



# WISCONSIN DOT STRUCTURES INSPECTION PROGRAM TECHNICAL BULLETIN

Issue 7 – November 2021

## INSPECTOR TRAINING DATES

For training news as well as other pertinent inspection information, we encourage you to visit the [WisDOT Structure Inspection Website](#). The site contains the upcoming training schedule, previous training videos, HSIS training items, policy memos, inspection manuals, and other useful information.

Currently, WisDOT has several classes available for the 2022 calendar year. To enroll in one of the below trainings, please contact Matt Coupar.

### Upcoming Training Schedule

- Snooper Operator Self-Rescue Training (DOT Staff only)  
La Crosse Spring 2022
- NHI Safety Inspection of In-Service Bridges (\$2100 per participant)  
Madison Spring 2022
- NHI Fracture Critical Inspection Techniques (\$900 per participant)  
Madison Spring 2022

## CRITICAL FINDINGS - DOCUMENTATION

WisDOT defines a Critical Finding as a defect on a bridge which threatens public safety and/or the structural stability of the bridge and is of such severity that immediate partial or full closure of the structure is required.

If the inspector discovers a critical finding, he or she shall notify the Program Manager immediately (24 hours) and take all necessary actions to ensure public safety on the site.

The Critical Finding must be documented in the Highway Structures Information (HSI) system using the Critical Finding activity under the Inspection Tab. The documentation should include:

- Date and time of incident (if known)
- Written and thorough narrative documentation
- Photographs and/or sketches
- Traffic restrictions and short-term plan of action
- Photographs of the traffic control/restrictions
- Uploaded DT2026 Critical Finding Form
- Long-term plan of action (if known)

If the long-term plan includes repairs to the structure, after the repairs are made the owner shall schedule an interim inspection to document the improved condition of the repaired/replaced elements. This serves as the FHWA defined close out of the critical finding.

If the long-term plan is to replace the entire structure, then a follow-up inspection is not required, and the critical finding can be considered closed out.

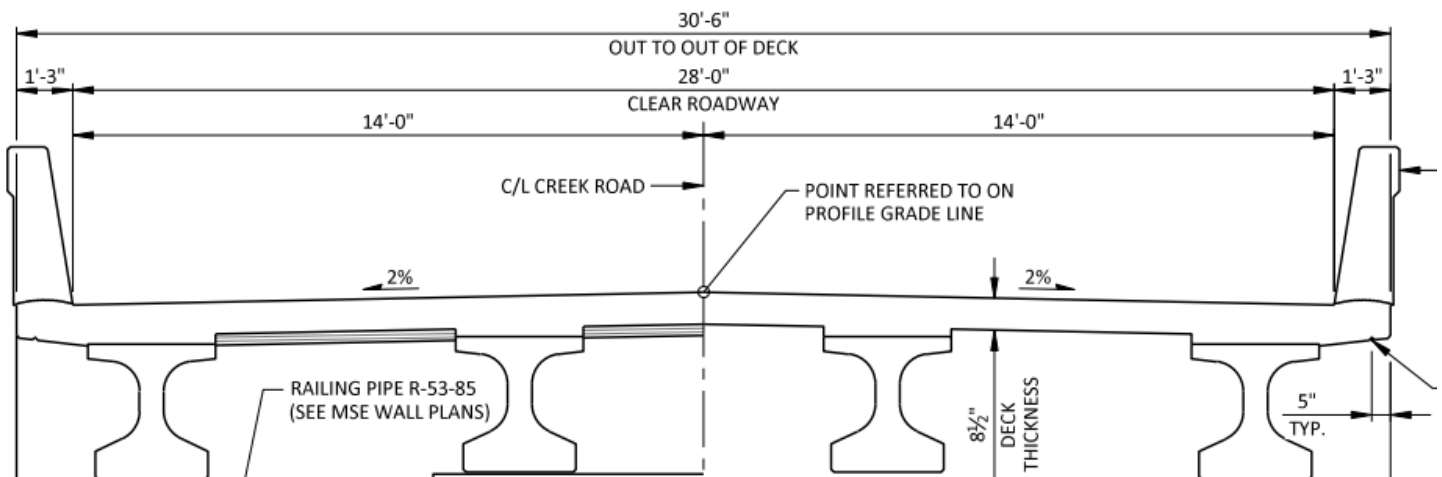
For more information, please refer to Part 1, Chapter 7 of the WisDOT Structures Inspection Manual located [here](#).

## INSPECTION REMINDERS AND TIPS

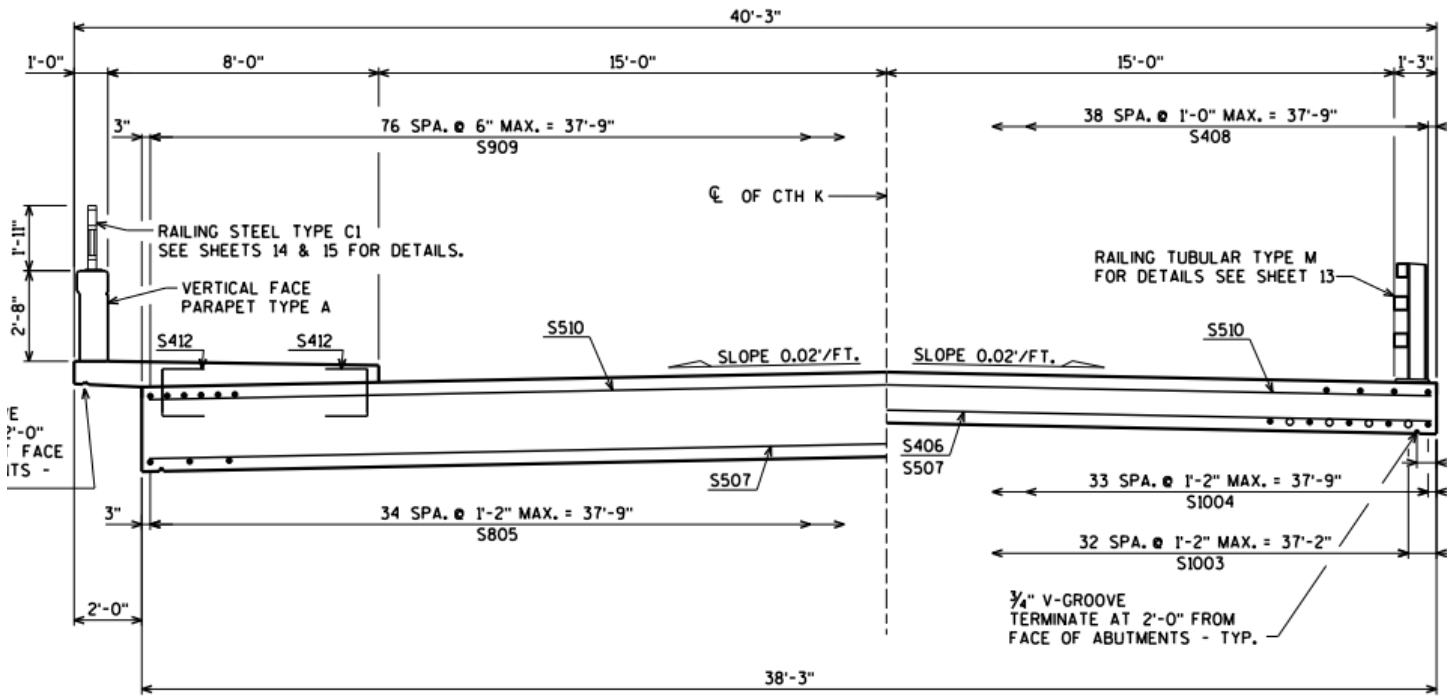
### Element Data – Deck/slab vs. Wearing Surface Quantities

One item that has consistently been miscoded is the wearing surface square footage for bridges with parapets or other raised concrete elements. Per definition, the wearing surface does not extend under these elements and thus should be typically less than the deck square footage.

For example, assume the below bridge is 100 feet long. The deck area (and thus deck element quantity) would be 30.5 ft x 100 ft = 3050 ft<sup>2</sup>. However, the wearing surface would be the area between the concrete parapets only (28 ft x 100 ft) = 2800 ft<sup>2</sup>.



This is not the case however, for an open rail structure. Again, assume the bridge below is 100 feet long. The slab area for this structure would be 38.25 ft x 100 ft = 3825 ft<sup>2</sup>. The wearing surface is more complicated in that the raised sidewalk area would not be counted in the wearing surface calculations. However, the open rail portion to the right-hand side would be counted. Thus, the wearing surface area would be (15 ft + 15 ft + 1.25 ft) x 100 ft = 3125 ft<sup>2</sup>.



## Reinforced Concrete Deck/Slab – Reinforcement Type

The reinforcement type used in a concrete deck or slab is important data to have for asset management engineers. With this information, combined with years of deck condition state data, engineers can develop accurate deterioration curves to be used in projecting deck deterioration. Knowing if the reinforcing steel is bare, epoxy coated, or stainless has a large impact on these curves. In addition, this data is required in the AASHTO Manual for Bridge Element Inspection.

During the next inspection cycle, please verify that the reinforcement type is set on these elements. If it is not, check the plans for what type of reinforcement was used, and update the data in the Highway Structures Information System (HSIS) under the deck/slab element. Simply click on the element, then click 'Set Rebar' and then choose the most appropriate answer.

For bridges with multiple types of reinforcement (IE top steel epoxy, bottom steel black) choose Black Steel Reinforcing. For bridges without plans, assume Black Steel Reinforcing.

**Inspection**

Ck	Element	Description	
<input checked="" type="checkbox"/>	12	<b>Reinforced Concrete Deck-Coated Reinforcing</b>	
	enter %	Numbered West to East Based on 2013 Plans.	
	add defect		
	add protect sys	ation - Spall - Patched Area	
	set rebar	Other Rebar Protective System	
	delete	Coated Reinforcing ✓	5
		Stainless Steel Reinforcing	
		Non-Metallic Reinforcing	
	1130	Crackin	
		Black Steel Reinforcing	



Did you know:

Wisconsin has 5 FHWA recognized tunnels that carry highway traffic, all located in Milwaukee County. WisDOT, in 2021, developed a tunnel program to inspect and maintain these structures per the National Tunnel Inspection Standards. The structures had previously been inspected under the National Bridge Inspection Program.

## Columns vs. Piles

As was noted in the May 2018 Technical Bulletin, and discovered again during the 2021 QA reviews, the element for steel columns (202) was still being used instead of the element for steel piling (225) for approximately 300 structures. This error is also occurring for other materials as well.

A simple rule of thumb to follow, if the member was driven into place during construction, it is considered a pile; otherwise, it is likely a column. Most bridges in the Wisconsin inventory have steel piling.

Please check this element during the next inspection cycle and update as appropriate.

## Photos for CS3/CS4 Defects

A quick reminder that **new photos and/or updated sketches** are required for defects in CS3 or CS4 condition states. Inspectors shall take sufficient photos during the inspection to accurately document the current condition of each of the defects.

In addition, inspectors are highly encouraged to add a date stamp to photographs.

## New Construction – Structure Numbers

WisDOT policy requires a new distinct number for structures that have been replaced. If an old structure is replaced, and the new structure qualifies as a bridge, then it must be assigned a new number by WisDOT. Please contact the local program manager or bridge owner to have a new bridge number requested. These requests shall be sent to the Regional program manager who assigns the ID. Use the structure number request form found [here](#).

## INSPECTION SCHEDULES – EXTENDED ROUTINE INSPECTION FREQUENCIES

As mentioned in the Winter 2020 Technical Bulletin, WisDOT received permission from the Federal Highway Administration (FHWA) to implement extended inspection frequencies for bridges that meet the criteria. As of November 2021, 2665 structures statewide are utilizing this policy in over 55 counties.

For agencies that have not yet applied to utilize these policies (it is not a requirement), a new version of the DT2002 Structure Inspection Quality Control Form will need to be submitted by the County PM or Commissioner and can be found at this [website](#). This form details specific information relevant to a successful inspection program and allows the local agency to 'Opt-in' to using extended frequencies for qualifying structures. The deadline for applying for the 2022 inspection season is February 1st, 2022.

Please note that it is not necessary to re-apply once you've opted in. However, if you have additional bridges to add to the extended frequency list, you'll need to resubmit the form with that bridge info included as an addendum.



## INSPECTION SCHEDULES - REQUESTING A CHANGE (REMINDER FROM 2018 BULLETIN)

There are occasionally special circumstances when the inspection schedule for a bridge needs to be adjusted. The most common reason is that there is construction work on the bridge that prohibits inspectors from conducting a full routine inspection. Another common occurrence is the desire for a program to move a single inspection to correspond with other inspections under the owner's jurisdiction.



Program Managers can request an extension to the scheduled inspection by submitting a request, via email, to the Statewide Program Manager (SPM) at least a month prior to the originally scheduled inspection for which the extension will be desired. The SPM will determine if the extension is warranted and if so, will request permission from FHWA. After receiving confirmation from FHWA on the status of the request (approved/denied), the original requesting PM will be notified via email. PM's are advised that until permission is granted, they are to assume the schedule cannot be changed and plan to inspect the structure during the originally scheduled month.

If the request is denied, the inspection team shall perform the inspection during the original due month.

When entering an inspection with shifted schedule in HSIS, the software will automatically assume the inspection is late. To document that the inspection was not late, click on the late reason tab and select "FHWA Approved" as the late reason. Specify the inspection schedule was approved by BOS/FHWA in the notes, and then upload the written permission email (PDF format) from BOS on the Documents/Images tab under the Late Reason category.

## NON-COMPLIANT LOAD POSTING SIGNAGE

A recent review of the bridge inspection program found a bridge with load posting signage that does not meet the requirements of the Manual on Uniform Traffic Control Devices for Streets and Highways ([MUTCD](#)). Specifically, the lettering used did not meet the sizing requirements and in fact was smaller mailbox lettering partially covering an existing number. This is confusing to the travelling public and is not enforceable. This has been identified at other locations within the state.

Load posting signs are regulatory signs that must meet the standards defined in the MUTCD. Signage that meets the standards are effective in notifying the travelling public, are enforceable by law, and limit the liability of the bridge owner. The load posting signs are also an assessment reviewed as part of the bridge safety inspections. Bridge inspectors should identify any signage they believe does not meet standards and include a recommendation under the maintenance action items to have the signage reviewed by the bridge owner for compliance. The inspection program manager will forward the maintenance action items to the bridge owner informing the bridge owner that the signage should be reviewed for compliance. Bridge owners must have regulatory signs installed that are the correct dimensions and have the correct sized lettering to meet the MUTCD.



Also note, the expectation is that owners and program managers shall follow through promptly on any signs discrepancies noted in the inspection report (Assessment 9034 in CS4), and a new Posting Verification Form shall be submitted when

the correction to the sign(s) is made. This can be entered as a Posted Verification Activity with only the Assessment 9034 updated. Any questions, please contact Alex Pence.

## ABOUT THE BULLETIN

The Bureau of Structures at WisDOT will publish 1~2 bulletins a year to discuss topics involving inspection, maintenance, repair, or improvement information and initiatives. If you have ideas for future topics, please submit to David Bohnsack, Travis McDaniel, Matt Coupar, Anthony Stakston or Steve Doocy.

## INSPECTION PROGRAM CONTACTS

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