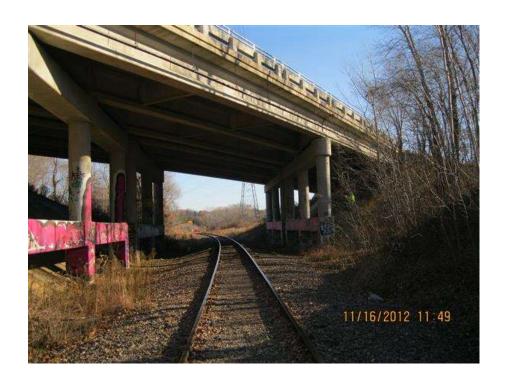
2016 ROUTINE BRIDGE INSPECTION REPORT



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 INSPECTION **GENERAL ROADWAY** Bridge Match ID (TIS) 0 Userkey 102 Agency Br. No. **District** Metro Roadway O/U Key Route On Structure Unofficial Structurally Deficient Y Maint. Area Crew Unofficial Functionally Obsolete N Route Sys 04 - CSAH Number 23 County 062 - Ramsey **Roadway Name or Description Unofficial Sufficiency Rating** 44.1 City Roseville **Routine Inspection Date** 11/02/2016 CSAH 23 **Township** Level of Service 1 - MAINLINE **Routine Inspection Frequency** Desc. Loc. 0.1 MI W OF JCT CSAH 52 Inspector Name CO Bridge Roadway Type 2 - 2-way traffic Sect., Twp., Range - 029N - 23W 11 Status P - Posted for Load Control Section (TH Only) **Deg** 45 **Sec** 11.95 Latitude Min 1 Reference Point 003+00.300 **NBI CONDITION RATINGS** Longitude Deg 93 **Sec** 26.96 Min 8 Deck **Detour Length** 4 - Poor Condition Custodian 02 - County Highway Agency Unsound Deck % 35 Lanes On 4 Under 0 Owner 02 - County Highway Agency Superstructure 5 - Fair Condition **ADT** 8864 Year 2008 **BMU Agreement** Substructure 6 - Satisfactory Condition ADTT 0 % HCADT 0 Year Built 1970 Channel N - Not Applicable Functional Class 16 - Urban - Minor Arterial **MN Year Reconstructed** Culvert N - Not Applicable **RDWY DIMENSIONS FHWA Year Reconstructed NBI APPRAISAL RATINGS** SB-WB If Divided NR-FR **MN Temporary Status** Structure Evaluation 4 Roadway Width 24.00 ft. 24.00 ft. Bridge Plan Location 3 - COUNTY **Deck Geometry** Vertical Clearance ft. Date Opened to Traffic 1/1/1974 **Underclearances** Max. Vert. Clear. ft. ft. **On-Off System** 1 - ON Water Adequacy N - Not Applicable Horizontal Clear. 23.9 ft. 23.9 ft. Legislative District 54A Approach Alignment 5 - Somewhat better than m Lateral Clearance ft. ft. **ABC Suitable SAFETY FEATURES** Appr. Surface Width 52.0 ft. **STRUCTURE** Bridge Railing 1 - MEETS STANDARDS **Bridge Roadway Width** 48 0 ft. Service On 5 - Highway-pedestrian **GR Transition** 1 - MEETS STANDARDS Median Width On Bridge 4.00 Service Under 2 - Railroad Appr. Guardrail 1 - MEETS STANDARDS MISC. BRIDGE DATA Main Span Type **GR Termini** 1 - MEETS STANDARDS Structure Flared 0 - No flare 5 - Prestress or Precast 01 - Beam Span IN DEPTH INSP. Main Span Detail Parallel Structure N - No parallel structure Y/N Freq Date Appr. Span Type Field Conn. ID Frac. Critical Ν Abutment Foundation 1 - CONC Underwater Ν Appr. Span Detail (Material/Type) 3 - FTG PILE Pinned Asblv. Skew 56 R 1 - CONC Pier Foundation Spec. Feat. **Culvert Type** (Material/Type) 3 - FTG PILE WATERWAY **Barrel Length** ft. Historic Status 5 - Not eligible Drainage Area (sq. mi.) **Cantilever ID Waterway Opening PAINT** NUMBER OF SPANS Navigation Control N - Not applicable, no waterw Year Painted APPR: 0 TOTAL: 3 **MAIN:** 3 **Pier Protection Unsound Paint %** Main Span Length 72.0 ft. Nav. Clr. (ft.) Vert. ft. Horiz. Painted Area sq. ft. Structure Length 224.9 Nav. Vert. Lift Bridge Clear. (ft.) **Primer Type** MN Scour Code A - NON WATER' Year Deck Width (Out-to-Out) 64.7 ft. Finish Type 1 - Concrete Cast-in-Place **Deck Material CAPACITY RATINGS Wear Surf Type** 1 - Monolithic Concrete (concu **Design Load** 5 - HS 20 **BRIDGE SIGNS** Wear Surf Install Year Operating Rating 1 - LF (LF) HS 19.8 Posted Load 2 - Vehicle & Semi (Type R12-5) Wear Course/Fill Depth 0.00 Inventory Rating 1 - LF (LF) HS 11.8 Traffic 0 - Not Required Deck Membrane 0 - None Posting VEH: 36 **SEMI:** 40 **DBL**: 40 **Deck Rebars** 0 - None Horizontal 0 - Not Required Rating Date 05/14/2012 **Deck Rebars Install Year** Vertical N - Not Applicable **Minnesota Permit Codes** Structure Area (Out-to-Out) 14551 A: N - N/A Roadway Area (Curb-to-Curb) 10796 sq. ft. Sidewalk Width Lt 5.00 B: N - N/A ft. Rt 5.00 ft.

Curb Height

Rail Type

Lt 0.75

Lt 15

ft. Rt 0.75

Rt 15

C: N - N/A

Minnesota Structure Inventory Report

Bridge ID: 62519 CSAH 23(CR C) over BNSF RR Date: 11/01/2016

Bridge ID: 62519	CSAH 23(CR C) ov	ei biige kk	Date: 11/01/2016
+	+ G E N E R A L +	+ R O A D W A Y +	+INSPECTION+
Agency Br. No.	Crew	Bridge Match ID (TIS) 0	Userkey 102
District	05 Maint. Area	Roadway O/U Key Route On Structure	Structurally Deficient Y
County	062 - Ramsey	Route Sys 04 - CSAH Number 23	Functionally Obsolete N
City	Roseville	Roadway Name or Description	Sufficiency Rating 44.1
Township		CSAH 23	Routine Inspection Date 11/02/2016
Desc. Loc.	0.1 MI W OF JCT CSAH 52	Level of Service 1 - MAINLINE	Routine Inspection Frequency 12
Sect., Twp., Range	11 - 029N - 23W	Roadway Type 2 - 2-way traffic	Inspector Name Essler, Brian
Latitude	45 ° 1 ' 11.95 "	Control Section (TH Only)	Status P - Posted for Load
Longitude	93 ° 8 ' 26.96 "	Reference Point 003+00.300	+NBI CONDITION RATINGS+
Custodian	02 - County Highway Agency	Detour Length 1.0 mi.	
Owner	02 - County Highway Agency	Lanes ON 4 UNDER 0	Deck 4 Unsound 35 Deck %
BMU Agreement		ADT 8864 YEAR 2008	Superstructure
Year Built	1970	HCADT ADTT %	Substructure 6
MN Year Reconstru	cted	Functional Class 16 - Urban - Minor Arterial	Channel N
FHWA Year Recons	tructed		Culvert N
MN Temporary State	us	+RDWY DIMENSIONS+	+NBI APPRAISAL RATINGS+
Bridge Plan Locatio	n 3 - COUNTY	TRUMI DIMENSIONST	
Date Opened to Tra	ffic 1/1/1974	If Divided NB-EB SB-WB	Structure Evaluation 4
On - Off Systen	n 1 - ON	Roadway Width 24.00 ft. 24.00 ft.	Deck Geometry 2
Legislative District	54A	Vertical Clearance ft. ft.	Underclearances 3
Potential ABC	2 - N/A	Max. Vert. Clear. ft. ft.	Waterway Adequacy N
		Horizontal Clear. 23.9 ft. 23.9 ft.	Approach Alignment 5
+ \$	STRUCTURE+	Lateral Clearance ft. ft.	+SAFETY FEATURES+
Service On	5 - Highway-pedestrian	Appr. Surface Width 52.0 ft.	TOATETT TEATOREST
Service Under	2 - Railroad	Bridge Roadway Width 48.0 ft.	Bridge Railing 1 - MEETS STANDARDS
Main Span Type	5 - Prestress or Precast	Median Width On Bridge 4.00 ft.	GR Transition 1 - MEETS STANDARDS
Main Span Design	01 - Beam Span		Appr. Guardrail 1 - MEETS STANDARDS
Main Span Detail		+MISC. BRIDGE DATA+	GR Termini 1 - MEETS STANDARDS
Appr. Span Type		Structure Flared 0 - No flare	+IN DEPTH INSP.+
Appr. Span Design		Parallel Structure N - No parallel structure	TIN BETTIN INCT.
Appr. Span Detail		Field Conn. ID	Y/N Freq Date
Skew	56 RIGHT	Abutment 1 - CONC Foundation	Frac. Critical N
Culvert Type		(Material/Type) 3 - FTG PILE	Underwater N
Barrel Length		Pier Foundation 1 - CONC	Pinned Asbly. N
Cantilever ID		(Material/Type) 3 - FTG PILE	Spec. Feat.
		3-FIGFILE	+ W A T E R W A Y +
Nu	mber of Spans	Historic Status 5 - Not eligible	TWATERWAIT
MAIN: 3 AP	PR: 0 TOTAL:		Drainage Area (sq. mi.)
Main Span Length	72.0 ft.	+ P A I N T +	Waterway Opening (sf.)
Structure Length	224.9 ft.		Navigation Control N - Not applicable, no
Deck Width (Out-to-	Out) 64.7 ft.	Year Painted	Pier Protection
Deck Material	1 - Concrete Cast-in-Place	Unsound Paint %	Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0
Wear Surf Type	1 - Monolithic Concrete	Painted Area sq. ft.	Nav. Vert. Lift Bridge Clear. (ft.)
Wear Surf Install Ye	ar	Primer Type	MN Scour Code A - NON Year
Wear Course/Fill De	epth 0.00 ft.	Finish Type	+CAPACITY RATINGS+
Deck Membrane	0 - None		
Deck Rebars	0 - None	+BRIDGE SIGNS+	Design Load 5 - HS 20
Deck Rebars Install	Year		Operating Rating 2 - HS TRUCK 19.8
Structure Area (Out-	-to-Out) 14551 sq. ft.	Posted Load 2 - Vehicle & Semi (Type R12-5)	Inventory Rating 2 - HS TRUCK 11.8
Roadway Area (Curl	b-to-Curb) 10796 sq. ft.	Traffic 0 - Not Required	Posting VEH: 36 SEMI: 40 DBL: 40
Sidewalk Width 50	OA. Lt 5.00 ft. 50B. Rt 5.00 ft.	Horizontal 0 - Not Required	Rating Date 05/14/2012
Curb Height	Lt 0.75 ft. Rt 0.75 ft.	Vertical N - Not Applicable	Overweight Permit Codes
Rail Type	Lt 15 Rt 15		A N - N/A B N - N/A C N - N/A

MINNESOTA BRIDGE INSPECTION REPORT

12/02/2016

County	GE 62519 CSAH 23(CR (C) OVER D	NOF KK			KOOII	112 11101	. DAIL.	11/02/20	16
	r: Ramsey	Lo	ocation: 0.1 MI	W OF JCT CSAF	l 52	Length:	2	24.9 ft.		
City:	Roseville	Ro	oute: 04 - CSAH	l 23 Ref. Pt.:	003+00.300	Deck Wid	th:	64.7 ft.		
Towns	hip:	Co	ontrol Section:			Rdwy. Ar	ea/ Pct. Un	snd: 1079	6 sq. ft. / 3	5%
Section	n: 11 Township: 029N R	ange: 23W	Maint. Area:			Paint Are	a/ Pct. Uns	nd: sq. ft	t. / %	
Span T	ype: 5 - Prestressed Concrete 2		Local Agency Bri	dge Nbr.:		Culvert:	N/A			
List:	Stringer/Multi-beam or Gird	er				Postings:	36	40		40
NBI De	eck: 4 Super: 5 Sub:	6 Chan:	N Culv: N							
			Open, Po	sted, Closed: P	- Posted for Loa	ad				
			MN Scou	r Code: A - NON	I WATERWAY					
	0 11	Naterway: I				Un	official Stru	cturally De	eficient '	Υ
Requir		R12-5)			Not Required	Un	official Fun	ctionally C)bsolete	N
	Horizntal:	0 - Not Requi	ired	Vertical: N -	Not Applicable	Un	official Suf	ficiency Ra	ating 4	44.1
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
012	Top of Concrete Deck (No Overlay - Uncoated Rebar)	2	Routine	11/02/2016	14553 SF	0	0	0	0	14553
	evenay encoated restary		Routine	11/05/2015	14553 SF	0	0	0	0	14553
		elamination is	s prevelant on so		the south side w with numerous	moderate	size cracks	S.	orth side d	leck has
109	[2006-2015] T	elamination is he north side		vith corrosion on to uth side of bridge tching at the wes	the south side w with numerous t end + a few otl	moderate	size cracks	S.	orth side d	leck has
109	[2006-2015] Ti moderate trans	elamination is he north side sverse and di	s prevelant on so has some bit. pa lagonal cracking v	with corrosion on the uth side of bridge tching at the wes with moderate to	the south side w with numerous t end + a few oth major spalls.	moderate ner areas o	size cracks of bit. patch	s. iing. The n		
109	[2006-2015] Ti moderate trans Prestressed Concrete Girder or Beam	elamination is he north side sverse and di 2 2015] SE & N	s prevelant on so has some bit. pa iagonal cracking very Routine	with corrosion on auth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 e girder plug out.	the south side we with numerous tend + a few oth major spalls. 1368 LF	moderate ner areas c 0 0	size cracks of bit. patch 1368	s. ing. The n	0	N/A
	[2006-2015] Ti moderate trans Prestressed Concrete Girder or Beam	elamination is he north side sverse and di 2 2015] SE & N	s prevelant on so has some bit. pa iagonal cracking vertical Routine Routine Routine	with corrosion on auth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 e girder plug out.	the south side we with numerous tend + a few oth major spalls. 1368 LF	moderate ner areas c 0 0	size cracks of bit. patch 1368	s. ing. The n	0	N/A
	Prestressed Concrete Girder or Beam Notes: [1995-[2003-2015] Ti	elamination is he north side sverse and di 2 2015] SE & N here is evider	Routine Routine Routine Routine Routine Routine Routine	with corrosion on a uth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 e girder plug out.	the south side we with numerous tend + a few oth major spalls. 1368 LF 1368 LF	moderate ner areas c 0 0 racking pre	size cracks of bit. patch 1368 1368 esent.	o. Jing. The n 0 0	0	N/A N/A
	Prestressed Concrete Girder or Beam Notes: [1995-[2003-2015] Ti	elamination is he north side sverse and di 2 2 2015] SE & N here is evider 2	Routine	with corrosion on auth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 girder plug out. pre-stressed gi 11/02/2016 11/05/2015	the south side we with numerous tend + a few oth major spalls. 1368 LF 1368 LF 1368 LF 12 EA 12 EA	o 0 0 racking pre	size cracks of bit. patch 1368 1368 esent. 12 12	0 0 0	0 0	N/A N/A
205	Prestressed Concrete Girder or Beam Notes: [1995-[2003-2015] Ti	elamination is he north side sverse and di 2 2 2015] SE & N here is evider 2	Routine	with corrosion on auth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 girder plug out. pre-stressed gi 11/02/2016 11/05/2015	the south side we with numerous tend + a few oth major spalls. 1368 LF 1368 LF 1368 LF 12 EA 12 EA	o 0 0 racking pre	size cracks of bit. patch 1368 1368 esent. 12 12	0 0 0	0 0	N/A N/A
	Prestressed Concrete Girder or Beam Notes: [1995-[2003-2015] TI Reinforced Concrete Column Notes: [2009-Reinforced Concrete	elamination is he north side sverse and di 2 2 2015] SE & Nhere is evider 2 2015] Modera	Routine	with corrosion on auth side of bridge tching at the wes with moderate to 11/02/2016 11/05/2015 girder plug out. pre-stressed gi 11/02/2016 11/05/2015 columns are prese	the south side we with numerous tend + a few oth major spalls. 1368 LF 1368 LF 1368 LF 12 EA 12 EA 12 EA	o o cacking pre o o o cacking pre o o o cacking pre o o o	size cracks of bit. patch 1368 1368 esent. 12 12 forcement.	on the notation of the notatio	0 0 0	N/A N/A N/A N/A

ROUTINE	INSP.	DATE:	11/02/2016
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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 C	ap 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
	[2009-2019 [2003-2019	i] West conc i] Minor spal	quantity from 495 LF rete cap has minor det ls and deterioration are underside on pier.	erioration.	-	•	m MNDOT	-		
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
			derate deterioration is joint has major adhesi							3.
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
	[2007-2018 [2013] Red	[] Corrosion	oderate corrosion of e is developing above pi placing the bearings du	er columns.	· ·					
										N I / A
313	Fixed Bearing	2	Routine	11/02/2016	6 EA	0	6	0	N/A	N/A
313	Fixed Bearing	2	Routine Routine	11/02/2016 11/05/2015	6 EA 6 EA	0	6 6	0	N/A N/A	N/A N/A
313	Notes: [20 located on	14] There ar the east gird		11/05/2015 were moved fro	6 EA m expansion be	0	6	0	N/A	N/A
	Notes: [20 located on	14] There ar the east gird i] There is m	Routine e 6 fixed bearings that lers of the west pier.	11/05/2015 were moved fro	6 EA m expansion be	0	6	0	N/A	N/A
313	Notes: [20 located on [2014-2018] Masonry, Other or	14] There ar the east gird i] There is m	Routine e 6 fixed bearings that lers of the west pier. oderate corrosion on t	11/05/2015 were moved fro he fixed bearings	6 EA m expansion be s.	0 earings (ele	6 ement # 31	0 1). The fixe	N/A ed bearings	N/A s are
	Notes: [20] located on [2014-2015] Masonry, Other or Combination Material Railin Notes: [20] South Railin [2013-2015] [2005-2015] #24, #26, # [2008-2015] severe dela [2007-2015] North Railin [2014-2015] [2014-2015]	14] There ar the east gird if there is m 15] There is m 15] moved fring i] Cable near if there is marmination with if there is a mg i] There is a mg	Routine e 6 fixed bearings that lers of the west pier. oderate corrosion on t Routine Routine rom element 331 to 33 r post #29 has been senth side there is moder ajor delamination w/ eth section loss. 6" major spall at bottom of the delamination in postioderate collision dama	11/05/2015 were moved fro he fixed bearings 11/02/2016 11/05/2015 3 combination m evered. ate cracking with exposed re-bar & m of concrete rai t #11, & #25 age on top metal	6 EA m expansion be s. 456 LF 456 LF atterial railing. (or moderate correctorrosion on co- iling @ post #25 rail between po	0 0 0 concrete & osion to poencrete rail on the so	ement # 31 228 228 228 metal) ost #9, #11 ing betwee uth side. 0.	0 1). The fixe 228 228 , #12, #16 in posts #2	N/A N/A N/A , #17, #19, 9-#36. Pos	N/A s are N/A N/A #20,
	Notes: [20 located on [2014-2015] Masonry, Other or Combination Material Railin Notes: [20 South Railin [2013-2015] [2005-2015] #24, #26, # [2008-2015] severe dell [2007-2015] North Railin [2014-2015] [2014-2015] [2014-2015] [2007-2015] #21, #24, # [2007-2015]	14] There are the east gird of the east gird of the sound	Routine e 6 fixed bearings that lers of the west pier. oderate corrosion on t Routine Routine rom element 331 to 33 r post #29 has been senth side there is moder ajor delamination w/ eth section loss. 6" major spall at bottom of the delamination in post of the section in post of the delamination in post of the section in t	were moved from the fixed bearings of the fixed bearing with the fixed properties of the fixed bearing with the fixed bearing of the fixed bearings	6 EA m expansion be s. 456 LF 456 LF atterial railing. (of moderate correctorsion on co- iling @ post #25 rail between poor (bent outward) rt posts on the r on concrete rail	0 0 0 concrete & concrete rail i on the so est #9 & #1). There is north side of	228 228 metal) ost #9, #11 ing betwee uth side. 0. 1' area of son concrete post #32.	0 1). The fixe 228 228 , #12, #16 on posts #2	N/A ed bearings N/A N/A , #17, #19, 9-#36. Pos	N/A s are N/A N/A #20, at #36 has
	Notes: [20 located on [2014-2015] Masonry, Other or Combination Material Railin Notes: [20 South Railin [2013-2015] [2005-2015] #24, #26, # [2008-2015] severe dell [2007-2015] North Railin [2014-2015] [2014-2015] [2014-2015] [2007-2015] #21, #24, # [2007-2015]	14] There are the east gird of the east gird of the sound	Routine e 6 fixed bearings that lers of the west pier. oderate corrosion on t Routine Routine Routine om element 331 to 33 r post #29 has been setth side there is moder ajor delamination w/ e th section loss. 6" major spall at botton of major spall at botton loss. 1' delamination in post oderate collision dama amage to metal railing ide on post #17. oderate cracking w/co 2, #33, #35, #36 & #38 6" spall w/ exposed re	were moved from the fixed bearings of the fixed bearing with the fixed properties of the fixed bearing with the fixed bearing of the fixed bearings	6 EA m expansion be s. 456 LF 456 LF atterial railing. (of moderate correctorsion on co- iling @ post #25 rail between poor (bent outward) rt posts on the r on concrete rail	0 0 0 concrete & concrete rail i on the so est #9 & #1). There is north side of	228 228 metal) ost #9, #11 ing betwee uth side. 0. 1' area of son concrete post #32.	0 1). The fixe 228 228 , #12, #16 on posts #2	N/A ed bearings N/A N/A , #17, #19, 9-#36. Pos	N/A S are N/A N/A #20, tt #36 has

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
	[2014-2015] T [2014-2015] T [2014] There a [2013-2015] S between girde [2013-2015] S [2013-2015] S [2008-2015] T [2007-2015] T joint material. [2012-2015] T	here is ma here is ma are 2 major pan #1 has rs #1 & #2 pan #2 has pan #3 has here is sor here is sor	amination along east/ jor delamination 4.0'. jor delamination 2.0'. delaminations 1.0' X s 90 LF of moderate 1 . Also some spalling a s 110 LF of moderate t jor delamination 2.5'. ne cracking & corrosi ne delamination, min- noderate transverse of	X 4.0' w/exposed X 2.0' on the SW 1.0' & 1.0' X 6.0 ongitudinal & tra and delamination transverse cracki X 2.0' on the sou on with efflorescon or cracking, corro	I rebar on the S' corner between 'w/exposed rebusyerse crackin present betweeking with efflores the side under ratence along centers.	n girders # ear on the g with efflor en girders scence. cence. diling abov erline join cence on r	2 & #3. NE corner prescence #1 & #2. e #1 column t due to fail	under railir & corrosion nn. lure of cen under railin	ng. n predomin terline expa	·
380	Secondary Structural	1	Routine	11/02/2016	40 EA	0	40	0	0	N/A
	Elements		Routine	11/05/2015	40 EA	0	40	0	0	N/A
	Notes: [2007-	2015] Con	crete diaphragms are	in place. Some	corrosion prese	nt at the b	ottom of di	aphragms.		
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
	[2014-2015] Ti [2013-2015] Ti [2013-2015] Ni [2013-2015] Ti	here is a 2 here are m E WW has here is a m	t failure on wing walls moderate crack in the inor to moderate spa two minor vertical cra inor 6' horizontal cra inor to moderate hori	ne top southwest lls on top of all w acks full height. ck at the SE wing	ringwalls. gwall.		/ & SW wir	ngwalls.		
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
	Notes: [2013- West side had		n bituminous approac verlay in 2007.	hes have modera	ate settlement w	rith crackir	ng.			
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
	Notes: DO NO	OT DELET	Routine E THIS CRITICAL FI			1	0	N/A	N/A	N/A
981	Notes: DO NO	OT DELET				0	0	N/A 0	N/A 1	N/A 0
981			E THIS CRITICAL FI	NDING SMART I	FLAG.					
981	Signing Notes: [2014- [2013] Need to	2 2015] Load	E THIS CRITICAL FII	11/02/2016 11/05/2015 place. d at bridge and n	1 EA 1 EA 1 EA	0	0	0	1	0
981	Signing Notes: [2014- [2013] Need to	2 2015] Load	Routine Routine Routine d posting signs are in	11/02/2016 11/05/2015 place. d at bridge and n	1 EA 1 EA 1 EA	0	0	0	1	0
	Signing Notes: [2014- [2013] Need Ic [2007-2015] M	2 2015] Load pad posting lissing obje	Routine Routine Routine d posting signs are in R12-5 signs installe act marker sign at NW	11/02/2016 11/05/2015 place. d at bridge and n	FLAG. 1 EA 1 EA earest intersect corner.	0 0 ion both s	0 0 ides.	0	1 1	0

BRID	GE 62519 CS	SAH 23(CR	C) OVER	BNSF RR			ROUT	INE INSP	. DATE:	11/02/20	16
ELEM NBR	ELEMENT	Г NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
984	Deck & Approac	h 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] Dra	nage system is funct	ioning properly.						
985	Slopes & Slope I	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
		column #2 & [2011-2015] Itransverse cr	Vest slope #3. Also mi East slope เ	juire sealing. pavement has some nor- moderate transv pavement has a majo	erse cracking.	de slope pavinç				minor- mo	derate
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
		[2013-2015] [2007-2013] §	Both ends h Bevere sett	ewalk on north side or lave settlement at me ement of sidewalk @ walk on the south sid	edian. bridge both end	s on the north s	side.		cracking c	on both side	∋ s.
988	Miscellaneous It	ems	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 co	nduit for utilities repa	ired in 2007. Cor	nduit runs east -	west on t	ne south si	de & north	side.	
	General Notes:	[2015] Bridg [2014] Bridge [2012] Bridge [2012] The 30% of the 2011 Bridge 2010 Bridge 2008 Bridge 2008-2011 2007 Bridge Bridge safe	ge safety in ge safety in ge safety in ge safety in ge safety ins eastbound eastbound e safety ins e safety ins e safety in so Deck in ned e safety in so ty inspection	spection was conduct spection was conduct spection was conducted was evaluated leader to make the conducted was evaluated leader to make the conducted was completed by the complete was completed of rehabilitation.	ted by Brian Ess ted by B. Wieman ted by B. Wieman by the City of St. Dair. Also determed by B. Wieman bret Wieman 10/	ler & Dan Bode n, B Essler, D. n and D. Bodels and D. Bodels Paul bridge de- ined that the en and D. Bodelso, B. Essler & D. on 8/25/2009. B. Wieman 10/0 & B. Essler 8/1	Ison on 11 Bodelson a son on 11/1 on on 11/1 ot. and rec tire deck s on on 11/1 Bodelson 01/2008.	/05/2015. & R Bussie 27/2013. 6/2012. ommended hould be re 5/2011.	re on 11/25 I replacing eplaced.		Over
	58. Deck NBI:	Concrete de	eck has ext	ensive delamination a	& 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 Guardrail terminations meet current standards.

Terminal NBI: 59. Superstructure NBI:

Deck has extensive cracking, leaching & spalling.

60. Substructure NBI: Abutments have moderate deterioration.

CSAH # 23 over BNSF RR 61. Channel NBI:

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:

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
	-									
	Brian Essl Inspector's Sigr			-			klaus Fis iewer's Sig			

ROUTINE INSP. DATE: 11/02/2016

BRIDGE 62519 CSAH 23(CR C) OVER BNSF RR

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 - 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

Required Bridge Signs - Load Posting: 2 - Vehicle & Semi (Type Traffic: 0 - Not Required Unofficial Functionally Obsolete N

R12-5)

Horizntal: 0 - Not Required Vertical: N - Not Applicable Unofficial Sufficiency Rating 44.1

Υ

ELEM QTY QTY QTY QTY **ELEMENT NAME** REPORT TYPE INSP. DATE QUANTITY NBR CS₁ CS₂ CS₃ CS₄ Reinforced Concrete Deck 14551 SF 13096 0 1455 0 12 11/02/2016 Routine 14551 SF 13096 0 1455 0 Migrated Values

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 & #2.

[2014-2016] There is major delamination 2.0' X 2.0' on the SW corner between girders #2 & #3.

[2014-2016] There are 2 major delaminations 1.0' X 1.0' X 6.0' w/exposed rebar on the NE corner under railing.

[2013-2016] Span #1 has 90 LF of moderate longitudinal & transverse cracking with efflorescence & corrosion predominately between girders #1 & #2. Also some spalling and delamination present between girders #1 & #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 & evidence of corrosion throughout.

[2012-2016] There is some delamination, minor cracking, corrosion & 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 & corrosion with efflorescence along centerline joint due to failure of centerline expansion joint material.

510 - Wearing Surfaces Routine 11/02/2016 10796 SF 7557 0 3239 0
Migrated Values 10796 SF 7557 0 3239 0

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 & 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 prevelant on south side of bridge with numerous moderate size cracks.

109	Prestressed Concrete Open Girder/Beam	Routine	11/02/2016	1368 LF	0	1368	0	0	
		Migrated Values		1368 LF	0	1368	0	0	
	Notes: [1995-2016] SE & NW corne [2003-2016] There is evidence of co			racking presen	t.				
205	Reinforced Concrete Column	Routine	11/02/2016	12 EA	0	12	0	0	
		Migrated Values		12 EA	0	12	0	0	

Notes: [2009-2016] Moderate spalls on all columns are present, but no exposure of reinforcement.

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
	West Abutment: [2014-2016] There is a major spall of [2014-2016] There is water sitting or [2012-2016] There are numerous mage [2013-2016] Moderate deterioration crack and a 5' moderate vertical crace [2013-2016] There is a 1' major spall East Abutment: [2012-2016] At the SE corner there is [2013-2016] There are numerous vereceived [2009-2016] There is a 6" major spate [2009-2016] 60% condition 2 & 40% Wingwall notes: [2016] minor faint fareceived [2013-2016] There is a 2' moderate is [2013-2016] There is a minor to mode [2013-2016] There is a minor 6' horize [2013-2016] There is a minor 6' horize [2013-2016] There are minor to mode [2013-2016] There are minor [2013-2016] T	the bearing seat on the oderate horizontal and votat the SW corner approach. I at girder #4. Between go at 4" spall with exposer rical cracks w/efflorescell at NE corner of east at condition 3 Illure on wing walls. Crack in the top southweer spalls on top of all vertical cracks full height contal crack at the SE weet at the seat and contains the seat at the SE weet at the seat at the SE weet	e NW corner & allertical cracking vimately 15 LF. A girders #5 & #6 the direction of the cornesion outment. Some but wingwalls.	ong the entire evith corrosion & also on the back nere is 1' major on. on east abutmouild up of debrivingwall.	effloresce wall off ab spall w/ex ent. Also s s at girder	nce preser utment the posed reba ome cracki #4.	re is a mod	ion.
	[2010 2010] More are miner to mee							
24	Poinforced Concrete Pier Can	Douting	11/02/2016	12015	0	120	0	0
234	Reinforced Concrete Pier Cap	Routine Migrated Values	11/02/2016	130 LF	0	130 130	0	0
234	Reinforced Concrete Pier Cap Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Lf	Migrated Values cap has minor deteriorat oration are present to the pier.	ion. e east concrete c	130 LF ap.	0	130 130	0	0
	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on	Migrated Values cap has minor deteriorat oration are present to the pier.	ion. e east concrete c mpliance Report	130 LF ap.	_		-	-
	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Lf	Migrated Values cap has minor deteriorationare present to the pier. To 130 LF per 2015 Co	ion. e east concrete c	130 LF sap.	0	130	0	0
	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Lf	Migrated Values cap has minor deteriorate oration are present to the pier. F to 130 LF per 2015 Co Routine Migrated Values oration is present above	ion. e east concrete compliance Report 11/02/2016 e piers. Joints ne	130 LF sap. from MNDOT 449 LF 449 LF ed to be reseale	0 0 0 0	130 112 112 condition s	169 169 state #3.	168
01	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Lf. Pourable Joint Seal Notes: [2013-2016] Moderate deterior	Migrated Values cap has minor deteriorate oration are present to the pier. F to 130 LF per 2015 Co Routine Migrated Values oration is present above	ion. e east concrete compliance Report 11/02/2016 e piers. Joints ne	130 LF sap. from MNDOT 449 LF 449 LF ed to be reseale	0 0 0 0	130 112 112 condition s	169 169 state #3.	168
901	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Life Pourable Joint Seal Notes: [2013-2016] Moderate detering [2013-2016] Centerline joint has major	Migrated Values cap has minor deteriorate oration are present to the pier. F to 130 LF per 2015 Co Routine Migrated Values oration is present above or adhesion and cohesion	ion. e east concrete compliance Report 11/02/2016 e piers. Joints neon failure. Cork fi	130 LF sap. from MNDOT 449 LF 449 LF ed to be reseale iller @ centerlin	0 0 0 ed. 75% in e joint is le	112 112 condition setting loose	169 169 state #3.	168 168
 301 311	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Life Pourable Joint Seal Notes: [2013-2016] Moderate detering [2013-2016] Centerline joint has major	Migrated Values cap has minor deterioration are present to the pier. To 130 LF per 2015 Co Routine Migrated Values oration is present above or adhesion and cohesion Routine Migrated Values oration be severe corror corrosion of west end expansion above pier columns. bearings to 30 expansion	ion. e east concrete compliance Report 11/02/2016 e piers. Joints need in failure. Cork fill 11/02/2016 rosion, all 12 in oxpansion bearings. In bearings with 6	130 LF ap. from MNDOT 449 LF 449 LF ed to be resealed to the resealed to t	0 0 ed. 75% in e joint is le 0 0	112 112 condition setting loose 18 18	169 169 state #3.	168 168
801	Notes: [2009-2016] West concrete of [2003-2016] Minor spalls and deterior [1995-2016] Graffiti on underside on [2015] changed quantity from 495 Lf. Pourable Joint Seal Notes: [2013-2016] Moderate detering [2013-2016] Centerline joint has major Movable Bearing Notes: [2015-2016] bearings @ abute [2008-2016] There is heavy-severe [2008-2014] There is moderate correct [2007-2016] Corrosion is developing [2014] Changed form 36 expansion	Migrated Values cap has minor deterioration are present to the pier. To 130 LF per 2015 Co Routine Migrated Values oration is present above or adhesion and cohesion Routine Migrated Values oration be severe corror corrosion of west end expansion above pier columns. bearings to 30 expansion	ion. e east concrete compliance Report 11/02/2016 e piers. Joints need in failure. Cork fill 11/02/2016 rosion, all 12 in oxpansion bearings. In bearings with 6	130 LF ap. from MNDOT 449 LF 449 LF ed to be resealed to the resealed to t	0 0 ed. 75% in e joint is le 0 0	112 112 condition setting loose 18 18	169 169 state #3.	168 168

[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.

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 su North Railing [2016] Railing has paint failure and su [2014-2016] There is moderate collision [2015] moved from element 331 to 33	rface corrosion. on damage on top meta						
	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 su North Railing [2016] Railing has paint failure and su [2014-2016] There is moderate collision [2016] 454 LF of 2.25' high railing 1.25	rface corrosion. on damage on top meta	al rail between p	ost #9 & #10.				
331	Reinforced Concrete Bridge Railing	Routine	11/02/2016	456 LF	0	228	0	228
, ,	The state of the s	Migrated Values	11/02/2010	456 LF	0	228	0	228
	[2015] moved from element 331 to 33: South Railing [2016] There is major spall w/ exposed section loss. [2013-2016] Cable near post #29 has	d re-bar & corrosion or			#29-#36.	Post #36 h	as severe	delamination with
	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall [2008-2015] There is major delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collision [2007-2016] There is damage to meta north side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to correspond	at bottom of concrete rion w/ exposed re-bar on in post #11, & #25 on damage on top metal railing at the SW corrong w/corrosion to supposed re-bar & corrosio	railing @ post #2 & corrosion on c all rail between p ner (bent outward out posts on the	ost #9 & #10. There is 1' an orth side on coulling above pos	side. petween portion rea of spal oncrete po	osts #29-#3 I with expo	36. Post #3 sed re-bar	6 has severe & corrosion at the
;00	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall is [2008-2015] There is major delamination delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collision [2007-2016] There is damage to metanorth side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to corrections.	at bottom of concrete rion w/ exposed re-bar and in post #11, & #25 and damage on top metal railing at the SW corrong w/corrosion to suppressed re-bar & corrosionsion of cable with several Routine Migrated Values	railing @ post #2 & corrosion on c all rail between p her (bent outward bort posts on the an on concrete ra here section loss 11/02/2016	ost #9 & #10. d). There is 1' an north side on contilling above pos @ #14 post. 1 EA 1 EA	side. petween portion rea of spal oncrete po	osts #29-#3 I with expo	36. Post #3 sed re-bar	6 has severe & corrosion at the
;00	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall is [2008-2015] There is major delamination delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collising [2007-2016] There is damage to metal north side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to corrections.	at bottom of concrete rion w/ exposed re-bar and in post #11, & #25 and damage on top metal railing at the SW corrong w/corrosion to suppressed re-bar & corrosion of cable with several Routine Migrated Values	railing @ post #2 & corrosion on c all rail between p her (bent outward bort posts on the an on concrete ra here section loss 11/02/2016	ost #9 & #10. d). There is 1' an north side on contilling above pos @ #14 post. 1 EA 1 EA	rea of spal oncrete po t #32.	Osts #29-#3 I with expo st #1, #5, #	36. Post #3 sed re-bar #12, #15, #	6 has severe & corrosion at the 17, #21, #24, #28
	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall is [2008-2015] There is major delamination delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collision [2007-2016] There is damage to metanorth side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to corrections.	at bottom of concrete rion w/ exposed re-bar and in post #11, & #25 and damage on top metal railing at the SW corrong w/corrosion to suppressed re-bar & corrosion of cable with several Routine Migrated Values	railing @ post #2 & corrosion on c all rail between p her (bent outward bort posts on the an on concrete ra vere section loss 11/02/2016 E LAST INSPEC	ost #9 & #10. d). There is 1' an north side on contilling above pos @ #14 post. 1 EA 1 EA	rea of spal oncrete po t #32.	Osts #29-#3 I with expo st #1, #5, #	36. Post #3 sed re-bar #12, #15, #	6 has severe & corrosion at the 17, #21, #24, #28
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	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall is [2008-2015] There is major delamination delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collising [2007-2016] There is damage to metanorth side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to correctical Deficiencies or Safety Hazards Notes: NO CRITICAL FINDINGS OBS	at bottom of concrete rion w/ exposed re-bar and railing at the SW corrogion of cable with several Polyage BERVED DURING THE Routine Migrated Values as 529' of longitudinal, trealed severe cracks ar eck.	railing @ post #2 & corrosion on co al rail between p ner (bent outward nort posts on the non concrete ra rere section loss 11/02/2016 E LAST INSPECT 11/02/2016 transverse & diag and density on the	ost #9 & #10. d). There is 1' an north side on coailing above pos @ #14 post. 1 EA 1 EA 2TION. 879 LF 879 LF agonal cracking. e eastbound dec	rea of spal oncrete po t #32.	Osts #29-#3 I with expo st #1, #5, # 0 0 879 879 879 are numero	36. Post #3 sed re-bar #12, #15, # 0 0 0 us unseale	6 has severe & corrosion at the 17, #21, #24, #28
310	[2005-2016] On the south side there is #28. [2007-2016] There is a 6" major spall is [2008-2015] There is major delamination delamination with section loss. North Railing [2014-2016] There is a 1' delamination [2014-2016] There is moderate collision [2007-2016] There is damage to metal north side on post #17. [2005-2016] There is moderate cracking #31, #32, #33, #35, #36 & #38. [2007-2016] There is a 6" spall w/ exp [2011-2016] Cable broken due to correctical Deficiencies or Safety Hazards Notes: NO CRITICAL FINDINGS OBSECTION OF Concrete Decks - Cracking & Sealing Notes: [2016] The Eastbound deck has [2014-2016] The westbound deck has [2013-2015] There are numerous unsucracks & density on the westbound de [2007-2015] There is moderate cracking the south of the westbound deck has [2013-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2013-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of the westbound deck has [2007-2015] There is moderate cracking the south of th	at bottom of concrete rion w/ exposed re-bar in in post #11, & #25 on damage on top metal railing at the SW corrong w/corrosion to suppressed re-bar & corrosion of cable with seven as 529' of longitudinal, trailing at the seven as 529' of longitudinal, trailing the north side of the north side of the control of the north side of the control of the c	railing @ post #2 & corrosion on c al rail between p her (bent outward bort posts on the on on concrete ra here section loss 11/02/2016 E LAST INSPEC 11/02/2016 transverse & diag and density on the deck and mode	ost #9 & #10. d). There is 1' an north side on coailing above pos @ #14 post. 1 EA 1 EA 2TION. 879 LF 879 LF agonal cracking. e eastbound dec	rea of spal oncrete poot #32.	Osts #29-#3 I with expo st #1, #5, # 0 0 879 879 879 are numero	36. Post #3 sed re-bar #12, #15, # 0 0 0 us unseale	6 has severe & corrosion at the 17, #21, #24, #28
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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	
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 prestressed concrete beams.	ne presence of shear c	racking on concr	ete elements. P	ay particul	ar attention	n to the cor	ncrete pier ca	ips and
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 sig [2013] Need load posting R12-5 signs [2007-2016] Missing object marker signs	s installed at bridge and		ction both sides					
892	Slopes & Slope Protection	Routine	11/02/2016	1 EA	0	1	0	0	
		Migrated Values		1 EA	0	1	0	0	
	sides require sealing. [2012-2016] West slope pavement ha #3. Also minor- moderate transverse [2011-2016] East slope pavement has cracking.	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 damag	je @ SW, NW & SE co	rners. No addition	onal deterioratio	n or dama	ge.			
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 [2016] Water drains to the gutter then								
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 nort [2013-2016] Both ends have settleme [2007-2016] Curb & sidewalk on the s [2007-2013] Severe settlement of side	ent at median. South side of the bridge	has severe spal	lling. Also some	minor cra	cking on bo	oth sides.		
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 rus [2015-2016] Steel conduit for utilities [2016] There is concrete struts betwe	sting at abutment. repaired in 2007. Cond	duit runs east - w	est on the south	ı side & no	rth side.			
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 f	•	cture.						

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.

	, ,								
ELEM NBR ELE	MENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
58. Deck NB	: Concrete deck has exte								
36A. Brdg Railings NB	: Vehicular railings meet	current standards.							
36B. Transitions NB	: Guardrail transitions meet current standards.								
36C. Appr Guardrail NB	Approach guardrail meets current standards.								
36D. Appr Guardra Terminal NB		meet current standard	ds.						
59. Superstructure NB	Deck has extensive cracking, leaching & spalling.								
60. Substructure NB	: Abutments have moderate deterioration.								
61. Channel NB	: CSAH # 23 over BNSF	RR							
62. Culvert NB	: CSAH # 23 over BNSF	RR							
71. Waterway Adeq NB	: CSAH # 23 over BNSF	RR							
72. Appr Roadwa Alignment NB		on required.							
Inventory Notes	:								
	D: E .				.	=			
Brian Essler			_	Nicklaus Fischer					
Inspector's Signature				Reviewer's Signature					



Photo 1 -



Photo 2 -



Photo 3 -



Photo 4 -



Photo 5 -



Photo 6 -



Photo 7 -



Photo 8 -



Photo 9 -



Photo 10 -



Photo 11 -



Photo 12 -



Photo 13 -



Photo 14 -



Photo 15 -



Photo 16 -



Photo 17 -



Photo 18 -

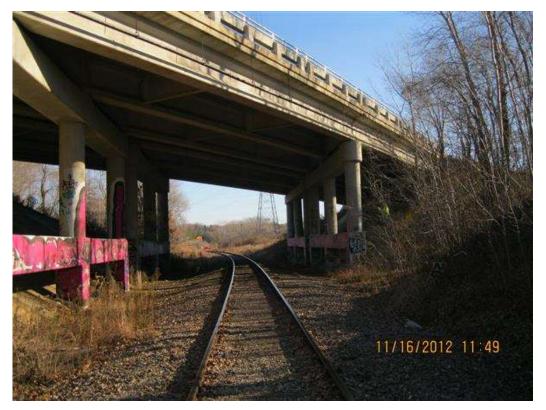


Photo 19 -



Photo 20 -



Photo 21 -



Photo 22 -



Photo 23 -



Photo 24 -



Photo 25 -



Photo 26 -



Photo 27 -



Photo 28 -