

2016 UNDERWATER BRIDGE INSPECTION REPORT



BRIDGE # 7183 CSAH 100 over ST LOUIS RIVER

DISTRICT: District 1

COUNTY: St. Louis

CITY/TOWNSHIP: WHITE

STATE: Minnesota

Date of Inspection: 06/23/2016

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. 7183, Piers 1 and 2, were found to be in satisfactory to fair condition with several noteworthy concrete defects. Moderate scaling was present at all pier columns, with heavier scaling occurring at the downstream column of Pier 1 with up to 2.5 inches of penetration. The channel bottom inspected upstream and downstream of the substructure units appeared stable; however, a 5 foot radius scour depression was observed around both columns of Pier 1 and the downstream column of Pier 2.

INSPECTION FINDINGS

(A) The channel bottom typically consisted of sand and gravel with 6 inch diameter and smaller cobbles and random 1 foot diameter riprap. The sandy gravel material had a maximum probe rod penetration of 1 inch.

(B) The channel bottom around Pier 2 consisted of soft silt and organic material allowing typical 1.5 feet of probe rod penetration.

(C) Moderate scaling with large aggregate exposure from 3 feet above the waterline to 1.5 feet below the waterline with typical penetrations of 1/8 to 1/4 inch and up to 1 inch maximum was observed around all columns of both piers.

(D) An area of heavy scaling/section loss was observed around the downstream column of Pier 1, 2 foot high by 2.5 feet wide extending from the waterline to 2 feet below the waterline with a maximum penetration of 2.5 inches. The concrete within this area was flaky and unsound.

(E) A scour depression measuring 5 feet in radius with a depth of 3 feet, was observed at the downstream column of Pier 2 and the upstream and downstream column of Pier 1.

(F) A 6 to 12 inch diameter log was observed from the channel bottom to the waterline along the upstream column of Pier 1.

RECOMMENDATIONS

(A) Consideration should be given to repairing the concrete defects at the columns of Piers 1 and 2. Until the repairs are implemented, the defected areas should be monitored during future underwater inspections for any progression of section loss and/or exposure of reinforcing steel.

(B) 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 #: 7183
Feature Intersected: ST LOUIS RIVER
Facility Carried: CSAH 100
District: District 1
County: 069 - St. Louis

Bridge Description:

The structure consists of a three span concrete beam superstructure supported by two concrete abutments and two concrete piers. The piers are numbered 1 and 2 starting from the south end of the bridge.

2. INSPECTION DATA

Professional Engineer/Team Leader: Lukas Janulis
Inspection Diver: Lukas Janulis
Date of Underwater Inspection: 06/23/2016
Weather Conditions: Sunny, 70°F
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:

Piers 1 and 2 consist of the reinforced concrete cap supported by two concrete columns. The exact foundation configuration is unknown, but according to the bridge inventory it consists of concrete footings supported on piles.

Maximum Water Depth at Substructure(s) Inspected (feet): 6.8 feet

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap at the upstream end of Pier 1.
Waterline Elevation (feet): 92.5 feet
Description: The waterline was approximately 7.5 feet below the reference.

5. NBIS CODING INFORMATION

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

Item 60: Substructure: Code: 5
Item 61: Channel and Channel Protection: Code: 7
Item 62: Culvert: Code:
Item 92B: Underwater Inspection: Code: Y 48 06/16

Item 113: Scour Critical Bridge:

Code: O

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
205	Reinforced Concrete Columns	4	EA		3	1	
885	Scour	1	EA	1			

UNDERWATER INSPECTION

INSPECTION PROCEDURES

The routine underwater inspection of Bridge 7183 (CSAH 100 over St. Louis River) was completed on June 23, 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 faces 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 concrete piers. According to the bridge inventory, the columns of Piers 1 and 2 are supported on concrete footings founded on piles. 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: 7183

CSAH 100 over ST LOUIS RIVER

Date: 12/14/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. 489 Crew District 01 Maint. Area County 069 - St. Louis City Township 69068 - WHITE Desc. Loc. 1.7 MI S OF JCT CSAH110 Sect., Twp., Range 22 - 058N - 15W Latitude 47 ° 29' 33.26 " Longitude 92 ° 14' 18.06 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1958 MN Year Reconstructed FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 0 - NO PLAN Date Opened to Traffic On - Off System 1 - ON Legislative District 05A Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 100 Roadway Name or Description CSAH 100 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 009+00.200 Detour Length 11.0 mi. Lanes ON 2 UNDER 0 ADT 1499 YEAR 2008 HCA DT ADTT % Functional Class 07 - Rural - Major Collector	Userkey 109 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 61.8 Routine Inspection Date 07/25/2016 Routine Inspection Frequency 24 Inspector Name Janulis, Lukas Status A - Open																				
		+ NBI CONDITION RATINGS +																				
		Deck 5 Unsound Deck % 10 Superstructure 7 Substructure 5 Channel 7 Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 5 Deck Geometry 5 Underclearances N Waterway Adequacy 9 Approach Alignment 8																				
		+ SAFETY FEATURES +																				
		Bridge Railing 0 - SUBSTANDARD GR Transition 0 - SUBSTANDARD 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></td> <td></td> <td></td> </tr> <tr> <td>Underwater</td> <td></td> <td style="text-align: center;">60</td> <td style="text-align: center;">06/23/2016</td> </tr> <tr> <td>Pinned Asbly.</td> <td></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				Underwater		60	06/23/2016	Pinned Asbly.				Spec. Feat.			
	Y/N	Freq	Date																			
Frac. Critical																						
Underwater		60	06/23/2016																			
Pinned Asbly.																						
Spec. Feat.																						
		+ WATERWAY +																				
		Drainage Area (sq. mi.) Waterway Opening (sf.) 2093 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 O - STBL - ACT Year 2010																				
		+ CAPACITY RATINGS +																				
		Design Load 4 - H 20 Operating Rating 2 - HS TRUCK 22.6 Inventory Rating 2 - HS TRUCK 14.0 Posting VEH: SEMI: DBL: Rating Date 11/15/2010 Overweight Permit Codes A N - N/A B N - N/A C N - N/A																				
+ STRUCTURE +	+ RDWY DIMENSIONS +																					
Service On 1 - Highway Service Under 5 - Waterway Main Span Type 2 - Concrete Continuous 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: 3 APPR: 0 TOTAL: Main Span Length 63.0 ft. Structure Length 168.3 ft. Deck Width (Out-to-Out) 32.5 ft. Deck Material 1 - Concrete Cast-in-Place Wear Surf Type 1 - Monolithic Concrete Wear Surf Install Year Wear Course/Fill Depth 0.00 ft. Deck Membrane 0 - None Deck Rebars 0 - None Deck Rebars Install Year Structure Area (Out-to-Out) 5470 sq. ft. Roadway Area (Curb-to-Curb) 4715 sq. ft. Sidewalk Width 50A. Lt 0.00 ft. 50B. Rt 0.00 ft. Curb Height Lt 0.83 ft. Rt 0.83 ft. Rail Type Lt 39 Rt 39	If Divided NB-EB SB-WB Roadway Width 28.00 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 36.0 ft. Bridge Roadway Width 28.0 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) 3 - FTG PILE Pier Foundation (Material/Type) 3 - FTG PILE 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

12/21/2016

Inspector: CO Bridge

BRIDGE 7183 CSAH 100 OVER ST LOUIS RIVER

County: St. Louis	Location: 1.7 MI S OF JCT CSAH110	Length: 168.3 ft.
City:	Route: 04 - CSAH 100 Ref. Pt.: 009+00.200	Deck Width: 32.5 ft.
Township: 69068 - WHITE	Control Section:	Rdwy. Area/ Pct. Unsnd: 4715 sq. ft. / 10%
Section: 22 Township: 058N Range: 15W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 2 - Concrete Continuous 3	Local Agency Bridge Nbr.: 489	Culvert: N/A
List:		Postings:
NBI Deck: 5 Super: 7 Sub: 5 Chan: 7 Culv: N	Open, Posted, Closed: A - Open	
	MN Scour Code: O - STBL - ACT REQD	

Appraisal Ratings - Approach: 8 Waterway: 9		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 61.8

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	Underwater	12/14/2016	5470 SF	4999	361	110	0
		Routine	07/25/2016	5470 SF	4999	361	110	0
Notes: [2016] Spall on span 3 between beams 4 and 5 with exposed corroding rebar. [2014] Most cracks have leaching. Areas of heavy water saturation under some potholes. [2013] Minor cracks and density.								
510	Wearing Surfaces	Underwater	12/14/2016	4715 SF	0	4243	472	0
		Routine	07/25/2016	4715 SF	0	4243	472	0
Notes: [2016] Many potholes have been patch with concrete. Areas of delamination are still present around patches. Spalls in top of deck that are less than 2" in depth with no exposed rebar. Delamination present along some cracks and spalls. Some rust staining along some cracks. [2014] Many potholes have exposed rebar with surface corrosion with little to no section loss. [2013] Potholes filled with bit patching at <10% deck area. Some transverse cracks and leaching. Minor crack at NE corner. Deck is spalling.								
110	Reinforced Concrete Open Girder/Beam	Underwater	12/14/2016	840 LF	673	167	0	0
		Routine	07/25/2016	840 LF	673	167	0	0
Notes: [2016] Hairline cracks spaced as little as 5'. [2014-2013] Hairline cracks throughout all beams at about 10' spacing. Hairline cracks through on N span.								
205	Reinforced Concrete Column	Underwater	12/14/2016	4 EA	0	3	1	0
		Routine	07/25/2016	4 EA	0	3	1	0
Notes: [2016-2014] Columns 1B, 1C, 2B and 2C have moderate to heavy scale at waterline with penetration from 1/4" up to 1". Column 1B has scaling up to 2.5" (may have exposed rebar) that is over about 60% of the circumference of the column at the waterline. [2013] Moderate mortar loss at water line on all columns. Minor scour at low water.								
215	Reinforced Concrete Abutment	Underwater	12/14/2016	92 LF	30	56	6	0
		Routine	07/25/2016	92 LF	30	56	6	0
Notes: [2016] Added 26 LF to abutment quantity to account for wingwalls. [2014] NE wing face has rebar exposed near top. Wing surface is disintegrating. [2013] Minor cracking throughout abutment. NE wing spalled.								
234	Reinforced Concrete Pier Cap	Underwater	12/14/2016	66 LF	58	7	1	0
		Routine	07/25/2016	66 LF	58	7	1	0
Notes: [2016-2014] Spall on east end of pier 2 cap. [2013] Minor hairline cracks throughout.								

BRIDGE 7183 CSAH 100 OVER ST LOUIS RIVER

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	Underwater	12/14/2016	130 LF	0	130	0	0
		Routine	07/25/2016	130 LF	0	130	0	0
Notes: [2016] Most sealant is missing in joints. [2014-2013] Deck edges have minor to moderate spalls.								
311	Movable Bearing	Underwater	12/14/2016	10 EA	0	10	0	0
		Routine	07/25/2016	10 EA	0	10	0	0
Notes: [2016] Some minor scale along edges of concrete. [2014-2013] 5 at each abutment. Functioning as intended								
313	Fixed Bearing	Underwater	12/14/2016	10 EA	0	10	0	0
		Routine	07/25/2016	10 EA	0	10	0	0
Notes: [2016-2013] 5 at each pier. Functioning as intended								
331	Reinforced Concrete Bridge Railing	Underwater	12/14/2016	335 LF	0	0	39	296
		Routine	07/25/2016	335 LF	0	0	39	296
Notes: [2016-2014] Areas of exposed reinforcement with surface corrosion with little to no section loss. [2013] Moderate to severe spalling and cracking of railing. Some cracking and spalling E rail. Heavy spalling at rail posts NW rail. Concrete deteriorating extensively, rebar exposed. Most of railing spalled.								
800	Critical Deficiencies or Safety Hazards	Underwater	12/14/2016	1 EA	1	0	0	0
		Routine	07/25/2016	1 EA	1	0	0	0
Notes: [2016-2013] No critical deficiencies or safety hazards found during this inspection.								
822	Bituminous Approach Roadway	Underwater	12/14/2016	2 EA	0	0	2	0
		Routine	07/25/2016	2 EA	0	0	2	0
Notes: [2016] Settlement on approaches is increasing traffic impact on bridge. [2014-2013] Bit surface has many pot holes with bit. patching. Settlement at deck ends.								
855	Secondary Members (Superstructure)	Underwater	12/14/2016	1 EA	0	1	0	0
		Routine	07/25/2016	1 EA	0	1	0	0
Notes: [2016] Leaching present on along tops of diaphragms. [2014-2013] Concrete diaphragms have hairline cracks. 32 Concrete Intermediate Diaphragms								
883	Concrete Shear Cracking	Underwater	12/14/2016	1 EA	1	0	0	0
		Routine	07/25/2016	1 EA	1	0	0	0
Notes: [2016] No shear cracking present.								
885	Scour	Underwater	12/14/2016	1 EA	1	0	0	0
		Routine	07/25/2016	1 EA	1	0	0	0
Notes: [2016] No notable scour present. [2014-2013] No change. O - Stable for scour. Additional action required.								
891	Other Bridge Signing	Underwater	12/14/2016	1 EA	0	0	1	0
		Routine	07/25/2016	1 EA	0	0	1	0
Notes: [2016-2014] SW Delineator missing. 4 Delineators.								
892	Slopes & Slope Protection	Underwater	12/14/2016	1 EA	0	1	0	0
		Routine	07/25/2016	1 EA	0	1	0	0
Notes: [2016-2013] Some loss of riprap. Exposed soils. Riprap and vegetation.								

BRIDGE 7183 CSAH 100 OVER ST LOUIS RIVER

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
893	Guardrail	Underwater	12/14/2016	1 EA	0	1	0	0
		Routine	07/25/2016	1 EA	0	1	0	0
Notes: [2016-2014] Guardrail has minor dents and dings throughout. W-beam w/ ELT ends.								
894	Deck & Approach Drainage	Underwater	12/14/2016	1 EA	0	1	0	0
		Routine	07/25/2016	1 EA	0	1	0	0
Notes: [2016] Some drains have surface corrosion. 2014-2013] No erosion due to drainage. Deck drainage functioning.								
895	Sidewalk, Curb, & Median	Underwater	12/14/2016	1 EA	0	1	0	0
		Routine	07/25/2016	1 EA	0	1	0	0
Notes: [2016-2013] Moderate to severe scaling with some spalls. Rebar exposed. Cracking, some spalls, some rebar exposed, mostly on W end.								
900	Protected Species	Underwater	12/14/2016	2 EA	0	1	1	0
		Routine	07/25/2016	2 EA	0	1	1	0
Notes: [2016] Swallow nests present on underside of deck. Bat droppings present on beams and riprap. 2 bats sleeping on end diaphragm south abutment. Type of bats was not determined.								

General Notes: SLC District 6
 Inspected by: [2016] CG, JB : [2014] CG, BH : [2013] JRS, JDO

58. Deck NBI: [2016] Many potholes have been patch with concrete. Areas of delamination are still present around patches. Spalls in top of deck that are less than 2" in depth with no exposed rebar. Delamination present along some cracks and spalls. Some rust staining along some cracks.
 [2014] Many potholes have exposed rebar with surface corrosion with little to no section loss.
 [2013] Many pot holes with bit patching. <10% deck area.

36A. Brdg Railings NBI: Concrete rail with concrete posts.

36B. Transitions NBI: Concrete end posts do not meet requirements.

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

36D. Appr Guardrail Terminal NBI: 4 ELT ends

59. Superstructure NBI: [2016] Cracks are spaced as little as 5'.
 [2014-2013] Hairline shrinkage cracks spaced approx 10' throughout lengths of beams.

60. Substructure NBI: [2016-2014] Columns 1B, 1C, 2B and 2C have moderate to heavy scale at waterline with penetration from 1/4" up to 1". Column 1B has scaling up to 2.5" (may have exposed rebar) that is over about 60% of the circumference of the column at the waterline.
 [2013] Minor cracking in all structures. Pier columns have moderate mortar loss at water line.

61. Channel NBI: [2016] Little deterioration along channel. Some loss of riprap along north slope.

62. Culvert NBI:

71. Waterway Adeq NBI: [2016-2014] Highest water staining on bridge is 1' up from bottom of pier 2 cap. Estimated 3.5' of freeboard during highwater.

72. Appr Roadway Alignment NBI: [2016-2014] No sight distance issues or speed reduction required.

Inventory Notes:

Inspector's Signature

Reviewer's Signature

Pictures

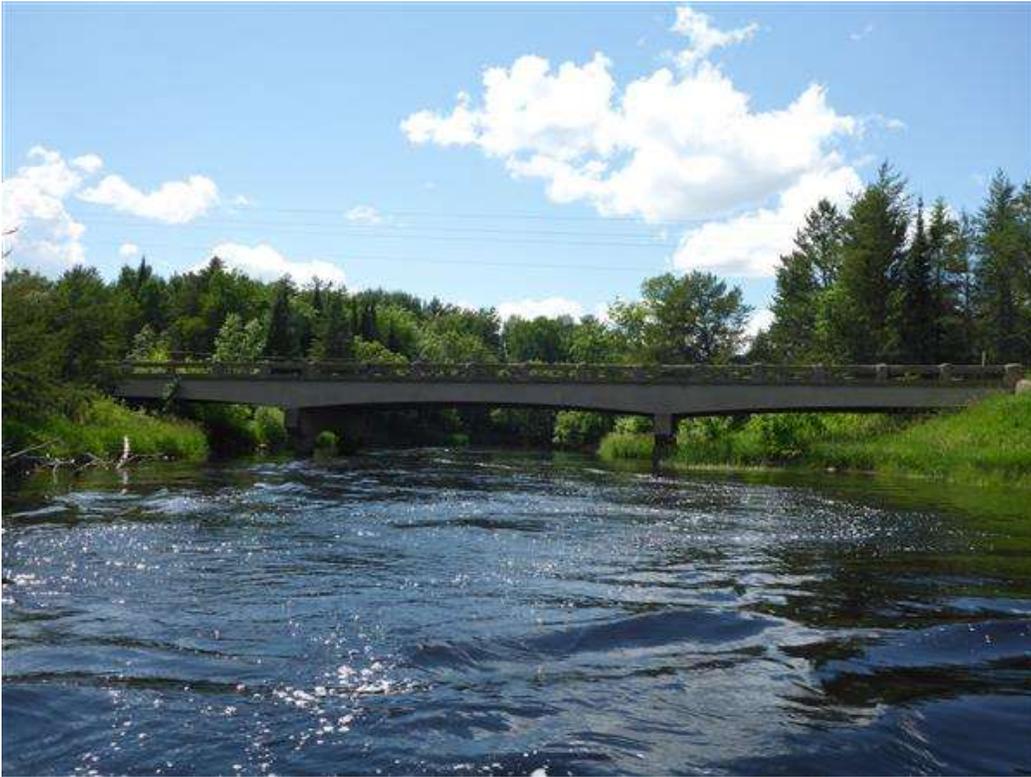


Photo 1 - Upstream Fascia, Looking West



Photo 2 - Downstream Fascia, Looking Northeast

Pictures



Photo 3 - Pier 1, Looking Southwest

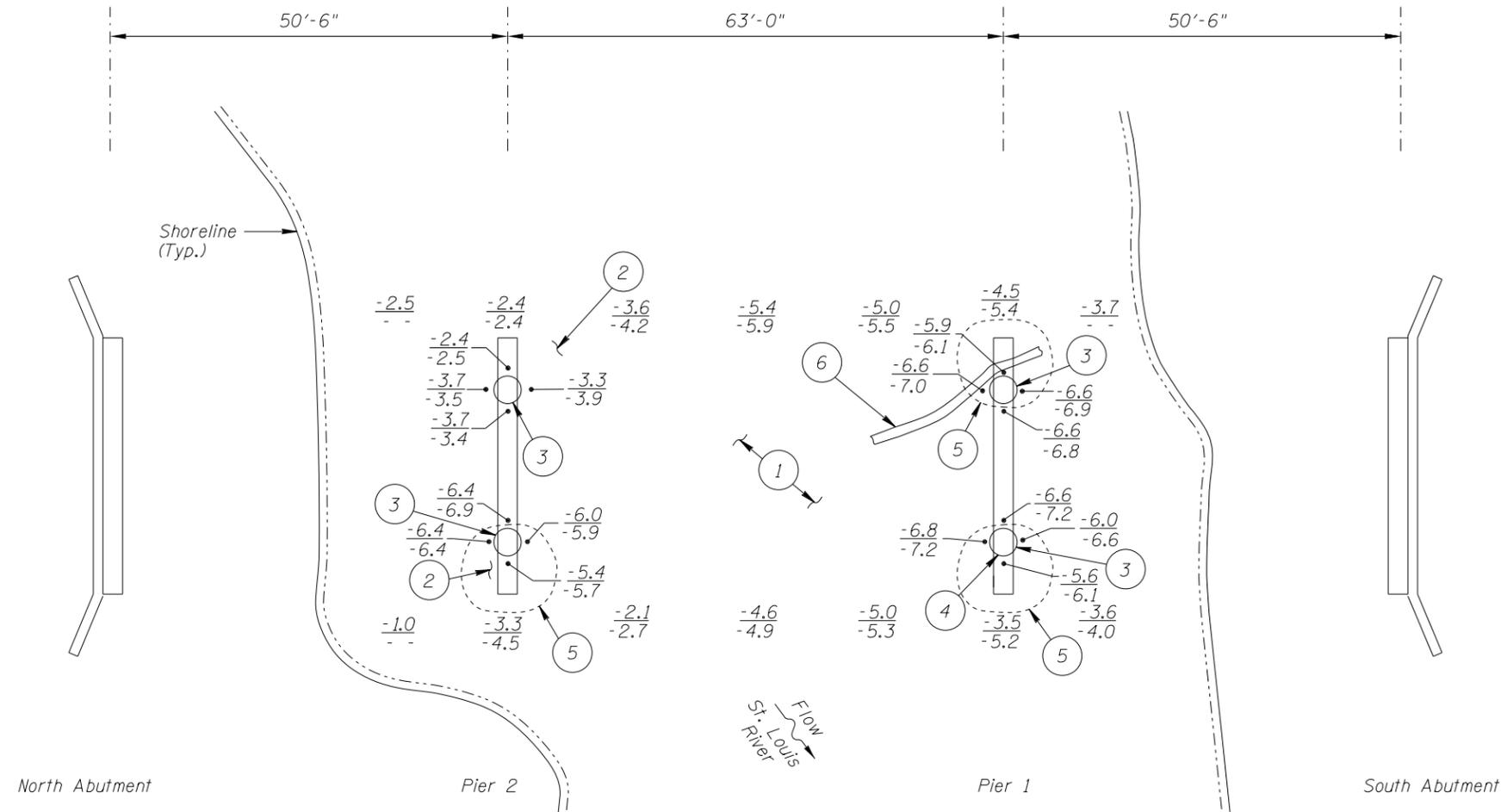
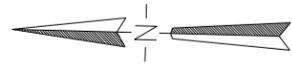


Photo 4 - Pier 2, Looking Northeast

Pictures



Photo 5 - Typical Concrete Condition at Waterline, Looking Northwest



INSPECTION NOTES:

- 1 The channel bottom typically consisted of sand and gravel with a maximum probe rod penetration of 1 inch and 6 inch diameter and smaller cobbles with random 1 foot diameter riprap.
- 2 The channel bottom consisted of soft silt and organic material allowing typical 1.5 feet of probe rod penetration at the upstream column of Pier 2.
- 3 Moderate scaling with some aggregate exposure from 3 feet above the waterline to 1.5 feet below the waterline with typical penetrations of 1/8 inch and up to 1 inch maximum was observed around all columns of both piers.
- 4 An area of heavy scaling/section loss was observed around the downstream column of Pier 1, 2 foot high by 2.5 feet wide extending from the waterline to 2 feet below the waterline with a maximum penetration of 2.5 inches. The concrete within the area was flaky and unsound.
- 5 A scour depression, 5 feet in radius with a depth of 3 feet, was observed at the downstream column of Pier 2 and both columns of Pier 1.
- 6 A 6 to 12 inch diameter log was observed from the channel bottom to the waterline along Pier 1 as shown.

SOUNDING PLAN

GENERAL NOTES:

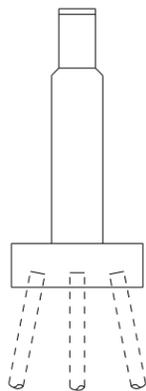
1. Piers 1 and 2 were inspected underwater.
2. At the time of inspection on June 23, 2016, the waterline was located approximately 7.5 feet below the top of the cap at the upstream end of Pier 1. Since insufficient bridge elevation information was available a reference elevation of 100.0 was assumed. Based on the assumed reference the waterline elevation was 92.5.
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.

Legend

- 2.5 Sounding Depth from Waterline (6/23/16)
- 3.0 Sounding Depth from Waterline (7/19/12)
- Scour Depression

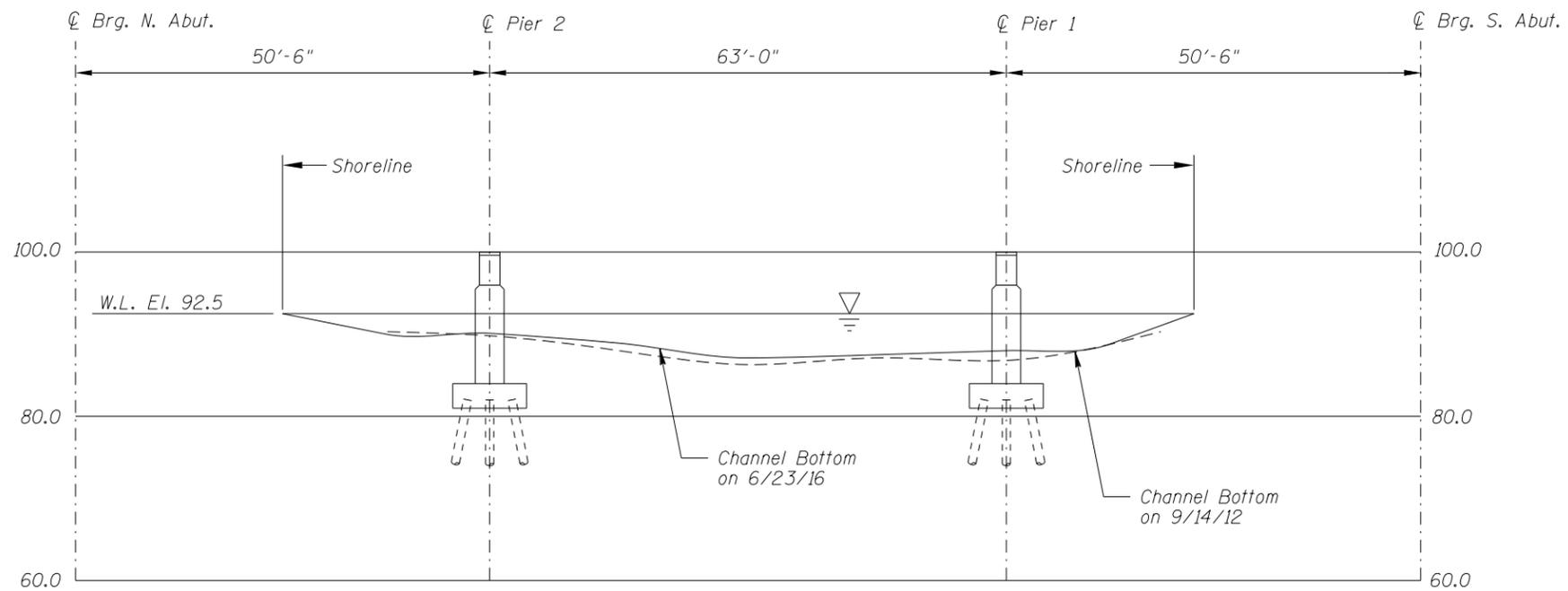
Note:

All soundings are based on 2016 waterline location.

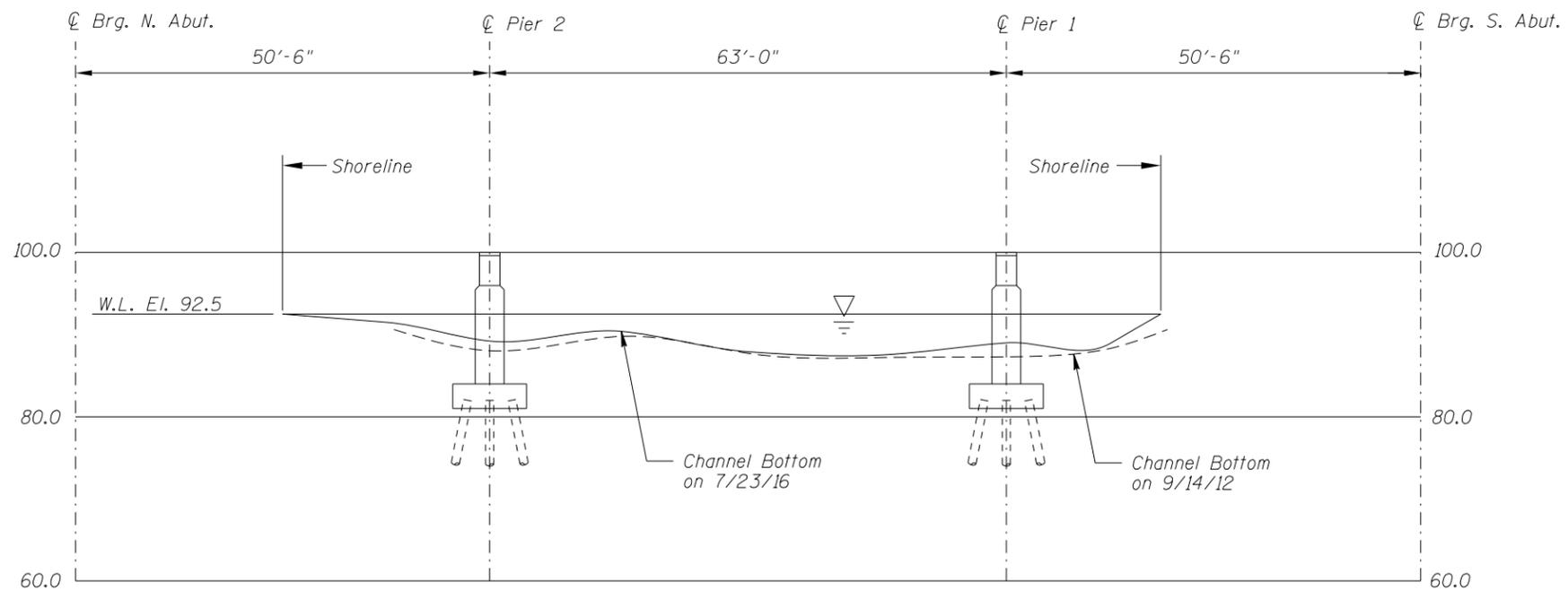


TYPICAL END VIEW OF PIERS

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 7183 OVER THE ST. LOUIS RIVER DISTRICT 1, ST. LOUIS COUNTY		
INSPECTION AND SOUNDING PLAN		
DRAWN BY: PRH	COLLINS ENGINEERS	DATE: JULY 23, 2016
CHECKED BY: LJ		SCALE: NTS
CODE: 96877183		FIGURE NO.: 1



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:
Refer to Figure 1 for General Notes.

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 7183 OVER THE ST. LOUIS RIVER DISTRICT I, ST. LOUIS COUNTY UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
DRAWN BY: PRH	COLLINS ENGINEERS <small>133 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	DATE: JULY 23, 2016
CHECKED BY: LJ		SCALE: 1"=20'-0"
CODE: 96877183		FIGURE NO.: 2