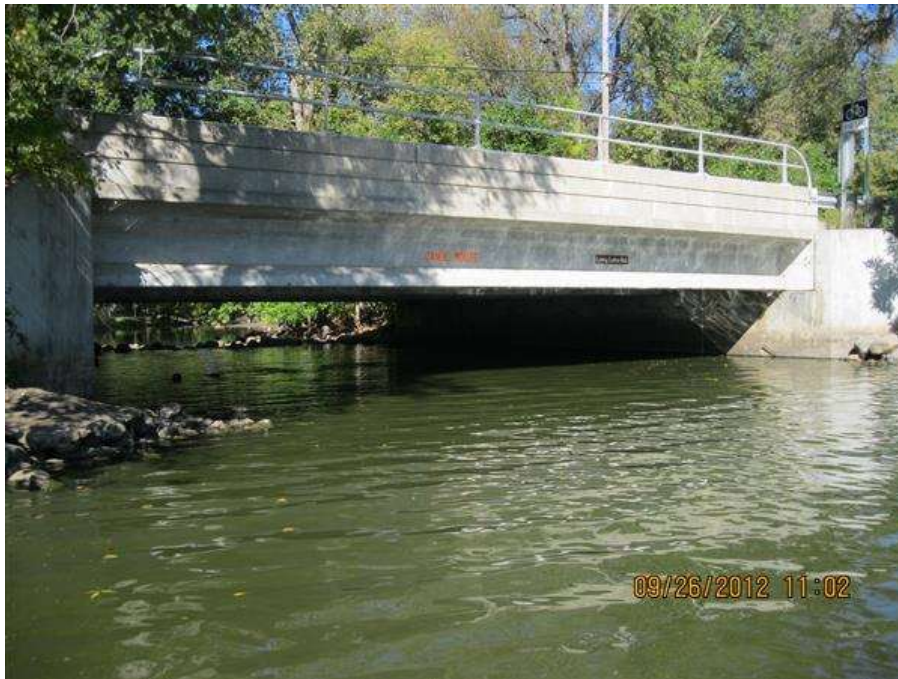


**2016 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 4513
CSAH 45(LONG LK) over RICE CREEK**

DISTRICT: Metro **COUNTY:** Ramsey **CITY/TOWNSHIP:** New Brighton
STATE: Minnesota

Date of Inspection: 09/15/2016

Equipment Used: Life Jacket, Probing Rod, Other - Chest Waders

Owner: County Highway Agency

Inspected By: Bodelson, Dan

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

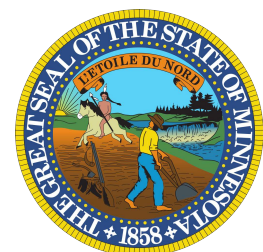


Table of Contents

<u>SECTION</u>	<u>PAGE</u>
COVER	1
SI&A	2
STRUCTURE INVENTORY	3
ROUTINE INSPECTION DATA	4
ELEMENTS	8
PICTURES	12
CULVERT	17
CHANNEL	18
SCOUR POA	20
MAINTENANCE	21
STRUCTURAL ASSESSMENT REPORT - ROUTINE	22

Minnesota Structure Inventory Report

Bridge ID: 4513

CSAH 45(LONG LK)

over RICE CREEK

Date: 10/20/2016

GENERAL	
Agency Br. No.	
District	Metro
Maint. Area	Crew
County	062 - Ramsey
City	New Brighton
Township	
Desc. Loc.	0.2 MI N OF JCT CSAH 11
Sect., Twp., Range	18 - 030N - 23W
Latitude	Deg 45 Min 5 Sec 4.17
Longitude	Deg 93 Min 12 Sec 41.65
Custodian	02 - County Highway Agency
Owner	02 - County Highway Agency
BMU Agreement	
Year Built	1926
MN Year Reconstructed	1984
FHWA Year Reconstructed	
MN Temporary Status	
Bridge Plan Location	3 - COUNTY
Date Opened to Traffic	11/1/1984
On-Off System	1 - ON
Legislative District	50B
ABC Suitable	

STRUCTURE	
Service On	5 - Highway-pedestrian
Service Under	5 - Waterway
Main Span Type	
	1 - Concrete 06 - Deck Girder
Main Span Detail	
Appr. Span Type	
Appr. Span Detail	
Skew	0
Culvert Type	
Barrel Length	ft.
Cantilever ID	

NUMBER OF SPANS		
MAIN: 1	APPR: 0	TOTAL: 1
Main Span Length	44.8	ft.
Structure Length	47.0	ft.
Deck Width (Out-to-Out)	52.8	ft.
Deck Material	1 - Concrete Cast-in-Place	
Wear Surf Type	4 - Low Slump Concrete	
Wear Surf Install Year	1984	
Wear Course/Fill Depth	0.17	ft.
Deck Membrane	0 - None	
Deck Rebars	0 - None	
Deck Rebars Install Year		
Structure Area (Out-to-Out)	2482	sq. ft.
Roadway Area (Curb-to-Curb)	2067	sq. ft.
Sidewalk Width	Lt 0.00	ft. Rt 6.00
Curb Height	Lt 0.83	ft. Rt 0.00
Rail Type	Lt 30	Rt 27

ROADWAY	
Bridge Match ID (TIS)	0
Roadway O/U Key	Route On Structure
Route Sys	04 - CSAH Number 45
Roadway Name or Description	
CSAH 45	
Level of Service	1 - MAINLINE
Roadway Type	2 - 2-way traffic
Control Section (TH Only)	
Reference Point	001+00.750
Detour Length	1.0 mi
Lanes	On 2 Under 0
	ADT 4432 Year 2008
HCACT	0 ADTT 0 %
Functional Class	16 - Urban - Minor Arterial

RDWY DIMENSIONS			
If Divided	NB-EB	SB-WB	
Roadway Width	44.00	ft.	ft.
Vertical Clearance		ft.	ft.
Max. Vert. Clear.		ft.	ft.
Horizontal Clear.	43.9	ft.	ft.
Lateral Clearance		ft.	ft.
Appr. Surface Width	44.0	ft.	
Bridge Roadway Width	44.0	ft.	
Median Width On Bridge		ft.	

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

PAINT	
Year Painted	
Unsound Paint %	
Painted Area	sq. ft.
Primer Type	
Finish Type	

BRIDGE SIGNS	
Posted Load	0 - Not Required
Traffic	0 - Not Required
Horizontal	1 - Object Markers
Vertical	N - Not Applicable

INSPECTION	
Userkey	102
Unofficial Structurally Deficient	N
Unofficial Functionally Obsolete	N
Unofficial Sufficiency Rating	98.4
Routine Inspection Date	09/15/2016
Routine Inspection Frequency	24
Inspector Name	CO Bridge
Status	A - Open

NBI CONDITION RATINGS	
Deck	6 - Satisfactory Condition
Unsound Deck %	
Superstructure	6 - Satisfactory Condition
Substructure	7 - Good Condition
Channel	7 - Needs minor repairs
Culvert	N - Not Applicable

NBI APPRAISAL RATINGS	
Structure Evaluation	6
Deck Geometry	7
Underclearances	N
Water Adequacy	8 - Bridge Above Approach
Approach Alignment	6 - Equal to present minimum

SAFETY FEATURES	
Bridge Railing	1 - MEETS STANDARDS
GR Transition	1 - MEETS STANDARDS
Appr. Guardrail	1 - MEETS STANDARDS
GR Termini	1 - MEETS STANDARDS

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

WATERWAY	
Drainage Area (sq. mi.)	
Waterway Opening	176 sq. ft.
Navigation Control	0 - No nav. control on waterway
Pier Protection	
Nav. Clr. (ft.)	Vert. ft. Horiz. ft.
Nav. Vert. Lift Bridge Clear. (ft.)	
MN Scour Code	I - LOW RISK Year 1998

CAPACITY RATINGS	
Design Load	5 - HS 20
Operating Rating	1 - LF (LF) HS 30.7
Inventory Rating	1 - LF (LF) HS 18.4
Posting VEH:	SEMI: DBL:
Rating Date	06/01/2011
Minnesota Permit Codes	
A:	N - N/A
B:	N - N/A
C:	N - N/A

Minnesota Structure Inventory Report

Bridge ID: 4513

CSAH 45(LONG LK) over RICE CREEK

Date: 09/14/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. Crew District 05 Maint. Area County 062 - Ramsey City New Brighton Township Desc. Loc. 0.2 MI N OF JCT CSAH 11 Sect., Twp., Range 18 - 030N - 23W Latitude 45 ° 5' 4.17 " Longitude 93 ° 12' 41.65 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1926 MN Year Reconstructed 1984 FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 3 - COUNTY Date Opened to Traffic 11/1/1984 On - Off System 1 - ON Legislative District 50B Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 45 Roadway Name or Description CSAH 45 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 001+00.750 Detour Length 1.0 mi. Lanes ON 2 UNDER 0 ADT 4432 YEAR 2008 HCA DT ADTT % Functional Class 16 - Urban - Minor Arterial	Userkey 102 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 98.4 Routine Inspection Date 09/15/2016 Routine Inspection Frequency 24 Inspector Name Bodelson, Dan Status A - Open																				
		+ NBI CONDITION RATINGS +																				
		Deck 6 Unsound Deck % Superstructure 6 Substructure 7 Channel 7 Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 6 Deck Geometry 7 Underclearances N Waterway Adequacy 8 Approach Alignment 6																				
		+ SAFETY FEATURES +																				
		Bridge Railing 1 - MEETS STANDARDS GR Transition 1 - MEETS STANDARDS Appr. Guardrail 1 - MEETS STANDARDS GR Termini 1 - MEETS STANDARDS																				
		+ IN DEPTH INSP. +																				
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">Y/N</th> <th style="width: 15%; text-align: center;">Freq</th> <th style="width: 15%; text-align: center;">Date</th> </tr> </thead> <tbody> <tr> <td>Frac. Critical</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Underwater</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Pinned Asbly.</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Spec. Feat.</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Y/N	Freq	Date	Frac. Critical	N			Underwater	N			Pinned Asbly.	N			Spec. Feat.			
	Y/N	Freq	Date																			
Frac. Critical	N																					
Underwater	N																					
Pinned Asbly.	N																					
Spec. Feat.																						
		+ WATERWAY +																				
		Drainage Area (sq. mi.) Waterway Opening (sf.) 176 Navigation Control 0 - No nav. control on Pier Protection - Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code I - LOW RISK Year 1998																				
		+ CAPACITY RATINGS +																				
		Design Load 5 - HS 20 Operating Rating 2 - HS TRUCK 30.7 Inventory Rating 2 - HS TRUCK 18.4 Posting VEH: SEMI: DBL: Rating Date 06/01/2011 Overweight Permit Codes A N - N/A B N - N/A C N - N/A																				
+ STRUCTURE +	+ RDWY DIMENSIONS +																					
Service On 5 - Highway-pedestrian Service Under 5 - Waterway Main Span Type 1 - Concrete Main Span Design 06 - Deck Girder Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 1 APPR: 0 TOTAL: Main Span Length 44.8 ft. Structure Length 47.0 ft. Deck Width (Out-to-Out) 52.8 ft. Deck Material 1 - Concrete Cast-in-Place Wear Surf Type 4 - Low Slump Concrete Wear Surf Install Year 1984 Wear Course/Fill Depth 0.17 ft. Deck Membrane 0 - None Deck Rebars 0 - None Deck Rebars Install Year Structure Area (Out-to-Out) 2482 sq. ft. Roadway Area (Curb-to-Curb) 2067 sq. ft. Sidewalk Width 50A. Lt 0.00 ft. 50B. Rt 6.00 ft. Curb Height Lt 0.83 ft. Rt 0.00 ft. Rail Type Lt 30 Rt 27	If Divided NB-EB SB-WB Roadway Width 44.00 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. 43.9 ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 44.0 ft. Bridge Roadway Width 44.0 ft. Median Width On Bridge ft.																					
	+ MISC. BRIDGE DATA +																					
	Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment Foundation (Material/Type) 1 - CONC 3 - FTG PILE Pier Foundation (Material/Type) N - N/A N - N/A Historic Status 5 - Not eligible																					
	+ PAINT +																					
	Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type																					
	+ BRIDGE SIGNS +																					
	Posted Load 0 - Not Required Traffic 0 - Not Required Horizontal 1 - Object Markers Vertical N - Not Applicable																					

MINNESOTA BRIDGE INSPECTION REPORT

10/20/2016

BRIDGE 4513 CSAH 45(LONG LK) OVER RICE CREEK

ROUTINE INSP. DATE: 09/15/2016

County: Ramsey	Location: 0.2 MI N OF JCT CSAH 11	Length: 47.0 ft.
City: New Brighton	Route: 04 - CSAH 45 Ref. Pt.: 001+00.750	Deck Width: 52.8 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 2067 sq. ft. / %
Section: 18 Township: 030N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 1 - Concrete 3 - Girder and Floorbeam	Local Agency Bridge Nbr.:	Culvert: N/A
List: System		Postings:
NBI Deck: 6 Super: 6 Sub: 7 Chan: 7 Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: I - LOW RISK	

Appraisal Ratings - Approach: 6	Waterway: 8	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: N - Not Applicable	Unofficial Sufficiency Rating 98.4

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
----------	--------------	-----	-------------	------------	----------	----------	----------	----------	----------	----------

022	Low Slump O/L (Concrete Deck with Uncoated Rebar)	2	Routine	09/15/2016	2486 SF	0	2486	0	0	0
			Routine	09/24/2014	2486 SF	0	2486	0	0	0

Notes: [2011-2014] There are 90 LF of moderate size unsealed cracks in deck. Still in condition state #2. The combined area of distress is less than 2%.
 [2006-2010] There are 80 LF of minor to moderate size cracks in deck. [2005-2008] Minor tight cracks in deck. [1995-2012] Underside of deck should be cleaned for better inspection.
 [2004-2014] There is spalling at both ends adjacent to formed joints at approach panels.

110	Reinforced Concrete Girder or Beam	2	Routine	09/15/2016	423 LF	0	423	0	0	N/A
			Routine	09/24/2014	423 LF	0	423	0	0	N/A

Notes: [2009-2014] Diaphragms are in place between girders #1- #4 and girders #7- #9.
 [2008-2014] Concrete girders are in proper alignment .
 There are horizontal cracks at north end of #1 girder. [2006-2012] Also cracking above abutment at north end girder #7.
 [2003-2014] Minor cracks are present. There are 2 spalls located 6 -10' north of south end of 'T' Girder #4 .

215	Reinforced Concrete Abutment	2	Routine	09/15/2016	105 LF	0	105	0	0	N/A
			Routine	09/24/2014	105 LF	0	105	0	0	N/A

Notes: [2014] Moderate delamination at construction joint bridge seat south girder #6 with rust present.
 [2010-2014] There is horizontal & vertical cracking at bridge seat between girders #7 & #8.
 [2008-2014] There is minor cracking at NE corner bridge seat.
 [2006-2014] There is horizontal & vertical cracking north end below #3 & #4 girders.
 [2008-2014] There is minor- moderate scaling present both abutments at water line.
 [1995-2014] Some Cracking at wing wall expansion joints @ SE & SW corner abutment. Minor- moderate spalling on bridge seat SE & NE corner.
 [1995-2014] Deterioration of cork along both sides of south and north abutments. [2005-2012] Cracking at construction joint bridge seat south girder #6.
 [2007-2014] There are 2 moderate spalls on the north side between #8 & #9 concrete girders.

301	Poured Deck Joint	2	Routine	09/15/2016	105 LF	0	0	105	N/A	N/A
			Routine	09/24/2014	105 LF	0	0	105	N/A	N/A

Notes: [2008-2014] Joints need replacement. Sealant has failed - 100% in condition #3.
 [2005-2014] Major spalls are present adjacent to joints. [2012-2014] They have been patched with bituminous.

311	Expansion Bearing	2	Routine	09/15/2016	10 EA	0	10	0	N/A	N/A
			Routine	09/24/2014	10 EA	0	10	0	N/A	N/A

Notes: [2002-2014] Bearings show little deterioration. Members are sound. Quantity was changed to 10 each in 2005.

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
313	Fixed Bearing	2	Routine	09/15/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/24/2014	1 EA	0	1	0	N/A	N/A
Notes: [2002-2014] Bearings show little deterioration. Members are sound.										
321	Concrete Approach Slab-Concrete Wearing Surface	2	Routine	09/15/2016	2 EA	0	2	0	0	N/A
			Routine	09/24/2014	2 EA	0	2	0	0	N/A
Notes: [2011-2014] All moderate to major size cracks should be sealed. SOUTH APPROACH SLAB [2014] 3' X 1.25' spall in south approach panel [2009-2014] There is one major spall on south approach slab at the bridge joint. [2002-2014] There are two 20' moderate Longitudinal cracks in south approach. NORTH APPROACH SLAB [2005-2014] One 20' moderate size longitudinal crack in north approach panel at centerline. [2010-2014] The north approach slab contains 2 major spalls & 1 moderate spall at bridge joint. [2005-2014] Bituminous patching is needed at approach panel ends due to bituminous settlement & potholes.										
331	Reinforced Concrete Bridge Railing	2	Routine	09/15/2016	135 LF	0	135	0	0	N/A
			Routine	09/24/2014	135 LF	0	135	0	0	N/A
Notes: [2007-2014] There are numerous moderate vertical cracks w/spalling in concrete railing both sides. Contains 2-3 cracks per section - most prevalent near anchorage for steel railing. [2005-2014] Concrete railing could use a special surface treatment. [2008-2014] There is some chalking of metal railing both sides. Bridge rail is a combination concrete & metal railing. East side has type "J" concrete railing w/ type "B" pipe railing. West side has type "F" concrete railing w/ type B pipe railing.										
358	Concrete Deck Cracking Smart Flag	2	Routine	09/15/2016	1 EA	0	1	0	0	N/A
			Routine	09/24/2014	1 EA	0	1	0	0	N/A
Notes: [2007-2014] There are numerous unsealed moderate size cracks in the deck. Minor tight cracks exists in deck 2002-2006.										
359	Underside of Concrete Deck Smart Flag	2	Routine	09/15/2016	1 EA	0	1	0	0	0
			Routine	09/24/2014	1 EA	0	1	0	0	0
Notes: [2002-2014] Minor cracking with efflorescence. Distressed area is less than 2%.										
387	Reinforced Concrete Wingwall	2	Routine	09/15/2016	4 EA	0	4	0	0	N/A
			Routine	09/24/2014	4 EA	0	4	0	0	N/A
Notes: [2014] Minor cracking in the NW WW, 1.5" X 0.3' spall in SE WW. [2008-2014] There is a minor 6' horizontal crack with moderate spalling at SE wingwall. There is moderate spalling at NE corner. [2006-2014] There is some moderate delamination at the NE WW. [1995-2014] Expansion material is missing at all 4 corners. Spalling and minor deterioration of SE wingwall & NE wingwall. [2005-2014] Trees behind the SE wingwall should be cleared.										
964	Critical Finding Smart Flag	2	Routine	09/15/2016	1 EA	1	0	N/A	N/A	N/A
			Routine	09/24/2014	1 EA	1	0	N/A	N/A	N/A
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
981	Signing	2	Routine	09/15/2016	1 EA	1	0	0	0	0
			Routine	09/24/2014	1 EA	1	0	0	0	0
Notes: [2002-2014] All appropriate signing is in place.										
982	Approach Guardrail	2	Routine	09/15/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/24/2014	1 EA	0	1	0	N/A	N/A
Notes: [2004-2014] Guardrail is in place & functioning properly. [2005-2014] Some moderate damage to guardrail system. SE guardrail not in proper alignment. [2011-2014] There is no crash attenuator for guardrail system. Crash attenuator not required due to low speed as per MNDOT.										
984	Deck & Approach Drainage	2	Routine	09/15/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/24/2014	1 EA	0	1	0	N/A	N/A
Notes: [2012-2014] There is some undermining at both aprons west side of bridge. [2009-2014] Apron which drains into Rice Creek is plugged with debris at trash guard.										
985	Slopes & Slope Protection	2	Routine	09/15/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/24/2014	1 EA	0	1	0	N/A	N/A
Notes: [2002-2014] There is minor cracking & settlement of riprap at all 4 corners. [2006-2014] There has been some movement of riprap @ NE corner. Riprap is not grouted at NE corner. [2011-2014] Some movement of the grouted riprap at SE corner. Riprap is grouted at SE corner. [2003-2014] There is moderate erosion at the NW corner. [2011-2014] Also some erosion behind the SW wing wall. New riprap was installed at NE corner by property owner in 2005.										
986	Curb & Sidewalk	2	Routine	09/15/2016	1 EA	0	1	0	N/A	N/A
			Routine	09/24/2014	1 EA	0	1	0	N/A	N/A
Notes: [2014] There is settlement both ends of sidewalk of the bituminous patch at the bridge approaches. [2012-2014] The sidewalk contains some moderate spalls. [2006-2014] There are minor spalls on the curb. [2002-2011] There is settlement both ends of sidewalk at bridge approaches. Sidewalk has been patched with bituminous at the bridge on the west side. [2007-2012] Additional repairs are needed. Low slump overlay mix was used for placement of bridge sidewalk.										

General Notes: 2016 Bridge safety inspection was conducted by Dan Bodelson, Brian Essler & Randy Bussiere on 9/15/2016.
2014 Bridge safety inspection was conducted by B. Essler & D. Bodelson on 9/24/2014.
2012 Bridge safety inspection was conducted by B. Wieman, B. Essler & D. Bodelson on 9/26/2012.
2011 Bridge safety inspection was conducted by B. Wieman on 10/10/2011.
2010 Bridge safety inspection was completed by B. Wieman 11/01/2010.
2009 Bridge safety inspection was completed by B. Wieman 7/05/2009.
2008 Bridge safety inspection was completed by B. Paine and B. Wieman 10/31/2008.
2007 Inspection was completed by Bret Wieman 7/24/2007.
Bridge #4513 was remodeled in 1984.

58. Deck NBI: Concrete deck has moderate w/ minor spalling and delamination.

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

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

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

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

59. Superstructure NBI: Concrete has moderate cracking & spalling.

60. Substructure NBI: Concrete has minor cracking scaling & delamination.

61. Channel NBI: No notable scour around substructure.
Minor debris in channel.

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
-------------	--------------	-----	-------------	------------	----------	-------------	-------------	-------------	-------------	-------------

62. Culvert NBI:

71. Waterway Adeq NBI: Greater than 3 feet of freeboard.

72. Appr Roadway Alignment NBI: Very minor speed reduction required.

Inventory Notes:

Dan Bodelson

Inspector's Signature

Nicklaus Fischer

Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

10/20/2016

Inspector: CO Bridge

BRIDGE 4513 CSAH 45(LONG LK) OVER RICE CREEK

County: Ramsey	Location: 0.2 MI N OF JCT CSAH 11	Length: 47.0 ft.
City: New Brighton	Route: 04 - CSAH 45 Ref. Pt.: 001+00.750	Deck Width: 52.8 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 2067 sq. ft. / %
Section: 18 Township: 030N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 1 - Concrete 3 - Girder and Floorbeam Local Agency Bridge Nbr.:		Culvert: N/A
List: System		Postings:
NBI Deck: 6 Super: 6 Sub: 7 Chan: 7 Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: I - LOW RISK	

Appraisal Ratings - Approach: 6 Waterway: 8	Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 1 - Object Markers	Unofficial Sufficiency Rating 98.4
Traffic: 0 - Not Required	
Vertical: N - Not Applicable	

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	09/15/2016	2491 SF	0	2441	50	0
		Migrated Values		2491 SF	0	2441	50	0
Notes: [2016] Concrete deck is 47' x 53' = 2491 SF [2002-2016] Minor cracking with efflorescence. Distressed area is less than 2%.								
510	- Wearing Surfaces	Routine	09/15/2016	2068 SF	0	2026	42	0
		Migrated Values		2068 SF	0	2026	42	0
Notes: Low Slump Overlay with Uncoated Rebar Notes: [2016] Concrete wearing surface is 47' x 44' = 2068 SF [2011-2016] There are 90 LF of moderate size unsealed cracks in deck. Still in condition state #2. The combined area of distress is less than 2%. [2006-2010] There are 80 LF of minor to moderate size cracks in deck. [2005-2008] Minor tight cracks in deck. [1995-2012] Underside of deck should be cleaned for better inspection. [2004-2016] There is spalling at both ends adjacent to formed joints at approach panels.								
110	Reinforced Concrete Open Girder/Beam	Routine	09/15/2016	423 LF	0	423	0	0
		Migrated Values		423 LF	0	423	0	0
Notes: [2009-2016] Diaphragms are in place between girders #1- #4 and girders #7- #9. [2008-2016] Concrete girders are in proper alignment . There are horizontal cracks at north end of #1 girder. [2006-2016] Also cracking above abutment at north end girder #7. [2003-2016] Minor cracks are present. There are 2 spalls located 6 -10' north of south end of 'T' Girder #4 .								
215	Reinforced Concrete Abutment	Routine	09/15/2016	173 LF	0	173	0	0
		Migrated Values		173 LF	0	173	0	0
Notes: [2016] South Abutment = 55', North Abutment = 55', SW wing = 21', SE wing = 10.5', NW wing = 21', NE wing = 10.5'. - Total = 173 LF [2016] Migrator added 40 LF to abutment quantity to account for wingwalls (CS1:0 CS2:40 CS3:0 CS4:0). [2014-2016] Moderate delamination at construction joint bridge seat south girder #6 with rust present. [2010-2016] There is horizontal & vertical cracking at bridge seat between girders #7 & #8. [2008-2016] There is minor cracking at NE corner bridge seat. [2006-2016] There is horizontal & vertical cracking north end below #3 & #4 girders. [2008-2016] There is minor- moderate scaling present both abutments at water line. [1995-2016] Some Cracking at wing wall expansion joints @ SE & SW corner abutment. Minor- moderate spalling on bridge seat SE & NE corner. [1995-2016] Deterioration of cork along both sides of south and north abutments. [2005-2012] Cracking at construction joint bridge seat south girder #6. [2007-2016] There are 2 moderate spalls on the north side between #8 & #9 concrete girders.								
Wingwall notes: [2014] Minor cracking in the NW WW, 1.5" X 0.3' spall in SE WW. [2008-2016] There is a minor 6' horizontal crack with moderate spalling at SE wingwall. There is moderate spalling at NE corner. [2006-2016] There is some moderate delamination at the NE WW. [1995-2016] Expansion material is missing at all 4 corners. Spalling and minor deterioration of SE wingwall & NE wingwall. [2005-2016] Trees behind the SE wingwall should be cleared.								

BRIDGE 4513 CSAH 45(LONG LK) OVER RICE CREEK

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	09/15/2016	105 LF	0	0	105	0
		Migrated Values		105 LF	0	0	105	0
Notes: [2008-2016] Joints need replacement. Sealant has failed - 100% in condition #3. [2005-2014] Major spalls are present adjacent to joints. [2012-2014] They have been patched with bituminous.								
311	Movable Bearing	Routine	09/15/2016	10 EA	0	10	0	0
		Migrated Values		10 EA	0	10	0	0
Notes: [2002-2016] Bearings show little deterioration. Members are sound. Quantity was changed to 10 each in 2005.								
313	Fixed Bearing	Routine	09/15/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2002-2016] Bearings show little deterioration. Members are sound.								
321	Reinforced Concrete Approach Slab	Routine	09/15/2016	1760 SF	0	1700	60	0
		Migrated Values		1760 SF	0	1700	60	0
Notes: [2016] 3 - 20' moderate cracks = 60 SF in condition state 3 - remainder in condition state 2 [2016] Migrator assumed an approach slab length of 20FT and used the inventory quantity of 44FT for the width. [2011-2016] All moderate to major size cracks should be sealed. SOUTH APPROACH SLAB [2016] South approach slab is 44' wide x 20' long = 880 SF [2014-2016] 3' X 1.25' spall in south approach panel [2009-2016] There is one major spall on south approach slab at the bridge joint. [2002-2016] There are two 20' moderate Longitudinal cracks in south approach. NORTH APPROACH SLAB [2016] North approach slab is 44' wide x 20' long = 880 SF [2005-2016] One 20' moderate size longitudinal crack in north approach panel at centerline. [2010-2016] The north approach slab contains 2 major spalls & 1 moderate spall at bridge joint. [2005-2016] Bituminous patching is needed at approach panel ends due to bituminous settlement & potholes.								
330	Metal Bridge Railing	Routine	09/15/2016	135 LF	0	135	0	0
		Migrated Values		135 LF	0	135	0	0
Notes: [2008-2016] There is some chalking of metal railing both sides. Bridge rail is a combination concrete & metal railing. East side has type "J" concrete railing w/ type "B" pipe railing. West side has type "F" concrete railing w/ type B pipe railing.								
515	Steel Protective Coating	Routine	09/15/2016	364 SF	0	364	0	0
		Migrated Values		364 SF	0	364	0	0
Notes: [2016] Minor coating deterioration & chalking. [2016] Metal railing is 135' long x 2.7' high = 364.5 SF								
331	Reinforced Concrete Bridge Railing	Routine	09/15/2016	135 LF	0	135	0	0
		Migrated Values		135 LF	0	135	0	0
Notes: [2007-2016] There are numerous moderate vertical cracks w/spalling in concrete railing both sides. Contains 2-3 cracks per section - most prevalent near anchorage for steel railing. [2005-2016] Concrete railing could use a special surface treatment. East side has type "J" concrete railing w/ type "B" pipe railing. West side has type "F" concrete railing w/ type B pipe railing.								
800	Critical Deficiencies or Safety Hazards	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: No critical structural deficiencies or serious safety hazards are present on this structure.								
810	Concrete Decks - Cracking & Sealing	Routine	09/15/2016	0 LF	0	0	0	0
		Migrated Values		0 LF	0	0	0	0
Notes: [2007-2016] There are numerous unsealed moderate size cracks in the deck. Minor tight cracks exists in deck 2002-2006.								

BRIDGE 4513 CSAH 45(LONG LK) OVER RICE CREEK

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
891	Other Bridge Signing	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2002-2016] All appropriate signing is in place.								
892	Slopes & Slope Protection	Routine	09/15/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2002-2016] There is minor cracking & settlement of riprap at all 4 corners. [2006-2016] There has been some movement of riprap @ NE corner. Riprap is not grouted at NE corner. [2011-2016] Some movement of the grouted riprap at SE corner. Riprap is grouted at SE corner. [2003-2016] There is moderate erosion at the NW corner. [2011-2014] Also some erosion behind the SW wing wall. New riprap was installed at NE corner by property owner in 2005.								
893	Guardrail	Routine	09/15/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2004-2016] Guardrail is in place & functioning properly. [2005-2016] Some moderate damage to guardrail system. SE guardrail not in proper alignment. [2011-2016] There is no crash attenuator for guardrail system. Crash attenuator not required due to low speed as per MNDOT.								
894	Deck & Approach Drainage	Routine	09/15/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2012-2016] There is some undermining at both aprons west side of bridge. [2009-2016] Apron which drains into Rice Creek is plugged with debris at trash guard.								
895	Sidewalk, Curb, & Median	Routine	09/15/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2016] 2" settlement on both ends of walk on west side, patched & ramped with bituminous. [2014-2016] There is settlement both ends of sidewalk of the bituminous patch at the bridge approaches. [2012-2016] The sidewalk contains some moderate spalls. [2006-2016] There are minor spalls on the curb. [2002-2011] There is settlement both ends of sidewalk at bridge approaches. Sidewalk has been patched with bituminous at the bridge on the west side. [2007-2012] Additional repairs are needed. Low slump overlay mix was used for placement of bridge sidewalk.								
900	Protected Species	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2016] no protective species found. Use this element to track the presence of protected species living on this structure.								

General Notes: 2016 Bridge safety inspection was conducted by Dan Bodelson, Brian Essler & Randy Bussiere on 9/15/2016.
2014 Bridge safety inspection was conducted by B. Essler & D. Bodelson on 9/24/2014.
2012 Bridge safety inspection was conducted by B. Wieman, B. Essler & D. Bodelson on 9/26/2012.
2011 Bridge safety inspection was conducted by B. Wieman on 10/10/2011.
2010 Bridge safety inspection was completed by B. Wieman 11/01/2010.
2009 Bridge safety inspection was completed by B. Wieman 7/05/2009.
2008 Bridge safety inspection was completed by B. Paine and B. Wieman 10/31/2008.
2007 Inspection was completed by Bret Wieman 7/24/2007.
Bridge #4513 was remodeled in 1984.

58. Deck NBI: Concrete deck has moderate w/ minor spalling and delamination.

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

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

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

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

59. Superstructure NBI: Concrete has moderate cracking & spalling.

60. Substructure NBI: Concrete has minor cracking scaling & delamination.

61. Channel NBI: No notable scour around substructure.

BRIDGE 4513 CSAH 45(LONG LK) OVER RICE CREEK

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
-------------	--------------	-------------	------------	----------	-------------	-------------	-------------	-------------

Minor debris in channel.

62. Culvert NBI:

71. Waterway Adeq NBI: Greater than 3 feet of freeboard.

72. Appr Roadway Alignment NBI: Very minor speed reduction required.

Inventory Notes:

Dan Bodelson

Inspector's Signature

Nicklaus Fischer

Reviewer's Signature

Pictures



Photo 1 -



Photo 2 -

Pictures



Photo 3 -

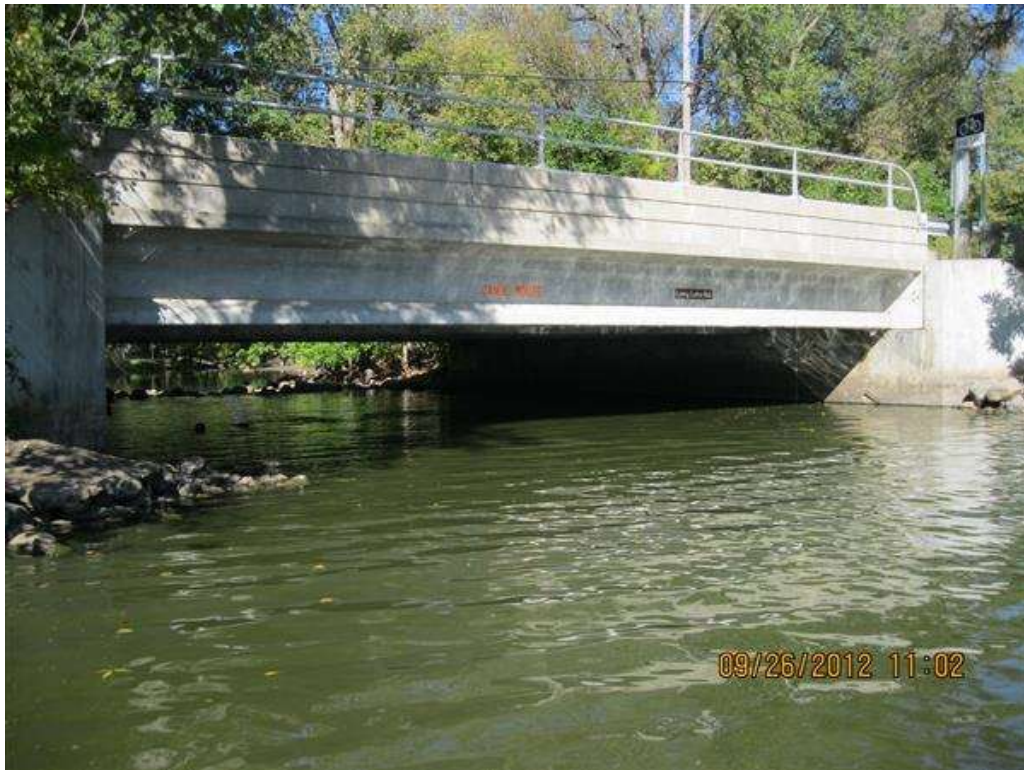


Photo 4 -

Pictures



Photo 5 -



Photo 6 -

Pictures



Photo 7 -



Photo 8 -

Pictures

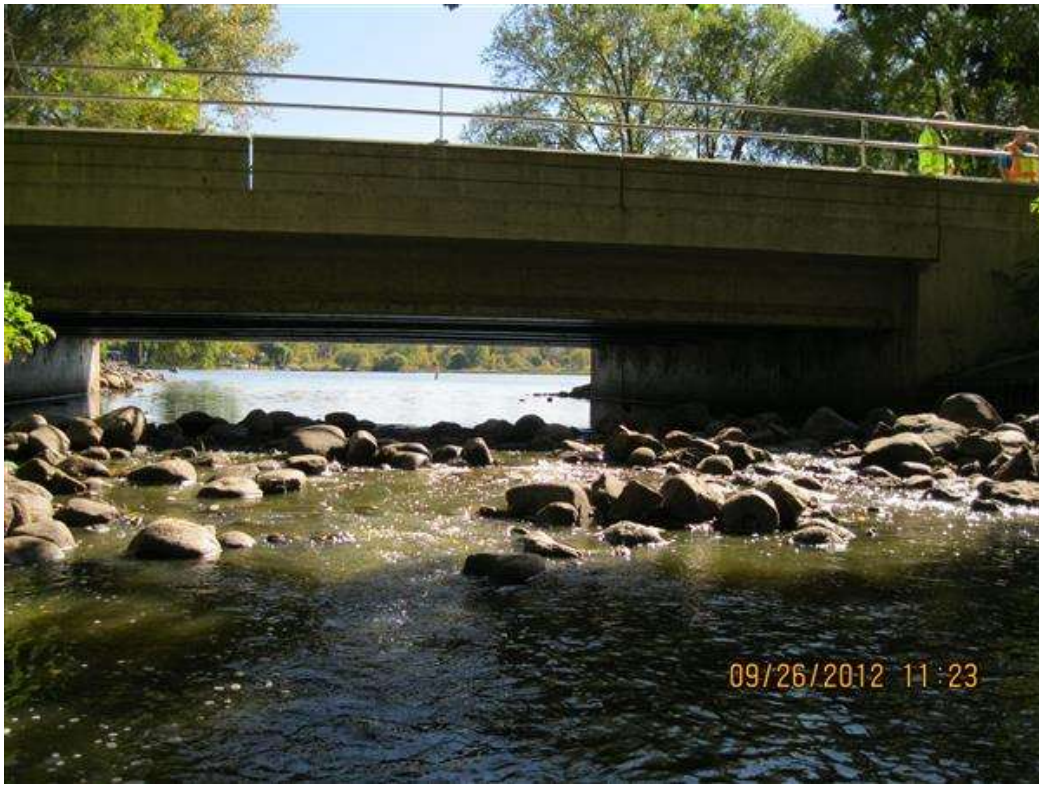


Photo 9 -

Channel

Bridge No.: 4513

Channel

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Channel Overall:	NBI Item 61	<u>7</u>	No notable scour around substructure. Minor debris in channel.

Bank Protection/Revetment

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Upstream Bank Protection:	_____	_____	_____
Downstream Bank Protection:	_____	_____	_____
Bridge Revetment:	_____	_____	_____
Minnesota Scour Code:	<u>I - LOW RISK</u>		

Underwater Inspection

Underwater Inspection By Divers: _____

No. of Piers To Be Inspected: _____

Waterway Characteristics

Reference Point: _____	High Water Elev.: _____	Current Water Elev.: _____
Pile Tip Elev.: _____	Low Water Elev.: _____	Current Streambed Elev.: _____
	Scour Hole Elev.: _____	Current Scour Hole Elev.: _____

Waterway Inspection: (Not applicable for culverts)

Item No.	Yes, No, NA or Not Visible	Description
1.	_____	Is there a significant build-up of debris?
2.	_____	Is there a change in the horizontal alignment of the handrail or structure members such as beams?
3.	_____	Is there any indication of vertical movement of the superstructure?
4.	_____	Is there shifting of the channel alignment or erosion of the stream banks? Also are there cracks in the soil of the banks parallel to the stream?
5.	_____	Is there a significant change in the alignment of the exterior bearings?
6.	_____	Are there cracks or other signs of distress in the approach pavement?
7.	_____	Is the water currently on the superstructure?
8.	_____	Are the slopes unstable?
9.	_____	Do scour measurements indicate: (place a check by all that apply.)
	<input type="checkbox"/>	A. that the streambed is two or more feet below the bottom of pier footings which are supported on piles?
	<input type="checkbox"/>	B. scour below the bottom of spread footings?
	<input type="checkbox"/>	C. scour below the bottom of high abutment footings?
	<input type="checkbox"/>	D. that the streambed has scoured five feet or more below the original streambed elevation at pier bents?

10. _____ Have the scour countermeasures been damaged or otherwise made ineffective?

Notes:

- Streambed sounding data is to be documented.
- Per Minnesota Bridge Inspection Manual Section 2.2.5, at bridges that require x-sections, take channel x-sections, along the upstream and/or downstream face of the bridge.
- If "Yes" is the answer to any items on the checklist, notify the Program Administrator for further instructions.

Comments:

Completed On _____ By _____

Scour POA

Bridge No.: 4513

Scour POA

1. Is POA on File? _____
2. Date of most recent POA: _____
3. Here is a link to Minnesota's Bridge Scour website for other
 - <http://www.dot.state.mn.us/bridge/hydraulics/scour.html>
 - The Scour POA should be kept in the bridge file and/or uploaded to SIMS using the "Inspection Files" tab.

Implementation

Scour POAs are required to be implemented by FHWA.

1. Is this POA being implemented? _____

Maintenance

Element	Source Code	Work Code	Description	P/R	Priority	Work Order #	Year Due	Last Viewed	Entered	Start Date	Completed
---------	-------------	-----------	-------------	-----	----------	--------------	----------	-------------	---------	------------	-----------

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.: 4513	BRIDGE OWNER: County Highway Agency
DATE INSPECTED: 09/15/2016	STRUCTURE TYPE: Concrete Order and Floorbeam System
FACILITY CARRIED: CSAH 45(LONG LK)	FEATURES INTERSECTED: RICE CREEK
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