

2016 UNDERWATER BRIDGE INSPECTION REPORT



BRIDGE # 69623 CSAH 27 over ST LOUIS RIVER

DISTRICT: District 1

COUNTY: St. Louis

CITY/TOWNSHIP: MCDAVITT

STATE: Minnesota

Date of Inspection: 09/13/2016

Equipment Used:

Owner: County Highway Agency

Inspected By: Parker, Marc

Report Written By: Marc Parker

Report Reviewed By:

Final Report Date:



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UNDERWATER INSPECTION

REPORT SUMMARY

The substructure unit inspected at Bridge No. 69623, Pier 1, was found to be in good condition, although a moderate accumulation of timber debris was observed at the upstream and downstream noses of Pier 1. The channel bottom appeared to be in stable condition with no evidence of significant scour. The substructure condition and channel bottom configuration were comparable to what was reported during the previous underwater inspection.

INSPECTION FINDINGS

(A) The channel bottom consisted of soft silt with 1.5 to 2 feet of probe rod penetration and up to 2 feet in diameter scattered rocks.

(B) The concrete of Pier 1 was typically smooth and sound.

(C) A moderate accumulation of timber debris consisting of logs and branches up to 12 inches in diameter was observed at the upstream and downstream noses of Pier 1 extending from the channel bottom to the waterline. The accumulation extended approximately 10 feet off the pier nose and faces.

(D) A band of light scaling was observed around the entire pier from the waterline to 4 feet below the waterline with 1/8 inch maximum penetration.

RECOMMENDATIONS

(A) Monitor the moderate accumulation of timber debris at the upstream and downstream noses of Pier 1 for signs of scour influence or a reduction in hydraulic capacity.

(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 #: 69623
Feature Intersected: ST LOUIS RIVER
Facility Carried: CSAH 27
District: District 1
County: 069 - St. Louis

Bridge Description:

Bridge No. 69623 consists of a two span, multiple prestressed concrete beam superstructure supported by two concrete abutments and one concrete pier.

2. INSPECTION DATA

Professional Engineer/Team Leader: Marc Parker
Inspection Diver: Marc Parker
Date of Underwater Inspection: 09/13/2016
Weather Conditions: Overcast, 60 °F
Underwater Visibility (feet): 1.0 foot
Waterway Velocity (ft/sec): 3.0 ft/sec

3. SUBSTRUCTURE INSPECTION DATA

Substructure(s) Inspected: Pier 1

General Shape:

The pier consists of an oblong rectangular shaft with rounded noses, which rests upon a rectangular footing founded on piles.

Maximum Water Depth at Substructure(s) Inspected (feet): 8.7 feet

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap on the upstream end of Pier 1.
Waterline Elevation (feet): 1268.6 feet
Description: The waterline was approximately 23.4 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: 7
Item 62: Culvert: Code:
Item 92B: Underwater Inspection: Code: Y 48 09/16

Item 113: Scour Critical Bridge:

Code: N

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
210	Reinforced Concrete Pier Wall	24	LF	24			
885	Scour	1	EA	1			

UNDERWATER INSPECTION

INSPECTION PROCEDURES

The routine underwater inspection of Bridge 69623 (CSAH No. 27 over The St. Louis 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 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 a reinforced concrete pier. 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: 69623

CSAH 27 over ST LOUIS RIVER

Date: 11/23/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. 442 Crew District 01 Maint. Area County 069 - St. Louis City Township 69043 - MCDAVITT Desc. Loc. 0.1 MI E OF JCT CR 312 Sect., Twp., Range 29 - 056N - 18W Latitude 47 ° 18 ' 19.42 " Longitude 92 ° 39 ' 35.22 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1999 MN Year Reconstructed FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 3 - COUNTY Date Opened to Traffic On - Off System 0 - OFF Legislative District 05B Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 27 Roadway Name or Description CSAH 27 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 007+00.200 Detour Length 4.0 mi. Lanes ON 2 UNDER 0 ADT 275 YEAR 2008 HCA DT ADTT % Functional Class 08 - Rural - Minor Collector	Userkey 109 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 99.9 Routine Inspection Date 10/05/2015 Routine Inspection Frequency 24 Inspector Name Parker, Marc Status A - Open																				
		+ NBI CONDITION RATINGS +																				
		Deck 7 Unsound Deck % Superstructure 7 Substructure 7 Channel 7 Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 7 Deck Geometry 9 Underclearances N Waterway Adequacy 9 Approach Alignment 8																				
		+ 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 border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Y/N</th> <th style="text-align: center;">Freq</th> <th style="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;">09/13/2016</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	09/13/2016	Pinned Asbly.				Spec. Feat.			
	Y/N	Freq	Date																			
Frac. Critical																						
Underwater		60	09/13/2016																			
Pinned Asbly.																						
Spec. Feat.																						
		+ WATERWAY +																				
		Drainage Area (sq. mi.) 881.9 Waterway Opening (sf.) 2925 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 N - STBL - LIM Year 2002																				
		+ CAPACITY RATINGS +																				
		Design Load 9 - HS 25 (OR GREATER) Operating Rating 2 - HS TRUCK 81.1 Inventory Rating 2 - HS TRUCK 25.0 Posting VEH: SEMI: DBL: Rating Date 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 5 - Prestress or Precast Main Span Design 01 - Beam Span Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 30 RIGHT Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 2 APPR: 0 TOTAL: Main Span Length 142.1 ft. Structure Length 290.5 ft. Deck Width (Out-to-Out) 42.5 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 1 - Epoxy Coated Reinforcing Deck Rebars Install Year 1999 Structure Area (Out-to-Out) 12346 sq. ft. Roadway Area (Curb-to-Curb) 11442 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 22 Rt 22	If Divided NB-EB SB-WB Roadway Width 39.40 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 0.0 ft. Bridge Roadway Width 39.4 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) 8 - CIP 3 - FTG PILE Pier Foundation (Material/Type) 8 - CIP 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 0 - Not Required Vertical N - Not Applicable																				

MINNESOTA BRIDGE INSPECTION REPORT

01/06/2017

Inspector: CO Bridge

BRIDGE 69623 CSAH 27 OVER ST LOUIS RIVER

County: St. Louis	Location: 0.1 MI E OF JCT CR 312	Length: 290.5 ft.
City:	Route: 04 - CSAH 27 Ref. Pt.: 007+00.200	Deck Width: 42.5 ft.
Township: 69043 - MCDAVITT	Control Section:	Rdwy. Area/ Pct. Unsnd: 11442 sq. ft. / %
Section: 29 Township: 056N Range: 18W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 5 - Prestressed Concrete 2 - List: Stringer/Multi-beam or Girder	Local Agency Bridge Nbr.: 442	Culvert: N/A
NBI Deck: 7 Super: 7 Sub: 7 Chan: 7 Culv: N		Postings:
	Open, Posted, Closed: A - Open	
	MN Scour Code: N - STBL - LIM SCOUR	

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: 0 - Not Required	Vertical: N - Not Applicable	Unofficial Sufficiency Rating 99.9

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	11/23/2016	12346 SF	12099	0	247	0
		Migrated Values		12346 SF	12099	0	247	0
Notes: [2015] Few cracks with leaching over pier and leaching along underside of poured deck joint. [2013-2012] No deterioration noted.								
510	- Wearing Surfaces	Underwater	11/23/2016	11442 SF	11213	0	229	0
		Migrated Values		11442 SF	11213	0	229	0
Notes: Top of Concrete Deck with Epoxy Reinforcement Notes: [2015] 10" spall SE corner of top of deck. 0.020" cracks along both sides of poured joint. [2013-2012] Minor cracking near pier joint.								
109	Prestressed Concrete Open Girder/Beam	Underwater	11/23/2016	1998 LF	1980	18	0	0
		Migrated Values		1998 LF	1980	18	0	0
Notes: [2015] Hairline cracking east end of beam 1B over bearing with a possible shear crack (< 0.005"). Beams 2 and 3 have hairline cracking from corners of end diaphragms. Ends of rebar under epoxy in beam ends corroding at each abutment. [2013-2012] No deterioration noted.								
210	Reinforced Concrete Pier Wall	Underwater	11/23/2016	24 LF	24	0	0	0
		Migrated Values		24 LF	24	0	0	0
Notes: [2015] Debris buildup at north end of pier. [2013] Staining on base of pier wall from water, no other deterioration noted. Debris no longer present. [2012] Underwater inspection] 1/8" max. pen. of light scaling along wetted perimeter. 2012-Debris built up in front of pier wall.								
215	Reinforced Concrete Abutment	Underwater	11/23/2016	138 LF	136	2	0	0
		Migrated Values		138 LF	136	2	0	0
Notes: [2016] Migrator added 40 LF to abutment quantity to account for wingwalls (CS1:40 CS2:0 CS3:0 CS4:0). [2015] Minor spalling south end of east abutment parapet. 0.020" cracks spaced 3' to 4' in tops of parapets, cracks have leaching on underside. Vertical cracks in abutments are 0.005". [2013] Hairline vertical cracks spaced 8' on both abutments, near beam seats. 2012-Minor leaching on backwalls of both abutments.								
Wingwall notes: [2015] Cracking along construction joints with some leaching. [2013-2012] Vertical crack with efflorescence in SW wingwall.								
234	Reinforced Concrete Pier Cap	Underwater	11/23/2016	49 LF	49	0	0	0
		Migrated Values		49 LF	49	0	0	0
Notes: [2015-2012] No deterioration noted.								

BRIDGE 69623 CSAH 27 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
300	Strip Seal Expansion Joint	Underwater	11/23/2016	92 LF	92	0	0	0
		Migrated Values		92 LF	92	0	0	0
Notes: [2015] Damage to south sliding plate for east strip seal. Screw pulled out and slot split east end of slot. [2013-2012] Joint filled with debris. Large debris with vegetation near south end of east joint.								
301	Pourable Joint Seal	Underwater	11/23/2016	41 LF	0	41	0	0
		Migrated Values		41 LF	0	41	0	0
Notes: [2015] 28' of seal missing with spalling on north and south ends. Leaching on underside indicating leakage through joint. [2013-2012] Minor cracking near pier joint. Sealant present.								
311	Movable Bearing	Underwater	11/23/2016	14 EA	14	0	0	0
		Migrated Values		14 EA	14	0	0	0
Notes: [2015-2012] No deterioration noted. Bearing pads on west abutment have slight lean south. Located at Abutment.								
313	Fixed Bearing	Underwater	11/23/2016	14 EA	14	0	0	0
		Migrated Values		14 EA	14	0	0	0
Notes: [2015-2012] No deterioration noted. Located at Pier.								
321	Reinforced Concrete Approach Slab	Underwater	11/23/2016	3960 SF	0	3960	0	0
		Migrated Values		3960 SF	0	3960	0	0
Notes: [2016] Migrator assumed an approach slab length of 20FT and used the inventory quantity of 99FT for the width. [2015] West approach longitudinal crack 0.030" wide crack. [2013-2012] Minor spalling near roadway joint warranting CS2. 1/16" Longitudinal crack in EB lane on the west approach panel.								
331	Reinforced Concrete Bridge Railing	Underwater	11/23/2016	699 LF	694	5	0	0
		Migrated Values		699 LF	694	5	0	0
Notes: [2015-2013] 1 1/32" vertical crack at center of each rail panel. Damage to south sliding plate for east strip seal. Screw pulled out and slot split east end of slot. 2012-Minor spall near pier joint warranting CS2. Minor scraping from plows. 1 1/32" vertical crack at center of each rail panel.								
800	Critical Deficiencies or Safety Hazards	Underwater	11/23/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: [2015-2013] No critical findings found during this inspection.								
810	Concrete Decks - Cracking & Sealing	Underwater	11/23/2016	0 LF	0	0	0	0
		Migrated Values		0 LF	0	0	0	0
Notes: [2015] Cracks near pier are 0.020" in width. [2013-2012] Cracks are of insignificant size and density.								
815	Plow Fingers	Underwater	11/23/2016	24 EA	24	0	0	0
		Migrated Values		24 EA	24	0	0	0
Notes: [2015] All plow straps present. [2013] One plowstrap missing east abutment just north of centerline. 2012-All straps in place. No deterioration noted.								
855	Secondary Members (Superstructure)	Underwater	11/23/2016	48 EA	48	0	0	0
		Migrated Values		48 EA	48	0	0	0
Notes: [2015-2012] No deterioration noted. Element represents intermediate and end diaphragms.								
883	Concrete Shear Cracking	Underwater	11/23/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
Notes: [2015] Possible shear crack beam 7B east end < 0.005".								

BRIDGE 69623 CSAH 27 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
885	Scour	Underwater	11/23/2016	1 EA	1	0	0	0
891	Other Bridge Signing	Underwater	11/23/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2015] All signs present with no notable deterioration. [2013-2012] All signs in place. 4 Delineators							
892	Slopes & Slope Protection	Underwater	11/23/2016	2 EA	0	2	0	0
		Migrated Values		2 EA	0	2	0	0
	Notes: [2015] North end of west abutment footing exposed due to erosion. [2013-2012] Eroding severely NW corner (see pictures). Riprap is lined in the scour hole in NW corner. Scour hole measures 14'x40'x5' deep. If left unchecked it could pose a future problem. Minor erosion on east slope.							
893	Guardrail	Underwater	11/23/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2015] Scraping SE with hole in flexbeam. [2013-2012] No deterioration noted. Flex Beam w/BCT ends.							
894	Deck & Approach Drainage	Underwater	11/23/2016	2 EA	2	0	0	0
		Migrated Values		2 EA	2	0	0	0
	Notes: [2015] Sand cleaned off of deck. No drainage-related slope erosion. [2013-2012] Minor sand and debris on bridge deck. Catch basins on east end of bridge free of debris.							
895	Sidewalk, Curb, & Median	Underwater	11/23/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2015] Cracks spaced about 6' in curbs. [2013-2012] No deterioration noted.							
899	Miscellaneous Items	Underwater	11/23/2016	2 EA	0	2	0	0
		Migrated Values		2 EA	0	2	0	0
	Notes: [2015] Bat droppings present on abutment seats. Graffiti on abutments, beam ends, and wings. [2013-2012] Tree and brush removal from wingwall slopes.							
900	Protected Species	Underwater	11/23/2016	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: SLC District 7
 Inspected by: [2015] CG : [2013] CG, BH
 7/09/2012 - Post 2012 Flood Inspection by JRM and RRC from TKDA. Underwater inspection performed by WSB.

58. Deck NBI: [2015] 10" spall SE corner of top of deck. 0.020" cracks along both sides of poured joint. Some cracking with leaching on underside over pier.

36A. Brdg Railings NBI: Concrete barrier type F.

36B. Transitions NBI: Guardrail transition meets minimum requirements in inspection manual.

36C. Appr Guardrail NBI: Flexbeam with timber posts.

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

59. Superstructure NBI: [2015] Corroding rebar on ends of beams, both abutments. Hairline cracking in beams 2, 3, and 7 over east abutment.

60. Substructure NBI: [2015] 0.005" vertical cracking in each abutment spaced about 8'. Minor spalling on south end of east parapet wall. Cracking of 0.020" spaced 3' to 4' in tops of parapet walls.

61. Channel NBI: [2015] Minor accumulation of debris on north end of pier.

62. Culvert NBI:

BRIDGE 69623 CSAH 27 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
71.	Waterway Adeq NBI:	[2015]	High water mark on pier is below pier cap, remote chance of overtopping. Plan indicated 6.5' of freeboard during 100 year event.					
72.	Appr Roadway Alignment NBI:	[2015]	No sight distance issues or speed reduction required.					
	Inventory Notes:							

Inspector's Signature

Reviewer's Signature

Pictures



Photo 1 - Upstream Fascia, Looking Southwest

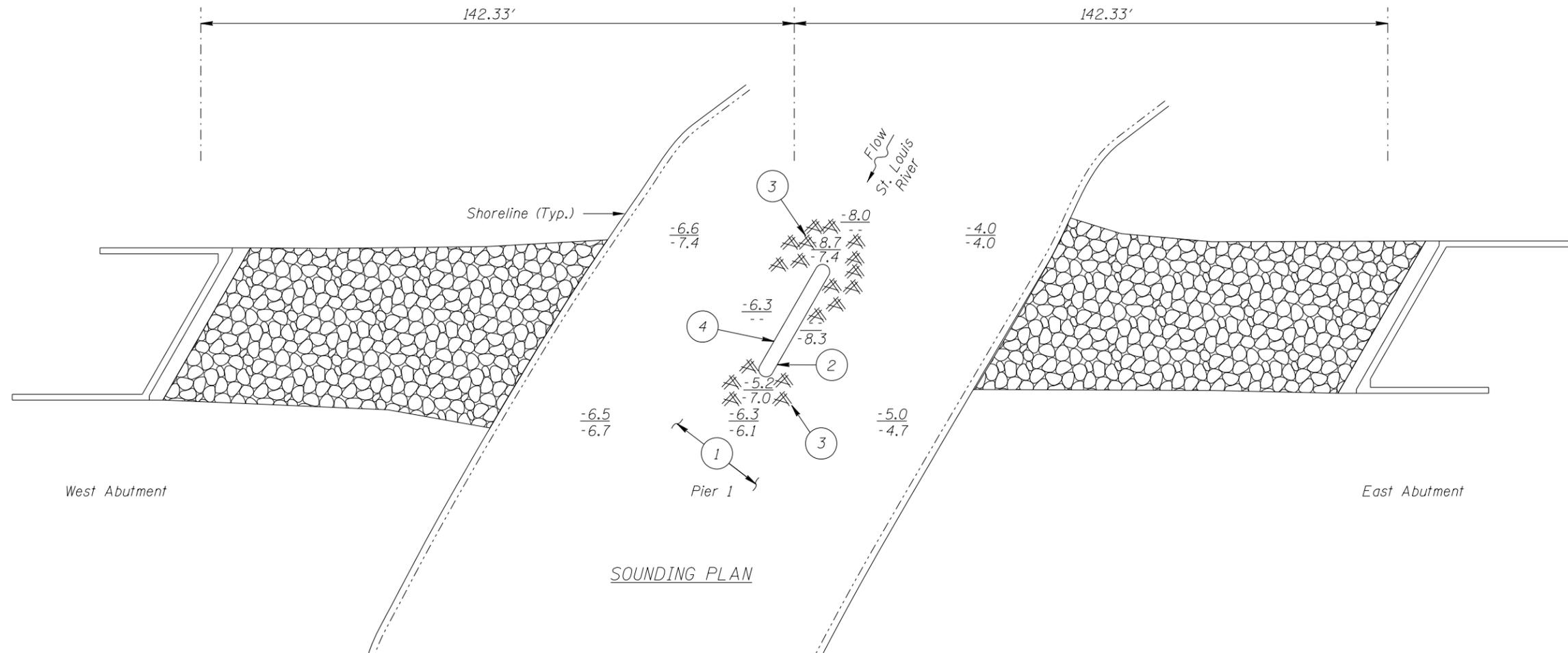


Photo 2 - Downstream Fascia, Looking Northeast

Pictures



Photo 3 - Pier 1, Looking West



SOUNDING PLAN

GENERAL NOTES:

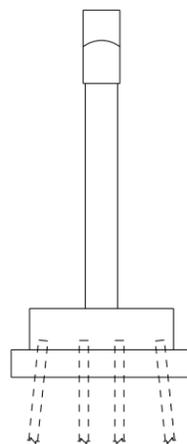
1. Pier 1 was inspected underwater.
2. At the time of inspection on September 13, 2016, the waterline was located approximately 23.4 feet below the top of the pier cap at the upstream end of Pier 1. This corresponds to a waterline elevation of 1268.6 based on design drawings.
3. Soundings indicate the 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 consisted of soft silt with 1.5 to 2 feet of probe rod penetration and scattered rocks up to 2 feet in diameter.
- 2 The concrete of Pier 1 was typically smooth and sound.
- 3 A moderate accumulation of timber debris consisting of logs and branches up to 12 inch in diameter was observed at the upstream at downstream noses of Pier 1 extending from the channel bottom to the waterline. The accumulation extended approximately 10 feet off the pier nose and faces.
- 4 A band of light scaling was observed around the entire pier from the waterline to 4 feet below the waterline with 1/8 inch maximum penetration.

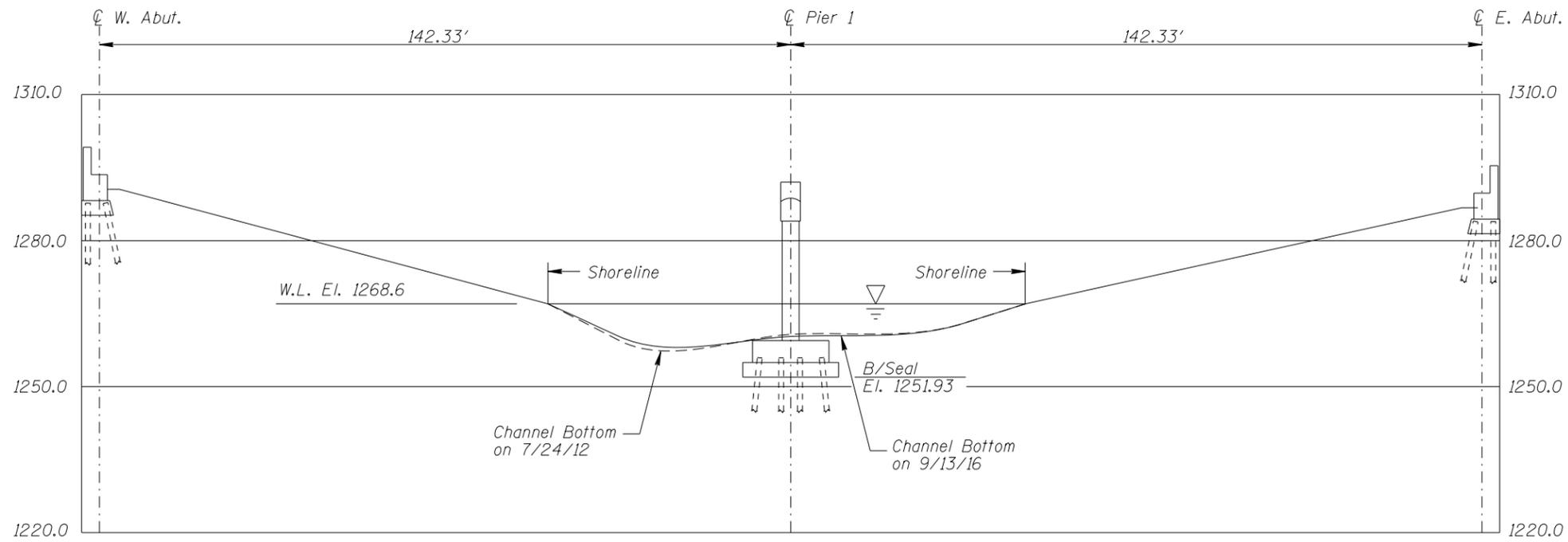
Legend

- 5.1 Sounding Depth (9/13/16)
- 5.5 Sounding Depth (7/24/12)
- Timber Debris
- Riprap

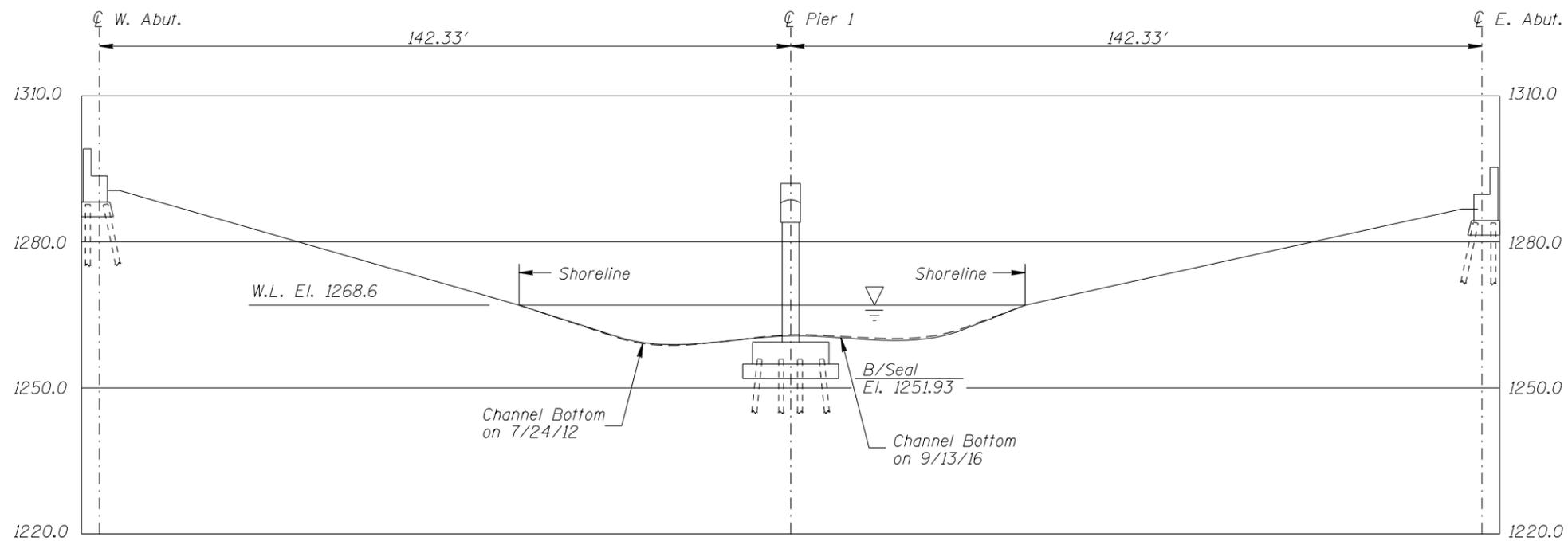


TYPICAL END VIEW OF PIER

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 69623 OVER THE ST. LOUIS RIVER DISTRICT I, ST. LOUIS COUNTY		
INSPECTION AND SOUNDING PLAN		
DRAWN BY: ELN	COLLINS ENGINEERS <small>133 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	DATE: SEPT 13, 2016
CHECKED BY: MBP		SCALE: NTS
CODE: 968769623		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. 69623 OVER THE ST. LOUIS RIVER DISTRICT I, ST. LOUIS COUNTY UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
DRAWN BY: ELN	COLLINS ENGINEERS <small>133 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	DATE: SEPT 13, 2016
CHECKED BY: MBP		SCALE: 1"=30'
CODE: 968769623		FIGURE NO.: 2