MONTANA
Department of Transportation

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Memorandum

From:	Mary Smith, P.E., Load Rating Engineer
Date:	March 20, 2023
Subject:	Interim Guidance for MDT034 - Request Review of Load Rating

This document is intended to provide MDT and Consultant Inspectors guidance on the general process and BrM procedures for updating MDT034 – Request Review of Load Rating. This interim guidance will stay in effect until incorporated into the Manual or otherwise superseded.

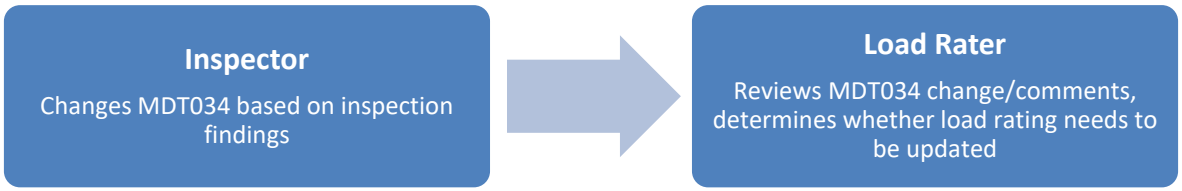
Background

A load rating is a structural analysis of a bridge's capacity – in its current condition – to carry a certain live load (vehicle). Load rating information is used for several purposes, including:

- to protect safety of the traveling public by identifying bridges with limited capacities that need to be load posted
- to maintain bridge integrity and safeguard bridge longevity
- to help identify and prioritize rehabilitation or replacement projects
- to assist in overweight vehicle permit review

Under the National Bridge Inspection Standards (NBIS, 23 CFR Part 650 Subpart C), every bridge is required to have a load rating. The load rating needs to be maintained throughout the bridge's lifetime and updated any time the bridge capacity changes. Things that may warrant an update include: change in bridge condition, rehab/reconstruction, new construction, change in operational condition (traffic use, vehicle placement), changes in dead or live loads, or change in load rating policy.

The MDT034 Request Review of Load Rating attribute is used to communicate changes that may warrant load rating updates. The intended workflow is for inspectors to flag changes based on inspection findings so load raters can review and determine whether a load rating update is needed.



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Comments

Every MDT034 attribute update should be accompanied by a comment. Comments provide important context for load rater review and are also used to track status. All comments need to be retained for documentation and tracking purposes. New comments should be added below any previous comments.

MDT034 comments should contain the following:

- Description/Reason for coding
- Date (please reference the inspection date, if applicable)
- Name of the person recommending review and their Company

Example
New corrugated deck was installed since the previous inspection, 10/12/2022 routine inspection, Henry Henning MDT

When to Update MDT034 / Description of Categories

- **Inspectors**

  Upon completion of inspection, update MDT034 (with a comment) for any of the situations below:

  - Change in condition
    - New CS4 defect, or a significant change in defect
    - Change in NBI Condition from 6 → 5 or 5 → 4
  - Change in Wearing Surface
    - Change in Wearing Surface Type (Item 108A)
    - Change in Depth of Cover (MDT008) – see additional guidance below
      ***For MDT008 changes – please upload Detailed Depth of Cover Measurement Sketch (attached)**
  - Bridge Modifications
    - Other changes in dead load (rail, curb, running planks)
    - Rehab/reconstruction
      ***Please make sure to upload rehab plans, shop drawings (if applicable), and/or updated measurements**
  - New Bridge
    - Newly constructed bridges
    - Older bridges that are new to the inventory
      ***Please make sure to upload plans, shop drawings (if applicable), and/or measurements for structures that are new or new to the inventory**
  - *Permitting*
    - *Reserved for permitting engineers – inspectors should not use this category*
  - Other
    - Any changes or concerns that don't fit into an above category
  - Change in Special Condition Assumption
    - Please use this category when MDT034 update is triggered per an inspection procedure. Load ratings that are based on special

conditions or assumptions will have an inspection procedure with specific details on what needs to be verified during each inspection, and when the load rating reeds to be marked for review.

- *Review in Progress*
  - *Reserved for load raters – inspectors should not use this category*

- **Permitting Engineers**

  Permitting engineers can use MDT034 to flag any condition changes or concerns about the existing load rating that are identified during permit analysis/review. Even if the observation fits under another category, permitters should only use the *Permitting* category (with a comment).

- **Load Raters**

  The *Review In Progress* category is used to update and track review status, and should only be used by load raters. Once review is complete and the load rating is updated (or determined not to need update), the load rater should document details with a comment and change MDT034 back to the default value *No*.

Wearing Surface – Depth of Cover

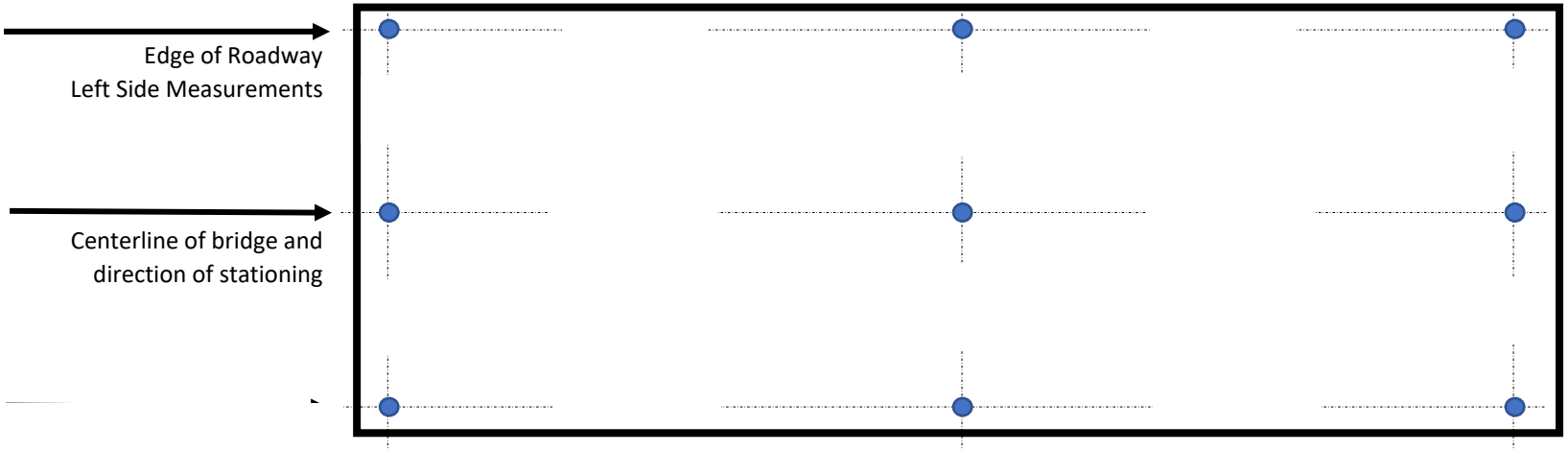
Type of Wearing Surface (Item 108A) and Depth of Cover (MDT008) should be verified during every inspection. Depth of cover measurements can vary based on precision and location of the measurement. Please follow the guidance below for updating MDT008 and MDT034.

- If the MDT008 value is within a reasonable tolerance (~1") of what's measured and there are no obvious changes since the previous inspection (i.e. no overlays, no change in wearing surface type) – do not update MDT008 or MDT034
- If there's a significant difference (i.e. previous measurement appears to be incorrect, obvious change in wearing surface since the previous inspection, new overlay, etc) – fill out a depth of cover detailed measurement sketch (see attached), upload to BrM Multimedia, and update MDT008 and MDT034 accordingly. The value entered into MDT008 should be the average of all depth measurements.

  Contact Henry Henning for a copy of the detailed measurement sketch.

Bridge ID:
Date:
Taken By:

Depth of Cover
Detailed Measurement Sketch



Record measurements in inches (measure to nearest ½ ")

Notes:

- Crown depth may need to be estimated by visual inspection from outside of bridge deck at eye level with the curb and added to the edge of deck depth.
- Measure depth of cover to the nearest half inch.
- Use inspector judgement to determine the edge or roadway and **describe in comments where the edge of roadway measurement is being taken at**.
  - *i.e. Edge of curb, fog line, edge of asphalt, etc…*

Key:

User input
Auto-calc

SPAN		Average:	
	A1	Mid	A2
Left EOR			
CTR Line			
Right EOR			

SPAN		Average:	
	A1	Mid	A2
Left EOR			
CTR Line			
Right EOR			

SPAN		Average:	
	A1	Mid	A2
Left EOR			
CTR Line			
Right EOR			

SPAN		Average:	
	A1	Mid	A2
Left EOR			
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SPAN		Average:	
	A1	Mid	A2
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CTR Line			
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Comments:

MDT008: inches