

**2015 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 90394
BNSF RR over CSAH 31(W MARYLAND AV)**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: St Paul

Date(s) of Inspection: 05/14/2015

Equipment Used:

Owner: Railroad

Inspected By: Burt, Dick; Ekstrand, Ron; Engel, Michael; Schaaf, Jerry

Report Written By: Ron Ekstrand

Report Reviewed By: Glenn Pagel

Final Report Date: 12/01/2015

**MnDOT Bridge Office
3485 Hadley Avenue North
Oakdale, MN 55128**



MnDOT Structure Inventory Report

Bridge ID: 90394

BNSF RR

over CSAH 31(W MARYLAND AV)

Date: 12/01/2015

GENERAL			
Agency Br. No.			
District Metro			
Maint. Area		Crew	
County 062 - Ramsey			
City St Paul			
Township			
Desc. Loc. 0.1 MI E OF JCT CSAH 53			
Sect., Twp., Range		24 - 029N - 23W	
Latitude	Deg 44	Min 58	Sec 38.82
Longitude	Deg 93	Min 7	Sec 23.19
Custodian 27 - Railroad			
Owner 27 - Railroad			
BMU Agreement			
Year Built		1928	
MN Year Reconstructed			
FHWA Year Reconstructed			
MN Temporary Status			
Bridge Plan Location 0 - NO PLAN			
Date Opened to Traffic			
On-Off System		0 - OFF	
Legislative District 66A			

STRUCTURE	
Service On 2 - Railroad	
Service Under 1 - Highway, w/ or w/out ped.	
Main Span Type	
3 - Steel	01 - Beam Span
Main Span Detail	
Appr. Span Type	
1 - Concrete	09 - Slab Span
Appr. Span Detail	
Skew	54 L
Culvert Type	
Barrel Length	ft.
Cantilever ID	

NUMBER OF SPANS			
MAIN: 2	APPR: 2	TOTAL: 4	
Main Span Length	39.0	ft.	
Structure Length	121.0	ft.	
Deck Width (Out-to-Out)	31.0	ft.	
Deck Material N - Not Applicable			
Wear Surf Type N - Not Applicable (applies onl			
Wear Surf Install Year			
Wear Course/Fill Depth	0.00	ft.	
Deck Membrane 0 - None			
Deck Rebars N - Not Applicable (no deck)			
Deck Rebars Install Year			
Structure Area (Out-to-Out)	3751	sq. ft.	
Roadway Area (Curb-to-Curb) sq. ft.			
Sidewalk Width	Lt 0.00	Rt 0.00	ft.
Curb Height	Lt 0.00	Rt 0.00	ft.
Rail Type	Lt NN	Rt NN	

ROADWAY		
Bridge Match ID (TIS)		
Roadway O/U Key		
Route Sys	Number	
Roadway Name or Description		
Level of Service		
Roadway Type		
Control Section (TH Only)		
Reference Point		
Detour Length mi		
Lanes	On	Under 4
	ADT	Year
HCACT	0	ADTT 0 %
Functional Class		

RDWY DIMENSIONS		
If Divided	NB-EB	SB-WB
Roadway Width	ft.	ft.
Vertical Clearance	ft.	ft.
Max. Vert. Clear.	ft.	ft.
Horizontal Clear.	ft.	ft.
Lateral Clearance	ft.	ft.
Appr. Surface Width	ft.	
Bridge Roadway Width	ft.	
Median Width On Bridge	ft.	

MISC. BRIDGE DATA	
Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	
Abutment Foundation	1 - CONC
(Material/Type)	1 - SPRD SOIL
Pier Foundation	1 - CONC
(Material/Type)	1 - SPRD SOIL
Historic Status	5 - Not eligible

PAINT	
Year Painted	1928
Unsound Paint %	5
Painted Area	9700 sq. ft.
Primer Type	1 - Lead - non 3309
Finish Type	A - Red Lead

BRIDGE SIGNS	
Posted Load	0 - Not Required
Traffic	0 - Not Required
Horizontal	1 - Object Markers
Vertical	0 - Not Required

INSPECTION	
Userkey	199
Unofficial Structurally Deficient	N
Unofficial Functionally Obsolete	N
Unofficial Sufficiency Rating	-2
Routine Inspection Date	05/14/2015
Routine Inspection Frequency	12
Inspector Name	City of St. Paul
Status	A - Open

NBI CONDITION RATINGS	
Deck	6 - Satisfactory Condition
Unsound Deck %	
Superstructure	7 - Good Condition
Substructure	6 - Satisfactory Condition
Channel	N - Not Applicable
Culvert	N - Not Applicable

NBI APPRAISAL RATINGS	
Structure Evaluation N	
Deck Geometry	N
Underclearances	2
Water Adequacy	N - Not Applicable
Approach Alignment	5 - Somewhat better than m

SAFETY FEATURES	
Bridge Railing	N - NOT REQUIRED
GR Transition	N - NOT REQUIRED
Appr. Guardrail	N - NOT REQUIRED
GR Termini	N - NOT REQUIRED

IN DEPTH INSP.		
Y/N	Freq	Date
Frac. Critical		
Underwater		
Pinned Asbly.		
Spec. Feat.		

WATERWAY	
Drainage Area (sq. mi.)	
Waterway Opening	sq. ft.
Navigation Control	N - Not applicable, no waterw
Pier Protection	
Nav. Clr. (ft.)	Vert. ft. Horiz. ft.
Nav. Vert. Lift Bridge Clear. (ft.)	
MN Scour Code	A - NON WATER' Year

CAPACITY RATINGS		
Design Load	8 - RAILROAD	
Operating Rating	2 - AS	HS 65.0
Inventory Rating	2 - AS	HS 65.0
Posting VEH:	SEMI:	DBL:
Rating Date		
MnDOT Permit Codes		
A: N - N/A		
B: N - N/A		
C: N - N/A		

MnDOT BRIDGE INSPECTION REPORT

12/01/2015

Inspector: City of St. Paul

BRIDGE 90394 BNSF RR OVER CSAH 31(W MARYLAND AV)

ROUTINE INSP. DATE: 05/14/2015

County: Ramsey	Location: 0.1 MI E OF JCT CSAH 53	Length: 121.0 ft.
City: St Paul	Route: Ref. Pt.:	Deck Width: 31.0 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsd: sq. ft. / %
Section: 24 Township: 029N Range: 23W Maint. Area:		Paint Area/ Pct. Unsd: 9700 sq. ft. / 5%
Span Type: 3 - Steel 02 - Stringer/Multi-beam or Girder	Local Agency Bridge Nbr.:	Culvert: N/A
List:		Postings:
NBI Deck: 6 Super: 7 Sub: 6 Chan: N Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: A - NON WATERWAY	

Appraisal Ratings - Approach: 5 Waterway: N		Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Traffic: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 1 - Object Markers	Vertical: 0 - Not Required	Unofficial Sufficiency Rating N

Structure Unit:

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
030	Corrugated, Orthotropic, or Other Deck	2	Routine	05/14/2015	1 SF	1	0	0	0	0
			Routine	05/14/2014	1 SF	1	0	0	0	0

Requires Monitoring Monitored

Notes: added element # 30 Deck other. 2013
Concrete deck is covered with ballast, ties and track. 2013-15

107	Painted Steel Girder or Beam	2	Routine	05/14/2015	1355 LF	0	1355	0	0	0
			Routine	05/14/2014	1355 LF	0	1355	0	0	0

Requires Monitoring Monitored

Notes: Only the bottom flange is exposed, the rest is encased in concrete. 97-08.
Paint system has moderate deterioration. 2013-15
Surface corrosion is present. 2013-15

205	Reinforced Concrete Column	2	Routine	05/14/2015	18 EA	6	12	0	0	N/A
			Routine	05/14/2014	18 EA	6	12	0	0	N/A

Requires Monitoring Monitored

Notes: Severe spalling with exposed rebar on 7 columns, 2012-13
Repaired by the Railroad. 2014
New attenuator install at the CL column support - W.side. 2015

215	Reinforced Concrete Abutment	2	Routine	05/14/2015	141 LF	0	141	0	0	N/A
			Routine	05/14/2014	141 LF	0	141	0	0	N/A

Requires Monitoring Monitored

Notes: Repaired by the Railroad. 2014

Structure Unit:

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
234	Reinforced Concrete Pier Cap	2	Routine	05/14/2015	157 LF	0	151	6	0	N/A
			Routine	05/14/2014	157 LF	0	151	6	0	N/A
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: 3 LF of spall at NW cap. 2014-15 3 LF of spall at SW cap. 2013-15					
311	Expansion Bearing	2	Routine	05/14/2015	1 EA	1	0	0	N/A	N/A
			Routine	05/14/2014	1 EA	1	0	0	N/A	N/A
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: < none >					
313	Fixed Bearing	2	Routine	05/14/2015	1 EA	1	0	0	N/A	N/A
			Routine	05/14/2014	1 EA	1	0	0	N/A	N/A
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: < none >					
333	Masonry, Other or Combination Material Railing	2	Routine	05/14/2015	226 LF	0	226	0	N/A	N/A
			Routine	05/14/2014	226 LF	226	0	0	N/A	N/A
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: Railing is for maintenance crews only. 2014 Paint is failing on the railing. Moderate rusting. 2015					
359	Underside of Concrete Deck Smart Flag	1	Routine	05/14/2015	1 EA	1	0	0	0	0
			Routine	05/14/2014	1 EA	1	0	0	0	0
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: Underdeck wet at CL joint. 2011, 2013, 2014 Dry in 2012.					
362	Traffic Impact Smart Flag	2	Routine	05/14/2015	1 EA	0	1	0	N/A	N/A
			Routine	05/14/2014	1 EA	0	1	0	N/A	N/A
	<input type="checkbox"/> Requires Monitoring		<input type="checkbox"/> Monitored		Notes: added element # 362 in 2014.					

Structure Unit:

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
387	Reinforced Concrete Wingwall	2	Routine	05/14/2015	4 EA	0	3	1	0	N/A
			Routine	05/14/2014	4 EA	0	3	1	0	N/A

 Requires Monitoring Monitored

Notes: Cracking, leaching and staining present. Delams / spalls at South wing. 2011-13
No changes 2015

964	Critical Finding Smart Flag	2	Routine	05/14/2015	1 EA	1	0	N/A	N/A	N/A
			Routine	05/14/2014	1 EA	1	0	N/A	N/A	N/A

 Requires Monitoring Monitored

Notes: Date 2003-10-09 -
Previous comments > DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.

981	Signing	2	Routine	05/14/2015	1 EA	0	1	0	0	0
			Routine	05/14/2014	1 EA	0	1	0	0	0

 Requires Monitoring Monitored

Notes: Vert. clearance sign is in place - 13' 9". 2013-15

Lights are all steady burn. 2010-15
Please Notified BNSF RR if lights are not working.

Michael Anderson bridges and structures supervisor (763) 782-3310 cell (612) 749-3401
michael.anderson5@bnsf.com

Lane Gilliland bridge inspector cell (612) 219-4219

982	Approach Guardrail	2	Routine	05/14/2015	1 EA	1	0	0	N/A	N/A
			Routine	05/14/2014	1 EA	1	0	0	N/A	N/A

 Requires Monitoring Monitored

Notes: The inside or sidewalk side of the guardrail was lined with flex beam at the N.E. & S.W. corners on Maryland Ave. 96.
New twist downs added at the northeast and southwest guardrail, 00.
All guard rail is on the roadway under the bridge . 2014
A new attenuator was install on the W.side of the bridge at the CL column support. 2015

985	Slopes & Slope Protection	1	Routine	05/14/2015	1 EA	1	0	0	N/A	N/A
			Routine	05/14/2014	1 EA	1	0	0	N/A	N/A

 Requires Monitoring Monitored

Notes:

General Notes: BNSF contact info:

Michael Anderson bridges and structures supervisor (763) 782-3310 cell (612) 749-3401
michael.anderson5@bnsf.com

Lane Gilliland bridge inspector cell (612) 219-4219

58. Deck NBI: Minor delams or spalls. 2013

Structure Unit:

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
36A.	Brdg Railings NBI:									
36B.	Transitions NBI:									
36C.	Appr Guardrail NBI:									
36D.	Appr Guardrail Terminal NBI:									
59.	Superstructure NBI:									
60.	Substructure NBI:									
61.	Channel NBI:									
62.	Culvert NBI:									
71.	Waterway Adeq NBI:									
72.	Appr Roadway Alignment NBI:									
	Inventory Notes:									

Ron Ekstrand
Inspector's Signature

Glenn Pagel
Reviewer's Signature



1. 6-17-11
CL_joint_Leaks.JPG



2. 6-17-11 concrete cap
cracks.JPG



3. 6-17-11 concrete cap
spall.JPG



4. 6-17-11 concrete
NE.abut cracks.JPG



5. 6-17-11 concrete
NW.abut cracks.JPG



6. 6-17-11 concrete
S.wing cracks.JPG



7. 6-17-11 concrete
S.wing spalls.JPG



8. 6-17-11 concrete
SW.abut cracks.JPG



9. 6-17-11 SW.side
guard_rail.JPG



10. 6-17-11 SW.side
slope.JPG



11. 6-18-2010
EB_elevation.JPG



12. 6-18-2010
WB_elevation.JPG



13. 001 New attenuator
install - W.side.JPG



14. 002 New attenuator
install - W.side.JPG



15. 003 New attenuator
install - W.side.JPG



16. 033 abut and column
repairs by - RR.JPG



17. 034 abut and column
repairs by - RR.JPG



18. 035 abut and column
repairs by - RR.JPG