

**2016 ROUTINE  
BRIDGE INSPECTION REPORT**



**BRIDGE # 62526  
CSAH 31(WB MRYLD) over BNSF RR; ST**

**DISTRICT:** Metro

**COUNTY:** Ramsey

**CITY/TOWNSHIP:** St Paul

**STATE:** Minnesota

**Date of Inspection:** 10/29/2016

**Equipment Used:**

**Owner:** County Highway Agency

**Inspected By:** Engel, Michael; Grau, Joe; Reimer, Dan

**Report Written By:** Joe Grau

**Report Reviewed By:** Glenn Pagel

**Final Report Date:** 12/14/2016



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# MINNESOTA BRIDGE INSPECTION REPORT

12/14/2016

Inspector: CO Bridge

## BRIDGE 62526 CSAH 31(WB MRYLD) OVER BNSF RR; ST

County: Ramsey	Location: 0.2 MI W OF JCT TH 35E	Length: 218.2 ft.
City: St Paul	Route: 04 - CSAH 31 Ref. Pt.: 003+00.780	Deck Width: 58.1 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 8730 sq. ft. / %
Section: 30 Township: 029N Range: 22W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 4 - Steel Continuous 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings: 30 40 40
NBI Deck: 7 Super: 5 Sub: 6 Chan: N Culv: N		
	Open, Posted, Closed: P - Posted for Load	
	MN Scour Code: A - NON WATERWAY	

Appraisal Ratings - Approach: 8	Waterway: N	Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 2 - Vehicle & Semi (Type R12-5)	Traffic: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 0 - Not Required	Vertical: N - Not Applicable	Unofficial Sufficiency Rating 49.5

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
12	Reinforced Concrete Deck	Routine	10/29/2016	12677 SF	11369	872	436	0
		Migrated Values		12677 SF	11369	872	436	0
		Notes: Water / salt saturation with rust staining is present. 2016 Moderate width cracks with map cracking. 2016						
510 - Wearing Surfaces		Routine	10/29/2016	8730 SF	8675	55	0	0
		Migrated Values		8730 SF	8675	55	0	0
		Notes: Low Slump Overlay with Uncoated Rebar Notes: Minor transverse and longitudinal cracking in the overlay. 2000-16 No unsound patches or delamination's found. 2015-16 Isolated spalls at strip seals. 2015 Unsealed moderate width cracks are present. 2016						
107	Steel Open Girder/Beam	Routine	10/29/2016	1526 LF	763	763	0	0
		Migrated Values		1526 LF	763	763	0	0
		Notes: WS has minor to moderate deterioration. 2015 Protective oxide coating is starting to fail at the beam ends and hinges. 2015-16						
515 - Steel Protective Coating		Routine	10/29/2016	14814 SF	13680	1134	0	0
		Migrated Values		14814 SF	13680	1134	0	0
		Notes: Paint system at the beams ends and hinges is failing. 2015 Freckled rust at the beam ends and hinges. 2016						
205	Reinforced Concrete Column	Routine	10/29/2016	6 EA	5	1	0	0
		Migrated Values		6 EA	5	1	0	0
		Notes: 1 column at the west end has a minor spall. 2016 Minor map cracking on all columns. 2016						
215	Reinforced Concrete Abutment	Routine	10/29/2016	161 LF	129	22	10	0
		Migrated Values		161 LF	129	22	10	0
		Notes: Vertical cracking of bridge seat at east and west abutment. 1989-2016 10 LF of various size spalls with exposed rebar located at the east abutment. 2013-16 Joint between east abutment and slope paving is open. 2015-16 Joint around base of W. pier and slope paving is open. 2015-16 Recommend sealing the open joints. 2015-16						
234	Reinforced Concrete Pier Cap	Routine	10/29/2016	121 LF	121	0	0	0
		Migrated Values		121 LF	121	0	0	0

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
300	Strip Seal Expansion Joint	Routine	10/29/2016	239 LF	0	231	0	8
		Migrated Values		239 LF	0	231	0	8
Notes: East and west abutment expansion joints are transmitting water to the bearing seats. 2009-16 Minor leaking of joints. 2013-16 5 LF of the top of steel extrusion is rusted away to where the gland is loose. 2013-15 Isolated spalls at strip seals. 2015 Glands are completely filled with debris. 2016 8 LF - vertical offset greater than 1/2". 2016								
301	Pourable Joint Seal	Routine	10/29/2016	180 LF	180	0	0	0
		Migrated Values		180 LF	180	0	0	0
Notes: Located at the East approach. 2016								
311	Movable Bearing	Routine	10/29/2016	22 EA	0	8	14	0
		Migrated Values		22 EA	0	8	14	0
Notes: Cleaning and painting is recommended. 2013-16 Bearing alignment is tight to the south side keeper. 2013-16 Anchor bolts and bearings are corroded / rusted. 2013-16 Some bearings are restricted. 2013-15								
313	Fixed Bearing	Routine	10/29/2016	6 EA	0	6	0	0
		Migrated Values		6 EA	0	6	0	0
Notes: All fixed Bearings are located at pier 2. E.side of tracks (6 total) 2015 N.side fascia bearing at pier 2 is a expansion bearing type 3. 2015 Anchor bolts and bearings are corroded / rusted. 2013-16								
321	Reinforced Concrete Approach Slab	Routine	10/29/2016	2663 SF	2637	18	8	0
		Migrated Values		2663 SF	2637	18	8	0
Notes: Moderate cracking is present. 2015-16 Wide cracks at the west approach. 2016								
330	Metal Bridge Railing	Routine	10/29/2016	218 LF	150	68	0	0
		Migrated Values		218 LF	150	68	0	0
Notes: Impact damage NE. side. - see photos - 2011. No change in condition. 2013-16 Railing is bent, concrete parapet is cracked at connection. 2013-15 Railing code is a type 19. 2014								
515	Steel Protective Coating	Routine	10/29/2016	461 SF	0	461	0	0
		Migrated Values		461 SF	0	461	0	0
Notes: Chalking and fading of the finish coat is present. 2016								
331	Reinforced Concrete Bridge Railing	Routine	10/29/2016	218 LF	150	56	12	0
		Migrated Values		218 LF	150	56	12	0
Notes: Impact damage NE. side. - see photos - 2011. No change in condition. 2013-16 Railing is bent, concrete parapet is cracked at connection. East end. 2013-16 Railing code is a type 19. 2014 Spalls and delams present. 68LF CS-2 Spalls with exposed rebar are present. 2016								
800	Critical Deficiencies or Safety Hazards	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION. 2016								
810	Concrete Decks - Cracking & Sealing	Routine	10/29/2016	549 LF	0	412	137	0
		Migrated Values		549 LF	0	412	137	0
Notes: Unsealed cracks of moderate size and density. 2015-16 Recommend sealing the cracks and the deck area. 2015								

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
815	Plow Fingers	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
816	Approach Relief Joint	Routine	10/29/2016	39 LF	28	10	1	0
		Migrated Values		39 LF	28	10	1	0
Notes: Foam filler is sticking up above the joint. 2016 Areas of adhesion loss - deterioration of seal. 2016								
850	Steel Hinge Assembly	Routine	10/29/2016	14 EA	0	14	0	0
		Migrated Values		14 EA	0	14	0	0
Notes: Minor deterioration present. 2015 Paint system has deterioration, rust and corrosion is present. 2015-16 Cleaning and lubrication is recommended. 2016								
855	Secondary Members (Superstructure)	Routine	10/29/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: 3" spall on S.E. diaphragm and a 2" spall on the 1st and 2nd diaphragm from the N.W. side. 1997-2003 (At abutments) 4 End diaphragms from the North are severely cracked and spalled on the West side. 2013-16								
856	Secondary Members (Substructure)	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Crash strut. 2016								
881	Steel Section Loss	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Minor section loss is present. 2015 Rust and corrosion is present at the beam ends and hinges. 2015-16								
883	Concrete Shear Cracking	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to monitor the presence of shear cracking on concrete elements. Pay particular attention to the concrete pier caps.								
890	Load Posting or Vertical Clearance Signing	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Load Posting signage is in place. 2014-16								
892	Slopes & Slope Protection	Routine	10/29/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: Joint between east abutment and slope paving is open. 2015-16 Joint around base of W. pier and slope paving is open. 2015-16								
893	Guardrail	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: New guardrail was added at both ends of the bridge. 2000 The guardrail is in back of the curb and walk section. 2015								
894	Deck & Approach Drainage	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to rate the condition, function, and adequacy of the drainage system.								

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
895	Sidewalk, Curb, & Median	Routine	10/29/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: Unsealed cracks present at the walks. 2015-16 Recommend sealing cracks and the curb and walk areas. 2015-16 Isolated spalling on the face of curb - median location. 2016								
899	Miscellaneous Items	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Lighting is on the N. side of the bridge. 2 bent straws total. 2015-16								
900	Protected Species	Routine	10/29/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to track the presence of protected species living on this structure. None found in 2016.								

General Notes: BNSF-RR contacts:  
Michael Anderson (763) 782-3310 cell (612) 749-3401 michael.anderson5@bnsf.com  
Lane Gilliland cell (612) 219-4219

The bridge owner is Ramsey County.  
contacts:  
Nick Fischer 651-266-7119  
Kathy Jaschke 651-266-7192

58. Deck NBI: Minor deterioration - 2011

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail  
Terminal NBI:

59. Superstructure NBI: Hinges are corroded 2015  
Expnasion bearing are frozen and restricted. 2015

60. Substructure NBI:

61. Channel NBI:

62. Culvert NBI:

71. Waterway Adeq NBI:

72. Appr Roadway  
Alignment NBI:

Inventory Notes:

Joe Grau

Inspector's Signature

Glenn Pagel

Reviewer's Signature



1. 009 Load Posting Sign 62526 WB\_Maryland - relocated.jpg



2. abut seat spall 028.JPG



3. 018 Vertical cracking W abut at back wall..JPG



4. abut seat spall 029.JPG



5. bearing corrosion 034.JPG



6. 019 W end concrete diaphragm delams and spalls..JPG



7. 020 W end underside of deck, center span..JPG



8. extrusion deterioration 036.JPG



9. 021 W end underside of deck..JPG



10. 022 W end underside of deck center span..JPG



11. 023 W pier hinge bearings, corrosion and paint failure..JPG



12. 024 W strip seal armor extrusion failure..JPG



13. 025 W approach sealant failure..JPG



14. 026 E approach liquid poured joint failure..JPG



15. 027 E approach liquid poured joint failure..JPG



16. 028 E approach unsound patches in paving block..JPG



17. 029 E end, S side of parapet, spalls and delams..JPG



18. 030 W end, S side of parapet, spalls and delams..JPG



19. 031 NW corner approach sidewalk undercutting..JPG



20. 033 SE abut, severe spalling..JPG



21. Concrete rail, E end..JPG



22. Concrete rail, midspan..JPG



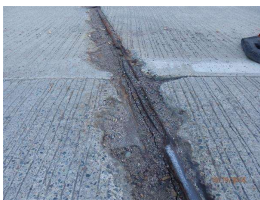
23. Concrete rail, W end..JPG



24. E end, S side..JPG



25. Joint at W end (1)..JPG



26. Joint at W end (2)..JPG



27. Median, midspan..JPG



28. Median, W end..JPG



29. Underdeck, W end (1)..JPG



30. Underdeck, W end (2)..JPG





31. W abutment (1).JPG



32. W abutment (2).JPG