

**2016 ROUTINE  
BRIDGE INSPECTION REPORT**



**BRIDGE # 62519  
CSAH 23(CR C) over BNSF RR**

**DISTRICT:** Metro

**COUNTY:** Ramsey

**CITY/TOWNSHIP:** Roseville

**STATE:** Minnesota

**Date of Inspection:** 11/02/2016

**Equipment Used:**

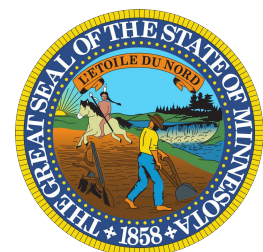
**Owner:** County Highway Agency

**Inspected By:** Essler, Brian

**Report Written By:** Brian Essler

**Report Reviewed By:** Nicklaus Fischer

**Final Report Date:** 12/02/2016



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# Minnesota Structure Inventory Report

**Bridge ID:** 62519

**CSAH 23(CR C)**

**over** BNSF RR

**Date:** 12/02/2016

GENERAL			
<b>Agency Br. No.</b>			
<b>District</b> Metro			
<b>Maint. Area</b>		<b>Crew</b>	
<b>County</b> 062 - Ramsey			
<b>City</b> Roseville			
<b>Township</b>			
<b>Desc. Loc.</b> 0.1 MI W OF JCT CSAH 52			
<b>Sect., Twp., Range</b>	11	- 029N	- 23W
<b>Latitude</b>	<b>Deg</b> 45	<b>Min</b> 1	<b>Sec</b> 11.95
<b>Longitude</b>	<b>Deg</b> 93	<b>Min</b> 8	<b>Sec</b> 26.96
<b>Custodian</b> 02 - County Highway Agency			
<b>Owner</b> 02 - County Highway Agency			
<b>BMU Agreement</b>			
<b>Year Built</b>		1970	
<b>MN Year Reconstructed</b>			
<b>FHWA Year Reconstructed</b>			
<b>MN Temporary Status</b>			
<b>Bridge Plan Location</b> 3 - COUNTY			
<b>Date Opened to Traffic</b> 1/1/1974			
<b>On-Off System</b> 1 - ON			
<b>Legislative District</b> 54A			
<b>ABC Suitable</b>			

ROADWAY			
<b>Bridge Match ID (TIS)</b> 0			
<b>Roadway O/U Key</b> Route On Structure			
<b>Route Sys</b> 04 - CSAH		<b>Number</b> 23	
Roadway Name or Description			
CSAH 23			
<b>Level of Service</b> 1 - MAINLINE			
<b>Roadway Type</b> 2 - 2-way traffic			
<b>Control Section (TH Only)</b>			
<b>Reference Point</b> 003+00.300			
<b>Detour Length</b>	1.0	mi	
<b>Lanes</b>	<b>On</b> 4	<b>Under</b> 0	
	<b>ADT</b> 8864	<b>Year</b> 2008	
<b>HCACT</b>	0	<b>ADTT</b> 0 %	
<b>Functional Class</b> 16 - Urban - Minor Arterial			

INSPECTION	
<b>Userkey</b>	102
<b>Unofficial Structurally Deficient</b>	Y
<b>Unofficial Functionally Obsolete</b>	N
<b>Unofficial Sufficiency Rating</b>	44.1
<b>Routine Inspection Date</b>	11/02/2016
<b>Routine Inspection Frequency</b>	12
<b>Inspector Name</b>	CO Bridge
<b>Status</b>	P - Posted for Load

RDWY DIMENSIONS			
<b>If Divided</b>	<b>NB-EB</b>	<b>SB-WB</b>	
<b>Roadway Width</b>	24.00	ft.	24.00
<b>Vertical Clearance</b>		ft.	ft.
<b>Max. Vert. Clear.</b>		ft.	ft.
<b>Horizontal Clear.</b>	23.9	ft.	23.9
<b>Lateral Clearance</b>		ft.	ft.
<b>Appr. Surface Width</b>	52.0	ft.	
<b>Bridge Roadway Width</b>	48.0	ft.	
<b>Median Width On Bridge</b>	4.00	ft.	

NBI CONDITION RATINGS	
<b>Deck</b>	4 - Poor Condition
<b>Unsound Deck %</b>	35
<b>Superstructure</b>	5 - Fair Condition
<b>Substructure</b>	6 - Satisfactory Condition
<b>Channel</b>	N - Not Applicable
<b>Culvert</b>	N - Not Applicable

STRUCTURE			
<b>Service On</b> 5 - Highway-pedestrian			
<b>Service Under</b> 2 - Railroad			
<b>Main Span Type</b>			
5 - Prestress or Precast 01 - Beam Span			
<b>Main Span Detail</b>			
<b>Appr. Span Type</b>			
<b>Appr. Span Detail</b>			
<b>Skew</b>	56	R	
<b>Culvert Type</b>			
<b>Barrel Length</b>		ft.	
<b>Cantilever ID</b>			

NBI APPRAISAL RATINGS	
<b>Structure Evaluation</b>	4
<b>Deck Geometry</b>	2
<b>Underclearances</b>	3
<b>Water Adequacy</b>	N - Not Applicable
<b>Approach Alignment</b>	5 - Somewhat better than m

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

SAFETY FEATURES	
<b>Bridge Railing</b>	1 - MEETS STANDARDS
<b>GR Transition</b>	1 - MEETS STANDARDS
<b>Appr. Guardrail</b>	1 - MEETS STANDARDS
<b>GR Termini</b>	1 - MEETS STANDARDS

NUMBER OF SPANS			
<b>MAIN:</b>	3	<b>APPR:</b>	0
<b>TOTAL:</b>	3		
<b>Main Span Length</b>	72.0	ft.	
<b>Structure Length</b>	224.9	ft.	
<b>Deck Width (Out-to-Out)</b>	64.7	ft.	
<b>Deck Material</b>	1 - Concrete Cast-in-Place		
<b>Wear Surf Type</b>	1 - Monolithic Concrete (concr)		
<b>Wear Surf Install Year</b>			
<b>Wear Course/Fill Depth</b>	0.00	ft.	
<b>Deck Membrane</b>	0 - None		
<b>Deck Rebars</b>	0 - None		
<b>Deck Rebars Install Year</b>			
<b>Structure Area (Out-to-Out)</b>	14551	sq. ft.	
<b>Roadway Area (Curb-to-Curb)</b>	10796	sq. ft.	
<b>Sidewalk Width</b>	<b>Lt</b> 5.00	ft.	<b>Rt</b> 5.00
		ft.	
<b>Curb Height</b>	<b>Lt</b> 0.75	ft.	<b>Rt</b> 0.75
		ft.	
<b>Rail Type</b>	<b>Lt</b> 15	<b>Rt</b> 15	

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

PAINT	
<b>Year Painted</b>	
<b>Unsound Paint %</b>	
<b>Painted Area</b>	sq. ft.
<b>Primer Type</b>	
<b>Finish Type</b>	

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

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

CAPACITY RATINGS			
<b>Design Load</b>	5 - HS 20		
<b>Operating Rating</b>	1 - LF (LF)	HS 19.8	
<b>Inventory Rating</b>	1 - LF (LF)	HS 11.8	
<b>Posting VEH:</b>	36	<b>SEMI:</b> 40	<b>DBL:</b> 40
<b>Rating Date</b> 05/14/2012			

Minnesota Permit Codes	
<b>A:</b>	N - N/A
<b>B:</b>	N - N/A
<b>C:</b>	N - N/A

# Minnesota Structure Inventory Report

Bridge ID: 62519

CSAH 23(CR C) over BNSF RR

Date: 11/01/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
<b>Agency Br. No.</b> Crew <b>District</b> 05 <b>Maint. Area</b> <b>County</b> 062 - Ramsey <b>City</b> Roseville <b>Township</b> <b>Desc. Loc.</b> 0.1 MI W OF JCT CSAH 52 <b>Sect., Twp., Range</b> 11 - 029N - 23W <b>Latitude</b> 45 ° 1' 11.95 " <b>Longitude</b> 93 ° 8' 26.96 " <b>Custodian</b> 02 - County Highway Agency <b>Owner</b> 02 - County Highway Agency <b>BMU Agreement</b> <b>Year Built</b> 1970 <b>MN Year Reconstructed</b> <b>FHWA Year Reconstructed</b> <b>MN Temporary Status</b> <b>Bridge Plan Location</b> 3 - COUNTY <b>Date Opened to Traffic</b> 1/1/1974 <b>On - Off System</b> 1 - ON <b>Legislative District</b> 54A <b>Potential ABC</b> 2 - N/A	<b>Bridge Match ID (TIS)</b> 0 <b>Roadway O/U Key</b> Route On Structure <b>Route Sys</b> 04 - CSAH <b>Number</b> 23 <b>Roadway Name or Description</b> CSAH 23 <b>Level of Service</b> 1 - MAINLINE <b>Roadway Type</b> 2 - 2-way traffic <b>Control Section (TH Only)</b> <b>Reference Point</b> 003+00.300 <b>Detour Length</b> 1.0 mi. <b>Lanes</b> <b>ON</b> 4 <b>UNDER</b> 0 <b>ADT</b> 8864 <b>YEAR</b> 2008 <b>HCA DT</b> <b>ADTT</b> % <b>Functional Class</b> 16 - Urban - Minor Arterial	<b>Userkey</b> 102 <b>Structurally Deficient</b> Y <b>Functionally Obsolete</b> N <b>Sufficiency Rating</b> 44.1 <b>Routine Inspection Date</b> 11/02/2016 <b>Routine Inspection Frequency</b> 12 <b>Inspector Name</b> Essler, Brian <b>Status</b> P - Posted for Load																				
		+ NBI CONDITION RATINGS +																				
		<b>Deck</b> 4 <b>Unsound Deck %</b> 35 <b>Superstructure</b> 5 <b>Substructure</b> 6 <b>Channel</b> N <b>Culvert</b> N																				
		+ NBI APPRAISAL RATINGS +																				
		<b>Structure Evaluation</b> 4 <b>Deck Geometry</b> 2 <b>Underclearances</b> 3 <b>Waterway Adequacy</b> N <b>Approach Alignment</b> 5																				
		+ SAFETY FEATURES +																				
		<b>Bridge Railing</b> 1 - MEETS STANDARDS <b>GR Transition</b> 1 - MEETS STANDARDS <b>Appr. Guardrail</b> 1 - MEETS STANDARDS <b>GR Termini</b> 1 - MEETS STANDARDS																				
		+ 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><b>Frac. Critical</b></td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td><b>Underwater</b></td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td><b>Pinned Asbly.</b></td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td><b>Spec. Feat.</b></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Y/N	Freq	Date	<b>Frac. Critical</b>	N			<b>Underwater</b>	N			<b>Pinned Asbly.</b>	N			<b>Spec. Feat.</b>			
	Y/N	Freq	Date																			
<b>Frac. Critical</b>	N																					
<b>Underwater</b>	N																					
<b>Pinned Asbly.</b>	N																					
<b>Spec. Feat.</b>																						
		+ WATERWAY +																				
		<b>Drainage Area (sq. mi.)</b> <b>Waterway Opening (sf.)</b> <b>Navigation Control</b> N - Not applicable, no <b>Pier Protection</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;"><b>Nav. Clr. (ft.)</b></td> <td style="width: 20%; text-align: center;">Vert. 0.0</td> <td style="width: 40%; text-align: center;">Horiz. 0.0</td> </tr> </table> <b>Nav. Vert. Lift Bridge Clear. (ft.)</b> <b>MN Scour Code</b> A - NON	<b>Nav. Clr. (ft.)</b>	Vert. 0.0	Horiz. 0.0																	
<b>Nav. Clr. (ft.)</b>	Vert. 0.0	Horiz. 0.0																				
		+ CAPACITY RATINGS +																				
		<b>Design Load</b> 5 - HS 20 <b>Operating Rating</b> 2 - HS TRUCK 19.8 <b>Inventory Rating</b> 2 - HS TRUCK 11.8 <b>Posting VEH:</b> 36 <b>SEMI:</b> 40 <b>DBL:</b> 40 <b>Rating Date</b> 05/14/2012 <b>Overweight Permit Codes</b> <b>A</b> N - N/A <b>B</b> N - N/A <b>C</b> N - N/A																				
		+ STRUCTURE +																				
<b>Service On</b> 5 - Highway-pedestrian <b>Service Under</b> 2 - Railroad <b>Main Span Type</b> 5 - Prestress or Precast <b>Main Span Design</b> 01 - Beam Span <b>Main Span Detail</b> <b>Appr. Span Type</b> <b>Appr. Span Design</b> <b>Appr. Span Detail</b> <b>Skew</b> 56 RIGHT <b>Culvert Type</b> <b>Barrel Length</b> <b>Cantilever ID</b>  <b>Number of Spans</b> <b>MAIN:</b> 3 <b>APPR:</b> 0 <b>TOTAL:</b> <b>Main Span Length</b> 72.0 ft. <b>Structure Length</b> 224.9 ft. <b>Deck Width (Out-to-Out)</b> 64.7 ft. <b>Deck Material</b> 1 - Concrete Cast-in-Place <b>Wear Surf Type</b> 1 - Monolithic Concrete <b>Wear Surf Install Year</b> <b>Wear Course/Fill Depth</b> 0.00 ft. <b>Deck Membrane</b> 0 - None <b>Deck Rebars</b> 0 - None <b>Deck Rebars Install Year</b> <b>Structure Area (Out-to-Out)</b> 14551 sq. ft. <b>Roadway Area (Curb-to-Curb)</b> 10796 sq. ft. <b>Sidewalk Width</b> 50A. Lt 5.00 ft. 50B. Rt 5.00 ft. <b>Curb Height</b> Lt 0.75 ft. Rt 0.75 ft. <b>Rail Type</b> Lt 15 Rt 15	<b>+ RDWY DIMENSIONS +</b> <b>If Divided</b> <b>NB-EB</b> <b>SB-WB</b> <b>Roadway Width</b> 24.00 ft. 24.00 ft. <b>Vertical Clearance</b> ft. ft. <b>Max. Vert. Clear.</b> ft. ft. <b>Horizontal Clear.</b> 23.9 ft. 23.9 ft. <b>Lateral Clearance</b> ft. ft. <b>Appr. Surface Width</b> 52.0 ft. <b>Bridge Roadway Width</b> 48.0 ft. <b>Median Width On Bridge</b> 4.00 ft.  <b>+ MISC. BRIDGE DATA +</b> <b>Structure Flared</b> 0 - No flare <b>Parallel Structure</b> N - No parallel structure <b>Field Conn. ID</b> <b>Abutment Foundation (Material/Type)</b> 1 - CONC 3 - FTG PILE <b>Pier Foundation (Material/Type)</b> 1 - CONC 3 - FTG PILE <b>Historic Status</b> 5 - Not eligible																					
		+ PAINT +																				
		<b>Year Painted</b> <b>Unsound Paint %</b> <b>Painted Area</b> sq. ft. <b>Primer Type</b> <b>Finish Type</b>																				
		+ BRIDGE SIGNS +																				
		<b>Posted Load</b> 2 - Vehicle & Semi (Type R12-5) <b>Traffic</b> 0 - Not Required <b>Horizontal</b> 0 - Not Required <b>Vertical</b> N - Not Applicable																				

# MINNESOTA BRIDGE INSPECTION REPORT

12/02/2016

## BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR

ROUTINE INSP. DATE: 11/02/2016

County: Ramsey	Location: 0.1 MI W OF JCT CSAH 52	Length: 224.9 ft.
City: Roseville	Route: 04 - CSAH 23 Ref. Pt.: 003+00.300	Deck Width: 64.7 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 10796 sq. ft. / 35%
Section: 11 Township: 029N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 5 - Prestressed Concrete 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings: 36 40 40
NBI Deck: 4 Super: 5 Sub: 6 Chan: N Culv: N		
	Open, Posted, Closed: P - Posted for Load	
	MN Scour Code: A - NON WATERWAY	
Appraisal Ratings - Approach: 5 Waterway: N		Unofficial Structurally Deficient Y
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 44.1

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY	QTY	QTY	QTY	QTY
						CS 1	CS 2	CS 3	CS 4	CS 5
012	Top of Concrete Deck (No Overlay - Uncoated Rebar)	2	Routine	11/02/2016	14553 SF	0	0	0	0	14553
			Routine	11/05/2015	14553 SF	0	0	0	0	14553

Notes: [2015] Deck has been patched with bituminous but remains in poor condition.  
 [2015] The westbound deck has 350' of longitudinal, transverse & diagonal cracking.  
 [2013-2015] Some delamination near pier #1 at southern side of deck.  
 [2013] The eastbound deck was evaluated by the City of St. Paul bridge dept. and recommended replacing the deck. Over 30% of the eastbound deck is in need of repair. Also determined that the entire deck should be replaced.  
 [2013-2015] Deck predominately on the south side are patched by Ramsey County Maintenance on an annual basis, but numerous bituminous patches are letting loose in a variety of locations.  
 [2007-2015] There is some exposed re-bar with corrosion on the south side when the patches let loose.  
 [2001-2015] Delamination is prevalent on south side of bridge with numerous moderate size cracks.  
 [2006-2015] The north side has some bit. patching at the west end + a few other areas of bit. patching. The north side deck has moderate transverse and diagonal cracking with moderate to major spalls.

109	Prestressed Concrete Girder or Beam	2	Routine	11/02/2016	1368 LF	0	1368	0	0	N/A
			Routine	11/05/2015	1368 LF	0	1368	0	0	N/A

Notes: [1995-2015] SE & NW corner outside girder plug out.  
 [2003-2015] There is evidence of corrosion @ pre-stressed girder ends. No cracking present.

205	Reinforced Concrete Column	2	Routine	11/02/2016	12 EA	0	12	0	0	N/A
			Routine	11/05/2015	12 EA	0	12	0	0	N/A

Notes: [2009-2015] Moderate spalls on all columns are present, but no exposure of reinforcement.

215	Reinforced Concrete Abutment	2	Routine	11/02/2016	249 LF	0	150	100	0	N/A
			Routine	11/05/2015	249 LF	0	150	100	0	N/A

Notes: West Abutment:  
 [2014-2015] There is a major spall on the SW corner w/exposed rebar on the parapet wall.  
 [2014-2015] There is water sitting on the bearing seat on the NW corner & along the entire east bearing seat.  
 [2012-2015] There are numerous moderate horizontal and vertical cracking with corrosion & efflorescence present.  
 [2013-2015] Moderate deterioration at the SW corner approximately 15 LF. Also on the backwall off abutment there is a moderate diagonal crack and a 5' moderate vertical crack.  
 [2013-2015] There is a 1' major spall at girder #4. Between girders #5 & #6 there is 1' major spall w/exposed rebar & corrosion.  
 East Abutment:  
 [2012-2015] At the SE corner there is a 4" spall with exposed rebar & corrosion.  
 [2013-2015] There are numerous vertical cracks w/efflorescence & corrosion on east abutment. Also some cracking on backwall.  
 [2009-2015] There is a 6" major spall at NE corner of east abutment. Some build up of debris at girder #4.  
 [2009-2015] 60% condition 2 & 40% condition 3

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	11/02/2016	130 LF	0	130	0	0	N/A
			Routine	11/05/2015	130 LF	0	130	0	0	N/A
Notes: [2015] changed quantity from 495 LF to 130 LF per 2015 Compliance Report from MNDOT [2009-2015] West concrete cap has minor deterioration. [2003-2015] Minor spalls and deterioration are present to the east concrete cap. [1995-2015] Graffiti on underside on pier.										
301	Poured Deck Joint	2	Routine	11/02/2016	449 LF	0	112	337	N/A	N/A
			Routine	11/05/2015	449 LF	0	112	337	N/A	N/A
Notes: [2013-2015] Moderate deterioration is present above piers. Joints need to be resealed. 75% in condition state #3. [2013-2015] Centerline joint has major adhesion and cohesion failure. Cork filler @ centerline joint is letting loose.										
311	Expansion Bearing	2	Routine	11/02/2016	30 EA	0	18	12	N/A	N/A
			Routine	11/05/2015	30 EA	0	18	12	N/A	N/A
Notes: [2015] bearings @ abutments have severe corrosion, all 12 in condition state 3. [2014] Changed from 36 expansion bearings to 30 expansion bearings with 6 fixed bearings on west pier. [2008-2015] There is heavy- severe corrosion of west end expansion bearings with some loss of section. [2008-2015] There is moderate corrosion of east end expansion bearings. [2007-2015] Corrosion is developing above pier columns. [2013] Recommend replacing the bearings due to severe corrosion.										
313	Fixed Bearing	2	Routine	11/02/2016	6 EA	0	6	0	N/A	N/A
			Routine	11/05/2015	6 EA	0	6	0	N/A	N/A
Notes: [2014] There are 6 fixed bearings that were moved from expansion bearings (element # 311). The fixed bearings are located on the east girders of the west pier. [2014-2015] There is moderate corrosion on the fixed bearings.										
333	Masonry, Other or Combination Material Railing	1	Routine	11/02/2016	456 LF	0	228	228	N/A	N/A
			Routine	11/05/2015	456 LF	0	228	228	N/A	N/A
Notes: [2015] moved from element 331 to 333 combination material railing. (concrete & metal) South Railing [2013-2015] Cable near post #29 has been severed. [2005-2015] On the south side there is moderate cracking with moderate corrosion to post #9, #11, #12, #16, #17, #19, #20, #24, #26, #27 & #28. [2008-2015] There is major delamination w/ exposed re-bar & corrosion on concrete railing between posts #29-#36. Post #36 has severe delamination with section loss. [2007-2015] There is a 6" major spall at bottom of concrete railing @ post #25 on the south side. North Railing [2014-2015] There is a 1' delamination in post #11, & #25 [2014-2015] There is moderate collision damage on top metal rail between post #9 & #10. [2007-2015] There is damage to metal railing at the SW corner (bent outward). There is 1' area of spall with exposed re-bar & corrosion at the north side on post #17. [2005-2015] There is moderate cracking w/corrosion to support posts on the north side on concrete post #1, #5, #12, #15, #17, #21, #24, #28, #31, #32, #33, #35, #36 & #38. [2007-2015] There is a 6" spall w/ exposed re-bar & corrosion on concrete railing above post #32. [2011-2015] Cable broken due to corrosion of cable with severe section loss @ #14 post.										
358	Concrete Deck Cracking Smart Flag	2	Routine	11/02/2016	1 EA	0	0	1	0	N/A
			Routine	11/05/2015	1 EA	0	0	1	0	N/A
Notes: [2014-2015] The westbound deck has 350' of longitudinal, transverse & diagonal cracking. [2013-2015] There are numerous unsealed severe cracks and density on the eastbound deck. There are numerous unsealed moderate size cracks & density on the westbound deck. [2007-2015] There is moderate cracking on the north side of deck and moderate to severe cracking on the south side.										

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
359	Underside of Concrete Deck Smart Flag	2	Routine	11/02/2016	1 EA	0	0	1	0	0
			Routine	11/05/2015	1 EA	0	0	1	0	0
<p>Notes: [2015] major delamination along east/north facia (1' - 2' wide.  [2014-2015] There is major delamination 4.0' X 4.0' w/exposed rebar on the SW corner between girders #1 &amp; #2.  [2014-2015] There is major delamination 2.0' X 2.0' on the SW corner between girders #2 &amp; #3.  [2014] There are 2 major delaminations 1.0' X 1.0' &amp; 1.0' X 6.0' w/exposed rebar on the NE corner under railing.  [2013-2015] Span #1 has 90 LF of moderate longitudinal &amp; transverse cracking with efflorescence &amp; corrosion predominately between girders #1 &amp; #2. Also some spalling and delamination present between girders #1 &amp; #2.  [2013-2015] Span #2 has 110 LF of moderate transverse cracking with efflorescence.  [2013-2015] Span #3 has 50 LF of moderate transverse cracking with efflorescence.  [2008-2015] There is major delamination 2.5' X 2.0' on the south side under railing above #1 column.  [2007-2015] There is some cracking &amp; corrosion with efflorescence along centerline joint due to failure of centerline expansion joint material.  [2012-2015] There is some delamination, minor cracking, corrosion &amp; efflorescence on north side under railing.  [2013-2015] Numerous moderate transverse cracking w/efflorescence &amp; evidence of corrosion throughout.</p>										
380	Secondary Structural Elements	1	Routine	11/02/2016	40 EA	0	40	0	0	N/A
			Routine	11/05/2015	40 EA	0	40	0	0	N/A
<p>Notes: [2007-2015] Concrete diaphragms are in place. Some corrosion present at the bottom of diaphragms.</p>										
387	Reinforced Concrete Wingwall	2	Routine	11/02/2016	4 EA	0	4	0	0	N/A
			Routine	11/05/2015	4 EA	0	4	0	0	N/A
<p>Notes: [2015] minor faint failure on wing walls.  [2014-2015] There is a 2' moderate crack in the top southwest corner of NE wingwall.  [2013-2015] There are minor to moderate spalls on top of all wingwalls.  [2013-2015] NE WW has two minor vertical cracks full height.  [2013-2015] There is a minor 6' horizontal crack at the SE wingwall.  [2013-2015] There are minor to moderate horizontal &amp; vertical cracks present on the NW &amp; SW wingwalls.</p>										
407	Bituminous Approach Roadway	2	Routine	11/02/2016	2 EA	0	2	0	0	N/A
			Routine	11/05/2015	2 EA	0	2	0	0	N/A
<p>Notes: [2013-2015] Both bituminous approaches have moderate settlement with cracking.  West side had a mill &amp; overlay in 2007.</p>										
964	Critical Finding Smart Flag	2	Routine	11/02/2016	1 EA	1	0	N/A	N/A	N/A
			Routine	11/05/2015	1 EA	1	0	N/A	N/A	N/A
<p>Notes: DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.</p>										
981	Signing	2	Routine	11/02/2016	1 EA	0	0	0	1	0
			Routine	11/05/2015	1 EA	0	0	0	1	0
<p>Notes: [2014-2015] Load posting signs are in place.  [2013] Need load posting R12-5 signs installed at bridge and nearest intersection both sides.  [2007-2015] Missing object marker sign at NW corner and at SE corner.</p>										
982	Approach Guardrail	2	Routine	11/02/2016	1 EA	0	1	0	N/A	N/A
			Routine	11/05/2015	1 EA	0	1	0	N/A	N/A
<p>Notes: [2013-2015] Moderate damage @ SW, NW &amp; SE corners. No additional deterioration or damage.</p>										

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
984	Deck & Approach Drainage	2	Routine	11/02/2016	1 EA	1	0	0	N/A	N/A
			Routine	11/05/2015	1 EA	1	0	0	N/A	N/A
Notes: [2003-2015] Drainage system is functioning properly.										
985	Slopes & Slope Protection	2	Routine	11/02/2016	1 EA	0	1	0	N/A	N/A
			Routine	11/05/2015	1 EA	0	1	0	N/A	N/A
Notes: [2008-2015] There is movement and settlement of slope pavement both ends (3" gap & settlement) near abut. Slope pavement both sides require sealing. [2012-2015] West slope pavement has some movement near the west side columns. Some washout of material near the base of column #2 & #3. Also minor- moderate transverse cracking. [2011-2015] East slope pavement has a major spall on east side slope paving between #4 & #5 girders. Also minor- moderate transverse cracking.										
986	Curb & Sidewalk	2	Routine	11/02/2016	1 EA	0	0	1	N/A	N/A
			Routine	11/05/2015	1 EA	0	0	1	N/A	N/A
Notes: [2014-2015] Sidewalk on north side of bridge has been ramped with bituminous. [2013-2015] Both ends have settlement at median. [2007-2013] Severe settlement of sidewalk @ bridge both ends on the north side. [2007-2015] Curb & sidewalk on the south side of the bridge has severe spalling. Also some minor cracking on both sides.										
988	Miscellaneous Items	1	Routine	11/02/2016	1 EA	1	0	0	N/A	N/A
			Routine	11/05/2015	1 EA	1	0	0	N/A	N/A
Notes: [2015] Plastic conduit for utilities repaired in 2007. Conduit runs east - west on the south side & north side.										

General Notes: [2016 Bridge safety inspection was conducted by Brian Essler, Dan Bodelson & Rob Gaetz on 11/02/2016.  
[2015] Bridge safety inspection was conducted by Brian Essler & Dan Bodelson on 11/05/2015.  
[2014] Bridge safety inspection was conducted by B. Wieman, B Essler, D. Bodelson & R Bussiere on 11/25/2014.  
[2013] Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/27/2013.  
2012 Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/16/2012.  
[2012] The eastbound deck was evaluated by the City of St. Paul bridge dept. and recommended replacing the deck. Over 30% of the eastbound deck is in need of repair. Also determined that the entire deck should be replaced.  
2011 Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/15/2011.  
2010 Bridge safety inspection was completed by B. Wieman, B. Essler & D. Bodelson 12/09/2010.  
2009 Bridge safety inspection was completed by B. Wieman on 8/25/2009.  
2008 Bridge safety inspection was completed by B. Paine & B. Wieman 10/01/2008.  
2008-2011 Deck in need of rehabilitation.  
2007 Bridge safety inspection was completed by B. Wieman & B. Essler 8/14/2007.  
Bridge safety inspection was completed by Bret Wieman 10/09/2006.

58. Deck NBI: Concrete deck has extensive delamination & spalling.

36A. Brdg Railings NBI: Vehicular railings meet current standards.

36B. Transitions NBI: Guardrail transitions meet current standards.

36C. Appr Guardrail NBI: Approach guardrail meets current standards.

36D. Appr Guardrail Terminal NBI: Guardrail terminations meet current standards.

59. Superstructure NBI: Deck has extensive cracking, leaching & spalling.

60. Substructure NBI: Abutments have moderate deterioration.

61. Channel NBI: CSAH # 23 over BNSF RR

62. Culvert NBI: CSAH # 23 over BNSF RR

71. Waterway Adeq NBI: CSAH # 23 over BNSF RR

72. Appr Roadway Alignment NBI: Minor 3-5 MPH reduction required.

Inventory Notes:



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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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Brian Essler  
Inspector's Signature

Nicklaus Fischer  
Reviewer's Signature

# MINNESOTA BRIDGE INSPECTION REPORT

12/02/2016

Inspector: CO Bridge

## BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR

County: Ramsey	Location: 0.1 MI W OF JCT CSAH 52	Length: 224.9 ft.
City: Roseville	Route: 04 - CSAH 23 Ref. Pt.: 003+00.300	Deck Width: 64.7 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 10796 sq. ft. / 35%
Section: 11 Township: 029N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 5 - Prestressed Concrete 2 - Stringer/Multi-beam or Girder	Local Agency Bridge Nbr.:	Culvert: N/A
List:		Postings: 36 40 40
NBI Deck: 4 Super: 5 Sub: 6 Chan: N Culv: N		
	Open, Posted, Closed: P - Posted for Load	
	MN Scour Code: A - NON WATERWAY	
Appraisal Ratings - Approach: 5 Waterway: N		Unofficial Structurally Deficient Y
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 44.1

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	11/02/2016	14551 SF	13096	0	1455	0
		Migrated Values		14551 SF	13096	0	1455	0
<p>Notes: [2015-2016] major delamination along east/north facia (1' - 2' wide).                      [2014-2016] There is major delamination 4.0' X 4.0' w/exposed rebar on the SW corner between girders #1 &amp; #2.                      [2014-2016] There is major delamination 2.0' X 2.0' on the SW corner between girders #2 &amp; #3.                      [2014-2016] There are 2 major delaminations 1.0' X 1.0' &amp; 1.0' X 6.0' w/exposed rebar on the NE corner under railing.                      [2013-2016] Span #1 has 90 LF of moderate longitudinal &amp; transverse cracking with efflorescence &amp; corrosion predominately between girders #1 &amp; #2. Also some spalling and delamination present between girders #1 &amp; #2.                      [2013-2016] Span #2 has 110 LF of moderate transverse cracking with efflorescence.                      [2013-2016] Span #3 has 50 LF of moderate transverse cracking with efflorescence.                      [2013-2016] Numerous moderate transverse cracking w/efflorescence &amp; evidence of corrosion throughout.                      [2012-2016] There is some delamination, minor cracking, corrosion &amp; efflorescence on north side under railing.                      [2008-2016] There is major delamination 2.5' X 2.0' on the south side under railing above #1 column.                      [2007-2016] There is some cracking &amp; corrosion with efflorescence along centerline joint due to failure of centerline expansion joint material.</p>								
510	Wearing Surfaces	Routine	11/02/2016	10796 SF	7557	0	3239	0
		Migrated Values		10796 SF	7557	0	3239	0
<p>Notes: Top of Concrete Deck with Uncoated Rebar Notes: [2015] Deck has been patched with bituminous but remains in poor condition.                      [2015-16] The westbound deck has 350' of longitudinal, transverse &amp; diagonal cracking.                      [2013-2016] Some delamination near pier #1 at southern side of deck.                      [2013] The eastbound deck was evaluated by the City of St. Paul bridge dept. and recommended replacing the deck. Over 30% of the eastbound deck is in need of repair. Also determined that the entire deck should be replaced.                      [2013-2016] Deck predominately on the south side are patched by Ramsey County Maintenance on an annual basis, but numerous bituminous patches are letting loose in a variety of locations.                      [2007-2016] There is some exposed re-bar with corrosion on the south side when the patches let loose.                      [2006-2016] The north side has some bit. patching at the west end + a few other areas of bit. patching. The north side deck has moderate transverse and diagonal cracking with moderate to major spalls.                      [2001-2016] Delamination is prevalent on south side of bridge with numerous moderate size cracks.</p>								
109	Prestressed Concrete Open Girder/Beam	Routine	11/02/2016	1368 LF	0	1368	0	0
		Migrated Values		1368 LF	0	1368	0	0
<p>Notes: [1995-2016] SE &amp; NW corner outside girder plug out.                      [2003-2016] There is evidence of corrosion @ pre-stressed girder ends. No cracking present.</p>								
205	Reinforced Concrete Column	Routine	11/02/2016	12 EA	0	12	0	0
		Migrated Values		12 EA	0	12	0	0
<p>Notes: [2009-2016] Moderate spalls on all columns are present, but no exposure of reinforcement.</p>								

**BRIDGE 62519 CSAH 23(CR C) 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	11/02/2016	309 LF	0	209	100	0
		Migrated Values		309 LF	0	209	100	0
<p>Notes: [2016] Added 50 LF to abutment quantity to account for wingwalls SE 7', SW 22', NE 24' &amp; NW 7'</p> <p>West Abutment:                      [2014-2016] There is a major spall on the SW corner w/exposed rebar on the parapet wall.                      [2014-2016] There is water sitting on the bearing seat on the NW corner &amp; along the entire east bearing seat.                      [2012-2016] There are numerous moderate horizontal and vertical cracking with corrosion &amp; efflorescence present.                      [2013-2016] Moderate deterioration at the SW corner approximately 15 LF. Also on the backwall off abutment there is a moderate diagonal crack and a 5' moderate vertical crack.                      [2013-2016] There is a 1' major spall at girder #4. Between girders #5 &amp; #6 there is 1' major spall w/exposed rebar &amp; corrosion.</p> <p>East Abutment:                      [2012-2016] At the SE corner there is a 4" spall with exposed rebar &amp; corrosion.                      [2013-2016] There are numerous vertical cracks w/efflorescence &amp; corrosion on east abutment. Also some cracking on backwall.                      [2009-2016] There is a 6" major spall at NE corner of east abutment. Some build up of debris at girder #4.                      [2009-2016] 60% condition 2 &amp; 40% condition 3</p> <p>Wingwall notes: [2016] minor faint failure on wing walls.                      [2014-2016] There is a 2' moderate crack in the top southwest corner of NE wingwall.                      [2013-2016] There are minor to moderate spalls on top of all wingwalls.                      [2013-2016] NE WW has two minor vertical cracks full height.                      [2013-2016] There is a minor 6' horizontal crack at the SE wingwall.                      [2013-2016] There are minor to moderate horizontal &amp; vertical cracks present on the NW &amp; SW wingwalls.</p>								
234	Reinforced Concrete Pier Cap	Routine	11/02/2016	130 LF	0	130	0	0
		Migrated Values		130 LF	0	130	0	0
<p>Notes: [2009-2016] West concrete cap has minor deterioration.                      [2003-2016] Minor spalls and deterioration are present to the east concrete cap.                      [1995-2016] Graffiti on underside on pier.                      [2015] changed quantity from 495 LF to 130 LF per 2015 Compliance Report from MNDOT</p>								
301	Pourable Joint Seal	Routine	11/02/2016	449 LF	0	112	169	168
		Migrated Values		449 LF	0	112	169	168
<p>Notes: [2013-2016] Moderate deterioration is present above piers. Joints need to be resealed. 75% in condition state #3.                      [2013-2016] Centerline joint has major adhesion and cohesion failure. Cork filler @ centerline joint is letting loose.</p>								
311	Movable Bearing	Routine	11/02/2016	30 EA	0	18	0	12
		Migrated Values		30 EA	0	18	0	12
<p>Notes: [2015-2016] bearings @ abutments have severe corrosion, all 12 in condition state 3.                      [2008-2016] There is heavy- severe corrosion of west end expansion bearings with some loss of section.                      [2008-2014] There is moderate corrosion of east end expansion bearings.                      [2007-2016] Corrosion is developing above pier columns.                      [2014] Changed from 36 expansion bearings to 30 expansion bearings with 6 fixed bearings on west pier.                      [2003] Recommend replacing the bearings due to severe corrosion.</p>								
313	Fixed Bearing	Routine	11/02/2016	6 EA	0	6	0	0
		Migrated Values		6 EA	0	6	0	0
<p>Notes: [2014-2016] There is moderate corrosion on the fixed bearings.                      [2014] There are 6 fixed bearings that were moved from expansion bearings (element # 311). The fixed bearings are located on the east girders of the west pier.</p>								

**BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
330	Metal Bridge Railing	Routine	11/02/2016	456 LF	0	436	20	0
		Migrated Values		456 LF	0	436	20	0
Notes: South Railing [2016] Railing has paint failure and surface corrosion. North Railing [2016] Railing has paint failure and surface corrosion. [2014-2016] There is moderate collision damage on top metal rail between post #9 & #10. [2015] moved from element 331 to 333 combination material railing. (concrete & metal)								
515 -	Steel Protective Coating	Routine	11/02/2016	570 SF	0	545	25	0
		Migrated Values		570 SF	0	545	25	0
Notes: South Railing [2016] Railing has paint failure and surface corrosion. North Railing [2016] Railing has paint failure and surface corrosion. [2014-2016] There is moderate collision damage on top metal rail between post #9 & #10. [2016] 454 LF of 2.25' high railing 1.25' X 456' = 570 SF.								
331	Reinforced Concrete Bridge Railing	Routine	11/02/2016	456 LF	0	228	0	228
		Migrated Values		456 LF	0	228	0	228
Notes: [2016] Migrator assumed concrete/metal combination type rail. [2015] moved from element 331 to 333 combination material railing. (concrete & metal) South Railing [2016] There is major spall w/ exposed re-bar & corrosion on concrete railing between posts #29-#36. Post #36 has severe delamination with section loss. [2013-2016] Cable near post #29 has been severed. [2005-2016] On the south side there is moderate cracking with moderate corrosion to post #9, #11, #12, #16, #17, #19, #20, #24, #26, #27 & #28. [2007-2016] There is a 6" major spall at bottom of concrete railing @ post #25 on the south side. [2008-2015] There is major delamination w/ exposed re-bar & corrosion on concrete railing between posts #29-#36. Post #36 has severe delamination with section loss. North Railing [2014-2016] There is a 1' delamination in post #11, & #25 [2014-2016] There is moderate collision damage on top metal rail between post #9 & #10. [2007-2016] There is damage to metal railing at the SW corner (bent outward). There is 1' area of spall with exposed re-bar & corrosion at the north side on post #17. [2005-2016] There is moderate cracking w/corrosion to support posts on the north side on concrete post #1, #5, #12, #15, #17, #21, #24, #28, #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exposed re-bar & corrosion on concrete railing above post #32. [2011-2016] Cable broken due to corrosion of cable with severe section loss @ #14 post.								
800	Critical Deficiencies or Safety Hazards	Routine	11/02/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION.								
810	Concrete Decks - Cracking & Sealing	Routine	11/02/2016	879 LF	0	879	0	0
		Migrated Values		879 LF	0	879	0	0
Notes: [2016] The Eastbound deck has 529' of longitudinal, transverse & diagonal cracking. [2014-2016] The westbound deck has 350' of longitudinal, transverse & diagonal cracking. [2013-2015] There are numerous unsealed severe cracks and density on the eastbound deck. There are numerous unsealed moderate size cracks & density on the westbound deck. [2007-2015] There is moderate cracking on the north side of deck and moderate to severe cracking on the south side.								
822	Bituminous Approach Roadway	Routine	11/02/2016	2 EA	0	2	0	0
		Migrated Values		2 EA	0	2	0	0
Notes: [2013-2016] Both bituminous approaches have moderate settlement with cracking. West side had a mill & overlay in 2007.								
855	Secondary Members (Superstructure)	Routine	11/02/2016	40 EA	0	40	0	0
		Migrated Values		40 EA	0	40	0	0
Notes: [2007-2016] Concrete diaphragms are in place. Some corrosion present at the bottom of diaphragms.								

**BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
883	Concrete Shear Cracking	Routine	11/02/2016	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 and prestressed concrete beams.								
890	Load Posting or Vertical Clearance Signing	Routine	11/02/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
Notes: [2014-2016] Load posting signs are in place. [2013] Need load posting R12-5 signs installed at bridge and nearest intersection both sides. [2007-2016] Missing object marker sign at NW corner and at SE corner.								
892	Slopes & Slope Protection	Routine	11/02/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2008-2016] There is movement and settlement of slope pavement both ends (3" gap & settlement) near abut. Slope pavement both sides require sealing. [2012-2016] West slope pavement has some movement near the west side columns. Some washout of material near the base of column #2 & #3. Also minor- moderate transverse cracking. [2011-2016] East slope pavement has a major spall on east side slope paving between #4 & #5 girders. Also minor- moderate transverse cracking.								
893	Guardrail	Routine	11/02/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2013-2016] Moderate damage @ SW, NW & SE corners. No additional deterioration or damage.								
894	Deck & Approach Drainage	Routine	11/02/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2003-2016] Drainage system is functioning properly. [2016] Water drains to the gutter then off both directions off the bridge								
895	Sidewalk, Curb, & Median	Routine	11/02/2016	1 EA	0	0	0	1
		Migrated Values		1 EA	0	0	0	1
Notes: [2014-2016] Sidewalk on north side of bridge has been ramped with bituminous. [2013-2016] Both ends have settlement at median. [2007-2016] Curb & sidewalk on the south side of the bridge has severe spalling. Also some minor cracking on both sides. [2007-2013] Severe settlement of sidewalk @ bridge both ends on the north side.								
899	Miscellaneous Items	Routine	11/02/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2016] Metal on south side rusting at abutment. [2015-2016] Steel conduit for utilities repaired in 2007. Conduit runs east - west on the south side & north side. [2016] There is concrete struts between the columns								
900	Protected Species	Routine	11/02/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2016] No protected species found living on this structure.								

General Notes: [2016 Bridge safety inspection was conducted by Brian Essler, Dan Bodelson & Rob Gaetz on 11/02/2016.  
[2015] Bridge safety inspection was conducted by Brian Essler & Dan Bodelson on 11/05/2015.  
[2014] Bridge safety inspection was conducted by B. Wieman, B Essler, D. Bodelson & R Bussiere on 11/25/2014.  
[2013] Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/27/2013.  
2012 Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/16/2012.  
[2012] The eastbound deck was evaluated by the City of St. Paul bridge dept. and recommended replacing the deck. Over 30% of the eastbound deck is in need of repair. Also determined that the entire deck should be replaced.  
2011 Bridge safety inspection was conducted by B. Wieman and D. Bodelson on 11/15/2011.  
2010 Bridge safety inspection was completed by B. Wieman, B. Essler & D. Bodelson 12/09/2010.  
2009 Bridge safety inspection was completed by B. Wieman on 8/25/2009.  
2008 Bridge safety inspection was completed by B. Paine & B. Wieman 10/01/2008.  
2008-2011 Deck in need of rehabilitation.  
2007 Bridge safety inspection was completed by B. Wieman & B. Essler 8/14/2007.  
Bridge safety inspection was completed by Bret Wieman 10/09/2006.

**BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
	58. Deck NBI:	Concrete deck has extensive delamination & spalling.						
	36A. Brdg Railings NBI:	Vehicular railings meet current standards.						
	36B. Transitions NBI:	Guardrail transitions meet current standards.						
	36C. Appr Guardrail NBI:	Approach guardrail meets current standards.						
	36D. Appr Guardrail Terminal NBI:	Guardrail terminations meet current standards.						
	59. Superstructure NBI:	Deck has extensive cracking, leaching & spalling.						
	60. Substructure NBI:	Abutments have moderate deterioration.						
	61. Channel NBI:	CSAH # 23 over BNSF RR						
	62. Culvert NBI:	CSAH # 23 over BNSF RR						
	71. Waterway Adeq NBI:	CSAH # 23 over BNSF RR						
	72. Appr Roadway Alignment NBI:	Minor 3-5 MPH reduction required.						
	Inventory Notes:							

Brian Essler  
Inspector's Signature

Nicklaus Fischer  
Reviewer's Signature

# Pictures



Photo 1 -



Photo 2 -



# Pictures



Photo 3 -



Photo 4 -



# Pictures



Photo 5 -



Photo 6 -

# Pictures



Photo 7 -



Photo 8 -



# Pictures



Photo 9 -



Photo 10 -

# Pictures



Photo 11 -



Photo 12 -



# Pictures



Photo 13 -



Photo 14 -

# Pictures



Photo 15 -



Photo 16 -



# Pictures



Photo 17 -



Photo 18 -

# Pictures



Photo 19 -



Photo 20 -



# Pictures



Photo 21 -



Photo 22 -

# Pictures



Photo 23 -



Photo 24 -

# Pictures



Photo 25 -



Photo 26 -



# Pictures



Photo 27 -



Photo 28 -