WisDOT Bridge Manual

July 2026 Updates

August 19th, 2026

Agenda

- Resources
- Updates (Chapters, Standards, Inserts, and Blocks)
- Questions and Feedback

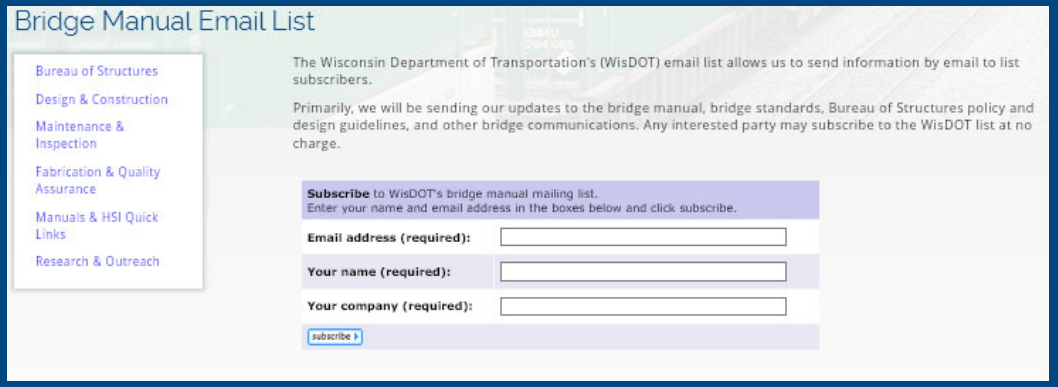
Housekeeping

- All participants are muted
- A handout of this webinar is posted on our website (See Update Archives)
- If you have a question, please use the chat feature to submit your question or raise your hand.
- Follow-up questions, please send to James.Luebke@dot.wi.gov

Resources

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/bm-mail-list.aspx

- To be added to the email distribution list:

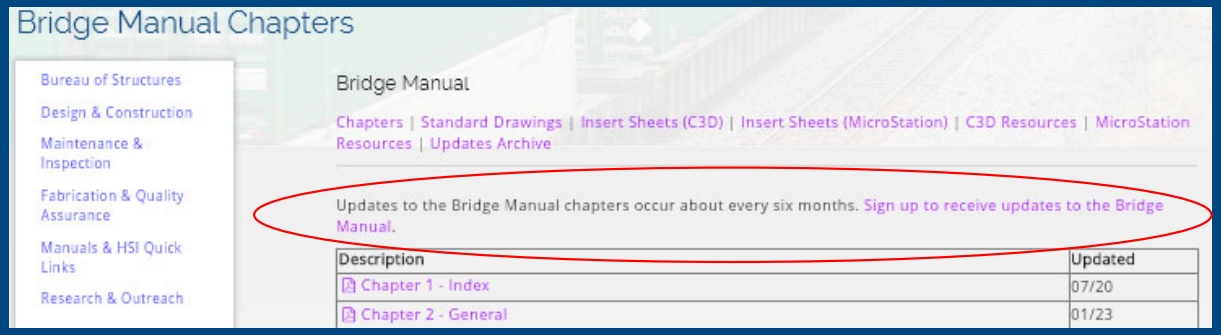


- To be removed from the email distribution list:
  - Send an email to James.Luebke@dot.wi.gov

Resources

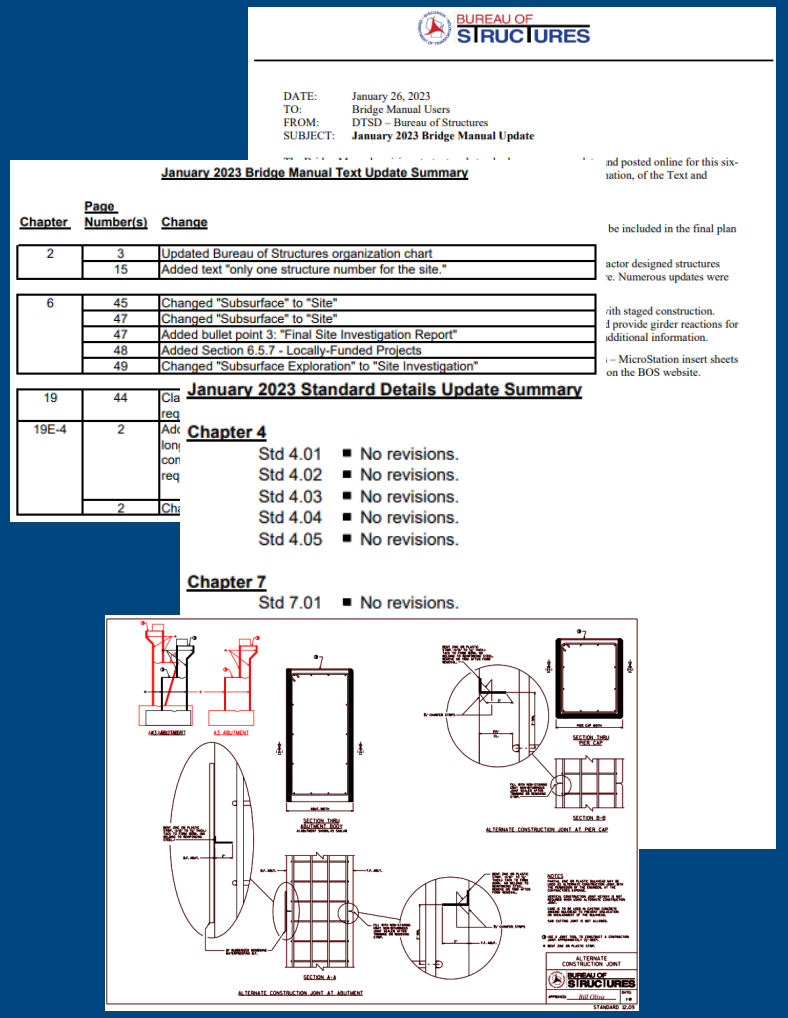
https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/bridge-manual.aspx

Or web search “WisDOT Bridge Manual”



Resources

- Update Archives
  - Update Memo
  - Text Update Summary
  - Standard Details Update Summary
  - Insert Sheet Update Summary
  - Standards Tracker
  - Update Presentation Slides
  - Block Update Summary



BUREAU OF STRUCTURES

DATE: January 26, 2023
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **January 2023 Bridge Manual Update**

January 2023 Bridge Manual Text Update Summary

Chapter	Page Number(s)	Change
2	3	Updated Bureau of Structures organization chart
	15	Added text "only one structure number for the site."
6	45	Changed "Subsurface" to "Site"
	47	Changed "Subsurface" to "Site"
	47	Added bullet point 3: "Final Site Investigation Report"
	48	Added Section 6.5.7 - Locally-Funded Projects
	49	Changed "Subsurface Exploration" to "Site Investigation"
19	44	Cla req
19E-4	2	Ad lon con req
	2	Ch

January 2023 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.

Chapter Updates

- Chapter 5 – Economics and Costs
  - Added 2025 bridge cost data
- Chapter 8 – Hydraulics
  - Clarified Design Frequency
  - Added requirements for all hydraulic/site reports and H&H calculations to be stamped by a PE.
  - Section 8.3.6: Complete re-write to clarify hydraulic modeling requirements when projects are in FEMA mapped floodplain.

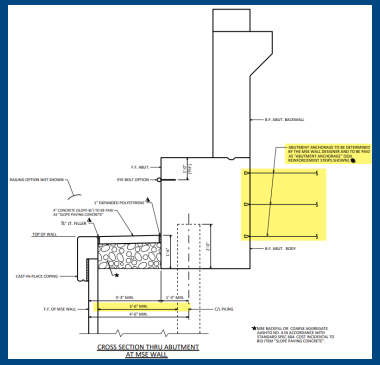
Chapter Updates

- Chapter 12 – Abutments
  - In general, MSE walls in front of Type A3 Abutments should be avoided.
  - If Abutment Anchorage is used:
    - The Designer shall specify, on the plans, all unfactored loads
    - Refer to updated Std. 14.04
    - Refer to BOS SPV Website “Abutment Anchorage” *New*

12.12 MSE Walls at Abutments

MSE walls in front of pile supported abutments, as shown in Figure 12.1-1, may be an alternative to traditional sill abutments (Type A1) constructed at the top of the slope. This configuration shortens span lengths, which may be particularly beneficial in urban areas with limited right of way or other site constraints. However, use of MSE walls at abutments should be evaluated on a project-by-project basis. Historically, MSE walls have not been used for the singular purpose of reducing span length. See Chapter 14 - Standard Details for additional information.

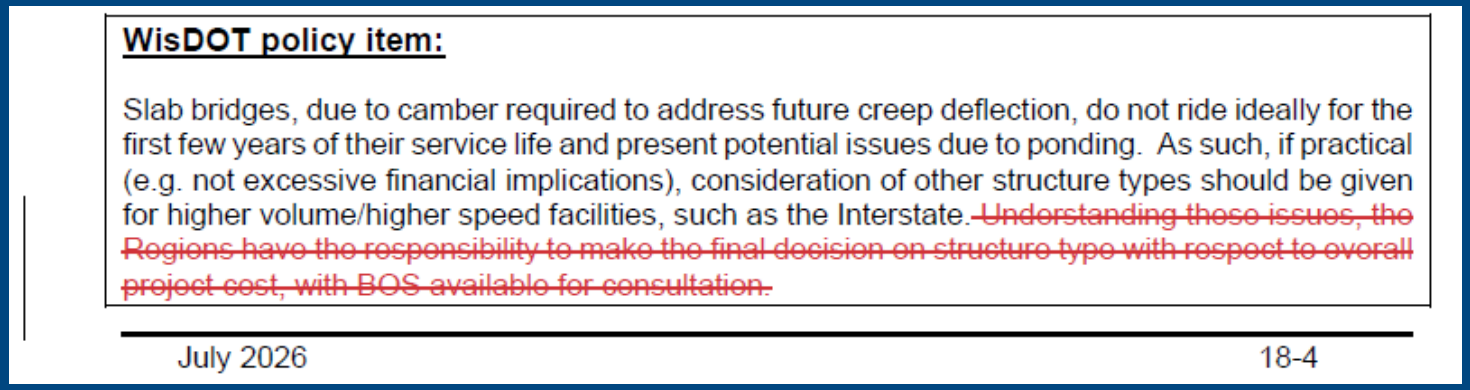
MSE walls in front of Type A3 semi-retaining abutments may be considered only when traditional Type A3 abutments (without an MSE wall) or a modified Type A3 abutment (MSE wall in front of two rows of vertical piles) are not feasible. This configuration typically provides a single row of vertical piles for vertical support only and does not rely on these piles for lateral resistance to avoid complicating the MSE wall design. Lateral loads from the superstructure and earth pressures on the abutment backwall are designed to be fully restrained by an abutment anchorage system. An MSE wall system is typically used for this purpose; a dead man anchor system is an alternative. See Chapter 14 - Standard Details for additional information.



Std. 14.04

Chapter Updates

- Chapter 18 – Concrete Slab Structures
  - Removed Region's responsibility to determine structure type.



WisDOT policy item:

Slab bridges, due to camber required to address future creep deflection, do not ride ideally for the first few years of their service life and present potential issues due to ponding. As such, if practical (e.g. not excessive financial implications), consideration of other structure types should be given for higher volume/higher speed facilities, such as the Interstate. ~~Understanding these issues, the Regions have the responsibility to make the final decision on structure type with respect to overall project cost, with BOS available for consultation.~~

July 2026 18-4

Chapter Updates

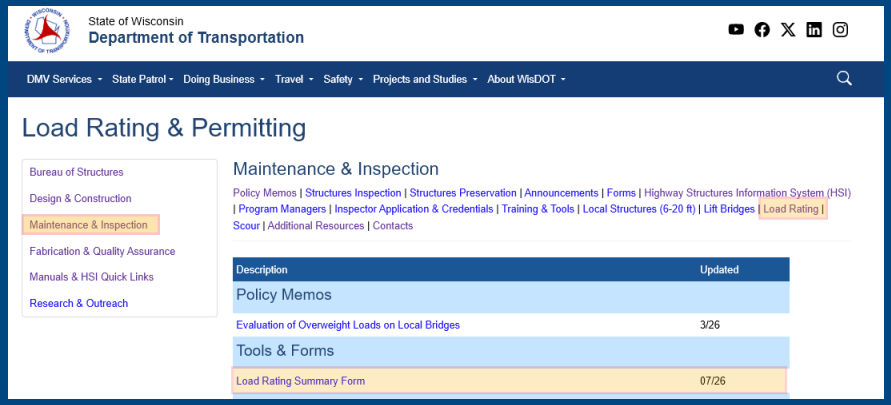
- Chapter 45 – Bridge Rating
  - Updated Load Rating Summary Form

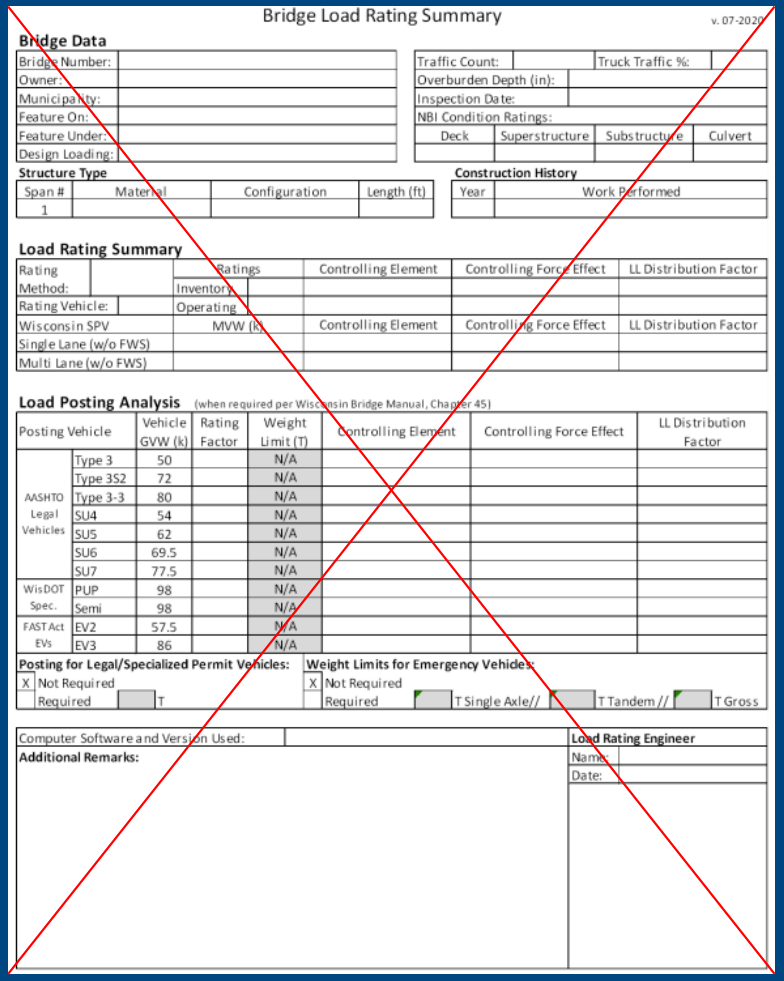
45.9.2 Load Rating Summary Forms

After the structure has been load rated, the WisDOT Bridge Load Rating Summary Form shall be completed and utilized as a cover sheet for the load rating calculations (see Figure 45.9-1). This form may be obtained from the Bureau of Structures or is available on the following website:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/plan-submittal.aspx

If required, the Refined Analysis Rating Form (see 45.9.5 and Figure 45.9-2) is available at the same location.





Bridge Load Rating Summary

v. 07-2020

Bridge Data

Bridge Number:		Traffic Count:		Truck Traffic %:	
Owner:		Overburden Depth (in):			
Municipality:		Inspection Date:			
Feature On:		NBI Condition Ratings:			
Feature Under:		Deck	Superstructure	Substructure	Culvert
Design Loading:					

Structure Type

Span #	Material	Configuration	Length (ft)
1			

Construction History

Year	Work Performed

Load Rating Summary

Rating Method:		Ratings	Controlling Element	Controlling Force Effect	LL Distribution Factor
Rating Vehicle:		Inventory			
Wisconsin SPV		Operating			
Single Lane (w/o FWS)		MVW (k)	Controlling Element	Controlling Force Effect	LL Distribution Factor
Multi Lane (w/o FWS)					

Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle		Vehicle GVW (k)	Rating Factor	Weight Limit (T)	Controlling Element	Controlling Force Effect	LL Distribution Factor
AASHTO Legal Vehicles	Type 3	50		N/A			
	Type 3S2	72		N/A			
	Type 3-3	80		N/A			
	SU4	54		N/A			
	SU5	62		N/A			
	SU6	69.5		N/A			
	SU7	77.5		N/A			
WisDOT Spec.	PUP	98		N/A			
	Semi	98		N/A			
FAST Act EVs	EV2	57.5		N/A			
	EV3	86		N/A			

Posting for Legal/Specialized Permit Vehicles: X Not Required; Required ____ T

Weight Limits for Emergency Vehicles: X Not Required; Required ____ T Single Axle// ____ T Tandem // ____ T Gross

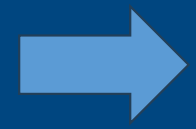
Computer Software and Version Used:

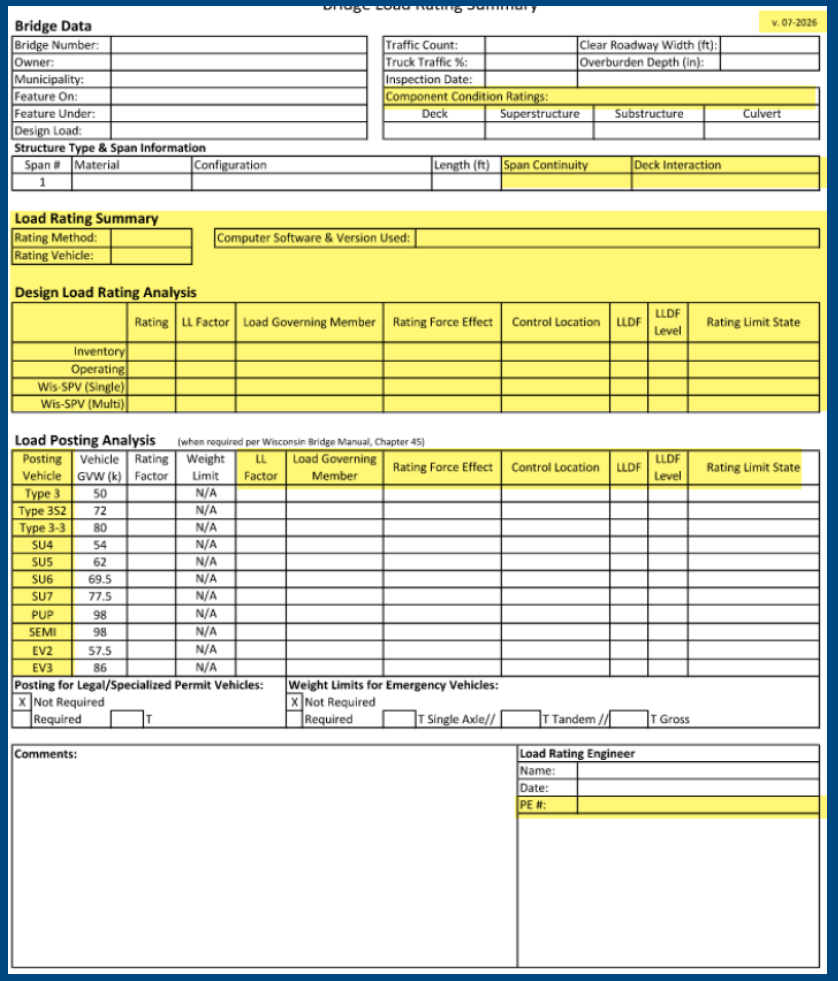
Additional Remarks:

Load Rating Engineer

Name:

Date:





v. 07-2026

Bridge Data

Bridge Number:		Traffic Count:		Clear Roadway Width (ft):	
Owner:		Truck Traffic %:		Overburden Depth (in):	
Municipality:		Inspection Date:			
Feature On:		Component Condition Ratings:			
Feature Under:		Deck	Superstructure	Substructure	Culvert
Design Load:					

Structure Type & Span Information

Span #	Material	Configuration	Length (ft)	Span Continuity	Deck Interaction
1					

Load Rating Summary

Rating Method:		Computer Software & Version Used:	
Rating Vehicle:			

Design Load Rating Analysis

	Rating	LL Factor	Load Governing Member	Rating Force Effect	Control Location	LLDF	LLDF Level	Rating Limit State
Inventory								
Operating								
Wis-SPV (Single)								
Wis-SPV (Multi)								

Load Posting Analysis (when required per Wisconsin Bridge Manual, Chapter 45)

Posting Vehicle	Vehicle GVW (k)	Rating Factor	Weight Limit	LL Factor	Load Governing Member	Rating Force Effect	Control Location	LLDF	LLDF Level	Rating Limit State
Type 3	50		N/A							
Type 3S2	72		N/A							
Type 3-3	80		N/A							
SU4	54		N/A							
SU5	62		N/A							
SU6	69.5		N/A							
SU7	77.5		N/A							
PUP	98		N/A							
SEMI	98		N/A							
EV2	57.5		N/A							
EV3	86		N/A							

Posting for Legal/Specialized Permit Vehicles: X Not Required; Required ____ T

Weight Limits for Emergency Vehicles: X Not Required; Required ____ T Single Axle// ____ T Tandem // ____ T Gross

Comments:

Load Rating Engineer

Name:

Date:

PE #:

Chapter Updates

- Chapter 45 – Bridge Rating
  - Removed Section 45.10.3.2 – Legal Load Rating Load Posting Equation(LRFR)

45.10.3.2 ~~Legal Load Rating Load Posting Equation (LRFR)~~

When using the LRFR method and the operating rating factor (RF) calculated for each legal truck described above is greater than 1.0, the bridge does not need to be posted. When for any legal truck the RF is between 0.3 and 1.0, then the following equation should be used to establish the safe posting load for that vehicle (see **MBE [Equation 6A6.3-1]**):

$$\text{Posting} = \frac{W}{0.7}[(RF) - 0.3]$$

Where:

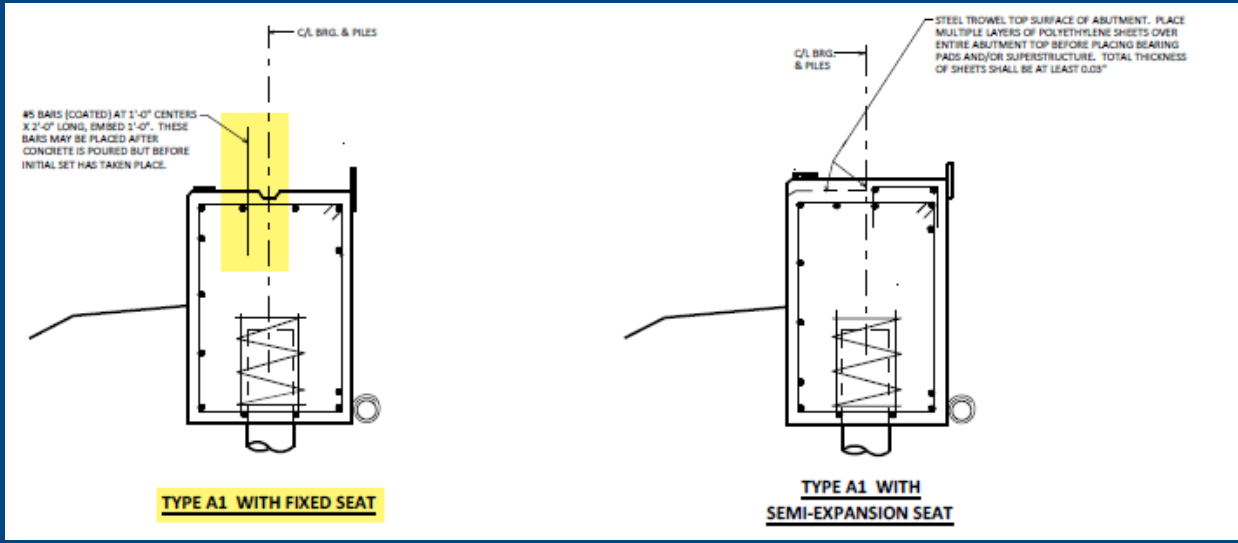
RF	=	Legal load rating factor
W	=	Weight of the rating vehicle

When the rating factor for any vehicle type falls below 0.3, then that vehicle type should not be allowed on the bridge. If necessary, the structure may need to be closed until it can be repaired, strengthened, or replaced. This formula is only valid for LRFR load posting calculations.

A bridge is posted for the lowest restricted weight limit of any of the standard posting vehicles. To calculate the capacity, in tons, on a bridge for a given posting vehicle utilizing LFR or ASR, multiply the rating factor by the gross vehicle weight in tons. To calculate the posting load for a bridge analyzed with LRFR, refer to ~~45.10.3.2 MBE~~ 6A.8.3. Contact the Bureau of Structures Load Rating Unit before recommending a posting based on LRFR methodology.

Standard Update

- Std. 14.04 – MSE Wall At Abutment
  - Added 150-ft Limit for A1 Abutments with Fixed Seats



DESIGNER NOTES

MSE WALLS SHALL NOT BE USED FOR THE SINGULAR PURPOSE OF REDUCING SPAN LENGTH. SEE BRIDGE MANUAL SECTION 12.12 FOR ADDITIONAL INFORMATION.

FALL PROTECTION SHALL BE PROVIDED. THE OPTION PROVIDED SHOULD BE BASED ON THE PREFERENCE OF THE BRIDGE MAINTENANCE AND REGION PROJECT STAFF.

IF PIPE RAILING IS USED, SEE STD. 30.26 FOR APPLICABLE NOTES. (NOTE: STD. 30.26 IS STILL UNDER DEVELOPMENT)

"SLOPE PAVING CONCRETE" ITEMS TO BE SHOWN AS PART OF BRIDGE PLAN.

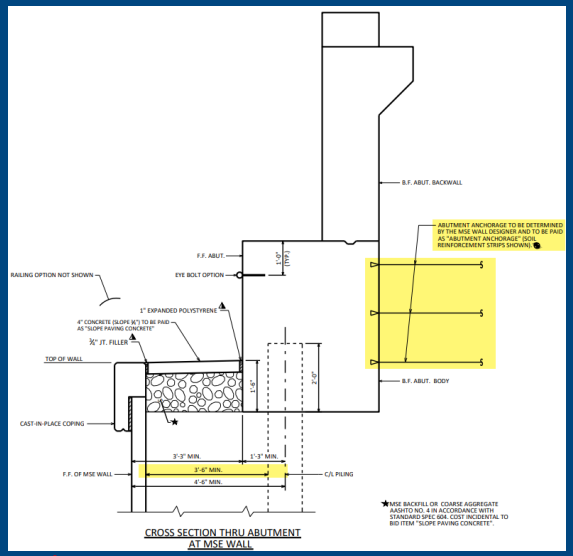
TYPE A1 ABUTMENTS:
FOR FIXED SEATS, TOTAL STRUCTURE LENGTH SHALL BE LIMITED TO 150-FEET.

TYPE A3 ABUTMENTS:
ABUTMENT ANCHORAGE IS NOT PREFERRED OVER TRADITIONAL A3 ABUTMENTS, BUT MAY BE CONSIDERED. WHEN ABUTMENT ANCHORAGE IS USED, THE DESIGNER SHALL SPECIFY, ON THE PLANS, ALL UNFACTORED LATERAL LOADS REQUIRED FOR THE DESIGN OF THE ABUTMENT ANCHORAGE.

Std. 14.04

Standard Update

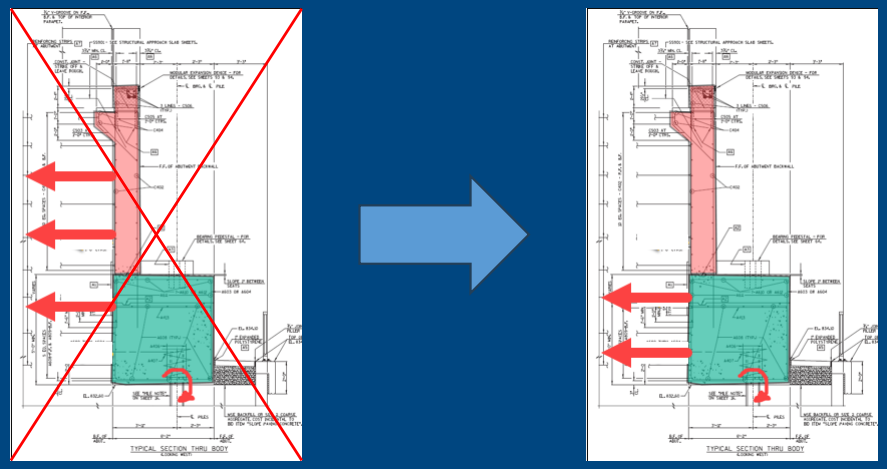
- Std. 14.04 – MSE Wall At Abutment
  - Added 3’-6” min. clearance between pile and panel

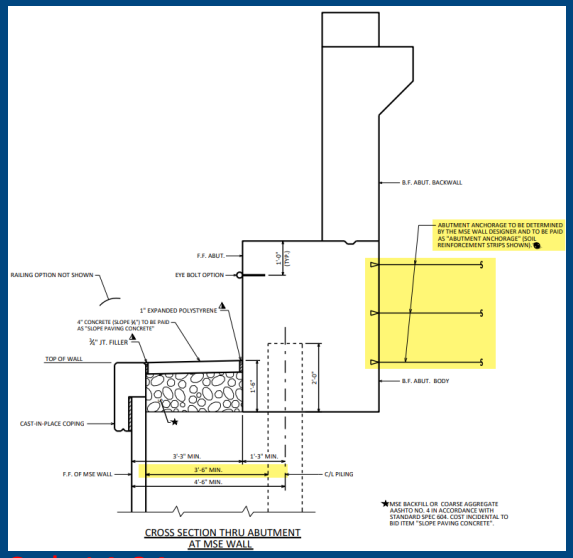


Std. 14.04

Standard Update

- Std. 14.04 – MSE Wall At Abutment
  - Abutment anchorage shall be attached to the abutment body (Not all allowed on backwall).





Std. 14.04

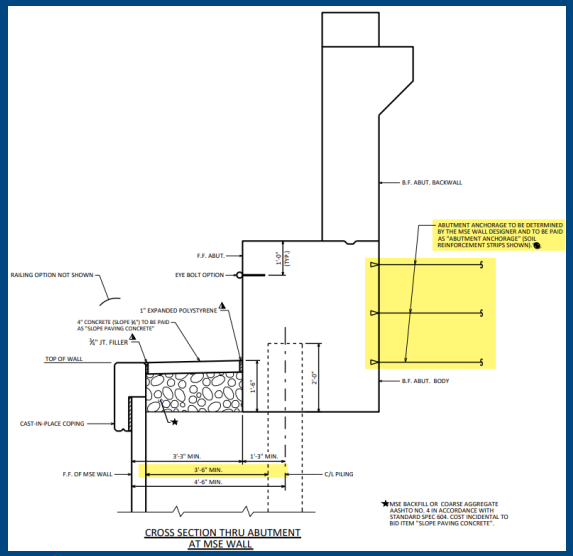
Standard Update

- Std. 14.04 – MSE Wall At Abutment
  - Added “EH” and “LS” loads
  - Added “Load Length”
  - Updated “Designer Notes” and “Notes”

UNFACTORED LATERAL DESIGN LOADS:

BR	= _ _ _ KLF	WS	= _ _ _ KLF	EH	= _ _ _ KLF
TU	= _ _ _ KLF	WL	= _ _ _ KLF	LS	= _ _ _ KLF

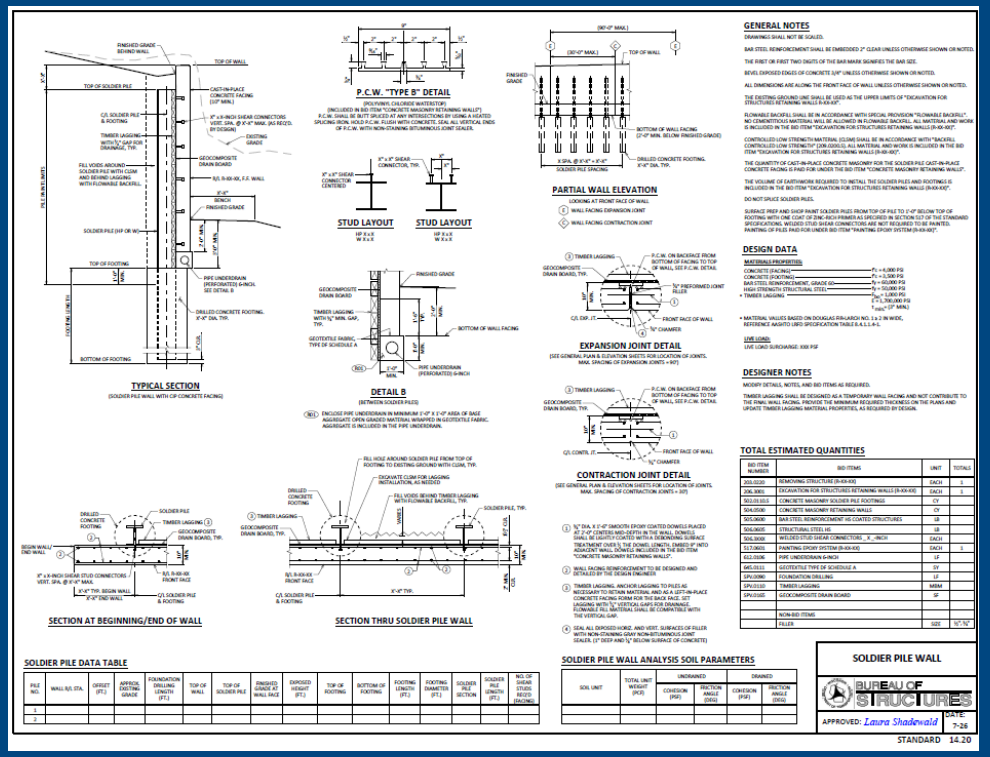
_. ABUT. LOAD LENGTH = _ _ FT



Std. 14.04

Standard Update

- Std. 14.20 – Soldier Pile Wall
  - CIP Facing Details
  - Cut Situation Detailed
  - See BOS Website for SPVs:
    - Foundation Drilling
    - Timber Lagging
    - Geocomposite Drain Board



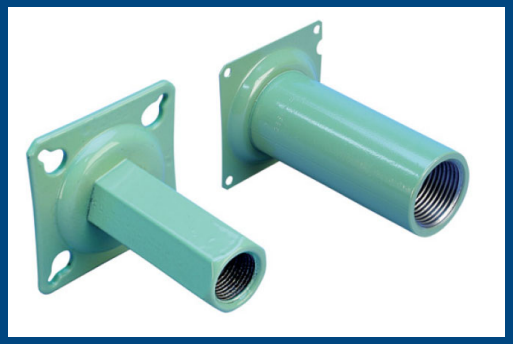
Std. 14.20

What is Next:

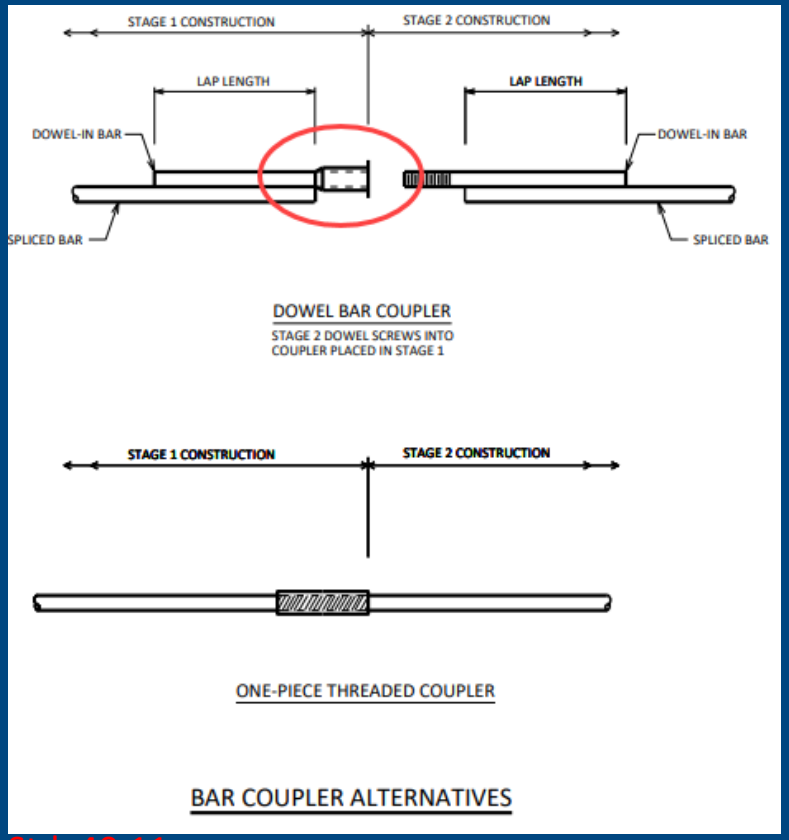
- Update Chapter 14 guidance
- Consider precast facing and tieback
- Consider other wall systems

Standard Update

- Std. 40.11 – Bar Splicer (Coupler)
  - Removed flange from dowel bar coupler
  - Mounting plates need to be compatible with concrete clear cover requirements.



Couplers with Mounting Plate - Not suitable for deck applications



Std. 40.11

Insert Sheet Update

July 2026 Insert Sheet Update Summary

Chapter 14 - Retaining Walls

soldier.dwg	*New* - Soldier Pile Wall

Chapter 19 - Prestressed Concrete

gpsbox_det1.dwg	Removed center horizontal bars for sections 1-4 in "Part Girder Elevation" view

Chapter 28 - Expansion Devices

jtss_A_SS.dwg	Bumped out paving notch limits and included abutment bars outside of "Section thru joint" details and "part plan"

Chapter 30 - Railings

railcombdet.dwg	Added back drop-down menu options for base plate
railcomb3T.dwg	Updated dimensions/location for nameplate (to match standard)
railw.dwg	Clarified note 8

Miscellaneous

altjoint.dwg	Changed "F.F. ABUT" to "B.F. ABUT." in left call out detail for section A-A

Block Details Update

July 2026 Block Details Update Summary
Updated: 2026-06-03
https://c3dkb.dot.wi.gov/

- Super - Prestressed Box Girder *New*
  - *Prestressed Box Girder Shapes*
  - *Deck Overhang Detail*
  - *Crown Detail*
  - *Section Thru Diaphragm*
  - *Corner Details*
  - *Bearing Pad Details*
- Deck – Joint Details
  - Added options for Deck/Slab, Transverse/Longitudinal

Questions and Feedback

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