# 2016 ROUTINE BRIDGE INSPECTION REPORT



# BRIDGE # 62546 CSAH 46(RAYMOND) over BNSF RR; MC RY YARDS

DISTRICT: Metro COUNTY: Ramsey CITY/TOWNSHIP: St Paul

STATE: Minnesota

Date of Inspection: 06/18/2016

**Equipment Used:** 

**Owner: County Highway Agency** 

Inspected By: Engel, Michael; Grau, Joe; Schaaf, Jerry

Report Written By: Joe Grau

Report Reviewed By: Glenn Pagel Final Report Date: 09/29/2016



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# **Minnesota Structure Inventory Report**

Date: 09/28/2016

Bridge ID: 62546 CSAH 46(RAYMOND) over BNSF RR; MC RY YARDS

	CENERAL	YARDS	LINGRESTICS			
	+ 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 199			
District	05 Maint. Area	Roadway O/U Key Route On Structure	Structurally Deficient N			
County	062 - Ramsey	Route Sys 04 - CSAH Number 46	Functionally Obsolete N			
City	St Paul	Roadway Name or Description	Sufficiency Rating 84.8			
Township		CSAH 46	Routine Inspection Date 06/18/2016			
Desc. Loc.	0.6 MI N OF UNIV AVE	Level of Service 1 - MAINLINE	Routine Inspection Frequency 24			
Sect., Twp., Range	29 - 029N - 23W	Roadway Type 2 - 2-way traffic	Inspector Name Grau, Joe			
Latitude	44 ° 58 ' 21.99 "	Control Section (TH Only)	Status A - Open			
Longitude	93 ° 11 ' 44.94 "	Reference Point 005+00.551	+NBI CONDITION RATINGS+			
Custodian	02 - County Highway Agency	Detour Length 1.0 mi.	Deck 7 Unsound			
Owner	02 - County Highway Agency	Lanes ON 2 UNDER 0	Superstructure 7 Deck %			
BMU Agreement	1000	ADT 12649 YEAR 2008	Substructure 7			
Year Built	1988	HCADT ADTT %  Functional Class 16 - Urban - Minor Arterial	Channel N			
MN Year Reconstru		Functional Class 16 - Urban - Minor Arterial	Culvert N			
FHWA Year Recons			NDI ADDRAIGH DATINGS			
MN Temporary Stat		+RDWY DIMENSIONS+	+NBI APPRAISAL RATINGS+			
Bridge Plan Location  Date Opened to Tra		If Divided NB-EB SB-WB	Structure Evaluation 5			
On - Off System		Roadway Width 44.00 ft. ft.	Deck Geometry 6			
Legislative District	66B	Vertical Clearance ft. ft.	Underclearances 4			
Potential ABC	2 - N/A	Max. Vert. Clear. ft. ft.	Waterway Adequacy N			
r oteritiai ABC	2 - IV/A	Horizontal Clear. 43.9 ft. ft.	Approach Alignment 9			
+ 8	STRUCTURE+	Lateral Clearance ft. ft.	+SAFETY FEATURES+			
Service On	5 - Highway-pedestrian	Appr. Surface Width 44.0 ft.	+SAFEIT FEATURES+			
Service Under	2 - Railroad	Bridge Roadway Width 44.0 ft.	Bridge Railing 1 - MEETS STANDARDS			
Main Span Type	5 - Prestress or Precast	Median Width On Bridge 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 N - NOT REQUIRED			
Appr. Span Type		Structure Flared 0 - No flare	+IN DEPTH INSP.+			
Appr. Span Design		Parallel Structure N - No parallel structure	22			
Appr. Span Detail		Field Conn. ID	Y/N Freq Date			
Skew	5 LEFT	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.			
Ni.	mber of Spans	Waterla Oleton 5 Net all all all	+ W A T E R W A Y +			
	PR: 0 TOTAL:	Historic Status 5 - Not eligible	Drainaga Araa (ag. mi.)			
Main Span Length	91.0 ft.	+ P A I N T +	Drainage Area (sq. mi.) Waterway Opening (sf.)			
Structure Length	403.9 ft.		Navigation Control N - Not applicable, no			
Deck Width (Out-to-		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	4 - Low Slump Concrete	Painted Area sq. ft.	Nav. Vert. Lift Bridge Clear. (ft.)			
Wear Surf Install Ye	ear 1988	Primer Type	MN Scour Code A - NON Year			
Wear Course/Fill De	epth 0.17 ft.	Finish Type	TEB			
Deck Membrane	0 - None		+CAPACITY RATINGS+			
Deck Rebars	1 - Epoxy Coated Reinforcing	+BRIDGE SIGNS+	Design Load 5 - HS 20			
Deck Rebars Install	<b>Year</b> 1988		Operating Rating 2 - HS TRUCK 22.6			
Structure Area (Out	t-to-Out) 25163 <b>sq. ft.</b>	Posted Load 0 - Not Required	Inventory Rating 2 - HS TRUCK 13.5			
Roadway Area (Cur	b-to-Curb) 17771 sq. ft.	Traffic 0 - Not Required	Posting VEH: SEMI: DBL:			
Sidewalk Width 50	<b>0A.</b> Lt 8.00 ft. <b>50B.</b> Rt 8.00 ft.	Horizontal 0 - Not Required	Rating Date 03/31/2015			
Curb Height	Lt 0.83 ft. Rt 0.83 ft.	Vertical N - Not Applicable	Overweight Permit Codes			
Rail Type	Lt 28 Rt 28		A N - N/A B N - N/A C N - N/A			

#### MINNESOTA BRIDGE INSPECTION REPORT

09/29/2016

Inspector: CO Bridge

#### BRIDGE 62546 CSAH 46(RAYMOND) OVER BNSF RR; MC RY YARDS

County:	Ramsey	Location: 0.6 M	I N OF UNIV AVE		Length:	Δ	103.9 ft.		
City:	St Paul Route: 04 - CSAH 46 Ref. Pt.: 005+00.551				Deck Wid		62.3 ft.		
Townsh	nip:	Control Section:			Rdwy. Are		nsnd: 1777	1 sq. ft. /	%
Section		23W Maint. Area:			-		snd: sq. ft	-	
Span Tı List:	ype: 5 - Prestressed Concrete 2 - Stringer/Multi-beam or Girder	Local Agency B	ridge Nbr.:		Culvert: Postings:	N/A	·		
NBI De	ck: 7 Super: 7 Sub: 7 C	han: N Culv: N	I		i ostings.				
110.00	on Paper Paper		osted, Closed: A	- Open					
		· ·	ur Code: A - NON	-					
Apprais	al Ratings - Approach: 9 Waterw	ay: N			Un	official Stru	ucturally De	eficient	N
Require	ed Bridge Signs - Load Posting: 0 - Not	-		Not Required	Un	official Fur	nctionally O	bsolete	N
	Horizntal: 0 - Not	Required	Vertical: N -	Not Applicable	Un	official Suf	ficiency Ra	ıting	84.8
ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
12	Reinforced Concrete Deck	Routine	06/18/2016	25163 SF	25163	0	0	0	
		Migrated Values		25163 SF	25163	0	0	0	
	Notes: Minor transverse under decl Some efflorescence at outside edge Also at some spans on both sides. Leaching at control joint over pier 1	of walk at joints over 98-04							
	510 - Wearing Surfaces	Routine	06/18/2016	17771 SF	17416	0	355	0	
		Migrated Values	5	17771 SF	17416	0	355	0	
	Notes: Some transverse cracks in the Cracks have been sealed with epox Recommend sealing the entire deck	sealant. 2016	6						
109	Prestressed Concrete Open Girder/Beam	Routine	06/18/2016	2418 LF	2418	0	0	0	
		Migrated Values		2418 LF	2418	0	0	0	
	Notes: 54" prestressed beams. 20	14							
205	Reinforced Concrete Column	Routine	06/18/2016	15 EA	15	0	0	0	
-00		Migrated Values		15 EA	15	0	0		
		3					U	0	
	Notes: The west column of the cent	er pier has one sq. ft.	of impact damage	up to one inch	deep. 20	06 No ch	o nange 2016		
 215	Notes: The west column of the cent	er pier has one sq. ft.  Routine		up to one inch	173	06 No ch	_		
 215			06/18/2016				ange 2016	5	
 215		Routine Migrated Values	06/18/2016	188 LF 188 LF	173 173	15	0 ange	0	
 215	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is	Routine Migrated Values loose on No. abutme 2-16  E wing wall. 2012-10	06/18/2016 ent and slope pavin	188 LF 188 LF	173 173	15	0 ange	0	
	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is Crack at SE. abut seat. 2 LF 2012  Wing wall notes: Vertical and horizontal cracking at S	Routine Migrated Values loose on No. abutme 2-16  E wing wall. 2012-10	06/18/2016 ent and slope pavin	188 LF 188 LF	173 173	15	0 ange	0	
	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is Crack at SE. abut seat. 2 LF 2012  Wing wall notes: Vertical and horizontal cracking at SC Cork is also falling out. SE wing wall	Routine Migrated Values loose on No. abutme 2-16 E wing wall. 2012-16 2014-16	06/18/2016 ent and slope pavin	188 LF 188 LF g joint. 2014	173 173 -16	15 15	0 0	0 0	
	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is Crack at SE. abut seat. 2 LF 2012  Wing wall notes: Vertical and horizontal cracking at SC Cork is also falling out. SE wing wall	Routine Migrated Values loose on No. abutme 2-16  E wing wall. 2012-10 2014-16  Routine Migrated Values om the south. ( cantile	06/18/2016 ent and slope pavin 6 06/18/2016	188 LF 188 LF g joint. 2014 308 LF	173 173 -16	15 15 20	0 0	0 0	
 234	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is Crack at SE. abut seat. 2 LF 2012  Wing wall notes: Vertical and horizontal cracking at SC Cork is also falling out. SE wing wall  Reinforced Concrete Pier Cap  Notes: Shear cracking at 3rd and 4th pier for Minor scrapes under south pier cap	Routine Migrated Values loose on No. abutme 2-16  E wing wall. 2012-10 2014-16  Routine Migrated Values om the south. ( cantile 2 locations. 2014	06/18/2016 ent and slope pavin 6 06/18/2016 evers ) 2012-16	188 LF 188 LF g joint. 2014 308 LF 308 LF	173 173 -16 288 288	15 15 20 20	0 0	0 0	
	Reinforced Concrete Abutment  Notes: 3/4 of the 3 ply waterproof is Crack at SE. abut seat. 2 LF 2012  Wing wall notes: Vertical and horizontal cracking at SC Cork is also falling out. SE wing wal  Reinforced Concrete Pier Cap  Notes: Shear cracking at 3rd and 4th pier for	Routine Migrated Values loose on No. abutme 2-16  E wing wall. 2012-10 2014-16  Routine Migrated Values om the south. ( cantile	06/18/2016 ent and slope pavin 06/18/2016 06/18/2016 06/18/2016	188 LF 188 LF g joint. 2014 308 LF	173 173 -16	15 15 20	0 0 0	0 0	

## BRIDGE 62546 CSAH 46(RAYMOND) OVER BNSF RR; MC RY YARDS

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
301	Pourable Joint Seal	Routine Migrated Values	06/18/2016	436 LF 436 LF	436 436	0 0	0 0	0 0	
	Notes: All pourable approach joints ha	ve been resealed with	hot rubber. 2	2016					
311	Movable Bearing	Routine Migrated Values	06/18/2016	60 EA 60 EA	60 60	0	0	0	
	Notes: Sliding bearings at abutments r Expansion bearing locations S.abut - 6 Pier 1 - 12 Pier 2 - 12 Pier 4 - 12 Pier 5 - 12 N.abut - 6	•	2012						
313	Fixed Bearing	Routine	06/18/2016	12 EA	12	0	0	0	
		Migrated Values		12 EA	12	0	0	0	
	Notes: Pier 3 has 8 fixed bearings and	4 fascia bearings that	t are able to mo	ve outward. 20	14				
321	Reinforced Concrete Approach Slab	Routine	06/18/2016	1760 SF	874	880	6	0	
		Migrated Values		1760 SF	874	880	6	0	
	Notes: Longitudinal crack NB. lane. 20 South approach panel curbing - 6 LF m North approach panel curbing - 2 LF m Cracks have been sealed with epoxy s	nissing / sheared off. 2 issing / cracked. 2014							
330	Metal Bridge Railing	Routine	06/18/2016	2644 LF	2644	0	0	0	
		Migrated Values		2644 LF	2644	0	0	0	
	515 - Steel Protective Coating	Routine	06/18/2016	2368 SF	2368	0	0	0	
		Migrated Values		2368 SF	2368	0	0	0	
	Notes: The metal railings were painted	_							
331	Reinforced Concrete Bridge Railing	Routine	06/18/2016	2644 LF	2644	0	0	0	
		Migrated Values		2644 LF	2644	0	0	0	
	Notes: Numerous vertical cracks in pa The inside face of the concrete railings								
800	Critical Deficiencies or Safety Hazards	Routine	06/18/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: NO CRITICAL FINDINGS OBS	ERVED DURING THE	E LAST INSPEC	TION. 2016	6				
B10	Concrete Decks - Cracking & Sealing	Routine	06/18/2016	882 LF	432	450	0	0	
		Migrated Values		882 LF	432	450	0	0	
	Notes: Some transverse cracking in th Cracks have been sealed with epoxy s Recommend sealing the entire deck.		sent. 2016						
855	Secondary Members (Superstructure)	Routine	06/18/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: Diaphragms and pier crash stru Vertical and map cracking of the crash Minor impact damage and scrapes on	struts 2, 3 and 4 - N. s		-16					
880	Impact Damage	Routine	06/18/2016	1 EA	0	1	0	0	
		Migrated Values		1 EA	0	1	0	0	
	Notes: Minor impact damage to the ea	•	h piers. 1996-	-16					

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4		
883	Concrete Shear Cracking	Routine	06/18/2016	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 prestressed concrete beams.  Shear cracking at 3rd and 4th pier from the south. (cantilevers) Monitor 2012-16									
 892	Slopes & Slope Protection	Routine	06/18/2016	1 EA	1	0	0	0		
002		Migrated Values	00/10/2010	1 EA	1	0	0	0		
 893	Guardrail	Routine	06/18/2016	1 EA	1	0	0	0		
		Migrated Values		1 EA	1	0	0	0		
	Notes: Posted speed does NOT ex	ceed 40 MPH. 2014								
894	Deck & Approach Drainage	Routine	06/18/2016	1 EA	1	0	0	0		
		Migrated Values		1 EA	1	0	0	0		
	Notes: Use this element to rate the condition, function, and adequacy of the drainage system.									
895	Sidewalk, Curb, & Median	Routine	06/18/2016	1 EA	1	0	0	0		
		Migrated Values		1 EA	1	0	0	0		
	Notes: Two lighting pull boxes are SE. walk approach panel sunk. Bitu Transverse and longitudnal cracking	uminous patch in place.		004-10						
	There are numerous cracks betwee NW approach walk settled 1 inch.		91-99							
899	Miscellaneous Items	Routine	06/18/2016	1 EA	1	0	0	0		
		Migrated Values		1 EA	1	0	0	0		
	Notes: Several vertical cracks 6' to Alligator cracking in special surface SE wall tipped out 1/2" at abut. 2 There are 12 light pole on the bridg	e finish. 92-10 2010	g wall with a coup	ole of cork joints	open up t	o 1/4".	91-04			
900	Protected Species	Routine	06/18/2016	1 EA	1	0	0	0		
	·	Migrated Values		1 EA	1	0	0	0		
	Notes: Use this element to track the None found in 2016.	e presence of protected	species living on	this structure.						

General Notes:

58. Deck NBI:

36A. Brdg Railings NBI:

36B. Transitions NBI: Posted speed does NOT exceed 40 MPH. 2014

36C. Appr Guardrail NBI:

36D. Appr Guardrail

Terminal NBI:

59. Superstructure NBI: Minor deterioration. 2014

60. Substructure NBI:

61. Channel NBI:

62. Culvert NBI:

71. Waterway Adeq NBI:

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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	
	or Roadway Inment NBI:								
Inver	ntory Notes:								
	Joe Grau		_		G	Blenn Pag	jel		
·	Inspector's Signature	·	_		Revi	ewer's Siar	nature		-



1. 2014 elevation view\_1.JPG



2. 2014 elevation view\_2.JPG



3. 2014 elevation view\_3.JPG



4. 20160614\_1.jpg



5. 20160614\_2.jpg



6. 20160614\_3.jpg



7. 20160614\_4.jpg



8. 20160614\_5.jpg



9. 20160614\_6.jpg



10. 20160614\_7.jpg