

**2016 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 2937
CP RAIL over CSAH 77(8TH AV NW)**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: New Brighton

STATE: Minnesota

Date of Inspection: 09/20/2016

Equipment Used:

Owner: Railroad

Inspected By: Bodelson, Dan

**Report Written By: Dan Bodelson
Report Reviewed By: Nicklaus Fischer
Final Report Date: 10/20/2016**

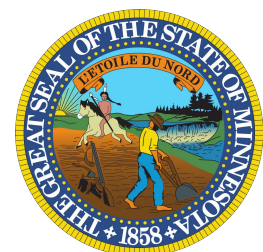


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Minnesota Structure Inventory Report

Bridge ID: 2937

CP RAIL

over CSAH 77(8TH AV NW)

Date: 10/20/2016

GENERAL			
Agency Br. No.			
District Metro			
Maint. Area		Crew	
County 062 - Ramsey			
City New Brighton			
Township			
Desc. Loc. 0.1 MI S OF JCT CSAH 15			
Sect., Twp., Range		32 - 030N - 23W	
Latitude Deg	45	Min	2
Sec	57.68		
Longitude Deg	93	Min	11
Sec	57.52		
Custodian 27 - Railroad			
Owner 27 - Railroad			
BMU Agreement			
Year Built		1928	
MN Year Reconstructed			
FHWA Year Reconstructed			
MN Temporary Status			
Bridge Plan Location 0 - NO PLAN			
Date Opened to Traffic			
On-Off System 0 - OFF			
Legislative District 50B			
ABC Suitable			

ROADWAY		
Bridge Match ID (TIS)		
Roadway O/U Key none		
Route Sys	Number	
Roadway Name or Description		
Level of Service		
Roadway Type		
Control Section (TH Only)		
Reference Point		
Detour Length mi		
Lanes	On	Under 2
	ADT	Year
HCACT	0	ADTT 0 %
Functional Class		

INSPECTION	
Userkey	102
Unofficial Structurally Deficient	N
Unofficial Functionally Obsolete	N
Unofficial Sufficiency Rating	-2
Routine Inspection Date	09/20/2016
Routine Inspection Frequency	12
Inspector Name	CO Bridge
Status	A - Open

STRUCTURE	
Service On	2 - Railroad
Service Under	1 - Highway, w/ or w/out ped.
Main Span Type	
4 - Steel Continuous	01 - Beam Span
Main Span Detail	
Appr. Span Type	
Appr. Span Detail	
Skew	15 L
Culvert Type	
Barrel Length	ft.
Cantilever ID	

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

NBI CONDITION RATINGS	
Deck	N - Not Applicable
Unsound Deck %	
Superstructure	4 - Poor Condition
Substructure	5 - Fair Condition
Channel	N - Not Applicable
Culvert	N - Not Applicable

MISC. BRIDGE DATA	
Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	2 - Riveted
Abutment Foundation	1 - CONC
(Material/Type)	3 - FTG PILE
Pier Foundation	1 - CONC
(Material/Type)	3 - FTG PILE
Historic Status	5 - Not eligible

NBI APPRAISAL RATINGS	
Structure Evaluation N	
Deck Geometry	N
Underclearances	2
Water Adequacy	N - Not Applicable
Approach Alignment	N - Not Applicable

NUMBER OF SPANS		
MAIN:	3	APPR: 0
TOTAL:	3	
Main Span Length	39.0	ft.
Structure Length	70.0	ft.
Deck Width (Out-to-Out)	37.5	ft.
Deck Material	N - Not Applicable	
Wear Surf Type	N - Not Applicable (applies onl	
Wear Surf Install Year		
Wear Course/Fill Depth	0.00	ft.
Deck Membrane	0 - None	
Deck Rebars	N - Not Applicable (no deck)	
Deck Rebars Install Year		
Structure Area (Out-to-Out)	2625	sq. ft.
Roadway Area (Curb-to-Curb)	sq. ft.	
Sidewalk Width	Lt 0.00	ft. Rt 0.00
Curb Height	Lt 0.00	ft. Rt 0.00
Rail Type	Lt NN	Rt NN

PAINT	
Year Painted	
Unsound Paint %	80
Painted Area	sq. ft.
Primer Type	1 - Lead - non 3309
Finish Type	

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

BRIDGE SIGNS	
Posted Load	0 - Not Required
Traffic	0 - Not Required
Horizontal	1 - Object Markers
Vertical	1 - Rdwy. Clr. Restriction

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

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

CAPACITY RATINGS		
Design Load	8 - RAILROAD	
Operating Rating	2 - AS	HS 65.0
Inventory Rating	2 - AS	HS 65.0
Posting VEH:	SEMI:	DBL:
Rating Date		

Minnesota Permit Codes	
A:	N - N/A
B:	N - N/A
C:	N - N/A

Minnesota Structure Inventory Report

Bridge ID: 2937

CP RAIL over CSAH 77(8TH AV NW)

Date: 09/14/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +		
Agency Br. No. Crew District 05 Maint. Area County 062 - Ramsey City New Brighton Township Desc. Loc. 0.1 MI S OF JCT CSAH 15 Sect., Twp., Range 32 - 030N - 23W Latitude 45 ° 2 ' 57.68 " Longitude 93 ° 11 ' 57.52 " Custodian 27 - Railroad Owner 27 - Railroad BMU Agreement Year Built 1928 MN Year Reconstructed FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 0 - NO PLAN Date Opened to Traffic On - Off System 0 - OFF Legislative District 50B Potential ABC 2 - N/A	Bridge Match ID (TIS) Roadway O/U Key Route Sys Number Roadway Name or Description Level of Service Roadway Type Control Section (TH Only) Reference Point Detour Length mi. Lanes ON UNDER 2 ADT YEAR HCA DT ADTT % Functional Class	Userkey 102 Structurally Deficient N Functionally Obsolete N Sufficiency Rating -2 Routine Inspection Date 09/20/2016 Routine Inspection Frequency 12 Inspector Name Bodelson, Dan Status A - Open		
		+ NBI CONDITION RATINGS +		
		Deck N	Unsound Deck %	
		Superstructure 4		
		Substructure 5		
		Channel N		
		Culvert N		
		+ NBI APPRAISAL RATINGS +		
		Structure Evaluation N		
		Deck Geometry N		
		Underclearances 2		
		Waterway Adequacy N		
		Approach Alignment N		
		+ SAFETY FEATURES +		
		Bridge Railing N - NOT REQUIRED		
		GR Transition N - NOT REQUIRED		
		Appr. Guardrail N - NOT REQUIRED		
		GR Termini N - NOT REQUIRED		
		+ IN DEPTH INSP. +		
			Y/N	Freq
				Date
		Frac. Critical N		
		Underwater N		
		Pinned Asbly. N		
		Spec. Feat.		
		+ WATERWAY +		
		Drainage Area (sq. mi.)		
		Waterway Opening (sf.)		
		Navigation Control N - Not applicable, no		
		Pier Protection -		
		Nav. Clr. (ft.) Vert. 0.0		Horiz. 0.0
		Nav. Vert. Lift Bridge Clear. (ft.)		
		MN Scour Code A - NON		Year
		+ CAPACITY RATINGS +		
		Design Load 8 - RAILROAD		
		Operating Rating 7 - RAILROAD		65.0
		Inventory Rating 7 - RAILROAD		65.0
		Posting VEH: SEMI:		DBL:
		Rating Date		
		Overweight Permit Codes		
		A N - N/A	B N - N/A	C N - N/A
+ STRUCTURE +	+ RDWY DIMENSIONS +			
Service On 2 - Railroad Service Under 1 - Highway, w/ or w/out ped. Main Span Type 4 - Steel Continuous Main Span Design 01 - Beam Span Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 15 LEFT Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 39.0 ft. Structure Length 70.0 ft. Deck Width (Out-to-Out) 37.5 ft. Deck Material N - Not Applicable Wear Surf Type N - Not Applicable (applies Wear Surf Install Year Wear Course/Fill Depth 0.00 ft. Deck Membrane 0 - None Deck Rebars N - Not Applicable (no deck) Deck Rebars Install Year Structure Area (Out-to-Out) 2625 sq. ft. Roadway Area (Curb-to-Curb) sq. ft. Sidewalk Width 50A. Lt 0.00 ft. 50B. Rt 0.00 ft. Curb Height Lt 0.00 ft. Rt 0.00 ft. Rail Type Lt NN Rt NN	If Divided NB-EB SB-WB Roadway Width ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. ft. ft. Lateral Clearance ft. ft. Appr. Surface Width ft. Bridge Roadway Width ft. Median Width On Bridge ft.			
		+ MISC. BRIDGE DATA +		
		Structure Flared 0 - No flare		
		Parallel Structure N - No parallel structure		
		Field Conn. ID 2 - Riveted		
		Abutment Foundation (Material/Type) 1 - CONC		
		Pier Foundation (Material/Type) 3 - FTG PILE		
		Pier Foundation (Material/Type) 1 - CONC		
		Historic Status 3 - FTG PILE		
		Historic Status 5 - Not eligible		
		+ PAINT +		
		Year Painted		
		Unsound Paint % 80		
		Painted Area sq. ft.		
		Primer Type 1 - Lead - non 3309		
		Finish Type		
		+ BRIDGE SIGNS +		
		Posted Load 0 - Not Required		
		Traffic 0 - Not Required		
		Horizontal 1 - Object Markers		
		Vertical 1 - Rdwy. Clr. Restriction		

MINNESOTA BRIDGE INSPECTION REPORT

10/20/2016

BRIDGE 2937 CP RAIL OVER CSAH 77(8TH AV NW)

ROUTINE INSP. DATE: 09/20/2016

County: Ramsey	Location: 0.1 MI S OF JCT CSAH 15	Length: 70.0 ft.
City: New Brighton	Route: Ref. Pt.:	Deck Width: 37.5 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: sq. ft. / %
Section: 32 Township: 030N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / 80%
Span Type: 4 - Steel Continuous 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings:
NBI Deck: N Super: 4 Sub: 5 Chan: N Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: A - NON WATERWAY	
Appraisal Ratings - Approach: N Waterway: N		Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Traffic: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 1 - Object Markers	Vertical: 1 - Rdwy. Clr. Restriction	Unofficial Sufficiency Rating N

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
107	Painted Steel Girder or Beam	2	Routine	09/20/2016	840 LF	0	84	672	84	0
			Routine	09/25/2015	840 LF	0	84	672	84	0

Notes: [2014-2015] The flange of #3 girder has been crimped above the south bound lane .
 [2013-2015] 10% in condition state 2 80% in condition state 3 10% in condition state 4
 [2012-2015] Alignment is good.
 There was collision damage to #7 girder in 2008. The #7 steel girder was struck on the south side by a northbound boom truck. The #7 steel girder has been badly crimped and pushed into girder #8. Girder #7 is also leaning severely. The incident was inspected by CP Rail before the roadway under the bridge was opened. [3/18/2009] CP Rail replaced #1 & #7 mid-span steel girders.
 [2009-2012] 90% in condition state 3 & 10% in condition state 4.
 [2008] 75% in condition state 3 & 25% in condition state 4.
 [2006-2015] The flange of #12 girder has been badly crimped above the south bound lane .
 [2004-2014] Major failure of the paint system. Steel Girders need to be painted. #6 beam has been badly crimped at mid-span and pushed into beam #5 in 1983.
 [2009-2013] Total traffic impact to #2, #3, #5, #6 & #12 beams. All steel girders have minor scrapes except for #1 & #7 steel girders, which have been replaced.
 [2004-2012] Bolts are leaning toward the south @ SW corner.

205	Reinforced Concrete Column	2	Routine	09/20/2016	10 EA	0	0	8	2	N/A
			Routine	09/25/2015	10 EA	0	0	8	2	N/A

Notes: [2014] RR filled in between the columns and created pier walls.
 [2009-2013] There is additional delamination to the east side of column #2. Column #6 has additional delamination under the concrete cap.
 [2006-2013] The north side of column#1 contains a major spall w/exposed rebar.
 [2011-2013] Columns #2, #4, #5, #6,#8 & #9 consists of delamination, major spalling & cracking with exposed rebar.
 [2009-2013] East side of column #4 & #6 have major delamination with exposed rebar & section loss.
 [2006-2013] 50% of columns in need of shot-crete rehabilitation.

210	Reinforced Concrete Pier Wall	2	Routine	09/20/2016	56 LF	0	56	0	0	N/A
			Routine	09/25/2015	56 LF	0	56	0	0	N/A

Notes: [2015] Minor shrinkage cracks on both piers with effervesce.
 [2014] Minor shrinkage cracks on both piers.
 [2014] RR filled in between the columns and created pier walls Condition state 2 due to being a repair.

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
215	Reinforced Concrete Abutment	2	Routine	09/20/2016	72 LF	0	61	11	0	N/A
			Routine	09/25/2015	72 LF	0	61	11	0	N/A
<p>Notes: [2015] There is a 1' X 2" spall at NW corner. [2015] There is a 1.5' X1" spall & 5' delamination from the SE corner extending toward the north. [2015] West abutment has a 3' delamination at girders#7 & #8. [2014] Repaired slope on east abutment covering the exposed piling. [2009-2014] West abutment has a 3' horizontal crack at girders#7 & #8. [2011-2014] There is a 4' diagonal crack at NW corner. [2009-2014] There is a 5' horizontal crack from the SE corner extending toward the north. [2004-2014] SE & NW corners of abutments contain major delamination. [2004-2013] There is exposed piling on the east side. Undermining at east abutment due to erosion.</p>										
234	Reinforced Concrete Pier Cap	2	Routine	09/20/2016	56 LF	0	0	56	0	N/A
			Routine	09/25/2015	56 LF	0	0	56	0	N/A
<p>Notes: [2014] RR filled in between the columns and created pier walls. [2009-2013] There is a 3' horizontal crack on the east side of the west concrete cap under mid-span at girders #11 & #12. [2009-2013] There is a 2' X 1' area of major delamination at the SE corner of east cap. [2004-2013] There is delamination of concrete cap at the bottom with exposed rebar w/section loss between columns #6 & #8 on the east side- 4 LF in need of rehabilitation. [2004-2013] West cap has 4 SF of delamination & exposed rebar east side of west cap @ column #1. [2009-2013] Both pier caps contain moderate cracking & spalling with some delamination throughout.</p>										
311	Expansion Bearing	2	Routine	09/20/2016	24 EA	0	24	0	N/A	N/A
			Routine	09/25/2015	24 EA	0	24	0	N/A	N/A
<p>Notes: [2009-2015] Abutment bearings are covered with ballast. [2002-2015] Bolts for #1 girder have been bent. Bearings have moderate to heavy corrosion with some buildup of debris that may be affecting movement. Bearing devices require cleaning & lubrication.</p>										
362	Traffic Impact Smart Flag	2	Routine	09/20/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/25/2015	1 EA	0	1	0	N/A	N/A
<p>Notes: [2010-2015] Minor scrapes to replacement girders #1 & #7. Girders appear to be structurally sound. [2009] Steel girders #1 & #7 have been replaced on 3/18/2009 due to traffic impact. [2008] There was collision damage to #7 girder in 2008. The #7 steel girder was struck on the south side by a north-bound boom truck. The #7 steel girder has been badly crimped and pushed into girder #8. Girder #7 is also leaning severely. The incident was inspected by CP Rail before the roadway under the railroad bridge was opened 2008. [2009-2015] Total traffic impact to #2, #3, #5, #6, & #12 girders. [2003-2015] Diaphragms are in place but has slight deformation due to impact.</p>										
964	Critical Finding Smart Flag	2	Routine	09/20/2016	1 EA	1	0	N/A	N/A	N/A
			Routine	09/25/2015	1 EA	1	0	N/A	N/A	N/A
<p>Notes: DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.</p>										
981	Signing	2	Routine	09/20/2016	1 EA	0	0	1	0	0
			Routine	09/25/2015	1 EA	0	0	1	0	0
<p>Notes: [2002-2015] Vertical clearance signs should be installed at the bridge and the nearest intersection. There is presently one sign on each side of the bridge. Vertical clearance measured at 14'3".</p>										
982	Approach Guardrail	2	Routine	09/20/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/25/2015	1 EA	0	1	0	N/A	N/A
<p>Notes: [20008-2015] Minor traffic damage to SE guardrail and NE guardrail . Moderate damage to twisted end at the NW corner.</p>										

ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
985	Slopes & Slope Protection	2	Routine	09/20/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/25/2015	1 EA	0	1	0	N/A	N/A

Notes: [2015] SE corner has moderate erosion.

[2015] West abutment is undermined for 20'. It is 0' - 0.5' into the abutment.

[2014] East abutment has been repaired and has no exposed piling.

[2014] Pre-cast concrete wall was added for slope protection at the NE & NW corners

[2013] Additional slope protection is needed at the east abutment due to exposed piling.

[2008-2013] Additional slope protection is needed at the NW corner to retain ballast. Slope protection is aggregate.

[2003-2013] Slope is undermining at the east abutment. Slope protection is recommended on the east side.

Pre-cast concrete wall was added for slope protection at the SE & SW corners in 2002. Sidewalk was constructed under bridge west side of road in 1991.

General Notes: 2016 Bridge safety inspection was completed by Dan Bodelson, Brian Essler & Randy Bussiere on 9/20/2015.
 2015 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/23/2015.
 2014 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/23/2014.
 Columns were filled in with concrete and turned into pier walls in 2014
 New concrete pavement under bridge was installed in 2014
 2013 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/25/2013.
 2012 Bridge safety inspection was completed by B. Wieman on 10/23/2012.
 2011 Bridge safety inspection was completed by B. Wieman on 10/12/2011.
 New catwalk was installed w/safety railing in 2000 on the north side.
 Safety railing on south side has the 2nd post loose and the 9th post is broken 2004-2011.
 Safety railing on the north side is loose 2009. 2010 Bridge safety inspection was completed by B. Wieman on 11/02/2010.
 2009 Bridge safety inspection was completed by B. Wieman on 7/13/2009. 2009 CP Rail replaced #1 and #7 mid-span steel girders on 3/18/2009. 2008 Bridge safety inspection was completed by B. Paine & B. Wieman 10/21/2008.
 Bridge safety inspection was completed by Bret Wieman 10/26/2006. Train traffic is on the north side only.

58. Deck NBI: Railroad bridge has no deck

36A. Brdg Railings NBI: roadway under bridge

36B. Transitions NBI: roadway under bridge

36C. Appr Guardrail NBI: roadway under bridge

36D. Appr Guardrail

Terminal NBI: roadway under bridge

59. Superstructure NBI: Bearing have moderate to heavy corrosion. Total traffic impact to #2, #3, #5, #6 & #12 beams. All steel girders have minor scrapes except for #1 & #7 steel girders, which have been replaced.

60. Substructure NBI: Filled with concrete between the columns and created pier walls. Numerous spalls and cracking on abutments.

61. Channel NBI: Railroad bridge not over waterway

62. Culvert NBI: Railroad bridge

71. Waterway Adeq NBI: Railroad bridge not over waterway

72. Appr Roadway

Alignment NBI: Railroad bridge

Inventory Notes: [2012] Vertical clearance measured at 14'3". The vertical clearance should be changed to 14'3".

Dan Bodelson
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

10/20/2016

Inspector: CO Bridge

BRIDGE 2937 CP RAIL OVER CSAH 77(8TH AV NW)

County: Ramsey	Location: 0.1 MI S OF JCT CSAH 15	Length: 70.0 ft.
City: New Brighton	Route: Ref. Pt.:	Deck Width: 37.5 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: sq. ft. / %
Section: 32 Township: 030N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / 80%
Span Type: 4 - Steel Continuous 2 -	Local Agency Bridge Nbr.:	Culvert: N/A
List: Stringer/Multi-beam or Girder		Postings:
NBI Deck: N Super: 4 Sub: 5 Chan: N Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: A - NON WATERWAY	
Appraisal Ratings - Approach: N Waterway: N		Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Traffic: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 1 - Object Markers	Vertical: 1 - Rdwy. Clr. Restriction	Unofficial Sufficiency Rating N

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY			
					CS 1	CS 2	CS 3	CS 4
107	Steel Open Girder/Beam	Routine	09/20/2016	840 LF	0	756	84	0
		Migrated Values		840 LF	0	756	84	0
<p>Notes: [2014-2016] The flange of #3 girder has been crimped above the south bound lane .</p> <p>[2013-2015] 10% in condition state 2 80% in condition state 3 10% in condition state 4</p> <p>[2012-2015] Alignment is good.</p> <p>There was collision damage to #7 girder in 2008. The #7 steel girder was struck on the south side by a northbound boom truck. The #7 steel girder has been badly crimped and pushed into girder #8. Girder #7 is also leaning severely. The incident was inspected by CP Rail before the roadway under the bridge was opened. [3/18/2009] CP Rail replaced #1 & #7 mid-span steel girders.</p> <p>[2009-2012] 90% in condition state 3 & 10% in condition state 4.</p> <p>[2008] 75% in condition state 3 & 25% in condition state 4.</p> <p>[2006-2015] The flange of #12 girder has been badly crimped above the south bound lane .</p> <p>[2004-2014] Major failure of the paint system. Steel Girders need to be painted. #6 beam has been badly crimped at mid-span and pushed into beam #5 in 1983.</p> <p>[2009-2013] Total traffic impact to #2, #3, #5, #6 & #12 beams. All steel girders have minor scrapes except for #1 & #7 steel girders, which have been replaced.</p> <p>[2004-2012] Bolts are leaning toward the south @ SW corner.</p>								
515	Steel Protective Coating	Routine	09/20/2016	7021 SF	0	776	0	6245
		Migrated Values		7021 SF	0	776	0	6245
<p>Notes: [2016] Steel girders #1 & #7 Replaced with new beams in 2010 by C P Rail, condition state 2 (42' x 9.24 SF/ft. x 2 = 776 SF) - remainder condition state 4</p> <p>[2016] Migrator assumed quantity of 999 SF and estimated the condition states.</p> <p>[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 24 = 2076 SF</p> <p>[2016] Inner beams (between pier walls) 2.15' web x 1.2' flange x 0.07' thick = 9.24 SF/ft. x 42' long x 12 = 4657 SF</p> <p>[2016] Diaphragms 1.7' x 1.47' = 2.5 SF x 2 sides = 5 SF each x 32 = 160 SF</p> <p>[2016] Diaphragms 1.47' x 1.35' = 2.0 SF x 2 sides = 4 SF each x (16 west + 16 east) = 128 SF</p>								
205	Reinforced Concrete Column	Routine	09/20/2016	10 EA	0	0	8	2
		Migrated Values		10 EA	0	0	8	2
<p>Notes: [2014-2016] RR filled in between the columns and created pier walls.</p> <p>[2009-2013] There is additional delamination to the east side of column #2. Column #6 has additional delamination under the concrete cap.</p> <p>[2006-2013] The north side of column#1 contains a major spall w/exposed rebar.</p> <p>[2011-2013] Columns #2, #4, #5, #6,#8 & #9 consists of delamination, major spalling & cracking with exposed rebar.</p> <p>[2009-2013] East side of column #4 & #6 have major delamination with exposed rebar & section loss.</p> <p>[2006-2013] 50% of columns in need of shot-crete rehabilitation.</p>								
210	Reinforced Concrete Pier Wall	Routine	09/20/2016	56 LF	0	56	0	0
		Migrated Values		56 LF	0	56	0	0
<p>Notes: [2015-2016] Minor shrinkage cracks on both piers with effervesce.</p> <p>[2014] Minor shrinkage cracks on both piers.</p> <p>[2014] RR filled in between the columns and created pier walls Condition state 2 due to being a repair.</p>								

BRIDGE 2937 CP RAIL OVER CSAH 77(8TH AV NW)

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	09/20/2016	72 LF	0	61	11	0
		Migrated Values		72 LF	0	61	11	0
<p>Notes: [2015-2016] There is a 1' X 2" spall at NW corner. [2015-2016] There is a 1.5' X 1" spall & 5' delamination from the SE corner extending toward the north. [2015-2016] West abutment has a 3' delamination at girders#7 & #8. [2014] Repaired slope on east abutment covering the exposed piling. [2009-2014] West abutment has a 3' horizontal crack at girders#7 & #8. [2011-2014] There is a 4' diagonal crack at NW corner. [2009-2014] There is a 5' horizontal crack from the SE corner extending toward the north. [2004-2014] SE & NW corners of abutments contain major delamination. [2004-2013] There is exposed piling on the east side. Undermining at east abutment due to erosion.</p>								
234	Reinforced Concrete Pier Cap	Routine	09/20/2016	56 LF	0	0	56	0
		Migrated Values		56 LF	0	0	56	0
<p>Notes: [2014] RR filled in between the columns and created pier walls. [2009-2013] There is a 3' horizontal crack on the east side of the west concrete cap under mid-span at girders #11 & #12. [2009-2013] There is a 2' X 1' area of major delamination at the SE corner of east cap. [2004-2013] There is delamination of concrete cap at the bottom with exposed rebar w/section loss between columns #6 & #8 on the east side- 4 LF in need of rehabilitation. [2004-2013] West cap has 4 SF of delamination & exposed rebar east side of west cap @ column #1. [2009-2013] Both pier caps contain moderate cracking & spalling with some delamination throughout.</p>								
311	Movable Bearing	Routine	09/20/2016	24 EA	0	24	0	0
		Migrated Values		24 EA	0	24	0	0
<p>Notes: [2009-2016] Abutment bearings are covered with ballast. [2002-2016] Bolts for #1 girder have been bent. Bearings have moderate to heavy corrosion with some buildup of debris that may be affecting movement. Bearing devices require cleaning & lubrication.</p>								
800	Critical Deficiencies or Safety Hazards	Routine	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
<p>Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION.</p>								
880	Impact Damage	Routine	09/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
<p>Notes: [2010-2016] Minor scrapes to replacement girders #1 & #7. Girders appear to be structurally sound. [2009] Steel girders #1 & #7 have been replaced on 3/18/2009 due to traffic impact. [2008] There was collision damage to #7 girder in 2008. The #7 steel girder was struck on the south side by a north-bound boom truck. The #7 steel girder has been badly crimped and pushed into girder #8. Girder #7 is also leaning severely. The incident was inspected by CP Rail before the roadway under the railroad bridge was opened 2008. [2009-2016] Total traffic impact to #2, #3, #5, #6, & #12 girders. [2003-2015] Diaphragms are in place but has slight deformation due to impact.</p>								
883	Concrete Shear Cracking	Routine	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
<p>Notes: Use this element to monitor the presence of shear cracking on concrete elements. Pay particular attention to the concrete pier caps.</p>								
891	Other Bridge Signing	Routine	09/20/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0
<p>Notes: [2002-2016] Vertical clearance signs should be installed at the bridge and the nearest intersection. There is presently one sign on each side of the bridge. Vertical clearance measured at 14'3".</p>								

BRIDGE 2937 CP RAIL OVER CSAH 77(8TH AV NW)

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
892	Slopes & Slope Protection	Routine	09/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
<p>Notes: [2015-2016] SE corner has moderate erosion. [2015-2016] West abutment is undermined for 20'. It is 0' - 0.5' into the abutment. [2014] East abutment has been repaired and has no exposed piling. [2014] Pre-cast concrete wall was added for slope protection at the NE & NW corners [2013] Additional slope protection is needed at the east abutment due to exposed piling. [2008-2013] Additional slope protection is needed at the NW corner to retain ballast. Slope protection is aggregate. [2003-2013] Slope is undermining at the east abutment. Slope protection is recommended on the east side. Pre-cast concrete wall was added for slope protection at the SE & SW corners in 2002. Sidewalk was constructed under bridge west side of road in 1991.</p>								
893	Guardrail	Routine	09/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
<p>Notes: [20008-2016] Minor traffic damage to SE guardrail and NE guardrail . Moderate damage to twisted end at the NW corner.</p>								
894	Deck & Approach Drainage	Routine	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
<p>Notes: Use this element to rate the condition, function, and adequacy of the drainage system. [2016] Railroad bridge over County Rd. # 77 - no deck</p>								
900	Protected Species	Routine	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
<p>Notes: Use this element to track the presence of protected species living on this structure. [2016] No protective species found.</p>								

General Notes: 2016 Bridge safety inspection was completed by Dan Bodelson, Brian Essler & Randy Bussiere on 9/20/2015.
 2015 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/23/2015.
 2014 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/23/2014.
 Columns were filled in with concrete and turned into pier walls in 2014
 New concrete pavement under bridge was installed in 2014
 2013 Bridge safety inspection was completed by B. Essler & D Boldelson on 9/25/2013.
 2012 Bridge safety inspection was completed by B. Wieman on 10/23/2012.
 2011 Bridge safety inspection was completed by B. Wieman on 10/12/2011.
 New catwalk was installed w/safety railing in 2000 on the north side.
 Safety railing on south side has the 2nd post loose and the 9th post is broken 2004-2011.
 Safety railing on the north side is loose 2009. 2010 Bridge safety inspection was completed by B. Wieman on 11/02/2010.
 2009 Bridge safety inspection was completed by B. Wieman on 7/13/2009. 2009 CP Rail replaced #1 and #7 mid-span steel girders on 3/18/2009. 2008 Bridge safety inspection was completed by B. Paine & B. Wieman 10/21/2008.
 Bridge safety inspection was completed by Bret Wieman 10/26/2006. Train traffic is on the north side only.

- 58. Deck NBI: Railroad bridge has no deck
 - 36A. Brdg Railings NBI: roadway under bridge
 - 36B. Transitions NBI: roadway under bridge
 - 36C. Appr Guardrail NBI: roadway under bridge
 - 36D. Appr Guardrail Terminal NBI: roadway under bridge
 - 59. Superstructure NBI: Bearing have moderate to heavy corrosion. Total traffic impact to #2, #3, #5, #6 & #12 beams. All steel girders have minor scrapes except for #1 & #7 steel girders, which have been replaced.
 - 60. Substructure NBI: Filled with concrete between the columns and created pier walls. Numerous spalls and cracking on abutments.
 - 61. Channel NBI: Railroad bridge not over waterway
 - 62. Culvert NBI: Railroad bridge
 - 71. Waterway Adeq NBI: Railroad bridge not over waterway
 - 72. Appr Roadway Alignment NBI: Railroad bridge
- Inventory Notes: [2012] Vertical clearance measured at 14'3". The vertical clearance should be changed to 14'3".

BRIDGE 2937 CP RAIL OVER CSAH 77(8TH AV NW)

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
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Dan Bodelson
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

Pictures



Photo 1 - 2937 E Pier 2012



Photo 2 - 2937 E Pier Culumns 2012

Pictures



Photo 4 - 2937 W Pier 2012



Photo 5 - 2937 Girders 7-12 2012

Pictures



Photo 6 - 2937 girders from north 2012



Photo 7 - 2937 NB 1-6 girders 2012

Pictures



Photo 8 - 2937 NB girders from south 2012



Photo 9 - 2937 SB girders from north 2012

Pictures



Photo 10 - Culumn 6 2013



Photo 11 - Culumn 9 2013

Pictures



Photo 12 - Columns 4 & 6 2013



Photo 13 - East abutment 2013

Pictures



Photo 14 - East columns 2013



Photo 15 -

Pictures



Photo 16 - Track WB 2013



Photo 17 - Road NB 2013

Pictures



Photo 20 - Road SB2 2013



Photo 21 - East abutment 2014

Pictures



Photo 22 - east pier wall 2014



Photo 23 - looking north 2014

Pictures



Photo 24 - looking south 2014

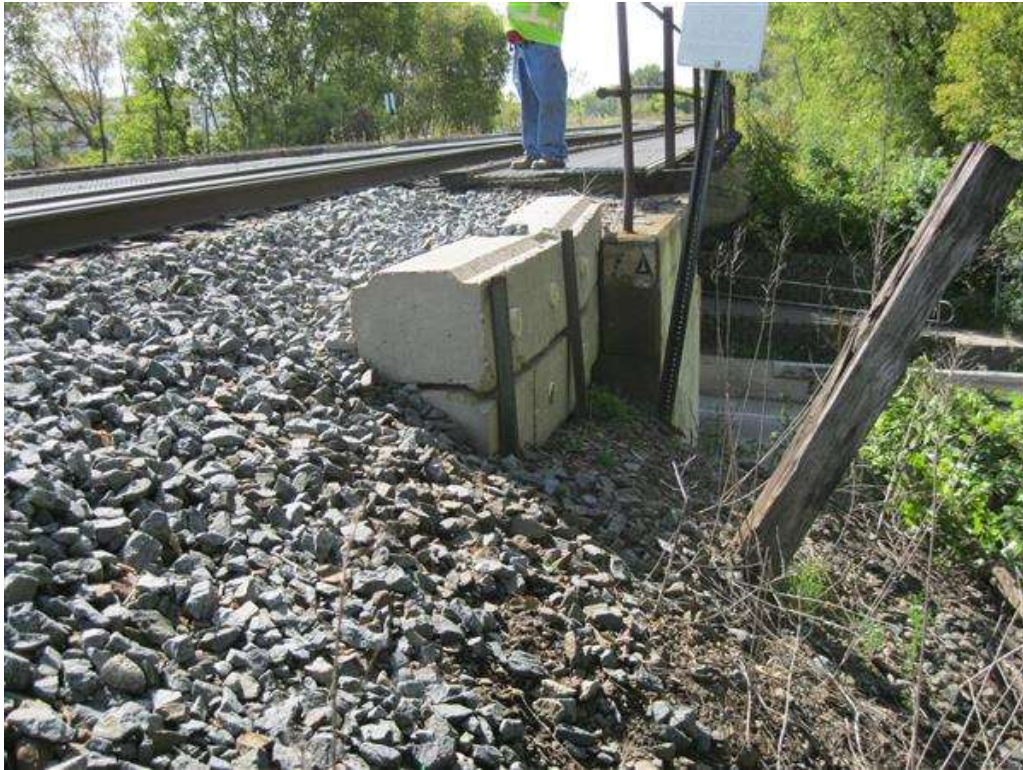


Photo 25 - NE corner top bridge 2014

Pictures



Photo 26 - west pier wall 2014

Maintenance

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

PURPOSE:

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

BRIDGE NO.: 2937	BRIDGE OWNER: Railroad
DATE INSPECTED: 09/20/2016	STRUCTURE TYPE: Steel Continuous tringer/Multi-beam or Girder
FACILITY CARRIED: CP RAIL	FEATURES INTERSECTED: CSAH 77(8TH AV NW)
TYPE OF INSPECTION: <input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> FRACTURE CRITICAL <input type="checkbox"/> PINNED ASSEMBLY: <input type="checkbox"/> SPECIAL: <input type="checkbox"/> DAMAGE: <input type="checkbox"/> COMPLEX:	
<u>Check all that apply:</u>	
Redundancy: <input type="checkbox"/> Load Path <input type="checkbox"/> Structural <input type="checkbox"/> Internal	Connection Type: <input type="checkbox"/> Riveted <input type="checkbox"/> Bolted <input type="checkbox"/> Welded <input type="checkbox"/> Other:

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

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

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

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

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

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

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

- | | |
|---|---|
| <input type="checkbox"/> Repair/Maintenance | <input type="checkbox"/> Monitoring Plan |
| <input type="checkbox"/> Complex | <input type="checkbox"/> Increased Inspection Frequency |

Explain recommended actions:

6. Other comments:

Bridge Office Reviewer