2016 UPDATE
BRIDGE INSPECTION REPORT

BRIDGE # 90415
CR 149 over STREAM

DISTRICT: Metro **COUNTY:** Ramsey **CITY/TOWNSHIP:** WHITE BEAR

STATE: Minnesota

Date of Inspection: 09/20/2016

Reason for Update Report:

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

Owner: County Highway Agency

Inspected By: Essler, Brian

Report Written By: Brian Essler

Report Reviewed By: Nicklaus Fischer

Final Report Date: 11/28/2016

Table of Contents

Minnesota Structure Inventory Report

Bridge ID: 90415 CR 149 **over** STREAM **Date:** 11/28/2016

GENERAL

Agency Br. No.
District Metro
Maint. Area **Crew**
County 062 - Ramsey
City
Township 62001 - WHITE BEAR
Desc. Loc. 0.8 MI N OF JCT CSAH 5
Sect., Twp., Range 3 - 030N - 22W
Latitude **Deg** 45 **Min** 6 **Sec** 55.65
Longitude **Deg** 93 **Min** 1 **Sec** 40.44
Custodian 02 - County Highway Agency
Owner 02 - County Highway Agency
BMU Agreement
Year Built 1939
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 53B
ABC Suitable

STRUCTURE

Service On 1 - Highway
Service Under 5 - Waterway
Main Span Type
1 - Concrete 13 - Box Culvert
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 0
Culvert Type W62D
Barrel Length 34 ft.
Cantilever ID

NUMBER OF SPANS

MAIN: 2 **APPR:** 0 **TOTAL:** 2
Main Span Length 6.5 ft.
Structure Length 14.2 ft.
Deck Width (Out-to-Out) 0.0 ft.
Deck Material N - Not Applicable
Wear Surf Type 6 - Bituminous
Wear Surf Install Year
Wear Course/Fill Depth 0.50 ft.
Deck Membrane N - Not Applicable (applies onl
Deck Rebars N - Not Applicable (no deck)
Deck Rebars Install Year
Structure Area (Out-to-Out) 0 sq. ft.
Roadway Area (Curb-to-Curb) sq. ft.
Sidewalk Width **Lt** 0.00 ft. **Rt** 0.00 ft.
Curb Height **Lt** 0.00 ft. **Rt** 0.00 ft.
Rail Type **Lt** 02 **Rt** 02

ROADWAY

Bridge Match ID (TIS) 0
Roadway O/U Key Route On Structure
Route Sys 07 - CNTY **Number** 249
Roadway Name or Description
CNTY 249
Level of Service 1 - MAINLINE
Roadway Type 2 - 2-way traffic
Control Section (TH Only)
Reference Point 000+00.770
Detour Length 3.0 mi
Lanes **On** 2 **Under** 0
ADT 1900 **Year** 2005
HCADT 0 **ADTT** 0 **%**
Functional Class 19 - Urban - Local

RDWY DIMENSIONS

If Divided	NB-EB	SB-WB
Roadway Width	26.00 ft.	ft.
Vertical Clearance	ft.	ft.
Max. Vert. Clear.	ft.	ft.
Horizontal Clear.	ft.	ft.
Lateral Clearance	ft.	ft.

Appr. Surface Width 32.0 ft.
Bridge Roadway Width 0.0 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 N - N/A
(Material/Type) N - N/A
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 0 - Not Required
Vertical N - Not Applicable

INSPECTION

Userkey 102
Unofficial Structurally Deficient N
Unofficial Functionally Obsolete N
Unofficial Sufficiency Rating 83.8
Routine Inspection Date 08/07/2015
Routine Inspection Frequency 24
Inspector Name CO Bridge
Status A - Open

NBI CONDITION RATINGS

Deck N - Not Applicable
Unsound Deck %
Superstructure N - Not Applicable
Substructure N - Not Applicable
Channel 5 - Bank eroded; Major damage
Culvert 5 - Mod. to major deterioration

NBI APPRAISAL RATINGS

Structure Evaluation 5
Deck Geometry N
Underclearances N
Water Adequacy 5 - Occasional Flooding - Si
Approach Alignment 6 - Equal to present minimu

SAFETY FEATURES

Bridge Railing 0 - SUBSTANDARD
GR Transition 0 - SUBSTANDARD
Appr. Guardrail 0 - SUBSTANDARD
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 24 sq. ft.
Navigation Control 0 - No nav. control on waterw
Pier Protection
Nav. Clr. (ft.) **Vert.** ft. **Horiz.** ft.
Nav. Vert. Lift Bridge Clear. (ft.)
MN Scour Code E - CULVERT **Year**

CAPACITY RATINGS

Design Load 4 - H 20
Operating Rating B - Assigned ratir 24.0
Inventory Rating B - Assigned ratir 18.0
Posting VEH: **SEMI:** **DBL:**
Rating Date 01/10/1985

Minnesota Permit Codes

A: N - N/A
B: N - N/A
C: N - N/A

Minnesota Structure Inventory Report

Bridge ID: 90415 **CR 149 over STREAM** Date: 09/20/2016

+GENERAL+

Agency Br. No.	**Crew**
District	05 **Maint. Area**
County	062 - Ramsey
City	
Township	62001 - WHITE BEAR
Desc. Loc.	0.8 MI N OF JCT CSAH 5
Sect., Twp., Range	3 - 030N - 22W
Latitude	45 ° 6 ' 55.65 "
Longitude	93 ° 1 ' 40.44 "
Custodian	02 - County Highway Agency
Owner	02 - County Highway Agency
BMU Agreement	
Year Built	1939
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	53B
Potential ABC	2 - N/A

+STRUCTURE+

Service On	1 - Highway
Service Under	5 - Waterway
Main Span Type	1 - Concrete
Main Span Design	13 - Box Culvert
Main Span Detail	
Appr. Span Type	
Appr. Span Design	
Appr. Span Detail	
Skew	0
Culvert Type	W62D
Barrel Length	34
Cantilever ID	

Number of Spans

MAIN: 2 **APPR:** 0 **TOTAL:**

Main Span Length	6.5 **ft.**
Structure Length	14.2 **ft.**
Deck Width (Out-to-Out)	0.0 **ft.**
Deck Material	N - Not Applicable
Wear Surf Type	6 - Bituminous
Wear Surf Install Year	
Wear Course/Fill Depth	0.50 **ft.**
Deck Membrane	N - Not Applicable (applies
Deck Rebars	N - Not Applicable (no deck)
Deck Rebars Install Year	
Structure Area (Out-to-Out)	0 **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**	02	**Rt**	02

+ROADWAY+

Bridge Match ID (TIS)	0
Roadway O/U Key	Route On Structure
Route Sys	07 - CNTY **Number** 249
Roadway Name or Description	CNTY 249
Level of Service	1 - MAINLINE
Roadway Type	2 - 2-way traffic
Control Section (TH Only)	
Reference Point	000+00.770
Detour Length	3.0 **mi.**
Lanes	**ON** 2 **UNDER** 0
	ADT 1900 **YEAR** 2005
HCADT	**ADTT** **%**
Functional Class	19 - Urban - Local

+RDWY DIMENSIONS+

If Divided	**NB-EB**	**SB-WB**
Roadway Width	26.00 **ft.**	**ft.**
Vertical Clearance	**ft.**	**ft.**
Max. Vert. Clear.	**ft.**	**ft.**
Horizontal Clear.	**ft.**	**ft.**
Lateral Clearance	**ft.**	**ft.**

Appr. Surface Width	32.0 **ft.**
Bridge Roadway Width	0.0 **ft.**
Median Width On Bridge	**ft.**

+MISC. BRIDGE DATA+

Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	
Abutment	N - N/A
Foundation (Material/Type)	N - N/A
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	0 - Not Required
Vertical	N - Not Applicable

+INSPECTION+

Userkey	102
Structurally Deficient	N
Functionally Obsolete	N
Sufficiency Rating	83.8
Routine Inspection Date	08/07/2015
Routine Inspection Frequency	24
Inspector Name	Essler, Brian
Status	A - Open

+NBI CONDITION RATINGS+

Deck	N	**Unsound Deck %**
Superstructure	N	
Substructure	N	
Channel	5	
Culvert	5	

+NBI APPRAISAL RATINGS+

Structure Evaluation	5
Deck Geometry	N
Underclearances	N
Waterway Adequacy	5
Approach Alignment	6

+SAFETY FEATURES+

Bridge Railing	0 - SUBSTANDARD
GR Transition	0 - SUBSTANDARD
Appr. Guardrail	0 - SUBSTANDARD
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.)	24
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	E - CULVERT **Year**

+CAPACITY RATINGS+

Design Load	4 - H 20	
Operating Rating	2 - HS TRUCK	24.0
Inventory Rating	2 - HS TRUCK	18.0

Posting VEH: **SEMI:** **DBL:**

Rating Date 01/10/1985

Overweight Permit Codes

A N - N/A **B** N - N/A **C** N - N/A

BRIDGE 90415 CR 149 OVER STREAM **ROUTINE INSP. DATE: 08/07/2015**

County: Ramsey
City:
Township: 62001 - WHITE BEAR
Section: 3 Township: 030N Range: 22W
Span Type: 1 - Concrete 19 - Culvert (includes frame culverts)
List:
NBI Deck: N Super: N Sub: N Chan: 5 Culv: 5

Location: 0.8 MI N OF JCT CSAH 5
Route: 07 - CNTY 249 Ref. Pt.: 000+00.770
Control Section:
Maint. Area:
Local Agency Bridge Nbr.:
Open, Posted, Closed: A - Open
MN Scour Code: E - CULVERT

Length: 14.2 ft.
Deck Width: 0.0 ft.
Rdwy. Area/ Pct. Unsnd: sq. ft. / %
Paint Area/ Pct. Unsnd: sq. ft. / %
Culvert: W62D
Postings:

Appraisal Ratings - Approach: 6 Waterway: 5
Required Bridge Signs - Load Posting: 0 - Not Required Traffic: 0 - Not Required
Horizntal: 0 - Not Required Vertical: N - Not Applicable

Unofficial Structurally Deficient N
Unofficial Functionally Obsolete N
Unofficial Sufficiency Rating 83.8

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
241	Reinforced Concrete Culvert	2	Update	09/20/2016	69 LF	0	69	0	0	N/A
			Routine	08/07/2015	69 LF	0	69	0	0	N/A
	Notes: [2015] Culvert contains moderate scaling. Debris on both ends of culvert. Culvert was full of water during inspection. [2013] Culvert contains moderate scaling. Some cleanout has been done at both ends, but still contains blockage. Culvert was full of water during inspection. [2005-2011] Culvert is filled with debris & water making it difficult to view. Culvert should be cleaned out inside and at both ends to increase efficiency. [2001-2013] Minor deterioration with cracking and leaching. [2009] West end is full of water. At east end water is 0.5' lower than top of inside culvert. [1988-2013] Could use seal treatment.									
334	Metal Bridge Railing (Coated or Painted)	2	Update	09/20/2016	30 LF	0	23	7	0	0
			Routine	08/07/2015	30 LF	0	23	7	0	0
	Notes: [2013-2015] Railing contains 7 LF of moderate corrosion. Both rails need paint. [2001-2011] Coating has deteriorated. Minor corrosion on both rails.									
388	Culvert Headwall, Wingwall or Other End Treatment	2	Update	09/20/2016	2 EA	0	2	0	0	N/A
			Routine	08/07/2015	2 EA	0	2	0	0	N/A
	Notes: [2013-2015] Major spall at the NE corner of the east headwall. Moderate scaling is present. [2007-2015] Moderate spalling on east headwall. Moderate crack at center of west headwall. [2001-2005] Minor spalling on east headwall. Scaling is present on both sides with minor corrosion of rebar.									
964	Critical Finding Smart Flag	2	Update	09/20/2016	1 EA	1	0	N/A	N/A	N/A
			Routine	08/07/2015	1 EA	1	0	N/A	N/A	N/A
	Notes: DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.									
981	Signing	1	Update	09/20/2016	1 EA	1	0	0	0	0
			Routine	08/07/2015	1 EA	1	0	0	0	0
	Notes: [2003-2015] Horizontal clearance marker signs are in place.									
982	Approach Guardrail	1	Update	09/20/2016	1 EA	0	0	1	N/A	N/A
			Routine	08/07/2015	1 EA	0	0	1	N/A	N/A
	Notes: [1995-2015] No guardrail, installation is recommended.									

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
987	Roadway over Culvert	2	Update	09/20/2016	1 EA	0	1	0	N/A	N/A
			Routine	08/07/2015	1 EA	0	1	0	N/A	N/A

Notes: [2009-2015] There is moderate settlement at both ends. Some deterioration of bituminous over culvert. [2001-2007] Roadway over culvert has minor settlement. [1992] Overlayed with chip seal.

General Notes: [2016] Bridge Safety Inspection was updated by Brian Essler on 9-20-2016.
[2015] Bridge Safety Inspection was completed by Dan Bodelson & Brian Essler on 8/12/2015.
[2013] Inspection was completed by B. Wieman and R. Bussiere.
[2011] Bridge safety inspection was completed by B. Wieman 9/13/2011.
[2009] Bridge safety inspection was completed by B. Wieman 6/11/2009.
[2007] Bridge safety inspection by B. Wieman & B. Essler 7/24/2007.
[2005] bridge safety inspection was completed by Bret Wieman 8/19/2005.
ALL EXPOSED CONCRETE EPOXIED DURING SUMMER 82. #104 RAILING DAMAGED (EAST) RAIL REPAIRED 1995. #186 WOOD SILL BLOCK DETERIORATING. 83, 90. COVER WITH BIT. 95.

58. Deck NBI: Culvert

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail Terminal NBI:

59. Superstructure NBI: Culvert

60. Substructure NBI: Culvert

61. Channel NBI: Debris blocking culvert on both ends.

62. Culvert NBI: Culvert contains moderate scaling with cracking and leaching. Major spall at the NE corner of the east headwall.

71. Waterway Adeq NBI: Less than 1' of freeboarding

72. Appr Roadway Alignment NBI:

Inventory Notes: There is a 0.85' bituminous overlay over culvert.

Brian Essler
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

11/28/2016

Inspector: CO Bridge

BRIDGE 90415 CR 149 OVER STREAM

County: Ramsey
City:
Township: 62001 - WHITE BEAR
Section: 3 Township: 030N Range: 22W
Span Type: 1 - Concrete 19 - Culvert (includes frame culverts)
List:
NBI Deck: N Super: N Sub: N Chan: 5 Culv: 5

Location: 0.8 MI N OF JCT CSAH 5
Route: 07 - CNTY 249 Ref. Pt.: 000+00.770
Control Section:
Maint. Area:
Local Agency Bridge Nbr.:
Open, Posted, Closed: A - Open
MN Scour Code: E - CULVERT

Length: 14.2 ft.
Deck Width: 0.0 ft.
Rdwy. Area/ Pct. Unsnd: sq. ft. / %
Paint Area/ Pct. Unsnd: sq. ft. / %
Culvert: W62D
Postings:

Appraisal Ratings - Approach: 6 Waterway: 5
Required Bridge Signs - Load Posting: 0 - Not Required Traffic: 0 - Not Required
Horizntal: 0 - Not Required Vertical: N - Not Applicable

Unofficial Structurally Deficient N
Unofficial Functionally Obsolete N
Unofficial Sufficiency Rating 83.8

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
241	Reinforced Concrete Culvert	Update	09/20/2016	69 LF	0	69	0	0
		Migrated Values		69 LF	0	69	0	0

Notes: [2015] Culvert contains moderate scaling. Debris on both ends of culvert. Culvert was full of water during inspection.
[2013] Culvert contains moderate scaling. Some cleanout has been done at both ends, but still contains blockage. Culvert was full of water during inspection.
[2005-2011] Culvert is filled with debris & water making it difficult to view. Culvert should be cleaned out inside and at both ends to increase efficiency.
[2001-2013] Minor deterioration with cracking and leaching.
[2009] West end is full of water. At east end water is 0.5' lower than top of inside culvert.
[1988-2013] Could use seal treatment.

330	Metal Bridge Railing	Update	09/20/2016	30 LF	0	30	0	0
		Migrated Values		30 LF	0	30	0	0

Notes: [2013-2015] Railing contains 7 LF of moderate corrosion. Both rails need paint.
[2001-2011] Coating has deteriorated. Minor corrosion on both rails.

	515 - Steel Protective Coating	Update	09/20/2016	999 SF	999	0	0	0
		Migrated Values		999 SF	999	0	0	0

Notes: [2016] Migrator assumed CS1 and a quantity of 999 SF.

800	Critical Deficiencies or Safety Hazards	Update	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0

Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION.

870	Culvert End Treatment	Update	09/20/2016	2 EA	0	2	0	0
		Migrated Values		2 EA	0	2	0	0

Notes: [2013-2015] Major spall at the NE corner of the east headwall. Moderate scaling is present.
[2007-2015] Moderate spalling on east headwall. Moderate crack at center of west headwall.
[2001-2005] Minor spalling on east headwall. Scaling is present on both sides with minor corrosion of rebar.

871	Roadway Over Culvert	Update	09/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0

Notes: [2009-2015] There is moderate settlement at both ends. Some deterioration of bituminous over culvert.
[2001-2007] Roadway over culvert has minor settlement. [1992] Overlayed with chip seal.

891	Other Bridge Signing	Update	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0

Notes: [2003-2015] Horizontal clearance marker signs are in place.

BRIDGE 90415 CR 149 OVER STREAM

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	Update	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Use this element to rate the condition of slopes and slope protection.							
893	Guardrail	Update	09/20/2016	1 EA	0	0	0	1
		Migrated Values		1 EA	0	0	0	1
	Notes: [1995-2015] No guardrail, installation is recommended.							
894	Deck & Approach Drainage	Update	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Use this element to rate the condition, function, and adequacy of the drainage system.							
900	Protected Species	Update	09/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Use this element to track the presence of protected species living on this structure.							

General Notes: [2016] Bridge Safety Inspection was updated by Brian Essler on 9-20-2016.
[2015] Bridge Safety Inspection was completed by Dan Bodelson & Brian Essler on 8/12/2015.
[2013] Inspection was completed by B. Wieman and R. Bussiere.
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ALL EXPOSED CONCRETE EPOXIED DURING SUMMER 82. #104 RAILING DAMAGED (EAST) RAIL REPAIRED 1995.
#186 WOOD SILL BLOCK DETERIORATING. 83, 90. COVER WITH BIT. 95.

58. Deck NBI: Culvert

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail Terminal NBI:

59. Superstructure NBI: Culvert

60. Substructure NBI: Culvert

61. Channel NBI: Debris blocking culvert on both ends.

62. Culvert NBI: Culvert contains moderate scaling with cracking and leaching. Major spall at the NE corner of the east headwall.

71. Waterway Adeq NBI: Less than 1' of freeboarding

72. Appr Roadway Alignment NBI:

Inventory Notes: There is a 0.85' bituminous overlay over culvert.

Brian Essler
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

Pictures

Photo 1 -

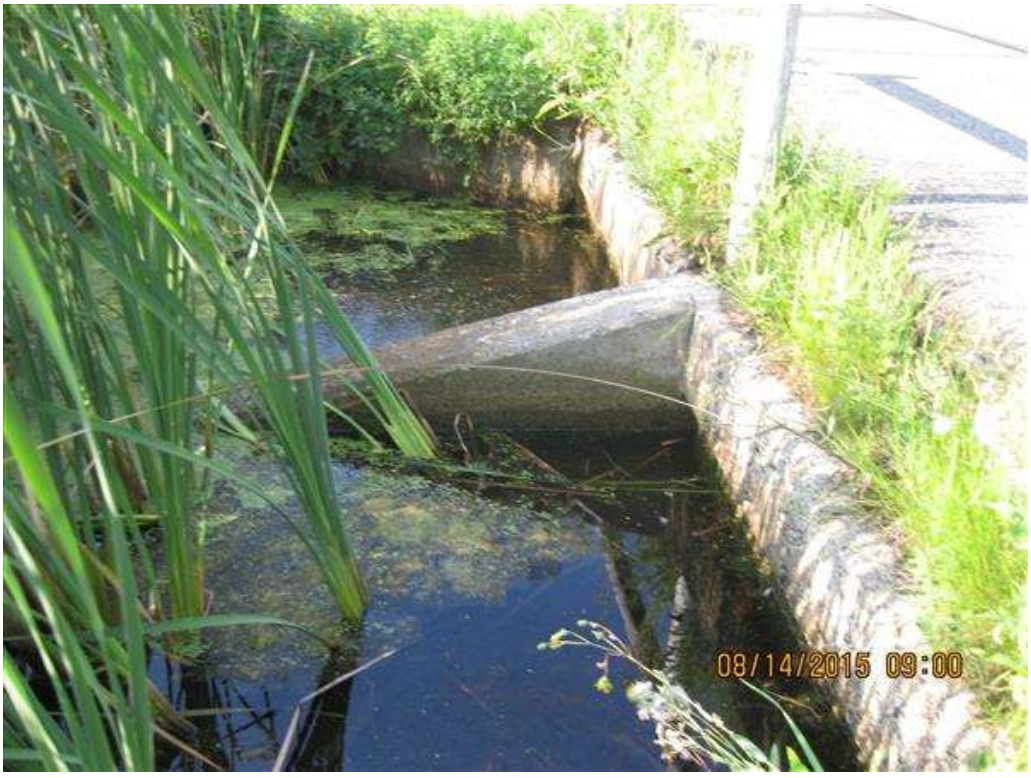

Photo 2 -

Pictures

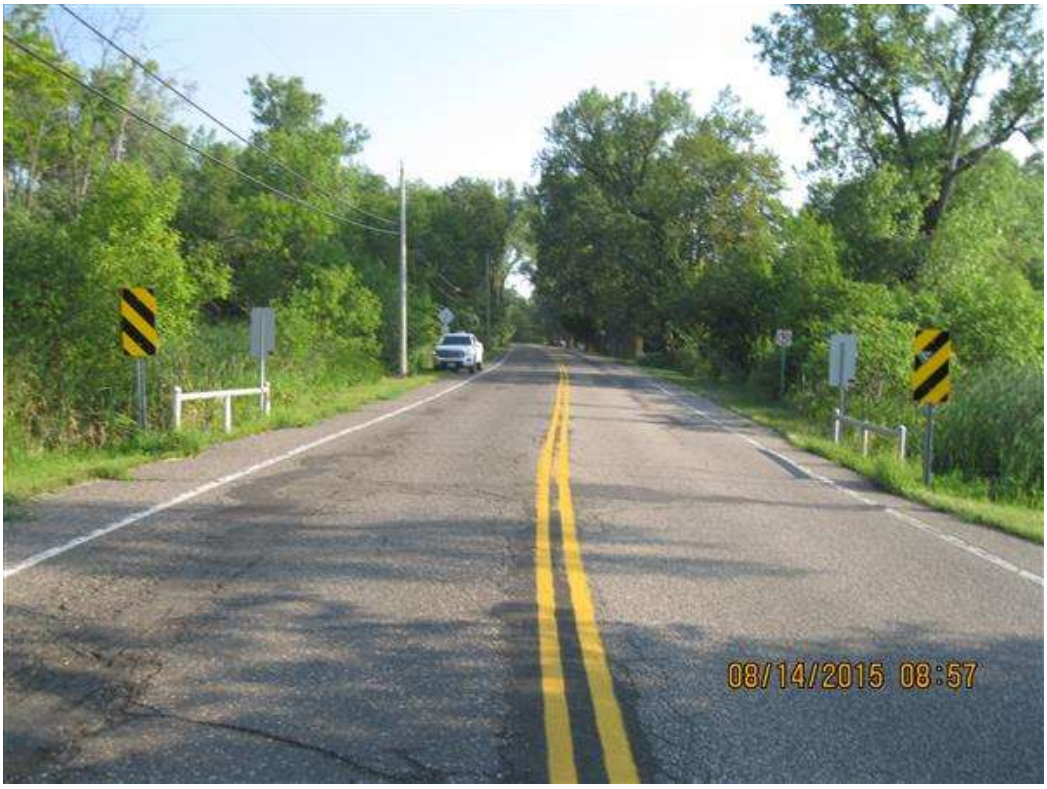

Photo 3 -

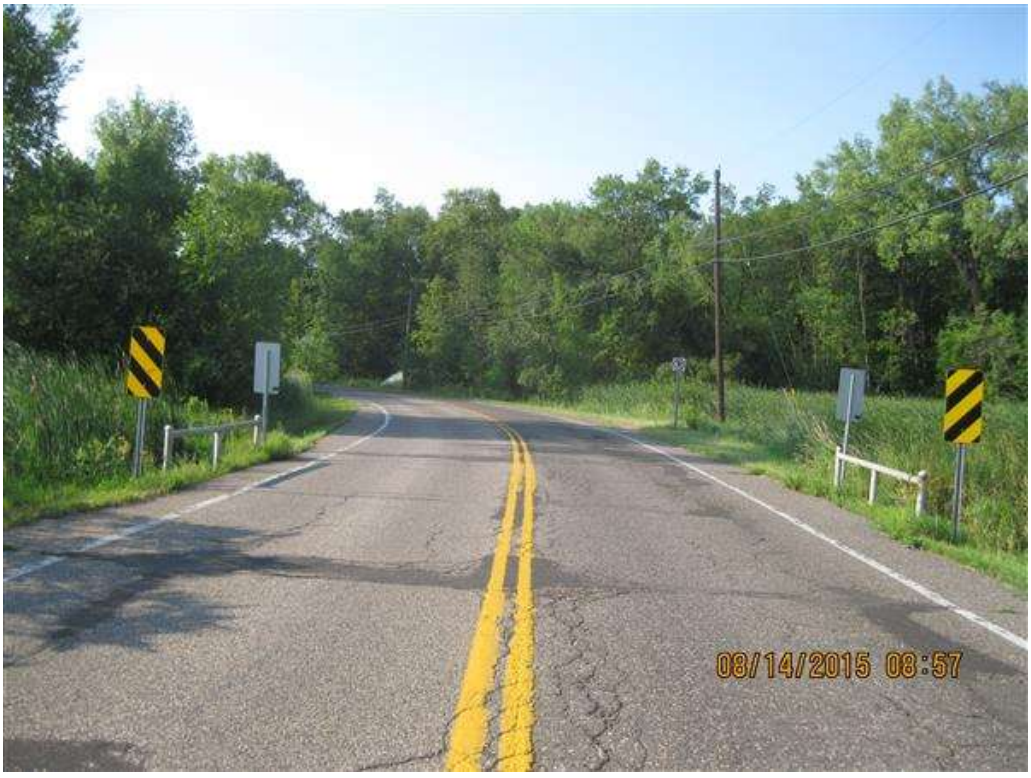

Photo 4 -

Pictures

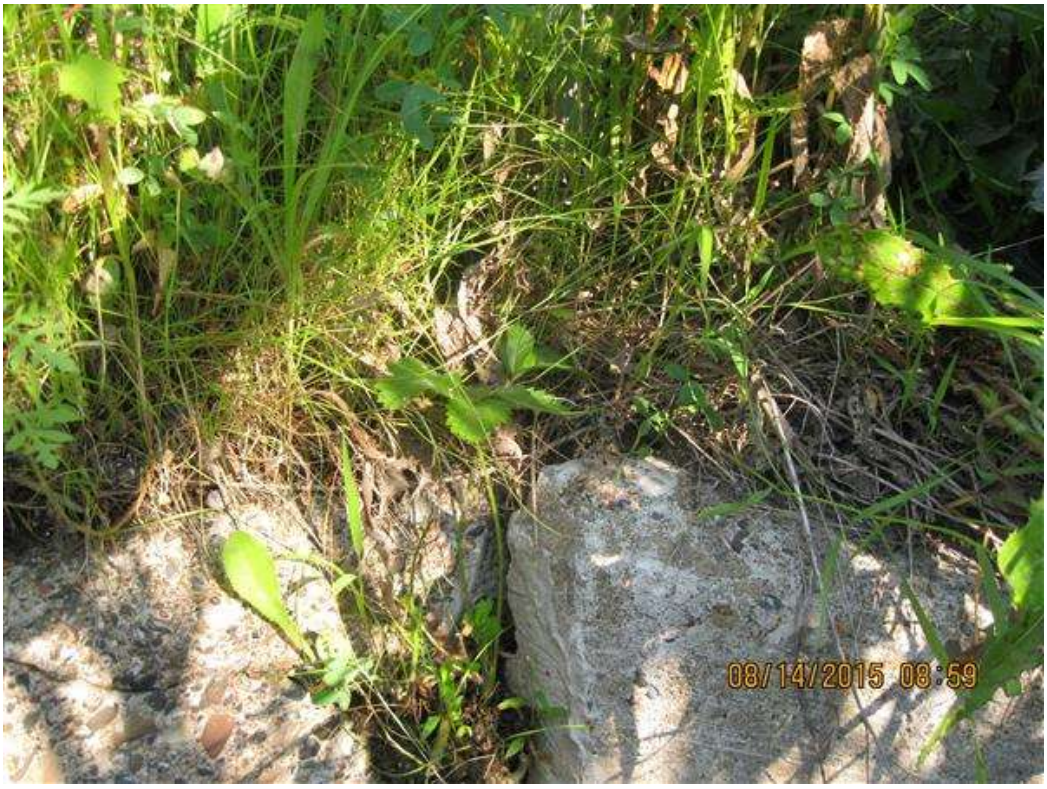

Photo 5 -

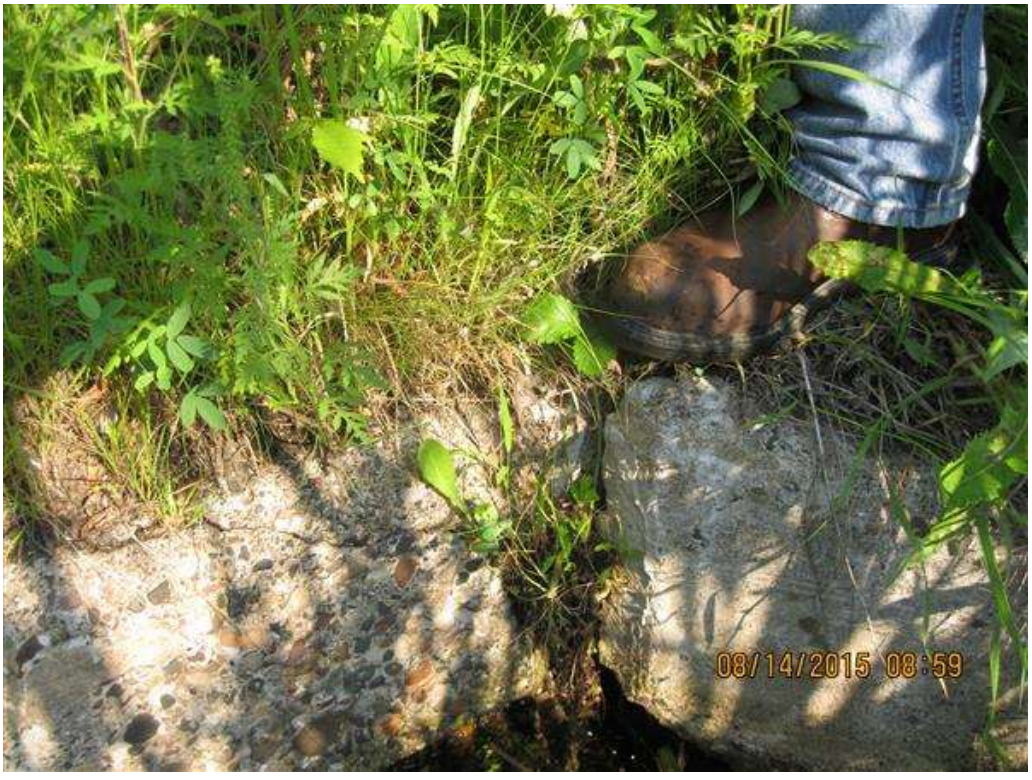

Photo 6 -

Pictures

Photo 7 -

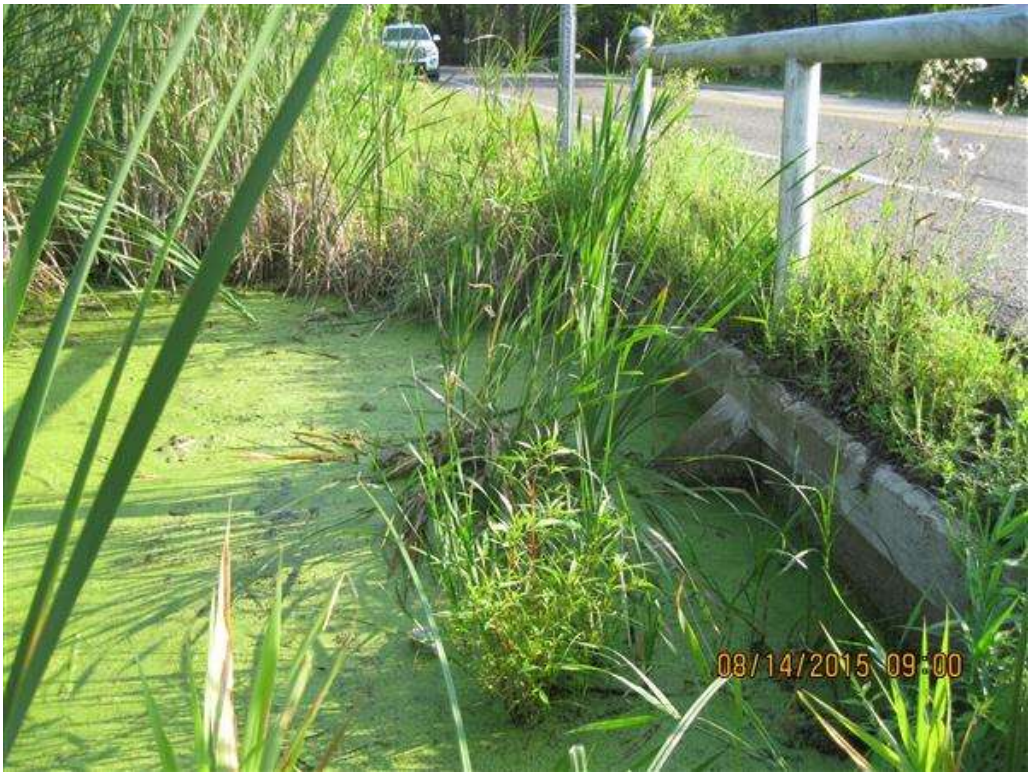

Photo 8 -

Culvert

Bridge No.: 90415

Culvert

Item	*Description*	*Condition*	*Comments*
Culvert Overall:	**NBI Item 62**	5	Culvert contains moderate scaling with cracking and leaching. Major spall at the NE corner of the east headwall.

Minnesota Scour Code: E - CULVERT

Waterway Inspection

Item No.	Yes, No, NA or Not Visible	Description
1.		Is there a significant build-up of debris?
2.		Is there erosion of the embankment around the headwalls?
3.		Is there any indication of cracking or settlement of the culvert barrel or headwalls?
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.		Do scour measurements indicate that the streambed is below the bottom of the cutoff walls at the ends of the culvert?
6.		Is there evidence of distress in the roadway or approaches such as cracks in the pavement and sags in the guardrail or roadway? Also, is there cracking, erosion, or failure of the side slopes at or adjacent to the culvert?
7.		Is there an indication of "piping" of water along the outside of the culvert such as cavities adjacent to the barrel?
8.		Is the culvert without a bottom and scour measurements indicate that the streambed is below the plan streambed elevations?
9.		Has the riprap or other scour protection been damaged or otherwise made ineffective?
10.		If the culvert was designed to be buried (fill inside the culvert), is the material still in the barrel?

Notes:

- Streambed sounding data is to be documented.

- Soundings of the streambed should be done at each end of the culvert. If Items #5 or #8 are "Yes", then a streambed profile of the scoured area should be done.

- If "Yes" is the answer to any items on the checklist, notify the Program Administrator for further instructions.

Comments:

Completed On _____ By _____

Channel

Bridge No.: 90415

Channel

Item	*Description*	*Condition*	*Comments*
Channel Overall:	**NBI Item 61**	5	Debris blocking culvert on both ends.

Bank Protection/Revetment

Item	*Description*	*Condition*	*Comments*
Upstream Bank Protection:			
Downstream Bank Protection:			
Bridge Revetment:			
Minnesota Scour Code:	E - CULVERT		

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 hte 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.)
		☐ A. that the streamed is two or more feet below the bottom of pier footings which are supported on piles?
		☐ B. scour below the bottom of spread footings?
		☐ C. scour below the bottom of high abutment footings?
		☐ 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.: 90415

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? _____