

**2016 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 5583
CSAH 51(LEX PKWY) over BNSF RR**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: St Paul

STATE: Minnesota

Date of Inspection: 10/16/2016

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

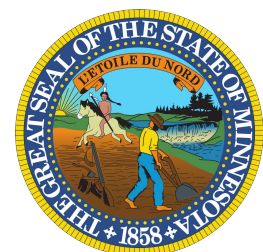


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Minnesota Structure Inventory Report

Bridge ID: 5583

CSAH 51(LEX PKWY)

over BNSF RR

Date: 12/14/2016

GENERAL	
Agency Br. No.	
District	Metro
Maint. Area	Crew
County	062 - Ramsey
City	St Paul
Township	
Desc. Loc.	0.8 MI N OF UNIV AVE
Sect., Twp., Range	26 - 029N - 23W
Latitude	Deg 44 Min 58 Sec 2.69
Longitude	Deg 93 Min 8 Sec 47.73
Custodian	02 - County Highway Agency
Owner	02 - County Highway Agency
BMU Agreement	
Year Built	1936
MN Year Reconstructed	1982
FHWA Year Reconstructed	
MN Temporary Status	
Bridge Plan Location	4 - MUNICIPAL
Date Opened to Traffic	
On-Off System	1 - ON
Legislative District	65A
ABC Suitable	

STRUCTURE	
Service On	5 - Highway-pedestrian
Service Under	2 - Railroad
Main Span Type	
	4 - Steel Continuous 01 - Beam Span
Main Span Detail	
Appr. Span Type	
Appr. Span Detail	
Skew	11 R
Culvert Type	
Barrel Length	ft.
Cantilever ID	

NUMBER OF SPANS			
MAIN:	5	APPR:	0
TOTAL:	5		
Main Span Length	66.0	ft.	
Structure Length	251.3	ft.	
Deck Width (Out-to-Out)	62.3	ft.	
Deck Material	1 - Concrete Cast-in-Place		
Wear Surf Type	4 - Low Slump Concrete		
Wear Surf Install Year	1982		
Wear Course/Fill Depth	0.17	ft.	
Deck Membrane	0 - None		
Deck Rebars	1 - Epoxy Coated Reinforcing		
Deck Rebars Install Year	1982		
Structure Area (Out-to-Out)	15656	sq. ft.	
Roadway Area (Curb-to-Curb)	12066	sq. ft.	
Sidewalk Width	Lt 6.00	ft.	Rt 6.00
Curb Height	Lt 0.83	ft.	Rt 0.83
Rail Type	Lt 27		Rt 27

ROADWAY	
Bridge Match ID (TIS)	0
Roadway O/U Key	Route On Structure
Route Sys	04 - CSAH Number 51
Roadway Name or Description	
CSAH 51	
Level of Service	1 - MAINLINE
Roadway Type	2 - 2-way traffic
Control Section (TH Only)	
Reference Point	003+00.825
Detour Length	2.0 mi
Lanes	On 4 Under 0
	ADT 24402 Year 2008
HCACT	0 ADTT 0 %
Functional Class	16 - Urban - Minor Arterial

RDWY DIMENSIONS			
If Divided	NB-EB	SB-WB	
Roadway Width	48.00	ft.	ft.
Vertical Clearance		ft.	ft.
Max. Vert. Clear.		ft.	ft.
Horizontal Clear.	47.9	ft.	ft.
Lateral Clearance		ft.	ft.
Appr. Surface Width	48.0	ft.	
Bridge Roadway Width	48.0	ft.	
Median Width On Bridge		ft.	

MISC. BRIDGE DATA	
Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	4 - Bolted
Abutment Foundation	1 - CONC
(Material/Type)	3 - FTG PILE
Pier Foundation	1 - CONC
(Material/Type)	1 - SPRD SOIL
Historic Status	5 - Not eligible

PAINT	
Year Painted	1982
Unsound Paint %	5
Painted Area	20000 sq. ft.
Primer Type	1 - Lead - non 3309
Finish Type	F - Phenolic Resin Alum

BRIDGE SIGNS	
Posted Load	2 - Vehicle & Semi (Type R12-5)
Traffic	0 - Not Required
Horizontal	0 - Not Required
Vertical	N - Not Applicable

INSPECTION	
Userkey	199
Unofficial Structurally Deficient	N
Unofficial Functionally Obsolete	Y
Unofficial Sufficiency Rating	37.6
Routine Inspection Date	10/16/2016
Routine Inspection Frequency	12
Inspector Name	CO Bridge
Status	P - Posted for Load

NBI CONDITION RATINGS	
Deck	6 - Satisfactory Condition
Unsound Deck %	
Superstructure	6 - Satisfactory Condition
Substructure	5 - Fair Condition
Channel	N - Not Applicable
Culvert	N - Not Applicable

NBI APPRAISAL RATINGS	
Structure Evaluation	4
Deck Geometry	2
Underclearances	4
Water Adequacy	N - Not Applicable
Approach Alignment	8 - Equal to present desirabl

SAFETY FEATURES	
Bridge Railing	1 - MEETS STANDARDS
GR Transition	N - NOT REQUIRED
Appr. Guardrail	N - NOT REQUIRED
GR Termini	N - NOT REQUIRED

IN DEPTH INSP.			
	Y/N	Freq	Date
Frac. Critical	N		
Underwater	N		
Pinned Asbly.	N		
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	6 - HS 20+MOD		
Operating Rating	1 - LF (LF)		HS 17.0
Inventory Rating	1 - LF (LF)		HS 10.2
Posting VEH:	25	SEMI: 36	DBL: 36
Rating Date	05/14/2014		
Minnesota Permit Codes			
A:	N - N/A		
B:	N - N/A		
C:	N - N/A		

Minnesota Structure Inventory Report

Bridge ID: 5583

CSAH 51(LEX PKWY) over BNSF RR

Date: 12/08/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. Crew District 05 Maint. Area County 062 - Ramsey City St Paul Township Desc. Loc. 0.8 MI N OF UNIV AVE Sect., Twp., Range 26 - 029N - 23W Latitude 44 ° 58 ' 2.69 " Longitude 93 ° 8 ' 47.73 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1936 MN Year Reconstructed 1982 FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 4 - MUNICIPAL Date Opened to Traffic On - Off System 1 - ON Legislative District 65A Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 51 Roadway Name or Description CSAH 51 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 003+00.825 Detour Length 2.0 mi. Lanes ON 4 UNDER 0 ADT 24402 YEAR 2008 HCA DT ADTT % Functional Class 16 - Urban - Minor Arterial	Userkey 199 Structurally Deficient N Functionally Obsolete Y Sufficiency Rating 37.6 Routine Inspection Date 10/16/2016 Routine Inspection Frequency 12 Inspector Name Grau, Joe Status P - Posted for Load																				
		+ NBI CONDITION RATINGS +																				
		Deck 6 Unsound Deck % Superstructure 6 Substructure 5 Channel N Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 4 Deck Geometry 2 Underclearances 4 Waterway Adequacy N Approach Alignment 8																				
		+ SAFETY FEATURES +																				
		Bridge Railing 1 - MEETS STANDARDS GR Transition N - NOT REQUIRED Appr. Guardrail N - NOT REQUIRED GR Termini N - NOT REQUIRED																				
		+ IN DEPTH INSP. +																				
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Y/N</th> <th style="text-align: center;">Freq</th> <th style="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 Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year																				
		+ CAPACITY RATINGS +																				
		Design Load 6 - HS 20+MOD Operating Rating 2 - HS TRUCK 17.0 Inventory Rating 2 - HS TRUCK 10.2 Posting VEH: 25 SEMI: 36 DBL: 36 Rating Date 05/14/2014 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 11 RIGHT Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 5 APPR: 0 TOTAL: Main Span Length 66.0 ft. Structure Length 251.3 ft. Deck Width (Out-to-Out) 62.3 ft. Deck Material 1 - Concrete Cast-in-Place Wear Surf Type 4 - Low Slump Concrete Wear Surf Install Year 1982 Wear Course/Fill Depth 0.17 ft. Deck Membrane 0 - None Deck Rebars 1 - Epoxy Coated Reinforcing Deck Rebars Install Year 1982 Structure Area (Out-to-Out) 15656 sq. ft. Roadway Area (Curb-to-Curb) 12066 sq. ft. Sidewalk Width 50A. Lt 6.00 ft. 50B. Rt 6.00 ft. Curb Height Lt 0.83 ft. Rt 0.83 ft. Rail Type Lt 27 Rt 27	If Divided NB-EB SB-WB Roadway Width 48.00 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. 47.9 ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 48.0 ft. Bridge Roadway Width 48.0 ft. Median Width On Bridge ft.																					
	+ MISC. BRIDGE DATA +																					
	Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID 4 - Bolted Abutment Foundation (Material/Type) 1 - CONC Pier Foundation (Material/Type) 3 - FTG PILE Pier Foundation (Material/Type) 1 - CONC Historic Status 1 - SPRD SOIL Historic Status 5 - Not eligible																					
	+ PAINT +																					
	Year Painted 1982 Unsound Paint % 5 Painted Area 20000 sq. ft. Primer Type 1 - Lead - non 3309 Finish Type F - Phenolic Resin Alum																					
	+ 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

12/14/2016

BRIDGE 5583 CSAH 51(LEX PKWY) OVER BNSF RR

ROUTINE INSP. DATE: 10/16/2016

County: Ramsey	Location: 0.8 MI N OF UNIV AVE	Length: 251.3 ft.
City: St Paul	Route: 04 - CSAH 51 Ref. Pt.: 003+00.825	Deck Width: 62.3 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 12066 sq. ft. / %
Section: 26 Township: 029N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: 20000 sq. ft. / 5%
Span Type: 4 - Steel Continuous 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings: 25 36 36
NBI Deck: 6 Super: 6 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 Traffic: 0 - Not Required Unofficial Functionally Obsolete Y
 R12-5)
 Horizontal: 0 - Not Required Vertical: N - Not Applicable Unofficial Sufficiency Rating 37.6

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
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107	Painted Steel Girder or Beam	2	Routine	10/16/2016	3012 LF	2922	30	30	30	0
			Routine	10/16/2015	3012 LF	2922	30	30	30	0

Notes: The paint system has extensive deterioration at the beam ends. 2015
 Corrosion with flaking rust present at the beam ends. 2011-15
 Prep. and paint recommended. 2011-15
 Gunite spalling off beams in span 3 over the RR. (TKDA 2012)

205	Reinforced Concrete Column	2	Routine	10/16/2016	20 EA	15	5	0	0	N/A
			Routine	10/16/2015	20 EA	15	5	0	0	N/A

Notes: 2 sq. ft. +/- spalling concrete with exposed rebar on Pier #4 south face. (TKDA 2012) -15
 Various column spalls / delams - see photos. 2014-15

215	Reinforced Concrete Abutment	2	Routine	10/16/2016	115 LF	95	20	0	0	N/A
			Routine	10/16/2015	115 LF	95	20	0	0	N/A

Notes: Abut. south, 1st bay from the east has 5 sq. ft. concrete spalling with exposed rebar. (TKDA 2012)
 Exposed rebar along with the 3rd bay in from the east on the abut. backwall. (TKDA 2012)
 Abut. south, 1st bay from the west has 2 sq. ft. concrete spalling with exposed rebar. (TKDA 2012)
 Moisture along the entire N.W. abut. backwall. Joint is above. (TKDA 2012)
 NW abut seat and deck repaired. 2014
 Abut. south seat repair is recommended. 2015

234	Reinforced Concrete Pier Cap	2	Routine	10/16/2016	233 LF	233	0	0	0	N/A
			Routine	10/16/2015	233 LF	233	0	0	0	N/A

Notes: PONTIS element inspection comments -

300	Strip Seal Deck Joint	2	Routine	10/16/2016	115 LF	115	0	0	N/A	N/A
			Routine	10/16/2015	115 LF	115	0	0	N/A	N/A

Notes: Strip seals are dirty. 2015

301	Poured Deck Joint	2	Routine	10/16/2016	115 LF	0	115	0	N/A	N/A
			Routine	10/16/2015	115 LF	0	115	0	N/A	N/A

Notes: Poured sealant has loss of adhesion. 2015

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
311	Expansion Bearing	2	Routine	10/16/2016	60 EA	36	24	0	N/A	N/A
			Routine	10/16/2015	60 EA	36	24	0	N/A	N/A
Notes: Clean, prep and painting is recommended. 2015										
313	Fixed Bearing	2	Routine	10/16/2016	12 EA	6	6	0	N/A	N/A
			Routine	10/16/2015	12 EA	6	6	0	N/A	N/A
Notes: Abut. bearings are fixed. 2011 Pier 3 and 4 bearings are fixed. 2011 see sheet 10 of 17. 1982 remodel Corrosion on each fascia beam bearing, typical. (TKDA 2012) NW fascia bearing, corrosion with possible section loss. 2013 NW abut seat repair completed. 2014 Clean, prep and painting is recommended. 2015										
321	Concrete Approach Slab-Concrete Wearing Surface	2	Routine	10/16/2016	2 EA	0	2	0	0	N/A
			Routine	10/16/2015	2 EA	0	2	0	0	N/A
Notes: Unsound patches found at both approach panels. 2015 Unsealed cracks of moderate size on the approaches. 2015										
333	Masonry, Other or Combination Material Railing	2	Routine	10/16/2016	502 LF	502	0	0	N/A	N/A
			Routine	10/16/2015	502 LF	502	0	0	N/A	N/A
Notes: Vertical cracking of the concrete bridge rail. 2005-15										
357	Pack Rust Smart Flag	2	Routine	10/16/2016	1 EA	0	1	0	0	N/A
			Routine	10/16/2015	1 EA	0	1	0	0	N/A
Notes: Pack rust distress at steel beam ends / bearing areas. 2011-15										
358	Concrete Deck Cracking Smart Flag	2	Routine	10/16/2016	1 EA	0	0	1	0	N/A
			Routine	10/16/2015	1 EA	0	0	1	0	N/A
Notes: Moderate map cracking at a density of less than five feet. 2013-15										
359	Underside of Concrete Deck Smart Flag	2	Routine	10/16/2016	1 EA	0	1	0	0	0
			Routine	10/16/2015	1 EA	0	1	0	0	0
Notes: Distressed areas - efflorescence, rust staining and cracking present. 2011-15 Underdeck distressed is 2% or less of the total deck area. 2011-15										
377	Low Slump O/L (Concrete Deck with Epoxy Rebar)	2	Routine	10/16/2016	15651 SF	0	15651	0	0	0
			Routine	10/16/2015	15651 SF	0	15651	0	0	0
Notes: Crack sealing recommended. 2011-15 3 sq. ft. of spalling with exposed rebar where repair took place in 05-07. (TKDA 2012) 4 Sq. ft. spall - asphalt patched - SE end. 2014-15										

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
380	Secondary Structural Elements	2	Routine	10/16/2016	1 EA	0	1	0	0	N/A
			Routine	10/16/2015	1 EA	0	1	0	0	N/A
Notes: Added element # 380 Secondary Structural Elements. (TKDA 2012) 2nd bay east concrete end diaphragm has spalling concrete with exposed rebar near the flange of the steel beam. (TKDA 2012)										
387	Reinforced Concrete Wingwall	2	Routine	10/16/2016	4 EA	3	1	0	0	N/A
			Routine	10/16/2015	4 EA	3	1	0	0	N/A
Notes: The top of the west wing wall is spalled. 02-13 NE & SE corner caps are spalled 05-13 The northeast wing is spalled on the top 1" mortar cap. 05-14										
964	Critical Finding Smart Flag	2	Routine	10/16/2016	1 EA	1	0	N/A	N/A	N/A
			Routine	10/16/2015	1 EA	1	0	N/A	N/A	N/A
Notes: DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.										
981	Signing	2	Routine	10/16/2016	1 EA	1	0	0	0	0
			Routine	10/16/2015	1 EA	1	0	0	0	0
Notes: Rating and Load Posting Analysis done. 2012 Revised by TKDA : 25 / 36 / 36 Ton 1-15-2013 Notified City Traffic and Signing Division of signing requirement. 2013 MNDOT notified by email. 2014 Required load posting signs are in place. 2014-15										
983	Plowstraps	2	Routine	10/16/2016	1 EA	1	0	0	N/A	N/A
			Routine	10/16/2015	1 EA	1	0	0	N/A	N/A
Notes: All repairs completed. 2015										
985	Slopes & Slope Protection	2	Routine	10/16/2016	1 EA	1	0	0	N/A	N/A
			Routine	10/16/2015	1 EA	1	0	0	N/A	N/A
Notes: 1/2 cu. yd. void at the top of the S. slope.										
986	Curb & Sidewalk	2	Routine	10/16/2016	1 EA	1	0	0	N/A	N/A
			Routine	10/16/2015	1 EA	1	0	0	N/A	N/A
Notes: Resealing of cracks recommended. 2011-15										
988	Miscellaneous Items	1	Routine	10/16/2016	1 EA	1	0	0	N/A	N/A
			Routine	10/16/2015	1 EA	1	0	0	N/A	N/A
Notes: Lighting is present on the bridge rail - both sides. 2015										

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

Bridge Owner - Ramsey County

58. Deck NBI: Moderate cracking, minor delams / spalls. 2011

36A. Brdg Railings NBI:

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
	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:									

Joe Grau

Inspector's Signature

Glenn Pagel

Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

12/14/2016

Inspector: CO Bridge

BRIDGE 5583 CSAH 51(LEX PKWY) OVER BNSF RR

County: Ramsey	Location: 0.8 MI N OF UNIV AVE	Length: 251.3 ft.
City: St Paul	Route: 04 - CSAH 51 Ref. Pt.: 003+00.825	Deck Width: 62.3 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsd: 12066 sq. ft. / %
Section: 26 Township: 029N Range: 23W Maint. Area:		Paint Area/ Pct. Unsd: 20000 sq. ft. / 5%
Span Type: 4 - Steel Continuous 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings: 25 36 36
NBI Deck: 6 Super: 6 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 Y
Horizontal: 0 - Not Required	Vertical: N - Not Applicable	Unofficial Sufficiency Rating 37.6

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	10/16/2016	15656 SF	15317	280	59	0
		Migrated Values		15656 SF	15317	280	59	0
	Notes: Distressed areas - efflorescence, rust staining and cracking present.			2011-16				
	51 SF of delamination / spall is present.			2016				
	280 SF of cracking with efflorescence is present.			2016				
	8 SF of water / salt saturation.			2016				
510	Wearing Surfaces	Routine	10/16/2016	12066 SF	11825	0	241	0
		Migrated Values		12066 SF	11825	0	241	0
	Notes: Low Slump Overlay with Epoxy Rebar Notes:							
	Crack sealing recommended.			2011-16				
	3 sq. ft. of spalling with exposed rebar where repair took place in 05-07. (TKDA 2012)							
	4 Sq. ft. spall - asphalt patched - SE end.			2014-15				
107	Steel Open Girder/Beam	Routine	10/16/2016	3012 LF	2907	75	30	0
		Migrated Values		3012 LF	2907	75	30	0
	Notes: Gunite spalling off beams in span 3 over the RR. (TKDA 2012)							
	Pack rust distress at steel beam ends / bearing areas.			2011-16				
515	Steel Protective Coating	Routine	10/16/2016	21886 SF	0	20793	656	437
		Migrated Values		21886 SF	0	20793	656	437
	Notes: The paint system has extensive deterioration at the beam ends.			2015-16				
	Corrosion with flaking rust present at the beam ends.			2011-16				
	Prep. and paint recommended.			2011-16				
205	Reinforced Concrete Column	Routine	10/16/2016	20 EA	12	3	5	0
		Migrated Values		20 EA	12	3	5	0
	Notes: 4 sq. ft. +/- spalling concrete with exposed rebar on Pier #4 south face. (TKDA 2012) -16							
	Various column spalls / delams - see photos.			2014-15				
	1 SF spall at pier 3, S. face, delam is below.			2016				

BRIDGE 5583 CSAH 51(LEX PKWY) OVER BNSF RR

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
215	Reinforced Concrete Abutment	Routine	10/16/2016	155 LF	121	25	9	0
		Migrated Values		155 LF	121	25	9	0
<p>Notes: Abut. south, 1st bay from the east has 12 sq. ft. concrete spalling with exposed rebar. (TKDA 2012)-16 Exposed rebar along with the 3rd bay in from the east on the abut. backwall. (TKDA 2012) Abut. south, 1st bay from the west has 3 sq. ft. concrete spalling with exposed rebar. (TKDA 2012)-16 Moisture along the entire N.W. abut. backwall. Joint is above. (TKDA 2012) NW abut seat and deck repaired. 2014 Abut. south seat repair is recommended. 2015-16</p> <p>The top of the west wing wall is spalled. 2002-13 NE & SE corner caps are spalled 05-13 The northeast wing is spalled on the top 1" mortar cap. 2005-14</p>								
220	Reinforced Concrete Pile Cap/Footing	Routine	10/16/2016	216 LF	204	0	12	0
		Migrated Values		216 LF	204	0	12	0
<p>Notes: Wide cracks are present - .05" vertical. 2016</p>								
234	Reinforced Concrete Pier Cap	Routine	10/16/2016	233 LF	230	3	0	0
		Migrated Values		233 LF	230	3	0	0
<p>Notes: Small delam at pier 1. 2016</p>								
300	Strip Seal Expansion Joint	Routine	10/16/2016	115 LF	0	115	0	0
		Migrated Values		115 LF	0	115	0	0
<p>Notes: Strip seals are dirty. 2015-16</p>								
301	Pourable Joint Seal	Routine	10/16/2016	115 LF	0	115	0	0
		Migrated Values		115 LF	0	115	0	0
<p>Notes: Poured sealant has loss of adhesion. 2015-16</p>								
311	Movable Bearing	Routine	10/16/2016	60 EA	36	24	0	0
		Migrated Values		60 EA	36	24	0	0
<p>Notes: Clean, prep and painting is recommended. 2015-16</p>								
313	Fixed Bearing	Routine	10/16/2016	12 EA	6	6	0	0
		Migrated Values		12 EA	6	6	0	0
<p>Notes: Abut. bearings are fixed. 2011 Pier 3 and 4 bearings are fixed. 2011 see sheet 10 of 17. 1982 remodel Corrosion on each fascia beam bearing, typical. (TKDA 2012) NW fascia bearing, corrosion with possible section loss. 2013 NW abut seat repair completed. 2014 Clean, prep and painting is recommended. 2015-16</p>								
321	Reinforced Concrete Approach Slab	Routine	10/16/2016	1920 SF	1874	6	40	0
		Migrated Values		1920 SF	1874	6	40	0
<p>Notes: 6 SF of spill on the n & S approaches. 2016 Unsound patches found at south approach panel. 2016 Unsealed cracks of wide size on the approaches. 2016</p>								
330	Metal Bridge Railing	Routine	10/16/2016	502 LF	502	0	0	0
		Migrated Values		502 LF	502	0	0	0
	515 - Steel Protective Coating	Routine	10/16/2016	657 SF	657	0	0	0
		Migrated Values		657 SF	657	0	0	0

BRIDGE 5583 CSAH 51(LEX PKWY) OVER BNSF RR

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
331	Reinforced Concrete Bridge Railing	Routine	10/16/2016	502 LF	502	0	0	0
		Migrated Values		502 LF	502	0	0	0
Notes: Vertical cracking of the concrete bridge rail. 2005-16								
800	Critical Deficiencies or Safety Hazards	Routine	10/16/2016	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	10/16/2016	5653 LF	0	5653	0	0
		Migrated Values		5653 LF	0	5653	0	0
Notes: Moderate map cracking at a density of less than five feet. 2013-16 4,853 LF of cracks on the roadway wear surface. 2016 800 LF of cracks on the sidewalks. 2016								
815	Plow Fingers	Routine	10/16/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: All repairs completed. 2016								
855	Secondary Members (Superstructure)	Routine	10/16/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: 2nd bay east concrete end diaphragm has spalling concrete with exposed rebar near the flange of the steel beam. (TKDA 2012)								
883	Concrete Shear Cracking	Routine	10/16/2016	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	10/16/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Rating and Load Posting Analysis done. 2012 Revised by TKDA : 25 / 36 / 36 Ton 1-15-2013 Notified City Traffic and Signing Division of signing requirement. 2013 MNDOT notified by email. 2014 Required load posting signs are in place. 2014-16								
892	Slopes & Slope Protection	Routine	10/16/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: 1/2 cu. yd. void at the top of the S. slope. Minor to moderate erosion on the S. slope. 2016								
894	Deck & Approach Drainage	Routine	10/16/2016	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	10/16/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: Resealing of cracks recommended. 2011-16 Isolated delam - SB curb at the S. end. 2016								
899	Miscellaneous Items	Routine	10/16/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Lighting is present on the bridge rail - both sides. 2015-16								

BRIDGE 5583 CSAH 51(LEX PKWY) OVER BNSF RR

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	10/16/2016	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 contact:
Michael Anderson (763) 782-3310 cell (612) 749-3401 michael.anderson5@bnsf.com
Lane Gilliland cell (612) 219-4219

Bridge Owner - Ramsey County

58. Deck NBI: Moderate cracking, minor delams / spalls. 2011

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:

Joe Grau

Inspector's Signature

Glenn Pagel

Reviewer's Signature

Pictures



Photo 1 - abut seat SW - spalls - exposed rebar - leakage



Photo 2 - beam ends pier 1 - rusty - north face

Pictures



Photo 3 - beam ends pier 4 - rusty



Photo 4 - center column pier 1 - delam south face

Pictures



Photo 5 - center column pier 1 spalls north face



Photo 6 - column delam - spalls pier 4 south end

Pictures



Photo 7 - column spall pier 1 south face



Photo 8 - column spall pier 2 south face

Pictures



Photo 9 - column spall pier 4 south end



Photo 10 - 2013 Deck view_2

Pictures



Photo 11 - liquid poured joint north approach



Photo 12 - 2013 Elevation view_1

Pictures



Photo 13 - longitudinal cracking at curb face east side mid span



Photo 14 - longitudinal cracks south approach panel

Pictures



Photo 15 - underside of deck between pier 4 and pier 3 has delam



Photo 16 - underside of deck between pier four and pier three has delam

Pictures



Photo 17 - unsealed cracks on deck - typical



Photo 18 - unsealed cracks on sidewalk - typical

Pictures



Photo 19 - unsound patch NW approach panel at gutter line



Photo 20 - unsound patch S. approach panel at gutter line

Pictures



Photo 21 - unsound patch SW approach panel



Photo 22 - 2013 Google view - Lex_3

Pictures



Photo 23 - Diaphragm at pier 4 (1)



Photo 24 - Diaphragm at pier 4 (2)

Pictures



Photo 25 - Pier 3, S face



Photo 26 - S Abutment, E end (1)

Pictures



Photo 27 - S Abutment, E end (2)



Photo 28 - S Abutment, W end

Pictures



Photo 29 - Slope washout at SE end



Photo 30 - Southbound curb at S end

Pictures



Photo 31 - Staining, E side near S abut



1. abut seat SW - spalls - exposed rebar - leakage.JPG



2. beam ends pier 1 - rusty - north face.JPG



3. beam ends pier 4 - rusty.JPG



4. center column pier 1 - delam south face.JPG



5. center column pier 1 spalls north face.JPG



6. column delam - spalls pier 4 south end.JPG



7. column spall pier 1 south face.JPG



8. column spall pier 2 south face.JPG



9. column spall pier 4 south end.JPG



10. 2013 Deck view_2.JPG



11. liquid poured joint north approach.JPG



12. 2013 Elevation view_1.JPG



13. longitudinal cracking at curb face east side mid span.JPG



14. longitudinal cracks south approach panel.JPG



15. underside of deck between pier 4 and pier 3 has delam.JPG



16. underside of deck between pier four and pier three has delam.JPG



17. unsealed cracks on deck - typical.JPG



18. unsealed cracks on sidewalk - typical.JPG



19. unsound patch NW approach panel at gutter line.JPG



20. unsound patch S approach panel at gutter line.JPG



21. unsound patch SW approach panel.JPG



22. 2013 Google view - Lex_3.png



23. Diaphragm at pier 4 (1).JPG



24. Diaphragm at pier 4 (2).JPG



25. Pier 3, S face.JPG



26. S Abutment, E end (1).JPG



27. S Abutment, E end (2).JPG



28. S Abutment, W end.JPG



29. Slope washout at SE end.JPG



30. Southbound curb at S end.JPG



31. Staining, E side near
S abut.JPG

Culvert

Bridge No.: 5583

Culvert

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Culvert Overall:	NBI Item 62	<u>N</u>	

Minnesota Scour Code: A - NON WATERWAY

Waterway Inspection

Item No.	Yes, No, NA or Not Visible	Description
1.	<u> </u>	Is there a significant build-up of debris?
2.	<u> </u>	Is there erosion of the embankment around the headwalls?
3.	<u> </u>	Is there any indication of cracking or settlement of the culvert barrel or headwalls?
4.	<u> </u>	Is there shifting of the channel alignment or erosion of the stream banks? Also are there cracks in the soil of the banks parallel to the stream?
5.	<u> </u>	Do scour measurements indicate that the streambed is below the bottom of the cutoff walls at the ends of the culvert?
6.	<u> </u>	Is there evidence of distress in the roadway or approaches such as cracks in the pavement and sags in the guardrail or roadway? Also, is there cracking, erosion, or failure of the side slopes at or adjacent to the culvert?
7.	<u> </u>	Is there an indication of "piping" of water along the outside of the culvert such as cavities adjacent to the barrel?
8.	<u> </u>	Is the culvert without a bottom and scour measurements indicate that the streambed is below the plan streambed elevations?
9.	<u> </u>	Has the riprap or other scour protection been damaged or otherwise made ineffective?
10.	<u> </u>	If the culvert was designed to be buried (fill inside the culvert), is the material still in the barrel?

Notes:

- Streambed sounding data is to be documented.
- Soundings of the streambed should be done at each end of the culvert. If Items #5 or #8 are "Yes", then a streambed profile of the scoured area should be done.
- If "Yes" is the answer to any items on the checklist, notify the Program Administrator for further instructions.

Comments:

Completed On _____ By _____

Channel

Bridge No.: 5583

Channel

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Channel Overall:	NBI Item 61	N	

Bank Protection/Revetment

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Upstream Bank Protection:	_____	_____	_____
Downstream Bank Protection:	_____	_____	_____
Bridge Revetment:	_____	_____	_____
Minnesota Scour Code:	A - NON WATERWAY		

Underwater Inspection

Underwater Inspection By Divers: _____

No. of Piers To Be Inspected: _____

Waterway Characteristics

Reference Point:	_____	High Water Elev.:	_____	Current Water Elev.:	_____
Pile Tip Elev.:	_____	Low Water Elev.:	_____	Current Streambed Elev.:	_____
		Scour Hole Elev.:	_____	Current Scour Hole Elev.:	_____

Waterway Inspection: (Not applicable for culverts)

Item No.	Yes, No, NA or Not Visible	Description
1.	_____	Is there a significant build-up of debris?
2.	_____	Is there a change in the horizontal alignment of the handrail or structure members such as beams?
3.	_____	Is there any indication of vertical movement of the superstructure?
4.	_____	Is there shifting of the channel alignment or erosion of the stream banks? Also are there cracks in the soil of the banks parallel to the stream?
5.	_____	Is there a significant change in the alignment of the exterior bearings?
6.	_____	Are there cracks or other signs of distress in the approach pavement?
7.	_____	Is the water currently on the superstructure?
8.	_____	Are the slopes unstable?
9.	_____	Do scour measurements indicate: (place a check by all that apply.)
	<input type="checkbox"/>	A. that the streambed is two or more feet below the bottom of pier footings which are supported on piles?
	<input type="checkbox"/>	B. scour below the bottom of spread footings?
	<input type="checkbox"/>	C. scour below the bottom of high abutment footings?
	<input type="checkbox"/>	D. that the streambed has scoured five feet or more below the original streambed elevation at pier bents?

10. _____ Have the scour countermeasures been damaged or otherwise made ineffective?

Notes:

- Streambed sounding data is to be documented.
- Per Minnesota Bridge Inspection Manual Section 2.2.5, at bridges that require x-sections, take channel x-sections, along the upstream and/or downstream face of the bridge.
- If "Yes" is the answer to any items on the checklist, notify the Program Administrator for further instructions.

Comments:

Completed On _____ By _____

Scour POA

Bridge No.: 5583

Scour POA

1. Is POA on File? _____
2. Date of most recent POA: _____
3. Here is a link to Minnesota's Bridge Scour website for other
 - <http://www.dot.state.mn.us/bridge/hydraulics/scour.html>
 - The Scour POA should be kept in the bridge file and/or uploaded to SIMS using the "Inspection Files" tab.

Implementation

Scour POAs are required to be implemented by FHWA.

1. Is this POA being implemented? _____

Maintenance

Element	Source Code	Work Code	Description	P/R	Priority	Work Order #	Year Due	Last Viewed	Entered	Start Date	Completed
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BRIDGE STRUCTURAL ASSESSMENT REPORT

PURPOSE:

This report is a structural assessment of the structure and its ability to carry loads based on conditions identified in the attached bridge inspection report. The assessment is only a cursory review intended to provide guidance as to the relative hazards for structural conditions and deficiencies identified. This report is mandatory for all fracture critical bridges and is completed by the Minnesota Bridge Office upon receipt of the 7 Day FC Report; however, it is an **OPTIONAL** tool for agencies to utilize at their discretion for all other inspection types.

BRIDGE NO.: 5583	BRIDGE OWNER: County Highway Agency
DATE INSPECTED: 10/16/2016	STRUCTURE TYPE: Steel Continuous tringer/Multi-beam or Girder
FACILITY CARRIED: CSAH 51(LEX PKWY)	FEATURES INTERSECTED: BNSF RR
TYPE OF INSPECTION: <input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> FRACTURE CRITICAL <input type="checkbox"/> PINNED ASSEMBLY: <input type="checkbox"/> SPECIAL: <input type="checkbox"/> DAMAGE: <input type="checkbox"/> COMPLEX:	
<u>Check all that apply:</u>	
Redundancy: <input type="checkbox"/> Load Path <input type="checkbox"/> Structural <input type="checkbox"/> Internal	Connection Type: <input type="checkbox"/> Riveted <input type="checkbox"/> Bolted <input type="checkbox"/> Welded <input type="checkbox"/> Other:

1. Was a critical finding identified during this inspection or upon structural review? Yes No
 - a) If selected "Yes" above, state briefly the finding(s):

2. If a critical finding was identified, what is the current status? Pending
 Resolved
 N/A
 - a) Briefly state actions taken:

3. Does the condition of any bridge component indicate impaired function? Examples of bridge components with impaired function include elements that are: frozen or immovable, out-of-plumb or misaligned, distorted or structurally deformed, excessively deteriorated, cracked, broken, eroded or scoured. Yes No

a) If selected "Yes" above, state briefly the component(s) and condition(s):

4. Does the overall condition of the bridge, or any of its components mentioned in Question 3, suggest the need for detailed structural analysis and/or a revised load rating? Yes No

a) If selected "Yes", state the reason for this recommendation and indicate a proposed timeframe in accordance with State of Minnesota Rule 8810.9500 (Subpart 2):

5. Based on the structural assessment of these findings, recommendations include:

- Repair/Maintenance Monitoring Plan
 Complex Increased Inspection Frequency

Explain recommended actions:

6. Other comments:

Bridge Office Reviewer