2016 ROUTINE BRIDGE INSPECTION REPORT



BRIDGE # 656 CP RAIL over CSAH 76(SNELLING AV)

DISTRICT: Metro COUNTY: Ramsey CITY/TOWNSHIP: Arden Hills

STATE: Minnesota

Date of Inspection: 09/13/2016

Equipment Used:

Owner: Railroad

Inspected By: Bodelson, Dan

Report Written By: Dan Bodelson

Report Reviewed By: Nicklaus Fischer

Final Report Date: 10/31/2016



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Minnesota Structure Inventory Report

over CSAH 76(SNELLING AV) Bridge ID: 656 Date: 10/31/2016 **CP RAIL** INSPECTION **GENERAL ROADWAY** Bridge Match ID (TIS) Userkey 102 Agency Br. No. **District** Metro Roadway O/U Key none Unofficial Structurally Deficient N Maint. Area Crew **Route Sys** Number **Unofficial Functionally Obsolete N** County 062 - Ramsey **Roadway Name or Description Unofficial Sufficiency Rating** City Arden Hills **Routine Inspection Date** 09/13/2016 **Township** Level of Service **Routine Inspection Frequency** 12 Desc. Loc. 0.2 MI N OF JCT CSAH 15 Inspector Name CO Bridge Roadway Type - 030N - 23W Sect., Twp., Range 27 **Status** A - Open Control Section (TH Only) **Deg** 45 **Sec** 11.29 Latitude Min 3 Reference Point **NBI CONDITION RATINGS** Longitude Deg 93 Sec 53.12 Min 9 Deck **Detour Length** N - Not Applicable Custodian 27 - Railroad **Unsound Deck %** Lanes On Under 2 Owner 27 - Railroad Superstructure 5 - Fair Condition ADT Year **BMU Agreement** Substructure 4 - Poor Condition ADTT 0 % HCADT 0 Year Built 1927 Channel N - Not Applicable **Functional Class MN Year Reconstructed** Culvert N - Not Applicable **RDWY DIMENSIONS FHWA Year Reconstructed NBI APPRAISAL RATINGS** SB-WB If Divided **NB-EB MN Temporary Status** Structure Evaluation N Roadway Width ft. ft. Bridge Plan Location 0 - NO PLAN **Deck Geometry** N **Vertical Clearance** ft **Date Opened to Traffic Underclearances** Max. Vert. Clear. ft. ft. **On-Off System** 0 - OFF Water Adequacy N - Not Applicable Horizontal Clear. ft. Legislative District 50B Approach Alignment N - Not Applicable Lateral Clearance ft. ft. **ABC Suitable SAFETY FEATURES** Appr. Surface Width ft. **STRUCTURE** Bridge Railing N - NOT REQUIRED **Bridge Roadway Width** ft. Service On 2 - Railroad **GR Transition** N - NOT REQUIRED Median Width On Bridge Service Under 1 - Highway, w/ or w/out ped. Appr. Guardrail N - NOT REQUIRED MISC. BRIDGE DATA Main Span Type **GR Termini** N - NOT REQUIRED Structure Flared 0 - No flare 4 - Steel Continuous 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 2 - Riveted Frac. Critical Ν Abutment Foundation 1 - CONC Underwater Ν Appr. Span Detail (Material/Type) 0 - UNKNOWN Pinned Asblv. Skew 1 - CONC Pier Foundation Spec. Feat. **Culvert Type** (Material/Type) 0 - UNKNOWN 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 1961 APPR: 0 TOTAL: 3 **MAIN:** 3 **Pier Protection Unsound Paint %** Main Span Length 33.9 ft. Nav. Clr. (ft.) Vert. ft. Horiz. ft. Painted Area sq. ft. Structure Length 61.7 Nav. Vert. Lift Bridge Clear. (ft.) ft. Primer Type 1 - Lead - non 3309 MN Scour Code A - NON WATER' Year Deck Width (Out-to-Out) 25.5 ft. Finish Type **Deck Material** N - Not Applicable **CAPACITY RATINGS Wear Surf Type** N - Not Applicable (applies onl **Design Load** 8 - RAILROAD **BRIDGE SIGNS** Wear Surf Install Year Operating Rating 2 - AS HS 65.0 Posted Load 0 - Not Required Wear Course/Fill Depth 0.00 Inventory Rating 2 - AS HS 65.0 Traffic 0 - Not Required Deck Membrane 0 - None Posting VEH: DBL: **Deck Rebars** N - Not Applicable (no deck) Horizontal 1 - Object Markers **Rating Date Deck Rebars Install Year** Vertical 0 - Not Required **Minnesota Permit Codes** Structure Area (Out-to-Out) 1573 sa. ft. A: N - N/A Roadway Area (Curb-to-Curb) sq. ft. Sidewalk Width Lt 0.00 ft. Rt 0.00 B: N - N/A ft. C: N - N/A

Curb Height

Rail Type

Lt 0.00

Lt NN

ft. Rt 0.00

Rt NN

ft

Minnesota Structure Inventory Report

Date: 09/14/2016

Bridge ID: 656

CP RAIL over CSAH 76(SNELLING AV)

	+ G E N E R A L +	+ R O A D W A Y +	+INSPECTION+
	Crew	Bridge Match ID (TIS)	
Agency Br. No.		, ,	1
District	05 Maint. Area	Roadway O/U Key	Structurally Deficient N
County	062 - Ramsey	Route Sys Number	Functionally Obsolete N
City	Arden Hills	Roadway Name or Description	Sufficiency Rating -2
Township			Routine Inspection Date 09/13/2016
Desc. Loc.	0.2 MI N OF JCT CSAH 15	Level of Service	Routine Inspection Frequency 12
Sect., Twp., Range		Roadway Type	Inspector Name Bodelson, Dan
Latitude	45 ° 3 ' 11.29 "	Control Section (TH Only)	Status A - Open
Longitude	93 ° 9 ' 53.12 "	Reference Point	+NBI CONDITION RATINGS+
Custodian	27 - Railroad	Detour Length mi.	Deck N Unsound
Owner	27 - Railroad	Lanes ON UNDER 2	Superstructure 5
BMU Agreement		ADT YEAR	Substructure 4
Year Built	1927	HCADT ADTT %	Channel N
MN Year Reconstru	cted	Functional Class	Culvert N
FHWA Year Recons	structed		Guiveit iv
MN Temporary Stat	us	+RDWY DIMENSIONS+	+NBI APPRAISAL RATINGS+
Bridge Plan Location	on 0 - NO PLAN		Structure Evaluation N
Date Opened to Tra	ffic	If Divided NB-EB SB-WB	Structure Evaluation N
On - Off Syster	n 0 - OFF	Roadway Width ft. ft.	Deck Geometry N
Legislative District	50B	Vertical Clearance ft. ft.	Underclearances 2
Potential ABC	2 - N/A	Max. Vert. Clear. ft. ft.	Waterway Adequacy N
	STRUCTURE+	Horizontal Clear. ft. ft.	Approach Alignment N
+3	STRUCTURE+	Lateral Clearance ft. ft.	+SAFETY FEATURES+
Service On	2 - Railroad	Appr. Surface Width ft.	
Service Under	1 - Highway, w/ or w/out ped.	Bridge Roadway Width ft.	Bridge Railing N - NOT REQUIRED
Main Span Type	4 - Steel Continuous	Median Width On Bridge ft.	GR Transition N - NOT REQUIRED
Main Span Design	01 - Beam Span	MICO BRIDGE BATA	Appr. Guardrail N - NOT REQUIRED
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	52
Appr. Span Detail		Field Conn. ID 2 - Riveted	Y/N Freq Date
Skew	0	Abutment 1 - CONC Foundation	Frac. Critical N
Culvert Type		(Material/Type) 0 - UNKNOWN	Underwater N
Barrel Length		Pier Foundation 1 - CONC	Pinned Asbly. N
Cantilever ID		(Material/Type)	Spec. Feat.
		0 - UNKNOWN	+ W A T E R W A Y +
Nu	mber of Spans	Historic Status 5 - Not eligible	TWAIERWAIT
MAIN: 3 AP	PR: 0 TOTAL:	<u>-</u>	Drainage Area (sq. mi.)
Main Span Length	33.9 ft.	+PAINT+	Waterway Opening (sf.)
Structure Length	61.7 ft.		Navigation Control N - Not applicable, no
Deck Width (Out-to-	-Out) 25.5 ft.	Year Painted 1961	Pier Protection _
Deck Material	N - Not Applicable	Unsound Paint %	Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0
Wear Surf Type	N - Not Applicable (applies	Painted Area sq. ft.	Nav. Vert. Lift Bridge Clear. (ft.)
Wear Surf Install Ye	ear	Primer Type 1 - Lead - non 3309	MN Scour Code A - NON Year
Wear Course/Fill De	epth 0.00 ft.	Finish Type	WATERWAY.
Deck Membrane	0 - None		+CAPACITY RATINGS+
Deck Rebars	N - Not Applicable (no deck)	+BRIDGE SIGNS+	Design Load 8 - RAILROAD
Deck Rebars Install			Operating Rating 7 - RAILROAD 65.0
Structure Area (Out	:-to-Out) 1573 sq. ft.	Posted Load 0 - Not Required	Inventory Rating 7 - RAILROAD 65.0
Roadway Area (Cur	· ·	Traffic 0 - Not Required	Posting VEH: SEMI: DBL:
Sidewalk Width 5		Horizontal 1 - Object Markers	Rating Date
Curb Height	Lt 0.00 ft. Rt 0.00 ft.	Vertical 0 - Not Required	Overweight Permit Codes
Rail Type	Lt NN Rt NN	, '	A N - N/A B N - N/A C N - N/A
]

MINNESOTA BRIDGE INSPECTION REPORT

10/31/2016

BRID	BRIDGE 656 CP RAIL OVER CSAH 76(SNELLING AV)						ROUTINE INSP. DATE: 09/13/2016					
County	r: Ramsey		Lo	ocation: 0.2 M	II N OF JCT	CSAH	15	Length:		61.7 ft.		
City:	Arden Hills		R	oute:	Ref	Pt.:		Deck Wid	lth:	25.5 ft.		
Towns	hip:		C	ontrol Section:				Rdwy. Ar	ea/ Pct. Ur	nsnd: sq. ft	./%	
Section	n: 27 Town	ship: 030N Ra	ange: 23W	Maint. Area:				Paint Are	a/ Pct. Uns	snd: sq. ft	./%	
Span T	ype: 4 - Steel Co			Local Agency E	Bridge Nbr.:			Culvert:	N/A			
List:	Stringer/Mul	lti-beam or Gird	er					Postings:				
NBI De	eck: N Super	r: 5 Sub: 4	4 Chan:	N Culv: 1	N							
				Open, F	osted, Close	ed: A	- Open					
					ur Code: A	- NON	WATERWAY					
	sal Ratings - Appr		Vaterway:					Un	official Str	ucturally De	eficient l	N
Requir	ed Bridge Signs -	_	-		Traffic:		Not Required	Un	official Fur	nctionally O	bsolete I	N
		Horizntal:	1 - Object Ma	irkers	Vertical:	1 - 0	Not Required	Un	official Suf	ficiency Ra	ting I	N
ELEM NBR		TNAME	ENIV/	REPORT TYPE	INSP.		QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
INDIX	ELEMEN	I NAIVIE	ENV	REPORT TIPE	INSP.	DATE	QUANTITY		<u> </u>			
107	Painted Steel G	irder or Beam	2	Routine	09/13/	2016	489 LF	0	0	489	0	0
				Routine	09/25/	2015	489 LF	0	0	489	0	0
205	Reinforced Con	Notes: [2014] [2013] Reinford [2009-2013] TI [2010-2013] C [2010-2013] C [2008-2013] C [2008-2013] C East and west NE pier has has Some epoxy w	Repaired conced concrete nere is major olumn #1 has oncrete column umns #3 & piers are sevairline crack a fork on lower	Routine Routine Routine Routine Columns, columns contain spalling & delar is major delamina mns #1, #6, #8, is major delamina #5 contain major verely spalled, rett filet. 1983. pier at retaining	o9/13// 09/25// poured as to major delamination with ation 3'X2' at #10 had ation near the or delamination grade inforcing stern wall level 19	2016 2015 wo reinf mination expose a with we dela e top won. eel expo	10 EA 10 EA forced concretion with section loss. mination and eith section loss. posed w/corrosionsmetic work d	0 0 0 e pier walls loss. Could west side exposed rel s.	10 10 (27' each) I use shot- of the east par w/loss	0 0 crete rehab pier web. of section.	0 0 oilitation.	N/A N/A
210	Reinforced Con	crete Pier Wall	2	Routine	09/13/	2016	54 LF	0	54	0	0	N/A
				Routine	09/25/	2015	54 LF	0	54	0	0	N/A
		[2014] Repaire	d concrete c	inor horizontal & olumns with reir n 2014 Bridge Ir	forced conc	rete pie			oier walls.			
215	Reinforced Con Abutment	crete	2	Routine	09/13/	2016	52 LF	0	40	12	0	N/A
				Routine	09/25/	2015	52 LF	0	40	12	0	N/A
		[2004-2015] D Major spalling [2007-2015] TI [2003-2015] TI [2003-2015] 78	elamination vand delamination value is 2.5' and the condition of the condi	spalling of parapy/spalling is preation is present rea of delaminate reaccional r	sent at back at SW & NE ion @ NE co ion & spallin '% in condition	wall of corners orner of g on the on state	both abutments. east abutmente east abutmente #3. Abutmente	t. nt at centei	·.	-		

ROUTINE INSP. DATE: 09/13/2016

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	09/13/2016	72 LF	0	72	0	0	N/A
			Routine	09/25/2015	72 LF	0	72	0	0	N/A
	[2013] The re WEST PIER ({2014] Repair [2013] Major : present betwe EAST PIER ([2014] Repair [2007-2013] T	nforced cor CAP ed spalling and en columns AP ed here is a 6	pier caps with pier wancrete cap has 75% in delamination locate is #1 . The crack at the east sign of spalling located on	in condition state d at the south en	#2 and 25% in d of the west ca	ap. [2006-2 beginning	2013] There	e moderate		
311	Expansion Bearing	2	Routine	09/13/2016	32 EA	0	16	16	N/A	N/A
	,		Routine	09/25/2015	32 EA	0	16	16	N/A	N/A
	replacement. [1983-2014] T	he north 16	de bearings require of bearings have mod h side of bridge. [200	erate corrosion. [2001-2014] The	e south 16	bearings h		nced corros	
										NI/A
362	Traffic Impact Smart Flag	2	Routine Routine	09/13/2016 09/25/2015	1 EA 1 EA	0	1 1	0	N/A N/A	N/A N/A
	Notes: [2014	Repaired (09/25/2015 oured as two reini	1 EA	0 pier walls	1	0	N/A	N/A
	Notes: [2014 [2002-2013] T Critical Finding Smart Flag	Repaired of raffic impact	Routine concrete columns, port on columns have concrete Routine	09/25/2015 Dured as two reinfoccurred & patched 09/13/2016 09/25/2015	1 EA forced concrete ed. Patches are 1 EA 1 EA	0 e pier walls letting loc	1 se. Recom	0 amend short N/A	N/A t-crete reha N/A	N/A abilitation N/A
964	Notes: [2014 [2002-2013] T Critical Finding Smart Flag	Repaired of raffic impact	Routine concrete columns, po ct on columns have o Routine Routine	09/25/2015 Dured as two reinfoccurred & patched 09/13/2016 09/25/2015	1 EA forced concrete ed. Patches are 1 EA 1 EA	0 e pier walls letting loc	1 se. Recom	0 amend short N/A	N/A t-crete reha N/A	N/A abilitation N/A
964 	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N	Repaired of raffic impact 2 OT DELETI	Routine concrete columns, po ct on columns have o Routine Routine E THIS CRITICAL FI	09/25/2015 oured as two reintoccurred & patcher 09/13/2016 09/25/2015 NDING SMART F	1 EA forced concrete ed. Patches are 1 EA 1 EA FLAG.	0 pier walls letting loc	1 sse. Recom 0 0	0 nmend shor N/A N/A	N/A t-crete reha N/A N/A	N/A abilitation N/A N/A
964	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N Signing	Repaired of raffic impact 2 OT DELETI 2 Hazard mali marker on	Routine concrete columns, po ct on columns have o Routine Routine E THIS CRITICAL FI	09/25/2015 oured as two reint occurred & patcher on the patcher of the patcher o	1 EA forced concrete ed. Patches are 1 EA 1 EA FLAG. 1 EA 1 EA	0 pier walls letting loo	1 sse. Recom	0 nmend shor N/A N/A	N/A t-crete reha N/A N/A	N/A abilitation N/A N/A
964 981	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N Signing	Repaired of raffic impact 2 OT DELETI 2 Hazard mali marker on	Routine concrete columns, poet on columns have of Routine Routine E THIS CRITICAL FI Routine Routine Routine Routine Routine Routine	09/25/2015 oured as two reint occurred & patcher on the patcher of the patcher o	1 EA forced concrete ed. Patches are 1 EA 1 EA FLAG. 1 EA 1 EA	0 pier walls letting loo	1 sse. Recom	0 nmend shor N/A N/A	N/A t-crete reha N/A N/A	N/A abilitation N/A N/A
964 981	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N Signing Notes: [2015 [2014] Hazard [2002-2015] A	Repaired of raffic impact 2 OT DELETI 2 Hazard male imarker on all appropria	Routine concrete columns, poet on columns have of Routine Routine E THIS CRITICAL FI Routine Routine Routine arker on SE corner has E corner needs to attention are in place	09/25/2015 Dured as two reint occurred & patcher og/13/2016 09/25/2015 NDING SMART F 09/13/2016 09/25/2015 as been installed be installed.	1 EA forced concrete ed. Patches are 1 EA 1 EA 1 EA 1 EA 1 EA 1 EA	o pier walls letting loc	1	0 nmend shor N/A N/A 0 0	N/A N/A N/A 0 0	N/A N/A N/A O O
964	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N Signing Notes: [2015 [2014] Hazard [2002-2015] A Approach Guardrail	Prepaired of traffic impact 2 OT DELETI 2 Hazard mater on a marker on a ma	Routine concrete columns, por concrete columns have of the concolumns have of the concolumns have of the columns have of the columns have of the columns have on the columns have concolumns arker on SE corner has a corner has a corner needs to the columns have on the columns have been concolumns.	09/25/2015 Dured as two reint occurred & patcher op/13/2016 09/25/2015 NDING SMART F 09/13/2016 09/25/2015 as been installed be installed. 09/13/2016 09/25/2015 crapes to guardradrail on both side ide.	1 EA forced concrete ed. Patches are 1 EA 1 E	0 e pier walls letting loc	1	nmend short N/A N/A 0 0	N/A N/A 0 0 N/A N/A	N/A Abilitation N/A N/A 0 0
964 981	Notes: [2014 [2002-2013] T Critical Finding Smart Flag Notes: DO N Signing Notes: [2015 [2014] Hazard [2002-2015] A Approach Guardrail	Prepaired of traffic impact 2 OT DELETI 2 Hazard mater on a marker on a ma	Routine concrete columns, poet on columns have of Routine Routine E THIS CRITICAL FI Routine Routine arker on SE corner h SE corner needs to ate signs are in place Routine Routine minor to moderate so inor scrapes to guard on road departure set at the concrete signs are in place.	09/25/2015 Dured as two reint occurred & patcher op/13/2016 09/25/2015 NDING SMART F 09/13/2016 09/25/2015 as been installed be installed. 09/13/2016 09/25/2015 crapes to guardradrail on both side ide.	1 EA forced concrete ed. Patches are 1 EA 1 E	0 e pier walls letting loc	1	nmend short N/A N/A 0 0	N/A N/A 0 0 N/A N/A	N/A Abilitation N/A N/A 0 0

Notes: [2014-2015] Ballast is over top of curb on SE & NE corners & should be cleaned off of raodway.

[2011-2015] Minor erosion at the SW & SE corners.

The west slope has a new C.I.P. concrete retaining wall installed in 2010.

[2009-2015] There is settlement of ballast slope protection at the east abutment.

[2005-2014] Slight movement of grouted slope paving at the NW corner. Pre-cast concrete wingwall added to the NE & NW corners in 2000.

[2002-2013] Recommend timber boards at SW & SE corners to retain ballast. Ballast is moving into the guardrail at the SE corner.

BRIDGE 656 CP R	RAIL OVER CSAH 76	ROUTINE INSP. DATE: 09/13/2016							
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
	[2014] Bridge safety ins [2013] Bridge safety ins [2012] Bridge safety ins 2011 Bridge safety insp 2010 Bridge safety insp Contractor installed reta 2009 Bridge safety insp 2008 Bridge safety insp 2007 Bridge safety insp 2006 Bridge safety insp 2006-2009 No railing or was installed. Bottlened All new ties & decking in	spection was conducted spection was completed section was complete	ted on 9/25/2013 ated by B. Wieman ad by B. Wieman ad by B. Wieman at west end of the ad by B. Wieman ad by B. Wieman ad by B. Wieman ad by B. Wieman ad by Bret Wiema ae bridge on top.	B by Dan Bodels an on 10/23/201 on 10/21/2011. on 11/10/2010. e bridge 2010. on 8/3/2009. G 10/21/2008. Gr 8/28/2007. an. 10/24/2006. The south 1/2 c	on & Briar 2. raffiti is on affiti is on	abutments abutrian traf	, pier colur fic only.[20	nns & pier	webs.
	CSAH 76 (Snelling Ave No deck	.) under CP Rail							
36A. Brdg Railings NBI:	No bridge railing								
36B. Transitions NBI:	Roadway under railroad	d.							
36C. Appr Guardrail NBI:	Roadway under railroad	d.							
36D. Appr Guardrail Terminal NBI:		d.							
59. Superstructure NBI:	Extensive rust & corros	ion							
60. Substructure NBI:	Major spalling on both a Colunms have been rep		vo pier walls						
61. Channel NBI:	Roadway under railroad	d.							
62. Culvert NBI:	Roadway under railroad	d.							
71. Waterway Adeq NBI:	Roadway under railroad	d.							
72. Appr Roadway Alignment NBI:		d.							
Inventory Notes:									
ſ	Dan Bodelson				Nic	cklaus Fis	scher		
			_		. 110				

Dan Bodelson	Nicklaus Fischer
Inspector's Signature	Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

10/31/2016

Inspector: CO Bridge

BRIDGE 656 CP RAIL OVER CSAH 76(SNELLING AV)

County: Ramsey Location: 0.2 MI N OF JCT CSAH 15 Length: 61.7 ft. City: Arden Hills Route: Ref. Pt.: Deck Width: 25.5 ft. Township: Control Section: Rdwy. Area/ Pct. Unsnd: sq. ft. / % Section: 27 Township: 030N Range: 23W Maint. Area: Paint Area/ Pct. Unsnd: sq. ft. / % Span Type: 4 - Steel Continuous 2 -Local Agency Bridge Nbr.: Culvert: N/A Stringer/Multi-beam or Girder List: Postings: NBI Deck: N Super: 5 Sub: 4 Chan: N Culv: N Open, Posted, Closed: A - Open MN Scour Code: A - NON WATERWAY Appraisal Ratings - Approach: Ν Waterway: **Unofficial Structurally Deficient** Ν Required Bridge Signs - Load Posting: 0 - Not Required Traffic: 0 - Not Required Unofficial Functionally Obsolete N Horizntal: 1 - Object Markers Vertical: 0 - Not Required **Unofficial Sufficiency Rating** Ν **ELEM** QTY QTY QTY QTY **NBR ELEMENT NAME** REPORT TYPE INSP. DATE **QUANTITY** CS₁ CS₂ CS₃ CS₄ Steel Open Girder/Beam 489 LF 0 489 0 0 107 Routine 09/13/2016 489 LF 0 489 n 0 Migrated Values Notes: [2007-2016] Paint system has failed. Diaphragms are in place and girders are still in good alignment, but freckled rust is prevalent. [2005-2016] Steel girders contain some minor section loss. Steel girders need paint. Steel girders contain some lead paint. [2005-2016] No collision damage to steel girders. Rail is active on the north side of the bridge. 515 - Steel Protective Coating 4500 Routine 09/13/2016 4500 SF 0 Migrated Values 4500 SF 0 4500 Notes: [2016] Migrator assumed quantity of 999 SF and estimated the condition states. [2016] Outer beams (pier walls to abutments) 1.67' web x 0.69' flange x 0.04' thick = 6.18 SF/ft. x 14' long x 16 = 1384 SF [2016] Inner beams (between pier walls) 2.35' web x 1.2' flange x 0.07 thick = 9.78 SF/ft. x 33' long x 8 = 2582 SF [2016] Outer diaphrams 2.6' x 1.25' = 3.25 SF x 2 sides = 6.5 SF each x (18 west + 18 east) = 234 SF [2016] Inner diaphrams 2.5' x 2.0' = 5.00 SF x 2 = 10.00 SF each x 30 = 300 SF 0 10 EA 0 10 0 205 Reinforced Concrete Column Routine 09/13/2016 10 EA 0 Migrated Values 0 10 0 Notes: [2016] Concrete columns have minor cracks with rust stain from beams above. [2014] Repaired concrete columns, poured as two reinforced concrete pier walls (27' each). [2013] Reinforced concrete columns contain major delamination with section loss. Could use shot-crete rehabilitation. [2009-2013] There is major spalling & delamination with exposed rebar to the west side of the east pier web. [2010-2013] Column #1 has major delamination 3'X2' area with section loss. [2003-2013] Concrete columns #1, #6, #8, #9 & #10 have delamination and exposed rebar w/loss of section. [2010-2013] Column #7 has major delamination near the top with section loss. [2008-2013] Columns #3 & #5 contain major delamination. East and west piers are severely spalled, reinforcing steel exposed w/corrosion. 1983-1984. Patched 1986. NE pier has hairline crack at filet, 1983. Some epoxy work on lower pier at retaining wall level 1984. Cosmetic work done is holding on west pier 1987-1988. 210 Reinforced Concrete Pier Wall 09/13/2016 54 LF 0 54 0 0 Routine 0 Migrated Values 54 LF 54 0 Notes: [2015-2016] Numorous minor horizontal & vertical cracks w/ effluence & rust on both pier walls. [2014] Repaired concrete columns with reinforced concrete pier walls over the summer [2014] added this element in 2014 Bridge Inspection Report Reinforced Concrete Abutment 52 LF 0 40 12 0 215 Routine 09/13/2016 12 0 52 I F 40 Migrated Values Notes: [2016] West abutment has 2' x 6' moderate spall & 1' x 4' moderate spall in top of south end. [2014-2016] Major spalling of parapet of both abutments. [2004-2016] Delamination w/spalling is present at backwall of both abutments. Also minor vertical cracking on west abutment. Major spalling and delamination is present at SW & NE corners. [2007-2016] There is 2.5' area of delamination @ NE corner of east abutment. [2003-2016] There is 2.5' area of delamination & spalling on the east abutment at center. [2003-2016] 75% in condition state #2 & 25% in condition state #3. Abutment backwalls were modified to install steel girders. [1983-2015] Some erosion back side of abutments at all 4 corners.

BRIDGE 656 CP RAIL OVER CSAH 76(SNELLING AV)

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
234	Reinforced Concrete Pier Cap	Routine	09/13/2016	72 LF	0	72	0	0
		Migrated Values		72 LF	0	72	0	0
	Notes: [2014-2016] Repaired pier caps [2013] The reinforced concrete cap has WEST PIER CAP {2014] Repaired [2013] Major spalling and delamination columns #1 3. EAST PIER CAP [2014] Repaired [2007-2013] There is a 6' crack at the e [2002-2013] There is 3' of spalling local	s 75% in condition stated at the south wast side of east cap wast side	ate #2 and 25% in end of the west of with delamination	n condition state cap. [2006-2013 n beginning. Als	i] There is o some me			
11	Movable Bearing	Routine	09/13/2016	32 EA	0	32	0	0
		Migrated Values		32 EA	0	32	0	0
300	[2010-2014] The north side bearings re [1983-2014] The north 16 bearings hav No active rail on the south side of bridg Critical Deficiencies or Safety Hazards	e moderate corrosion	n. [2001-2014] Th	ne south 16 bea				
		Migrated Values	00, 10, 20 10	1 EA	1	0	0	0
	Notes: NO CRITICAL FINDINGS OBS	· ·	E LAST INSPEC			-	-	-
30	Impact Damage	Routine	09/13/2016	1 EA	0	1	0	0
	Notes: [2016] No impact damage. [2014] Repaired concrete columns, pou [2002-2013] Traffic impact on columns	Migrated Values ured as two reinforced have occurred & pate	d concrete pier w ched. Patches ar	1 EA valls. re letting loose.	Recomme	nd shot-cre	ete rehabilit	ation.
83	Concrete Shear Cracking	Routine	09/13/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2016] No shear cracking prese Use this element to monitor the presen	ent. ce of shear cracking	on concrete elen	nents. Pay parti	cular atten	tion to the	concrete pi	ier caps.
91	Other Bridge Signing	Routine	09/13/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2016] Signing OK [2015] Hazard marker on SE corner ha [2014] Hazard marker on SE corner ne [2002-2015] All appropriate signs are ir	eds to be installed.						
92	Slopes & Slope Protection	Routine	09/13/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
	Notes: [2014-2016] Ballast is over top [2011-2016] Minor erosion at the SW & The west slope has a new C.I.P. concre [2009-2016] There is settlement of balla [2005-2014] Slight movement of groute [2002-2013] Recommend timber board	SE corners. ete retaining wall insta ast slope protection a d slope paving at the	alled in 2010. It the east abutm NW corner. Pre	ent. -cast concrete v	vingwall ad	dded to the		
93	Guardrail	Routine	09/13/2016	1 EA	0	0	0	1
		Migrated Values	55, . 5, 25 . 6	1 EA	0	0	0	1
	Notes: [2015-2016] There are minor to [2007-2014] There are minor scrapes to [1983-2014] No guardrail on road depa [1994-2014] Guardrail system should b	moderate scrapes to guardrail on both si rture side.	des.		-	-	-	

BRIDGE 656 CP RAIL OVER CSAH 76(SNELLING AV)

Inspector's Signature

ELEM NBR		ENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
894	Deck & Approach	Drainage	Routine	09/13/2016	1 EA	1	0	0	0
			Migrated Values		1 EA	1	0	0	0
		Roadway under railroa nt to rate the condition		cy of the drainag	e system.				
900	Protected Specie	s	Routine	09/13/2016	1 EA	1	0	0	0
	N-4 [0040]	NI	Migrated Values		1 EA	1	0	0	0
		No protective species f nt to track the presence		living on this stru	ucture.				
	General Notes:	[2015] Bridge safety i [2014] Bridge safety i [2013] Bridge safety i [2012] Bridge safety in 2011 Bridge safety in Contractor installed re 2009 Bridge safety in 2008 Bridge safety in 2007 Bridge safety in 2006 Bridge safety in 2006 Bridge safety in	nspection was completed inspection was completed inspection was completed inspection was conducted inspection was conducted inspection was completed in was completed in the south side of the condition exists on installed in 1988.	ted on 9/25/2015 ted on 9/25/2014 ted on 9/25/2013 ted by B. Wieman d by B. Wieman	by Dan Bodels by Dan Bodels by Dan Bodels by Dan Bodels an on 10/23/201 on 10/21/2011. on 11/10/2010. e bridge 2010. on 8/3/2009. G 10/21/2008. Gr 8/28/2007. an. 10/24/2006. The south 1/2 of	son & Briar son & Briar 2. raffiti is on carries ped	n Essler n Essler n Essler abutments abutments estrian traf	s, pier colu , pier colur fic only.[20	nns & pier webs.
	58. Deck NBI:	CSAH 76 (Snelling Av No deck	ve.) under CP Rail						
36A. E	Brdg Railings NBI:	No bridge railing							
36E	B. Transitions NBI:	Roadway under railro	ad.						
36C. Ap	opr Guardrail NBI:	Roadway under railro	ad.						
36	D. Appr Guardrail Terminal NBI:	Roadway under railro	ad.						
59. St	uperstructure NBI:	Extensive rust & corre	osion						
60.	Substructure NBI:	Major spalling on both Colunms have been r	n abutments repaired & made into tv	vo pier walls					
	61. Channel NBI:	Roadway under railro	ad.						
	62. Culvert NBI:	Roadway under railro	ad.						
71. Wa	terway Adeq NBI:	Roadway under railro	ad.						
7	72. Appr Roadway Alignment NBI:	Roadway under railro	ad.						
	Inventory Notes:								
	Γ	Dan Bodelson		_		Nic	klaus Fis	scher	

Reviewer's Signature

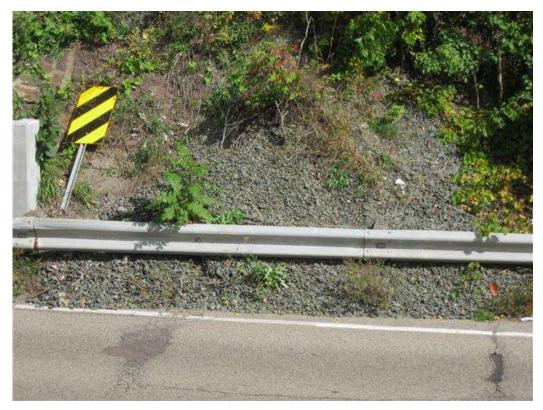


Photo 1 -



Photo 2 -



Photo 3 -



Photo 4 -



Photo 5 -



Photo 6 -



Photo 7 -



Photo 10 -

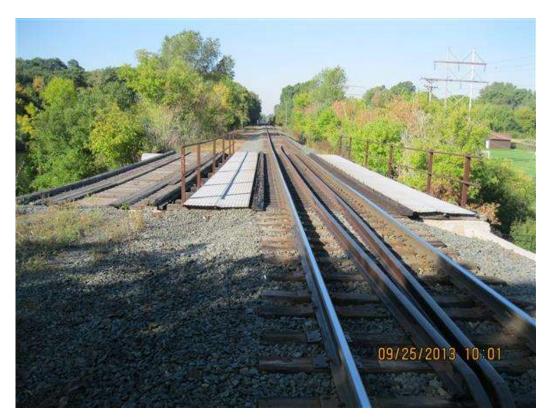


Photo 18 -

Maintenance

BRIDGE STRUCTURAL ASSESSMENT REPORT

PURPOSE:

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

BRIDGE NO.: 656	BRIDGE OWNER: Railroad					
DATE INSPECTED: 09/13/2016	STRUCTURE TYPE: Steel Continuous					
FACILITY CARRIED: CP RAIL	·	ger/Multi-beam or Girder ED: CSAH 76(SNELLING AV)				
TYPE OF INSPECTION:						
Redundancy:	Connection	l d				
1. Was a critical finding identified during this i structural review?	inspection or upon	☐ Yes ☐ No				
a) If selected "Yes" above, state briefly the	e finding(s):					
2. If a critical finding was identified, what is th	ne current status?	□ Pending□ Resolved□ N/A				
a) Briefly state actions taken:						
3. Does the condition of any bridge component function? Examples of bridge components vinclude elements that are: frozen or immove misaligned, distorted or structurally deforme deteriorated, cracked, broken, eroded or scot	with impaired function eable, out-of-plumb or ed, excessively	☐ Yes ☐ No				

	a) If selected Yes above, state briefly the component(s) and condition(s):
4.	Does the overall condition of the bridge, or any of its components mentioned in Question 3, suggest the need for detailed structural analysis and/or a revised load rating?
	a) If selected "Yes", state the reason for this recommendation and indicate a proposed timeframe in accordance with State of Minnesota Rule 8810.9500 (Subpart 2):
5.	Based on the structural assessment of these findings, recommendations include:
	☐ Repair/Maintenance ☐ Monitoring Plan
	☐ Complex ☐ Increased Inspection Frequency
	Explain recommended actions:
6.	Other comments:

Bridge Office Reviewer