

**2015 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 93533
CSAH 77(OLD HWY 8) over CO DITCH # 2**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: New Brighton

Date(s) of Inspection: 10/06/2015

Equipment Used:

Owner: County Highway Agency

Inspected By: Bodelson, Dan; Essler, Brian

Report Written By: Dan Bodelson

Report Reviewed By: Nicklaus Fischer

Final Report Date: 01/06/2016

**MnDOT Bridge Office
3485 Hadley Avenue North
Oakdale, MN 55128**



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MnDOT Structure Inventory Report

Bridge ID: 93533

CSAH 77(OLD HWY 8)

over CO DITCH # 2

Date: 01/06/2016

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 3	Sec 3.87
Longitude	Deg 93	Min 11	Sec 58.23
Custodian 02 - County Highway Agency			
Owner 02 - County Highway Agency			
BMU Agreement			
Year Built		1968	
MN Year Reconstructed			
FHWA Year Reconstructed			
MN Temporary Status			
Bridge Plan Location 3 - COUNTY			
Date Opened to Traffic			
On-Off System		1 - ON	
Legislative District 50B			

STRUCTURE			
Service On 1 - Highway			
Service Under 5 - Waterway			
Main Span Type			
5 - Prestress or Precast 15 - Pipe Arch			
Main Span Detail			
Appr. Span Type			
Appr. Span Detail			
Skew	80	R	
Culvert Type	65"X40"		
Barrel Length	200	ft.	
Cantilever ID			

NUMBER OF SPANS			
MAIN:	3	APPR:	0
TOTAL:		3	
Main Span Length	5.5	ft.	
Structure Length	23.0	ft.	
Deck Width (Out-to-Out)	0.0	ft.	
Deck Material N - Not Applicable			
Wear Surf Type 1 - Monolithic Concrete (concu			
Wear Surf Install Year			
Wear Course/Fill Depth	1.00	ft.	
Deck Membrane 0 - None			
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
Curb Height	Lt 0.00	ft.	Rt 0.00
Rail Type	Lt NN	Rt NN	

ROADWAY			
Bridge Match ID (TIS) 0			
Roadway O/U Key Route On Structure			
Route Sys 04 - CSAH		Number 77	
Roadway Name or Description			
CSAH 77			
Level of Service 1 - MAINLINE			
Roadway Type 2 - 2-way traffic			
Control Section (TH Only)			
Reference Point 000+00.990			
Detour Length	3.0	mi	
Lanes	On 2	Under 0	
	ADT 9263	Year 2008	
HCADT	0	ADTT 0 %	
Functional Class 16 - Urban - Minor Arterial			

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	35.0	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	96.1
Routine Inspection Date	10/06/2015
Routine Inspection Frequency	24
Inspector Name	County, Ramsey
Status	A - Open

NBI CONDITION RATINGS	
Deck	N - Not Applicable
Unsound Deck %	
Superstructure	N - Not Applicable
Substructure	N - Not Applicable
Channel	6 - Bank slump; minor damage
Culvert	6 - Deterioration or initial disint

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

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		
Underwater		
Pinned Asbly.		
Spec. Feat.		

WATERWAY			
Drainage Area (sq. mi.)			
Waterway Opening	43	sq. ft.	
Navigation Control 0 - No nav. control on waterw			
Pier Protection			
Nav. Clr. (ft.)	Vert.	ft.	Horiz.
Nav. Vert. Lift Bridge Clear. (ft.)			
MN Scour Code	E - CULVERT	Year	

CAPACITY RATINGS			
Design Load	5 - HS 20		
Operating Rating	5 - NRAP	24.0	
Inventory Rating	5 - NRAP	18.0	
Posting VEH:	SEMI:	DBL:	
Rating Date 01/08/1985			

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

MnDOT Structure Inventory Report

Additional Roadways

Bridge ID: 93533

CSAH 77(OLD HWY 8) over CO DITCH # 2

Date: 01/06/2016

MnDOT BRIDGE INSPECTION REPORT

01/06/2016

Inspector: County, Ramsey

BRIDGE 93533 CSAH 77(OLD HWY 8) OVER CO DITCH # 2

ROUTINE INSP. DATE: 10/06/2015

County: Ramsey	Location: 0.1 MI S OF JCT CSAH 15	Length: 23.0 ft.
City: New Brighton	Route: 04 - CSAH 77 Ref. Pt.: 000+00.990	Deck Width: 0.0 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: sq. ft. / %
Section: 32 Township: 030N Range: 23W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 1 - Concrete 19 - Culvert (includes frame culverts)	Local Agency Bridge Nbr.:	Culvert: 65"X40"
List:		Postings:
NBI Deck: N Super: N Sub: N Chan: 6 Culv: 6	Open, Posted, Closed: A - Open	
	MN Scour Code: E - CULVERT	

Appraisal Ratings - Approach: 8 Waterway: 8		Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Traffic: 0 - Not Required	Unofficial Functionally Obsolete N
Horizontal: 0 - Not Required	Vertical: N - Not Applicable	Unofficial Sufficiency Rating 96.1

Structure Unit:

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	Routine	10/06/2015	1801 LF	0	1800	1	0	N/A
			Routine	10/21/2013	1801 LF	0	1800	1	0	N/A

Requires Monitoring Monitored

Notes: [2015] Sediment has been deposited @ north end of culverts # 2, # 3 & # 4.
 [2015] major debris on north ends of culverts # 2 & # 3
 [2015] east end of culvert # 3 has major blockage
 The east end of culvert #1 2nd joint has infiltration of material 2011-2015.
 The north end culvert #1 & culvert #3 contains riprap & debris 2007-2015.
 East end culvert #3 has moderate blockage with riprap, sediment & debris 2005-2013.
 East end has minor blockage with sediment & debris 2005.
 Sediment has been deposited @ north end 2005-2013.
 Minor cracking & leaching with slight separation of joints 2001-2013.
 Runs under and parallel to roadway approximately 200'.

361	Scour Smart Flag	2	Routine	10/06/2015	1 EA	0	1	0	N/A	N/A
			Routine	10/21/2013	1 EA	0	1	0	N/A	N/A

Requires Monitoring Monitored

Notes: Both ends show signs of minor scour 2001-2015.

388	Culvert Headwall, Wingwall or Other End Treatment	2	Routine	10/06/2015	6 EA	0	6	0	0	N/A
			Routine	10/21/2013	6 EA	0	6	0	0	N/A

Requires Monitoring Monitored

Notes: [2015] moderate spalls on east end of culvert # 2.
 [2015] moderate spalls on north end of culverts # 2 & # 4.
 There is some moderate spalling at both ends 2007-2013.
 Minor cracking & spalling at both ends 2001-2005.

Structure Unit:

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
964	Critical Finding Smart Flag	2	Routine	10/06/2015	1 EA	1	0	N/A	N/A	N/A
			Routine	10/21/2013	1 EA	1	0	N/A	N/A	N/A

 Requires Monitoring Monitored

Notes: < none >DO NOT DELETE!

985	Slopes & Slope Protection	3	Routine	10/06/2015	1 EA	0	0	1	N/A	N/A
			Routine	10/21/2013	1 EA	0	0	1	N/A	N/A

 Requires Monitoring Monitored

Notes: [2015] Bank is slumping @ south side & north side of east end
 [2015] moderate erosion on north side both ends.
 Bank is slumping @ south side of east end 2007-2013.
 Slope restoration is required @ SE corner - south of culvert #1 2007-2013.
 Additional riprap is needed around all aprons 2005-2013.
 Erosion of slope at the south end - requires maintenance 2003-2013.
 Rip rap installed to south side of channel @ south end 2005.

987	Roadway over Culvert	2	Routine	10/06/2015	1 EA	0	1	0	N/A	N/A
			Routine	10/21/2013	1 EA	0	1	0	N/A	N/A

 Requires Monitoring Monitored

Notes: New 9" concrete pavement 2013
 The roadway over culvert has moderate settlement 2001-2011.

General Notes: 2015 Bridge safety inspection was conducted by B. Essler & D. Bodelson on 10/6/2015.
 2013 Bridge safety inspection was conducted by B. Essler & D. Bodelson on 10/21/2013.
 2011 Bridge safety inspection was conducted by B. Wieman on 10/11/2011.
 Both ends need cleaning 1983-2007. South end severely blocked by debris 1992-1997. Some cleaning done.
 Cleaning is still needed 1997. Letter was sent to Rice Creek Watershed.
 2009 Inspection was completed by B. Wieman 7/09/2009.
 7/25/2007 Inspection was completed by B. Wieman.
 Moderate blockage east end culvert #3. Maintenance is required @ south end culvert #3 and north end of all culverts 2005-2009. Branches should be trimmed @ north end.
 Unreported as a bridge prior to 1981.

58. Deck NBI: Culvert

36A. Brdg Railings NBI: Culvert - no railing

36B. Transitions NBI: No guardrail

36C. Appr Guardrail NBI: No guardrail

36D. Appr Guardrail NBI: No guardrail

Terminal NBI:

59. Superstructure NBI: Culvert

60. Substructure NBI: Culvert

61. Channel NBI: Banks have moderate erosion

62. Culvert NBI: Culvert has moderate scaling & cracking

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

72. Appr Roadway Alignment NBI: no speed reduction required

Structure Unit:

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
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Inventory Notes:

Dan Bodelson
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

Pictures



Photo 1 - East end 1



Photo 2 - East end

Pictures



Photo 3 - West end 1



Photo 4 - West end 2

Pictures



Photo 5 - West end



1. East end 1.JPG



2. East end.JPG



3. West end 1.JPG



4. West end 2.JPG



5. West end.JPG

Culvert

Bridge No.: 93533

Culvert

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Culvert Overall:	NBI Item 62	<u>6</u>	Culvert has moderate scaling & cracking

MnDOT Scour Code: E - CULVERT

Waterway Inspection

Item No.	Yes, No, NA or Not Visible	Description
1.	<u> </u>	Is there a significant build-up of debris?
2.	<u> </u>	Is there erosion of the embankment around the headwalls?
3.	<u> </u>	Is there any indication of cracking or settlement of the culvert barrel or headwalls?
4.	<u> </u>	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.	<u> </u>	Do scour measurements indicate that the streambed is below the bottom of the cutoff walls at the ends of the culvert?
6.	<u> </u>	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.	<u> </u>	Is there an indication of "piping" of water along the outside of the culvert such as cavities adjacent to the barrel?
8.	<u> </u>	Is the culvert without a bottom and scour measurements indicate that the streambed is below the plan streambed elevations?
9.	<u> </u>	Has the riprap or other scour protection been damaged or otherwise made ineffective?
10.	<u> </u>	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.: 93533

Channel

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Channel Overall:	NBI Item 61	<u>6</u>	Banks have moderate erosion

Bank Protection/Revetment

<i>Item</i>	<i>Description</i>	<i>Condition</i>	<i>Comments</i>
Upstream Bank Protection:	_____	_____	_____
Downstream Bank Protection:	_____	_____	_____
Bridge Revetment:	_____	_____	_____
MnDOT Scour Code:	<u>E - CULVERT</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 MnDOT 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.: 93533

Scour POA

1. Is POA on File? _____
2. Date of most recent POA: _____
3. Here is a link to MnDOT's Bridge Scour website for other resources:
 - <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? _____

Channel Section

Upstream

Custom Label	Location	Elevation
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Downstream

Custom Label	Location	Elevation
--------------	----------	-----------

Distance Measured From:

Elev. of Ref. Pt:

Depth to Water Surface:

WS Elev:

Vertical Datum:

Comments:

Distance Measured From:

Elev. of Ref. Pt:

Depth to Water Surface:

WS Elev:

Vertical Datum:

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 MnDOT 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.: 93533	BRIDGE OWNER: County Highway Agency
DATE INSPECTED: 10/06/2015	STRUCTURE TYPE: Concrete Culvert (includes frame culverts)
FACILITY CARRIED: CSAH 77(OLD HWY 8)	FEATURES INTERSECTED: CO DITCH # 2
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"/> OTHER:	
<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:

- Was a critical finding identified during this inspection or upon structural review? Yes No
 a) If selected "Yes" above, state briefly the finding(s):
- If a critical finding was identified, what is the current status? Pending
 Resolved
 N/A
 a) Briefly state actions taken:
- 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:

- Repair/Maintenance Monitoring Plan
 Other Increased Inspection Frequency

Explain recommended actions:

6. Other comments:

Bridge Office Reviewer