

# 2017 UNDERWATER BRIDGE INSPECTION REPORT



## BRIDGE # 69592 CSAH 29 over WHITEFACE RIVER

DISTRICT: District 1

COUNTY: St. Louis

CITY/TOWNSHIP: KELSEY

STATE: Minnesota

Date of Inspection: 09/13/2016

Equipment Used:

Owner: County Highway Agency

Inspected By: Janulis, Lukas

Report Written By: Lukas Janulis

Report Reviewed By:

Final Report Date:



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## UNDERWATER INSPECTION

### REPORT SUMMARY

The substructure units inspected below water at Bridge No. 69592, Piers 1 and 2, were in good condition with no defects of structural significance. All of the steel piles exhibited surface corrosion on 100 percent of their surface area. A light accumulation of timber debris was present upstream and along Pier 1. The overall structure condition has not changed since the previous underwater inspection.

### INSPECTION FINDINGS

(A) The channel bottom material consisted of sand allowing up to 4 inches of probe rod penetration.

(B) All steel pipe piles typically exhibited surface corrosion from 1 foot below the waterline to the channel bottom, with no measurable section loss.

(C) A light accumulation of timber debris, consisting of logs and branches up to 12 inches in diameter, was observed extending from the west shore out 20 feet to the upstream nose of Pier 1, and along the east face of the pier, extending off the face up to 10 feet. The debris extended from the channel bottom to the waterline.

### RECOMMENDATIONS

(A) Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of sixty (60) months.

Contractor: Collins Engineers, Inc.

Contractor Job Number: 9687

## UNDERWATER INSPECTION

### 1. BRIDGE DATA

Bridge #: 69592  
Feature Intersected: WHITEFACE RIVER  
Facility Carried: CSAH 29  
District: District 1  
County: 069 - St. Louis

#### Bridge Description:

The superstructure consists of three spans of reinforced concrete deck. The bridge is supported by two reinforced concrete abutments founded on piles and two pile bent piers.

### 2. INSPECTION DATA

Professional Engineer/Team Leader: Lukas Janulis  
Inspection Diver: Lukas Janulis  
Date of Underwater Inspection: 09/13/2016  
Weather Conditions: Cloudy, 57F  
Underwater Visibility (feet): 2.0 feet  
Waterway Velocity (ft/sec): 0.5 ft/sec

### 3. SUBSTRUCTURE INSPECTION DATA

Substructure(s) Inspected: Piers 1 and 2.

#### General Shape:

The piers consisted of a reinforced concrete pier cap supported by 6 steel pipe encased concrete piles.

Maximum Water Depth at Substructure(s) Inspected (feet): 7.7 feet

### 4. WATERLINE DATUM

Water Level Reference: Below the top of the pier cap at the downstream end of Pier 1.  
Waterline Elevation (feet): 1268.1 feet  
Description: The waterline was located approximately 10.5 feet below the reference.

### 5. NBIS CODING INFORMATION

(Minnesota specific codes are used for 92B and 113)

Item 60: Substructure: Code: 7  
Item 61: Channel and Channel Protection: Code: 6  
Item 62: Culvert: Code:  
Item 92B: Underwater Inspection: Code: Y 48 09/2016

Item 113: Scour Critical Bridge:

Code: I

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site.

Yes  No (Mark your selection with an X)

6. STRUCTURAL ELEMENT CONDITION RATING

ELEM #	Element Description	Quantity	Unit	Conditions			
				CS1	CS2	CS3	CS4
225	Steel or CIP Piling	12	EA		12		
885	Scour	1	EA	1			

## UNDERWATER INSPECTION

### INSPECTION PROCEDURES

The routine underwater inspection of Bridge 69592 (CSAH 29 over Whiteface River) was completed on September 13, 2016. The underwater inspection was conducted from shore. The inspection was conducted by a team consisting of a Professional Engineer Diver with a valid MnDOT Team Leader certification, a backup diver and dive tender. The inspection utilized commercial dive equipment and techniques in accordance with OSHA regulations. Channel bottom profiles were taken along the upstream and downstream fascias of the bridge and around the periphery of substructure units to determine the presence, location and area of scour.

The bridge elements inspected consisted of two pile bent piers. According to the bridge plans, Piers 1 and 2 are founded on steel pipe encased concrete piles supporting a reinforced concrete cap. Inspection procedures followed FHWA guidance and the MnDOT Bridge and Structure Inspection Program Manual with channel bottom probing to search for foundations. The maximum routine underwater inspection frequency is recommended to remain at 60 months based on those findings and risk factors. Also, inspection procedures should continue to follow the above approach and standard guidance with 100% Level I and 10% Level II intensity efforts.

# Minnesota Structure Inventory Report

Bridge ID: 69592

CSAH 29 over WHITEFACE RIVER

Date: 01/27/2017

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
<b>Agency Br. No.</b> 222 <b>Crew</b> <b>District</b> 01 <b>Maint. Area</b> <b>County</b> 069 - St. Louis <b>City</b> <b>Township</b> 69037 - KELSEY <b>Desc. Loc.</b> 2.4 MI W OF JCT CSAH 7 <b>Sect., Twp., Range</b> 29 - 054N - 18W <b>Latitude</b> 47 ° 8' 20.00 " <b>Longitude</b> 92 ° 38' 47.26 " <b>Custodian</b> 02 - County Highway Agency <b>Owner</b> 02 - County Highway Agency <b>BMU Agreement</b> <b>Year Built</b> 1991 <b>MN Year Reconstructed</b> <b>FHWA Year Reconstructed</b> <b>MN Temporary Status</b> <b>Bridge Plan Location</b> 3 - COUNTY <b>Date Opened to Traffic</b> <b>On - Off System</b> 0 - OFF <b>Legislative District</b> 05B <b>Potential ABC</b> 2 - N/A	<b>Bridge Match ID (TIS)</b> 0 <b>Roadway O/U Key</b> Route On Structure <b>Route Sys</b> 04 - CSAH <b>Number</b> 29 <b>Roadway Name or Description</b> CSAH 29 <b>Level of Service</b> 1 - MAINLINE <b>Roadway Type</b> 2 - 2-way traffic <b>Control Section (TH Only)</b> <b>Reference Point</b> 024+00.150 <b>Detour Length</b> 6.0      mi. <b>Lanes</b> <b>ON</b> 2 <b>UNDER</b> 0 <b>ADT</b> 50 <b>YEAR</b> 2008 <b>HCA DT</b> <b>ADTT</b> % <b>Functional Class</b> 09 - Rural - Local	<b>Userkey</b> 109 <b>Structurally Deficient</b> N <b>Functionally Obsolete</b> N <b>Sufficiency Rating</b> 100.0 <b>Routine Inspection Date</b> 09/21/2016 <b>Routine Inspection Frequency</b> 24 <b>Inspector Name</b> Janulis, Lukas <b>Status</b> A - Open																				
	<b>+ RDWY DIMENSIONS +</b>	<b>+ NBI CONDITION RATINGS +</b>																				
	<b>If Divided</b> <b>NB-EB</b> <b>SB-WB</b> <b>Roadway Width</b> 34.00    ft.            ft. <b>Vertical Clearance</b> ft.            ft. <b>Max. Vert. Clear.</b> ft.            ft. <b>Horizontal Clear.</b> ft.            ft. <b>Lateral Clearance</b> ft.            ft. <b>Appr. Surface Width</b> 34.0    ft. <b>Bridge Roadway Width</b> 34.0    ft. <b>Median Width On Bridge</b> ft.	<b>Deck</b> 7 <b>Unsound Deck %</b> <b>Superstructure</b> 7 <b>Substructure</b> 7 <b>Channel</b> 6 <b>Culvert</b> N																				
<b>+ STRUCTURE +</b>	<b>+ MISC. BRIDGE DATA +</b>	<b>+ NBI APPRAISAL RATINGS +</b>																				
<b>Service On</b> 1 - Highway <b>Service Under</b> 5 - Waterway <b>Main Span Type</b> 5 - Prestress or Precast <b>Main Span Design</b> 21 - Quad Tee <b>Main Span Detail</b> <b>Appr. Span Type</b> <b>Appr. Span Design</b> <b>Appr. Span Detail</b> <b>Skew</b> 0 <b>Culvert Type</b> <b>Barrel Length</b> <b>Cantilever ID</b>  <b>Number of Spans</b> <b>MAIN:</b> 3 <b>APPR:</b> 0 <b>TOTAL:</b> <b>Main Span Length</b> 40.3    ft. <b>Structure Length</b> 121.2    ft. <b>Deck Width (Out-to-Out)</b> 37.3    ft. <b>Deck Material</b> 1 - Concrete Cast-in-Place <b>Wear Surf Type</b> 6 - Bituminous <b>Wear Surf Install Year</b> <b>Wear Course/Fill Depth</b> 0.17    ft. <b>Deck Membrane</b> 0 - None <b>Deck Rebars</b> 0 - None <b>Deck Rebars Install Year</b> <b>Structure Area (Out-to-Out)</b> 4521    sq. ft. <b>Roadway Area (Curb-to-Curb)</b> 4123    sq. ft. <b>Sidewalk Width</b> 50A. Lt 0.00    ft.    50B. Rt 0.00    ft. <b>Curb Height</b> Lt 0.00    ft.            Rt 0.00    ft. <b>Rail Type</b> Lt 22            Rt 22	<b>Structure Flared</b> 0 - No flare <b>Parallel Structure</b> N - No parallel structure <b>Field Conn. ID</b> <b>Abutment Foundation (Material/Type)</b> 3 - FTG PILE <b>Pier Foundation (Material/Type)</b> 4 - PILE BENT <b>Historic Status</b> 5 - Not eligible	<b>Structure Evaluation</b> 7 <b>Deck Geometry</b> 9 <b>Underclearances</b> N <b>Waterway Adequacy</b> 8 <b>Approach Alignment</b> 8																				
	<b>+ PAINT +</b>	<b>+ SAFETY FEATURES +</b>																				
	<b>Year Painted</b> <b>Unsound Paint %</b> <b>Painted Area</b> sq. ft. <b>Primer Type</b> <b>Finish Type</b>	<b>Bridge Railing</b> 1 - MEETS STANDARDS <b>GR Transition</b> 1 - MEETS STANDARDS <b>Appr. Guardrail</b> 1 - MEETS STANDARDS <b>GR Termini</b> 1 - MEETS STANDARDS																				
	<b>+ BRIDGE SIGNS +</b>	<b>+ IN DEPTH INSP. +</b>																				
	<b>Posted Load</b> 0 - Not Required <b>Traffic</b> 0 - Not Required <b>Horizontal</b> 0 - Not Required <b>Vertical</b> N - Not Applicable	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%; text-align: center;">Y/N</th> <th style="width: 10%; text-align: center;">Freq</th> <th style="width: 10%; text-align: center;">Date</th> </tr> </thead> <tbody> <tr> <td><b>Frac. Critical</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Underwater</b></td> <td></td> <td>60</td> <td>09/13/2016</td> </tr> <tr> <td><b>Pinned Asbly.</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Spec. Feat.</b></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Y/N	Freq	Date	<b>Frac. Critical</b>				<b>Underwater</b>		60	09/13/2016	<b>Pinned Asbly.</b>				<b>Spec. Feat.</b>			
	Y/N	Freq	Date																			
<b>Frac. Critical</b>																						
<b>Underwater</b>		60	09/13/2016																			
<b>Pinned Asbly.</b>																						
<b>Spec. Feat.</b>																						
		<b>+ WATERWAY +</b>																				
		<b>Drainage Area (sq. mi.)</b> 452.0 <b>Waterway Opening (sf.)</b> 1140 <b>Navigation Control</b> 0 - No nav. control on <b>Pier Protection</b> - <b>Nav. Clr. (ft.)</b> <b>Vert.</b> 0.0 <b>Horiz.</b> 0.0 <b>Nav. Vert. Lift Bridge Clear. (ft.)</b> <b>MN Scour Code</b> I - LOW RISK <b>Year</b> 1995																				
		<b>+ CAPACITY RATINGS +</b>																				
		<b>Design Load</b> 9 - HS 25 (OR GREATER) <b>Operating Rating</b> 2 - HS TRUCK            45.8 <b>Inventory Rating</b> 2 - HS TRUCK            26.8 <b>Posting VEH:</b> <b>SEMI:</b> <b>DBL:</b> <b>Rating Date</b> 11/12/2015  <b>Overweight Permit Codes</b> <b>A</b> 1 - No Restriction <b>B</b> 1 - No Restriction <b>C</b> 1 - No Restriction																				

**MINNESOTA BRIDGE INSPECTION REPORT**

02/02/2017

**BRIDGE 69592 CSAH 29 OVER WHITEFACE RIVER**

County: St. Louis	Location: 2.4 MI W OF JCT CSAH 7	Length: 121.2 ft.
City:	Route: 04 - CSAH 29 Ref. Pt.: 024+00.150	Deck Width: 37.3 ft.
Township: 69037 - KELSEY	Control Section:	Rdwy. Area/ Pct. Unsnd: 4123 sq. ft. / %
Section: 29 Township: 054N Range: 18W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 5 - Prestressed Concrete 2 - Stringer/Multi-beam or Girder	Local Agency Bridge Nbr.: 222	Culvert: N/A
List:		Postings:
NBI Deck: 7 Super: 7 Sub: 7 Chan: 6 Culv: N		
	Open, Posted, Closed: A - Open	
	MN Scour Code: 1 - LOW RISK	

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 100.0

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
15	Prestressed Concrete Top Flange	Underwater	01/27/2017	4521 SF	4438	83	0	0
		Routine	09/21/2016	4521 SF	4438	83	0	0
Notes: [2016] 1 Hairline transverse crack mid span on underside of top of beams on spans 1 and 3. Cracking on span 1 has efflorescence. Quad tee 6 span 1 has 2 cracks midspan.								
510	- Wearing Surfaces	Underwater	01/27/2017	4123 SF	4041	82	0	0
		Routine	09/21/2016	4123 SF	4041	82	0	0
Notes: [2016] Transverse 0.125" cracks in bituminous, 1" cracks over piers, and 0.5" longitudinal crack along centerline of spans 1 and 2 in wearing surface. Areas of bituminous deterioration middle of span 2 along south rail from fires on top of deck. [2014] Grooves in bituminous from graders. [2013] No change. 2012-Minor Longitudinal and transverse cracking. Pothole in eastbound lane in center span warranting CS2.								
109	Prestressed Concrete Open Girder/Beam	Underwater	01/27/2017	3636 LF	3633	3	0	0
		Routine	09/21/2016	3636 LF	3633	3	0	0
Notes: [2016] Spall in beam 1A mid span [2014] Minor staining at quad tee joints from minor leakage. [2013] No change. 2012-2 spalls in the north leg of the north beam in the center span. No strands or rebar exposed. SPALL IN CENTER OF N. LEG OF N. BEAM SPAN-1.								
215	Reinforced Concrete Abutment	Underwater	01/27/2017	111 LF	111	0	0	0
		Routine	09/21/2016	111 LF	111	0	0	0
Notes: [2016] Added 36 LF to abutment quantity to account for wingwalls. [2014] Leaching around beam end south end of east abutment. [2013-2012] No deterioration noted for wings and abutments.								
225	Steel Pile	Underwater	01/27/2017	12 EA	0	12	0	0
		Routine	09/21/2016	14 EA	0	14	0	0
Notes: [2016] More paint failure on pile 1b and 1c. [2014-2013] No change. 2012-No additional deterioration. PILE PAINT STARTING TO FAIL BELOW HIGH WATER MARK.								
515	- Steel Protective Coating	Underwater	01/27/2017	997 SF	738	117	0	142
		Routine	09/21/2016	997 SF	738	117	0	142
Notes: [2016] Paint failure on piles 1b and 1c. Stained and chalking paint on 2' above waterline on all piles.								
234	Reinforced Concrete Pier Cap	Underwater	01/27/2017	75 LF	75	0	0	0
		Routine	09/21/2016	75 LF	75	0	0	0
Notes: [2016-2013] No change. 2012-Staining and efflorescence on the west side of the west pier cap near the north end of the cap.								

**BRIDGE 69592 CSAH 29 OVER WHITEFACE RIVER**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
321	Reinforced Concrete Approach Slab	Underwater	01/27/2017	1700 SF	1656	44	0	0
		Routine	09/21/2016	1700 SF	1656	44	0	0
Notes: [2016] Approach panels have bituminous overlay with 0.5" wide crack along centerline. 2.5" gab between edge of deck and approach panel. Approach panels are 25' x 34'. [2014-2013] No change. 2012-Approach panels are covered with gravel. BIT. APPROACH PANELS. SEPARATING FROM BRIDGE. Concrete approach panel with bituminous overlay.								
331	Reinforced Concrete Bridge Railing	Underwater	01/27/2017	243 LF	233	10	0	0
		Routine	09/21/2016	243 LF	233	10	0	0
Notes: [2016] 2 spalls on south rail from fires along edge of deck. Rail cracks are 0.02" in width or smaller. [2014] 2 to 3 hairline vertical cracks per rail panel. 2 areas of north rail have staining from fires. [2013] No change. 2012-2 minor spalls on the backside of the north barrier. Minor vertical cracking in the north barrier. SMALL AREA DAMAGED S. SIDE FROM FIRE.								
800	Critical Deficiencies or Safety Hazards	Underwater	01/27/2017	1 EA	1	0	0	0
		Routine	09/21/2016	1 EA	1	0	0	0
Notes: [2016-2014] No critical deficiencies or safety hazards found during this inspection.								
885	Scour	Underwater	01/27/2017	1 EA	1	0	0	0
891	Other Bridge Signing	Underwater	01/27/2017	1 EA	0	1	0	0
		Routine	09/21/2016	1 EA	0	1	0	0
Notes: [2016] NE delineator has corner bent. Vegetation growth starting to block bottom of delineators. [2014--2012] All signs in place. 4-Delineators.								
892	Slopes & Slope Protection	Underwater	01/27/2017	1 EA	0	1	0	0
		Routine	09/21/2016	1 EA	0	1	0	0
Notes: [2016] Loss of riprap on abutment slopes. With little to no erosion on exposed soil. [2014-2013] No notable erosion present. 2012-No deterioration noted.								
893	Guardrail	Underwater	01/27/2017	1 EA	0	1	0	0
		Routine	09/21/2016	1 EA	0	1	0	0
Notes: [2016] Scrapes on w-beam have galvanizing peeled off with surface corrosion on exposed steel. [2014-2012] Minor Scrapes. W-BEAM w/ ELT ENDS.								
894	Deck & Approach Drainage	Underwater	01/27/2017	1 EA	0	1	0	0
		Routine	09/21/2016	1 EA	0	1	0	0
Notes: [2016] Minor ponding along south rail from fire damage to bituminous overlay. [2014-2013] No notable ponding or drainage- related slope erosion. 2012-No deterioration noted. Catch basin on north and south side of road west approach.								
895	Sidewalk, Curb, & Median	Underwater	01/27/2017	1 EA	1	0	0	0
		Routine	09/21/2016	1 EA	1	0	0	0
Notes: [2016] Minor chipping on some ends from plows. [2014-2012] No deterioration noted.								

**BRIDGE 69592 CSAH 29 OVER WHITEFACE RIVER**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
899	Miscellaneous Items	Underwater	01/27/2017	1 EA	1	0	0	0
		Routine	09/21/2016	1 EA	1	0	0	0

Notes: [2016] Debris has been removed or has washed down stream.  
 [2014] Debris buildup at north end of west pier. Some large trees in debris go from pier to river bank.  
 [2013] No Change.  
 2012-Debris removal in the western most span.  
 W. pier full of debris.

900	Protected Species	Underwater	01/27/2017	2 EA	0	1	1	0
		Routine	09/21/2016	2 EA	0	1	1	0

Notes: [2016] 1 swallow nest on each pier. Bat droppings on beams. Bat species unknown.

General Notes: SLC District 5  
 Inspected by: [2016] CG, ES : [2014] CG, BH  
 7/12/2012 - Post 2012 Flood Inspection by JRM and RRC from TKDA. Underwater inspection performed by WSB.

58. Deck NBI: [2016] 1 Hairline transverse crack mid span on underside of top of beams on spans 1 and 3. Cracking on span 1 has efflorescence. Quad tee 6 span 1 has 2 cracks midspan. Transverse 0.125" cracks in bituminous, 1" cracks over piers, and 0.5" longitudinal crack along centerline of spans 1 and 2 in wearing surface. Areas of bituminous deterioration middle of span 2 along south rail from fires on top of deck.  
 [2014] Grooves in bituminous from graders. Minor staining at quad tee joints from minor leakage  
 [2013] Deck bituminous overly has cracking otherwise good condition.

36A. Brdg Railings NBI: Concrete barrier type J. Meets standards for all speeds.

36B. Transitions NBI: Guardrail end transitions meet minimum requirements. Traffic barrier design special.

36C. Appr Guardrail NBI: W-beam with timber posts. Traffic barrier B8307

36D. Appr Guardrail Terminal NBI: 4 ELT end terminals.

59. Superstructure NBI: [2016] Spall beam 1A midspan.  
 [2014-2013] Superstructure in good condition and proper alignment.

60. Substructure NBI: [2016-2014] Leaching around beam end south end of east abutment.  
 [2013] Substructure in good condition and proper alignment.

61. Channel NBI: [2016 U/W] Light timber debris accumulation present along Pier 1.  
 [2016] No debris present at time of inspection. Minor deterioration to channel banks. Some riprap has washed away on both abutment slopes.  
 2014] Debris buildup on north end of pier 1. Some trees extend from pier to river bank.

62. Culvert NBI:

71. Waterway Adeq NBI: [2016] Water over west approach and some over west end of deck during flooding in summer of 2012. Flooding event was greater than 500 year event.

72. Appr Roadway Alignment NBI: [2016-2013] No speed reduction required or sight distance issues.

Inspector's Signature

Reviewer's Signature

# Pictures



Photo 1 - Downstream Fascia, Looking Northeast



Photo 2 - Pier 1, Looking West

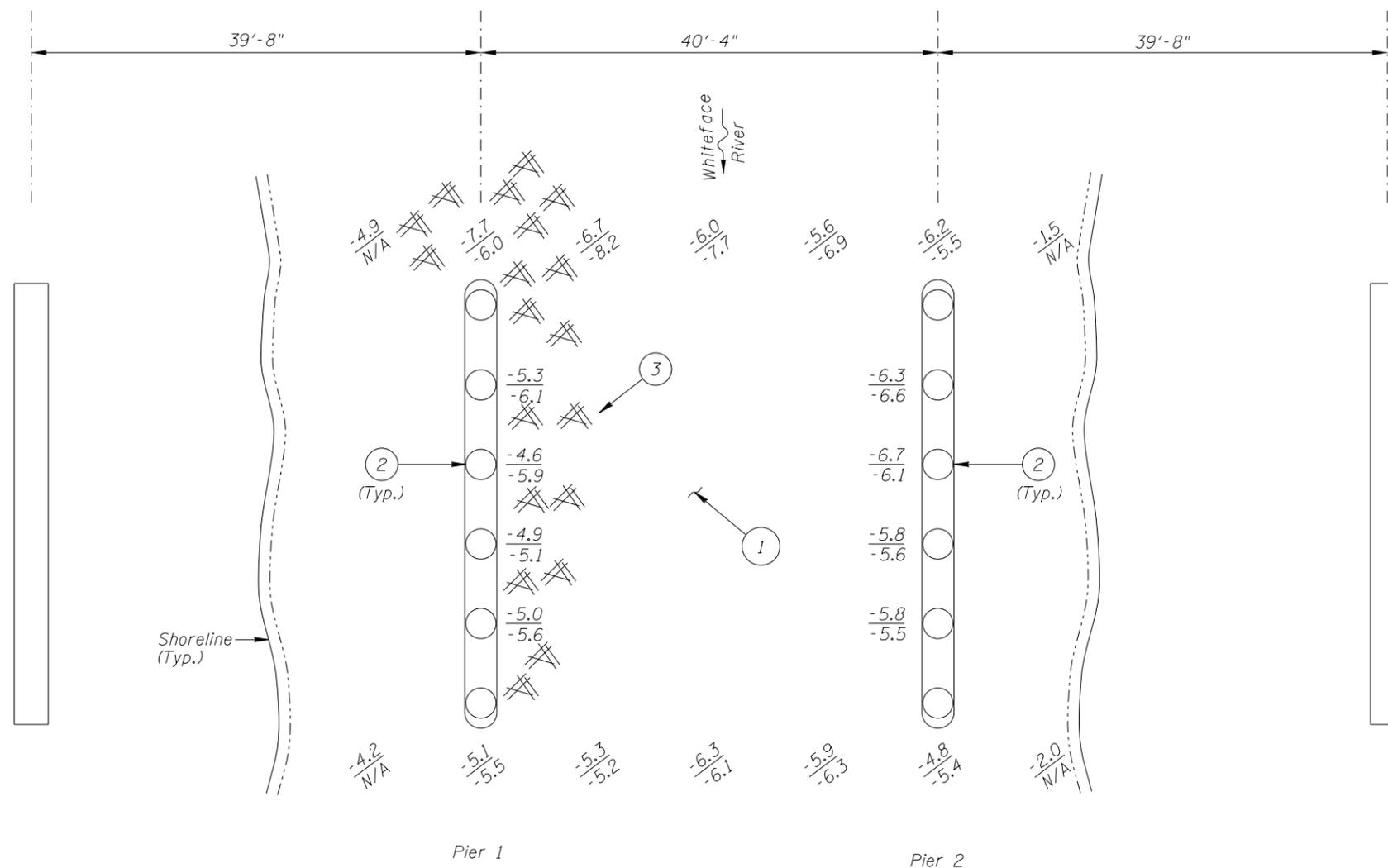
# Pictures



Photo 3 - Pier 2, Looking East



Photo 4 - Typical Steel Condition at the Waterline, Looking East



SOUNDING PLAN

GENERAL NOTES:

1. Piers 1 and 2 were inspected underwater.
2. At the time of inspection on September 13, 2016, the waterline was located approximately 10.5 feet below the top of the pier cap at the downstream end of Pier 1. This corresponds with a waterline elevation of 1268.1 feet based on bridge design plans dated March 11, 1991.
3. Soundings indicate the water depth at the time of inspection and are measured in feet.
4. Soundings were taken parallel to the bridge at 1/4 point intervals between the substructure units.

INSPECTION NOTES:

- 1 The channel bottom material consisted of sand allowing up to 4 inches of probe rod penetration.
- 2 All steel pipe piles typically exhibited surface corrosion from 1 foot below the waterline to the channel bottom, with no measurable section loss.
- 3 A light accumulation of timber debris, consisting of logs and branches 12 inch diameter and smaller, was observed extending from the west shore out 20 feet to the upstream nose of Pier 1, and along the east face of the pier, extending off the face up to 10 feet. The debris extended from the channel bottom to the waterline.

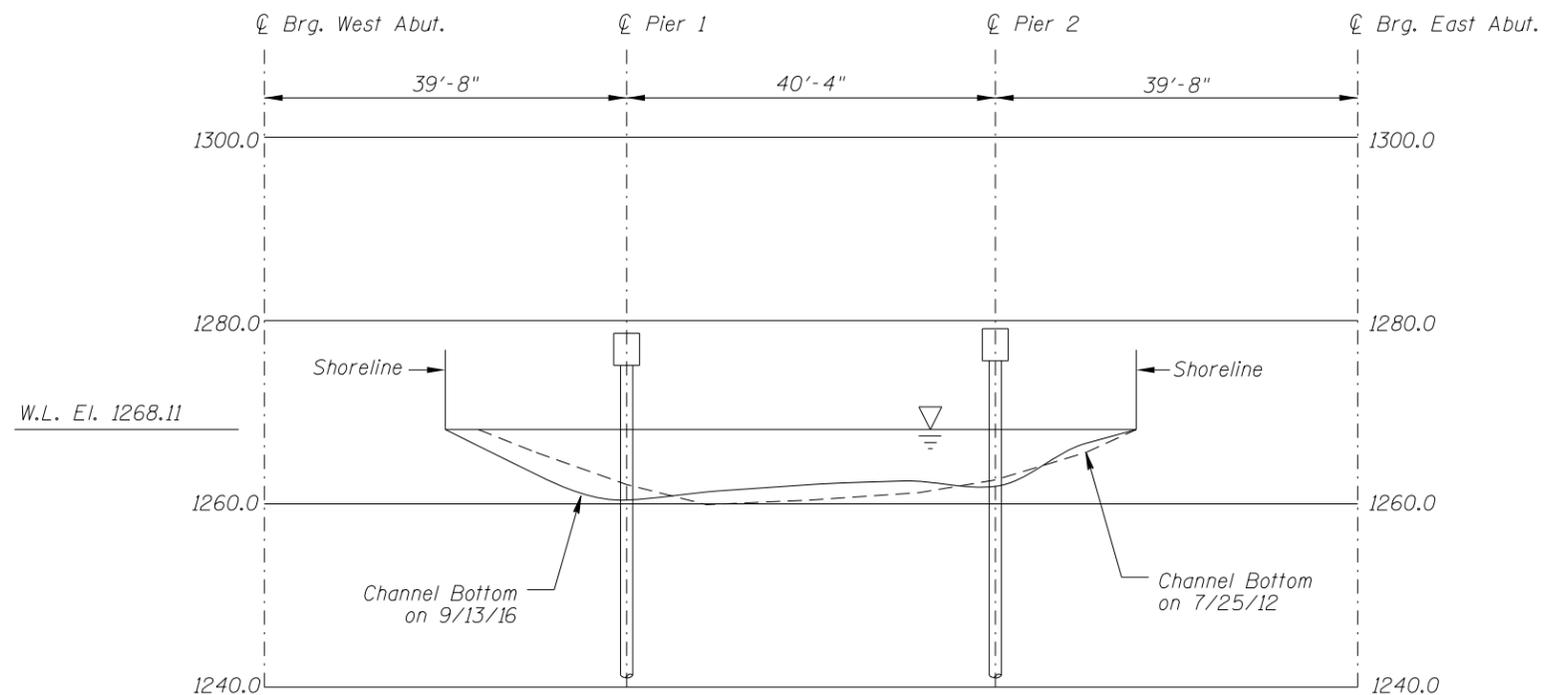
Legend

- 4.2 Sounding Depth from Waterline (9/13/16)
- 3.6 Sounding Depth from Waterline (7/25/12)
- Timber Debris

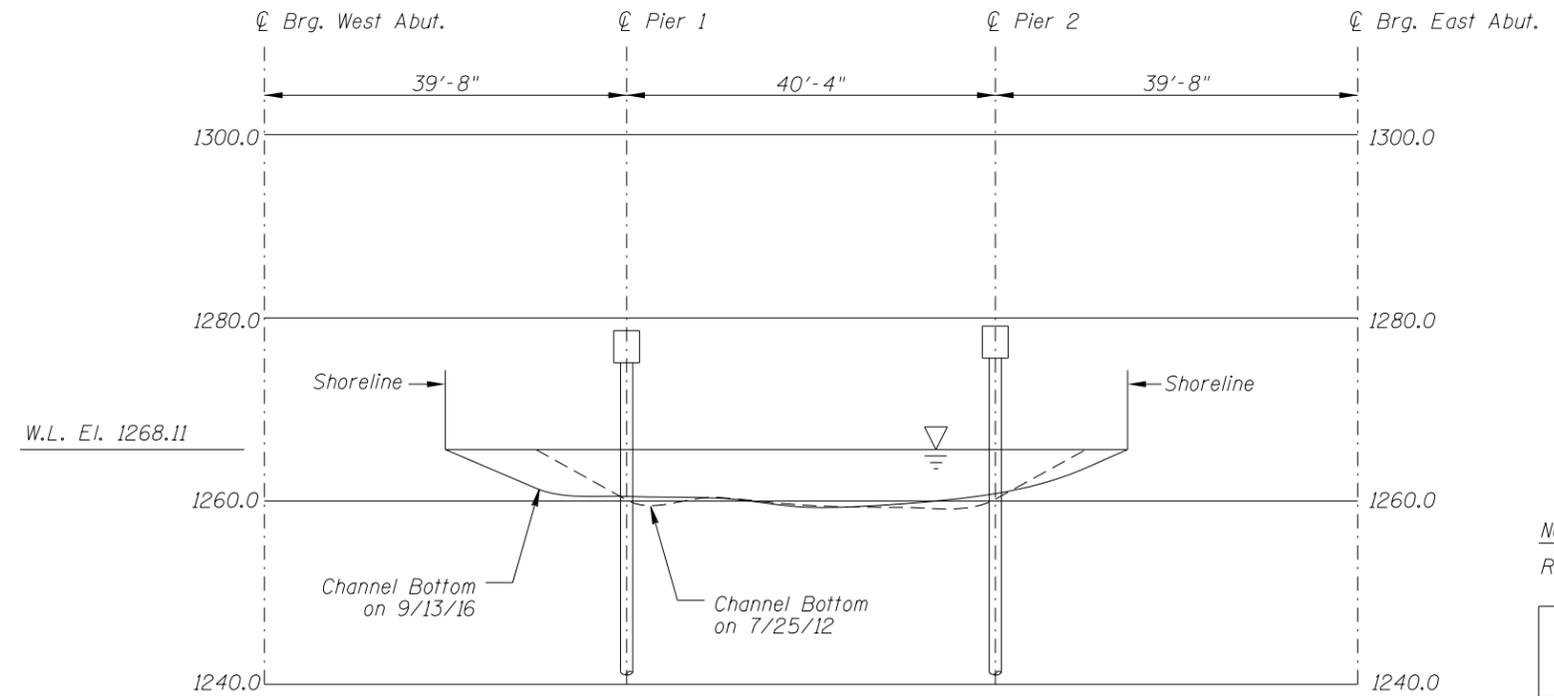
Note:

All soundings based on 2016 waterline location.

<b>MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION</b>		
STRUCTURE NO. 69592 OVER THE WHITEFACE RIVER DISTRICT I, ST. LOUIS COUNTY		
INSPECTION AND SOUNDING PLAN		
DRAWN BY: ELN	<b>COLLINS ENGINEERS</b> <small>123 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	DATE: SEPT 13, 2016
CHECKED BY: LJ		SCALE: NTS
CODE: 968769592		FIGURE NO.: 1



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:  
Refer to Figure 1 for General Notes.

<b>MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION</b>		
STRUCTURE NO. 69592 OVER THE WHITEFACE RIVER DISTRICT I, ST. LOUIS COUNTY		
UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
DRAWN BY: ELN	<b>COLLINS ENGINEERS</b> <small>123 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	DATE: SEPT 13, 2016
CHECKED BY: LJ		SCALE: 1"=20'
CODE: 968769592		FIGURE NO.: 2