

**2016 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 90408
CSAH 55(JACKSON) over BNSF RR**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: St Paul

STATE: Minnesota

Date of Inspection: 05/06/2016

Equipment Used:

Owner: County Highway Agency

Inspected By: Ekstrand, Ron; Engel, Michael; Grau, Joe; Reimer, Dan

**Report Written By: Ron Ekstrand
Report Reviewed By: Glenn Pagel
Final Report Date: 08/19/2016**

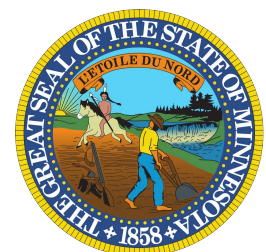


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Minnesota Structure Inventory Report

Bridge ID: 90408

CSAH 55(JACKSON) over BNSF RR

Date: 07/19/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. Crew District 05 Maint. Area County 062 - Ramsey City St Paul Township Desc. Loc. 0.2 MI N OF JCT CSAH 31 Sect., Twp., Range 19 - 029N - 22W Latitude 44 ° 58 ' 50.18 " Longitude 93 ° 5 ' 47.00 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1952 MN Year Reconstructed 1980 FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 4 - MUNICIPAL Date Opened to Traffic On - Off System 1 - ON Legislative District 66A Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 55 Roadway Name or Description CSAH 55 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 001+00.460 Detour Length 1.0 mi. Lanes ON 2 UNDER 0 ADT 6872 YEAR 2008 HCA DT ADTT % Functional Class 16 - Urban - Minor Arterial	Userkey 199 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 66.8 Routine Inspection Date 05/06/2016 Routine Inspection Frequency 12 Inspector Name Ekstrand, Ron Status P - Posted for Load																				
		+ NBI CONDITION RATINGS +																				
		Deck 6 Unsound Deck % 0 Superstructure 5 Substructure 5 Channel N Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 5 Deck Geometry 4 Underclearances 5 Waterway Adequacy N Approach Alignment 8																				
		+ SAFETY FEATURES +																				
		Bridge Railing 0 - SUBSTANDARD GR Transition 0 - SUBSTANDARD Appr. Guardrail N - NOT REQUIRED GR Termini N - NOT REQUIRED																				
		+ IN DEPTH INSP. +																				
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">Y/N</th> <th style="width: 15%; text-align: center;">Freq</th> <th style="width: 15%; text-align: center;">Date</th> </tr> </thead> <tbody> <tr> <td>Frac. Critical</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Underwater</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Pinned Asbly.</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Spec. Feat.</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Y/N	Freq	Date	Frac. Critical	N			Underwater	N			Pinned Asbly.	N			Spec. Feat.			
	Y/N	Freq	Date																			
Frac. Critical	N																					
Underwater	N																					
Pinned Asbly.	N																					
Spec. Feat.																						
		+ WATERWAY +																				
		Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Nav. Clr. (ft.)</td> <td style="width: 10%; text-align: center;">Vert.</td> <td style="width: 10%; text-align: center;">0.0</td> <td style="width: 10%; text-align: center;">Horiz.</td> <td style="width: 10%; text-align: center;">0.0</td> </tr> </table> Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON	Nav. Clr. (ft.)	Vert.	0.0	Horiz.	0.0															
Nav. Clr. (ft.)	Vert.	0.0	Horiz.	0.0																		
		+ CAPACITY RATINGS +																				
		Design Load 0 - Other/Unknown Operating Rating 2 - HS TRUCK 21.6 Inventory Rating 2 - HS TRUCK 13.0 Posting VEH: 25 SEMI: 34 DBL: 40 Rating Date 05/14/2012 Overweight Permit Codes A N - N/A B N - N/A C N - N/A																				
+ STRUCTURE +	+ RDWY DIMENSIONS +																					
Service On 5 - Highway-pedestrian Service Under 2 - Railroad Main Span Type 4 - Steel Continuous Main Span Design 01 - Beam Span Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 27 RIGHT Culvert Type Barrel Length Cantilever ID P - Pinned Hinge Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 54.3 ft. Structure Length 143.5 ft. Deck Width (Out-to-Out) 41.1 ft. Deck Material 1 - Concrete Cast-in-Place Wear Surf Type 4 - Low Slump Concrete Wear Surf Install Year 1980 Wear Course/Fill Depth 0.17 ft. Deck Membrane 0 - None Deck Rebars 1 - Epoxy Coated Reinforcing Deck Rebars Install Year 1980 Structure Area (Out-to-Out) 5898 sq. ft. Roadway Area (Curb-to-Curb) sq. ft. Sidewalk Width 50A. Lt 6.00 ft. 50B. Rt 0.00 ft. Curb Height Lt 0.75 ft. Rt 0.75 ft. Rail Type Lt 08 Rt 21	If Divided NB-EB SB-WB Roadway Width 32.00 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. 31.9 ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 40.0 ft. Bridge Roadway Width 32.0 ft. Median Width On Bridge ft.																					
		+ MISC. BRIDGE DATA +																				
		Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID 2 - Riveted Abutment Foundation (Material/Type) 1 - CONC Pier Foundation (Material/Type) 1 - CONC 1 - SPRD SOIL Historic Status 5 - Not eligible																				
		+ PAINT +																				
		Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type																				
		+ BRIDGE SIGNS +																				
		Posted Load 2 - Vehicle & Semi (Type R12-5) Traffic 0 - Not Required Horizontal 0 - Not Required Vertical N - Not Applicable																				

MINNESOTA BRIDGE INSPECTION REPORT

08/19/2016

Inspector: CO Bridge

BRIDGE 90408 CSAH 55(JACKSON) OVER BNSF RR

County: Ramsey	Location: 0.2 MI N OF JCT CSAH 31	Length: 143.5 ft.
City: St Paul	Route: 04 - CSAH 55 Ref. Pt.: 001+00.460	Deck Width: 41.1 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: sq. ft. / 0%
Section: 19 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:		Postings: 25 34 40

NBI Deck: 6 Super: 5 Sub: 5 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	66.8

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	05/06/2016	5898 SF	5780	0	118	0
		Migrated Values		5898 SF	5780	0	118	0
	Notes: Cracks in deck under west railing at deflection joints in railing with minor leaching. Cracking, salt / water saturation and efflorescence is present. see photos. 86-11.							
510	Wearing Surfaces	Routine	05/06/2016	4719 SF	4646	73	0	0
		Migrated Values		4719 SF	4646	73	0	0
	Notes: Low Slump Overlay with Epoxy Rebar Deck Notes: Cracks in deck under west railing at deflection joints in railing with minor leaching. 86-08. There are numerous transverse cracks in the wearing course. 2006-16 Longitudinal cracks are present. 2012-16							
107	Steel Open Girder/Beam	Routine	05/06/2016	575 LF	525	20	30	0
		Migrated Values		575 LF	525	20	30	0
	Notes: Steel beam ends have surface corrosion and rust at the abutments. Section loss at the ends of all beams. 2016 Approximately 1/8" loss of total thickness. 2016							
515	Steel Protective Coating	Routine	05/06/2016	6478 SF	3890	2000	138	450
		Migrated Values		6478 SF	3890	2000	138	450
	Notes: Paint system failure - exposed steel. CS4 2016 Finish coat failure - primer intact. CS3 2016 Chalking, fading finish coat. CS2 2016							
205	Reinforced Concrete Column	Routine	05/06/2016	6 EA	4	2	0	0
		Migrated Values		6 EA	4	2	0	0
	Notes: One sq. ft. spall at E. side of N. pier and two small spalls on the S. pier. 2015-16							
210	Reinforced Concrete Pier Wall	Routine	05/06/2016	70 LF	70	0	0	0
		Migrated Values		70 LF	70	0	0	0
	Notes: Quantity = 35' each side. X 2 = 70' total Location is at the columns, crash barrier on each side of the tracks. 2013-16 Minor cracking is present. 2013-16							
215	Reinforced Concrete Abutment	Routine	05/06/2016	135 LF	92	11	32	0
		Migrated Values		135 LF	92	11	32	0
	Notes: Extensive cracking, staining and scale present. 2013-15 Delams and spalls are prevalent at the N. and S. abuts. 2013-16 Exposed reinforcement is present on the N. abut. 2013-16 Abutment seats get wet from leaking expansion joints. 2005-16							

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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
234	Reinforced Concrete Pier Cap	Routine	05/06/2016	95 LF	91	0	4	0
		Migrated Values		95 LF	91	0	4	0
	Notes: One sq. ft. spall with rusted rebar at the bottom of the cap at the east end of the north pier between columns. 2006-10 + one sq. ft. spall at the N.E. end. 2016 Two sq. ft. spall with rusted rebar at the bottom of the cap at the west end of the south pier. 2011-16							
300	Strip Seal Expansion Joint	Routine	05/06/2016	74 LF	64	0	8	2
		Migrated Values		74 LF	64	0	8	2
	Notes: Leaking at abutments. 96-15 The south and north gland leak. 2013-16 The south gland is torn (3' +/-), 8' from the east walk. 2005-16 5 LF pulled or torn at the N. end. 2016 2' of the S. end extrusion is bent. 2016 Quantity = (2 x 32' each - curb to curb) + (2 x 5' walk) = 74 LF total. 2016							
301	Pourable Joint Seal	Routine	05/06/2016	66 LF	0	7	33	26
		Migrated Values		66 LF	0	7	33	26
	Notes: The North relief joint is broken 1/3. 2014-16 Sealant has adhesoin failure or is missing. 2013-16							
310	Elastomeric Bearing	Routine	05/06/2016	3 EA	2	1	0	0
		Migrated Values		3 EA	2	1	0	0
	Notes: Located on the east side, below sidewalk. 2016 1 at the N. abut. + 1 at each pier. = 3 total							
311	Movable Bearing	Routine	05/06/2016	12 EA	0	12	0	0
		Migrated Values		12 EA	0	12	0	0
	Notes: Bearings are rusty and pack rust developing. 2014-16 Center and east beam bearing at the north abutment is pushed north. 1994-2014							
313	Fixed Bearing	Routine	05/06/2016	5 EA	0	1	4	0
		Migrated Values		5 EA	0	1	4	0
	Notes: S. abut. bearings are very rusty. see photos SE corner has an elastomeric bearing. 2013-16 Severe deterioration present. 2015-16							
321	Reinforced Concrete Approach Slab	Routine	05/06/2016	2099 SF	1974	20	105	0
		Migrated Values		2099 SF	1974	20	105	0
	Notes: Cracks at approach panels. 84-2015 Wide cracks at both approaches + temporary patches at the N. end. 2016 South panel settlement. 2014-16							
330	Metal Bridge Railing	Routine	05/06/2016	289 LF	0	289	0	0
		Migrated Values		289 LF	0	289	0	0
	Notes: Chain Link Fence Notes: Located on top of concrete bridge railing. 2014-16							
	515 - Steel Protective Coating	Routine	05/06/2016	1734 SF	0	1734	0	0
		Migrated Values		1734 SF	0	1734	0	0
	Notes: Surface corrosion through out. 2016							
331	Reinforced Concrete Bridge Railing	Routine	05/06/2016	289 LF	0	289	0	0
		Migrated Values		289 LF	0	289	0	0
	Notes: Map cracked parapet. - see photos 2016							
800	Critical Deficiencies or Safety Hazards	Routine	05/06/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION. None found in 2016.							

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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
810	Concrete Decks - Cracking & Sealing	Routine	05/06/2016	732 LF	0	732	0	0
		Migrated Values		732 LF	0	732	0	0
Notes: Transverse and longitudinal cracking present. 2012-16 Measured 732 LF of unsealed cracks. 2016								
815	Plow Fingers	Routine	05/06/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: 4 missing on the S. end. 2016 2 missing on the N. end. 2016								
855	Secondary Members (Superstructure)	Routine	05/06/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: The S. diaphragms are rusty. 1999-2016 2nd diaphragm at the NE corner has section loss. 2015-16								
881	Steel Section Loss	Routine	05/06/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: See element 107 steel beams. 2016 5% to 10% section loss. 2016								
883	Concrete Shear Cracking	Routine	05/06/2016	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	05/06/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Load posting signs are present and in good condition. 2016								
892	Slopes & Slope Protection	Routine	05/06/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: The south & the north slopes are washing away due to a leak in the expansion joint. 1999-16 There is erosion build up behind the crash barriers at the bottom of the slopes. 2012-16								
893	Guardrail	Routine	05/06/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: Minor impact damage in various locations. 2013-16 NE side cable guardrail is substandard. 2012-16 The posted speed is not greater than 40 mph. The bridge roadway width is not greater than the approach roadway. See Appendix C - Safety Features								
894	Deck & Approach Drainage	Routine	05/06/2016	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.								
895	Sidewalk, Curb, & Median	Routine	05/06/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: Severe map cracking of approach walks. SE & NE. 1999-16								
899	Miscellaneous Items	Routine	05/06/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: The center span has gunite on the old beams, but not on the east fascia beams or east diaphragm line. 2001-08 Existing beams have riveted splices and the new east fascia beam has a high strength bolted splice. 1982-08 The Water Department Bridge is 35 ft. west. 2003-04								

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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
900	Protected Species	Routine	05/06/2016	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: Rating and load posting analysis done. 2012

58. Deck NBI: Leaky joints at abuts. 2014-15
Moderate cracking, scale and wear. 2016

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail
Terminal NBI:

59. Superstructure NBI: Steel beam ends have surface corrosion and rust at abuts. 2013
Section loss at the critical stress areas. 2016

60. Substructure NBI: Moderate spalling at abutment seat areas. 2013-16
Exposed rebar present at abutments. 2013-16
Moderate erosion of underdeck slopes. 2013-16

61. Channel NBI:

62. Culvert NBI:

71. Waterway Adeq NBI:

72. Appr Roadway
Alignment NBI:

Inventory Notes: TKDA - Joe Mueller Jr. - 05/14/2012
License # 49106
Rating and load posting analysis done. 2012

Findings:

See Forms RC-CL, RD-CL and attachments. 2012

Recommendations:

Load rating change and weight restriction is required. 2012
Load Posting Type - R12-5
25 / 34 / 40

Ron Ekstrand
Inspector's Signature

Glenn Pagel
Reviewer's Signature



1. abut. North - spalls_1.JPG



2. abut. North - spalls_2.JPG



3. abut. South - spalls and delams..JPG



4. approach cracking - N.side.JPG



5. approach N.side.JPG



6. approach S.side - cracks.JPG



7. bearing N.abut - 3 beamline_1.JPG



8. bearing N.abut - 3 beamline_2.JPG



9. bearing NE corner.JPG



10. bridge rail map cracked.JPG



11. diaphragm N.side.JPG



12. slope N..JPG



13. slope S..JPG



14. steel beam 2 - SE corner.JPG



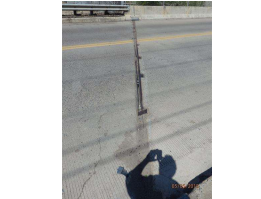
15. steel beam 3 - SE corner.JPG



16. steel beam and bearing.JPG



17. steel beam and bearing - SE corner.JPG



18. stripseal torn SE.JPG



19. walk cracking.JPG



20. 10-2-2013-Bridge Sign at North End.JPG



21. 10-2-2013-Bridge Sign at South End.JPG



22. E. side fascia beam.JPG



23. N. abutment.JPG



24. N. diaphragm midspan.JPG



25. NE corner.JPG



26. NE pier cap.JPG



27. S. abutment E. side.JPG



28. S. end diaphragm connection.JPG



29. SW pier cap.JPG