

# 2017 UNDERWATER BRIDGE INSPECTION REPORT



## BRIDGE # 92626 CR 207 over STONE 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: Parker, Marc

Report Written By: Marc Parker

Report Reviewed By:

Final Report Date:



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## UNDERWATER INSPECTION

### REPORT SUMMARY

The substructure units inspected at Bridge No. 92626, the North and South Abutments were found to be in good condition with no defects of structural significance below water. The timber piles and pile caps exhibited no notable deficiencies and only minor splitting/weathering. Overall the structure condition has not changed since the previous underwater inspection.

### INSPECTION FINDINGS

- (A) The channel bottom consisted of soft silt allowing up to 1 foot of probe rod penetration.
- (B) Timber piles and pile caps were generally in good condition, with no significant defects and only minor checking/weathering present.
- (C) The timber backwalls are in good condition with no notable gaps or loss of backfill present.

### RECOMMENDATIONS

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

Contractor: Collins Engineers, Inc.

Contractor Job Number: 9687

## UNDERWATER INSPECTION

### 1. BRIDGE DATA

Bridge #: 92626  
Feature Intersected: STONE RIVER  
Facility Carried: CR 207  
District: District 1  
County: 069 - St. Louis  
Bridge Description:

The bridge superstructure consists of one timber deck span and steel stringers that are supported two timber abutments.

### 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): 2.0 feet  
Waterway Velocity (ft/sec): Negligible

### 3. SUBSTRUCTURE INSPECTION DATA

Substructure(s) Inspected: The North and South Abutments.

General Shape:

The abutments consisted of a timber pile cap supported by timber piles with horizontal backwall planking.

Maximum Water Depth at Substructure(s) Inspected (feet): 4.5 feet

### 4. WATERLINE DATUM

Water Level Reference: The bottom of the west girder at the south end.  
Waterline Elevation (feet): 98.1 feet  
Description: The waterline was located 1.9 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 09/2016

Item 113: Scour Critical Bridge:

Code: J

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
216	Timber Abutment	96	LF		96		
228	Timber Piling	20	EA		20		
885	Scour	1	EA	1			

## UNDERWATER INSPECTION

### INSPECTION PROCEDURES

The routine underwater inspection of Bridge 92626 (C.R. 207 over Stone 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 two timber abutments. According to the bridge inventory, the North and South Abutments are founded on timber piles supporting a timber 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: 92626

CR 207 over STONE RIVER

Date: 02/02/2017

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
<b>Agency Br. No.</b> 255 <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> 1.1 MI S OF JCT CSAH28 <b>Sect., Twp., Range</b> 5 - 054N - 18W <b>Latitude</b> 47 ° 11 ' 43.34 " <b>Longitude</b> 92 ° 39 ' 46.75 " <b>Custodian</b> 02 - County Highway Agency <b>Owner</b> 02 - County Highway Agency <b>BMU Agreement</b> <b>Year Built</b> 1969 <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> 07 - CNTY <b>Number</b> 207 <b>Roadway Name or Description</b> CR 207 <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> 001+00.940 <b>Detour Length</b> 5.0      mi. <b>Lanes</b> <b>ON</b> 2 <b>UNDER</b> 0 <b>ADT</b> 15 <b>YEAR</b> 2003 <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> 84.1 <b>Routine Inspection Date</b> 09/14/2016 <b>Routine Inspection Frequency</b> 24 <b>Inspector Name</b> Parker, Marc <b>Status</b> P - Posted for Load																				
	<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> 24.00 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> 24.0 ft. <b>Bridge Roadway Width</b> 24.0 ft. <b>Median Width On Bridge</b> ft.	<b>Deck</b> 6 <b>Unsound Deck %</b> <b>Superstructure</b> 5 <b>Substructure</b> 7 <b>Channel</b> 7 <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> 3 - Steel <b>Main Span Design</b> 01 - Beam Span <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> 1 <b>APPR:</b> 0 <b>TOTAL:</b> <b>Main Span Length</b> 18.2 ft. <b>Structure Length</b> 20.4 ft. <b>Deck Width (Out-to-Out)</b> 25.0 ft. <b>Deck Material</b> 8 - Wood or Timber <b>Wear Surf Type</b> 6 - Bituminous <b>Wear Surf Install Year</b> <b>Wear Course/Fill Depth</b> 0.20 ft. <b>Deck Membrane</b> 0 - None <b>Deck Rebars</b> N - Not Applicable (no deck) <b>Deck Rebars Install Year</b> <b>Structure Area (Out-to-Out)</b> 510 sq. ft. <b>Roadway Area (Curb-to-Curb)</b> 495 sq. ft. <b>Sidewalk Width</b> 50A. Lt 0.00 ft.      50B. Rt 0.00 ft. <b>Curb Height</b> Lt 0.50 ft.      Rt 0.50 ft. <b>Rail Type</b> Lt 37      Rt 37	<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> 2 - TIMBER 4 - PILE BENT <b>Pier Foundation (Material/Type)</b> N - N/A N - N/A <b>Historic Status</b> 5 - Not eligible	<b>Structure Evaluation</b> 5 <b>Deck Geometry</b> 6 <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> 0 - SUBSTANDARD <b>GR Transition</b> N - NOT REQUIRED <b>Appr. Guardrail</b> N - NOT REQUIRED <b>GR Termini</b> N - NOT REQUIRED																				
	<b>+ BRIDGE SIGNS +</b>	<b>+ IN DEPTH INSP. +</b>																				
	<b>Posted Load</b> 2 - Vehicle & Semi (Type R12-5) <b>Traffic</b> 0 - Not Required <b>Horizontal</b> 1 - Object Markers <b>Vertical</b> N - Not Applicable	<table 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><b>Frac. Critical</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Underwater</b></td> <td></td> <td style="text-align: center;">60</td> <td style="text-align: center;">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>			
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<b>Pinned Asbly.</b>																						
<b>Spec. Feat.</b>																						
		<b>+ WATERWAY +</b>																				
		<b>Drainage Area (sq. mi.)</b> <b>Waterway Opening (sf.)</b> 70 <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> J - SCOUR <b>Year</b> 1992																				
		<b>+ CAPACITY RATINGS +</b>																				
		<b>Design Load</b> 4 - H 20 <b>Operating Rating</b> 2 - HS TRUCK      22.6 <b>Inventory Rating</b> 2 - HS TRUCK      16.4 <b>Posting VEH:</b> 24 <b>SEMI:</b> 36 <b>DBL:</b> 36 <b>Rating Date</b> 6/23/2005 <b>Overweight Permit Codes</b> <b>A</b> N - N/A <b>B</b> N - N/A <b>C</b> N - N/A																				

**MINNESOTA BRIDGE INSPECTION REPORT**

02/03/2017

**BRIDGE 92626 CR 207 OVER STONE RIVER**

County: St. Louis	Location: 1.1 MI S OF JCT CSAH28	Length: 20.4 ft.
City:	Route: 07 - CNTY 207 Ref. Pt.: 001+00.940	Deck Width: 25.0 ft.
Township: 69037 - KELSEY	Control Section:	Rdwy. Area/ Pct. Unsnd: 495 sq. ft. / %
Section: 5 Township: 054N Range: 18W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 3 - Steel 2 - Stringer/Multi-beam or Girder	Local Agency Bridge Nbr.: 255	Culvert: N/A
List:		Postings: 24 36 36

NBI Deck: 6 Super: 5 Sub: 7 Chan: 7 Culv: N  
 Open, Posted, Closed: P - Posted for Load  
 MN Scour Code: J - SCOUR SUSCEPT

Appraisal Ratings - Approach: 8 Waterway: 8 Unofficial Structurally Deficient N  
 Required Bridge Signs - Load Posting: 2 - Vehicle & Semi (Type R12-5) Traffic: 0 - Not Required Unofficial Functionally Obsolete N  
 Horizontal: 1 - Object Markers Vertical: N - Not Applicable Unofficial Sufficiency Rating 84.1

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
31	Timber Deck	Underwater	02/02/2017	510 SF	435	50	25	0
		Routine	09/14/2016	510 SF	435	50	25	0
Notes: [2016] Leakage through deck is indicating the presence of moderate width cracks in bituminous overlay (deck covered in gravel) with a spacing of 5' on south end of deck. Isolated loss of wood preservative on underside of deck. Top backing board and ends of deck separating causing gap. South gap allowing gravel to deposit on south cap.								
510	- Wearing Surfaces	Underwater	02/02/2017	490 SF	0	422	20	48
		Routine	09/14/2016	490 SF	0	422	20	48
Notes: [2016] About 1' of bituminous is missing on north and south ends of deck. Leakage through deck is indicating the presence of moderate width cracks in bituminous overlay (deck covered in gravel) with a spacing of 5' on south end of deck. [2014] Deck covered with gravel. [2013-2012] Bituminous is covered with gravel. Some potholes on the s. end are visible. SOME SPALL S. END.								
107	Steel Open Girder/Beam	Underwater	02/02/2017	240 LF	0	222	18	0
		Routine	09/14/2016	240 LF	0	222	18	0
Notes: [2016] Beams 1 through 8 ends on south abutment buried in gravel with flaking rust present having little section loss. Possible that beams are salvaged due to minor pitting on bottom of some bottom flanges being painted over. Beam 10 on has some flaking paint on east side. North half of Beam 1 is rotated to the west from impact to rail causing north bearing to lift off cap 1.5" and north end diaphragm weld to break (1.5" gap between end of diaphragm and web). [2014-2012] Beams show signs of minor corrosion.								
515	- Steel Protective Coating	Underwater	02/02/2017	794 SF	0	608	32	154
		Routine	09/14/2016	794 SF	0	608	32	154
Notes: [2016] Majority of paint has proper adhesion with minor chalking. South end of beam 10 has flaking paint on east side. Beams 1-8 have failed paint on south end with flaking rust on bottom flange.								
216	Timber Abutment	Underwater	02/02/2017	96 LF	0	94	2	0
		Routine	09/14/2016	96 LF	7	87	2	0
Notes: [2016] Migrator added 40 LF to abutment quantity to account for wingwalls. Top backing board and ends of deck separating causing gap. South gap allowing gravel to deposit on south cap. [2014] Piles have minor weathering with splitting. West end of south cap wrapped in tin. West end of south cap has spit across middle of cap and bottom south corner broken off. East end of south cap has moss and vegetation growing. Wing caps and piling have moderate weathering with splits and checks. [2013-2012] No deterioration noted. [2012 Underwater] Piles and caps have minor weathering with splitting.								

**BRIDGE 92626 CR 207 OVER STONE RIVER**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
228	Timber Pile	Underwater	02/02/2017	20 EA	0	20	0	0
		Routine	09/14/2016	20 EA	0	12	8	0
<p>Notes: [2016 U/W] Timber piles exhibit only minor checking/weathering.                      [2016] Added 8 piling for wing piles. South abutment has 4 piles with shims that are not loose. All abutment piling have about 1' of pile above water line. Piles have moderate weathering with splits and checks. Piles sound of little to moderate decay when sounded. Wing piles have moderate to extensive decay with some separation along growth wings.                      [2013-2012] No additional deterioration noted.                      [2012 Underwater] Piles have minor weathering with splitting.                      FROST IS RAISING PILES ON S. ABUT, SHIMS SEEM STABLE.</p>								
235	Timber Pier Cap	Underwater	02/02/2017	56 LF	0	54	2	0
		Routine	09/14/2016	56 LF	0	54	2	0
<p>Notes: [2016] Caps have 1/16" wide checks with a depth of 1". Caps sound of little to no decay. South cap has gravel deposits on top from beam 1 to beam 8. Gravel falling through gap between top backing board and end of deck.                      [2014] West end of south cap wrapped in tin. West end of south cap has spit across middle of cap and bottom south corner broken off. East end of south cap has moss and vegetation growing.                      [2013-2012] S. cap appears to have been reinforced with steel plates, visible on SW corner.                      [2012 Underwater] Caps have minor weathering with splitting.</p>								
313	Fixed Bearing	Underwater	02/02/2017	24 EA	0	14	10	0
		Routine	09/14/2016	24 EA	0	14	10	0
<p>Notes: [2016] Bearings on south abutment for beams 1 - 8 and beam 2 north abutment have flaking rust with little section loss. North bearing of beam 1 has lifted off of cap 1.5" on east edge from rail impact that cause beam to rotate. Surface corrosion present on all other bearings.                      [2014-2012] No deterioration noted.</p>								
330	Metal Bridge Railing	Underwater	02/02/2017	46 LF	23	23	0	0
		Routine	09/14/2016	46 LF	23	23	0	0
<p>Notes: [2016-2014] Impact to north end of west rail has caused rail to lean outward. Scrape on rail from impact.                      [2013-2012] Bridge railing at NW corner has rotated slightly outward.                      Angle Iron Posts w/ Flex beam rail.</p>								
515 -	Steel Protective Coating	Underwater	02/02/2017	999 SF	847	92	60	0
		Routine	09/14/2016	999 SF	847	92	60	0
<p>Notes: [2016] Minor chalking of w-beam galvanizing and posts have primer exposed throughout that has no deterioration with proper adhesion.</p>								
800	Critical Deficiencies or Safety Hazards	Underwater	02/02/2017	1 EA	1	0	0	0
		Routine	09/14/2016	1 EA	1	0	0	0
<p>Notes: [2016-2013] No critical deficiencies or safety hazards found during this inspection.</p>								
855	Secondary Members (Superstructure)	Underwater	02/02/2017	1 EA	0	0	1	0
		Routine	09/14/2016	1 EA	0	0	1	0
<p>Notes: [2016] Weld on north end diaphragm of beam 1 has broken due to rail impact.                      15 intermediate and end diaphragms.</p>								
880	Impact Damage	Underwater	02/02/2017	1 EA	0	0	1	0
		Routine	09/14/2016	1 EA	0	0	1	0
<p>Notes: [2016] Rail impact has caused north end of beam 1 to rotate west 1.5".</p>								
885	Scour	Underwater	02/02/2017	1 EA	1	0	0	0
890	Load Posting or Vertical Clearance Signing	Underwater	02/02/2017	1 EA	0	0	1	0
		Routine	09/14/2016	1 EA	0	0	1	0
<p>Notes: [2016] Load posting signs at bridge have no deterioration. North advance warning sign is blocked by vegetation.                      [2014-2012] Correct load posting sign now in place (24/36/36). Delineators and advanced warning signs in place.                      Load limit 26/40/40.</p>								

**BRIDGE 92626 CR 207 OVER STONE RIVER**

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
891	Other Bridge Signing	Underwater	02/02/2017	1 EA	1	0	0	0
		Routine	09/14/2016	1 EA	1	0	0	0
Notes: [2016-2012] All signs present with no deterioration. 4 DELINEATORS								
892	Slopes & Slope Protection	Underwater	02/02/2017	1 EA	0	1	0	0
		Routine	09/14/2016	1 EA	0	1	0	0
Notes: [2016] Stream is from abutment to abutment with little to no slopes along abutment. No signs of undermining of abutment backing wall. Minor erosion of banks along wings. [2014-2012] Wetland surrounds all 4 corners of the bridge. Bare dirt slope protection. Riprap not in place does not constitute CS3.								
894	Deck & Approach Drainage	Underwater	02/02/2017	1 EA	0	1	0	0
		Routine	09/14/2016	1 EA	0	1	0	0
Notes: [2016-2013] Gravel on deck is restricting deck drainage run-off. Approach slopes are not eroded.								
895	Sidewalk, Curb, & Median	Underwater	02/02/2017	1 EA	0	0	1	0
		Routine	09/14/2016	1 EA	0	0	1	0
Notes: [2016] 3' on north end of west curb broken from impact damage. 3 of 5 bolts on west curb have been pulled out from impact of rail. [2014-2013] Curb bolt in NW corner no longer connected to deck due to impact damage. [2012]Some scrapes along inside face of curb.								
900	Protected Species	Underwater	02/02/2017	1 EA	0	1	0	0
		Routine	09/14/2016	1 EA	0	1	0	0
Notes: [2016] Swallow nest present on some intermediate diaphragms.								

- General Notes: SLC District 5  
 Inspected by: [2016] CG : [2014] CG, BH : [2013] BH, CG. [7/11/2012] - Post 2012 Flood Inspection by JRM and RRC from TKDA. Underwater inspection performed by WSB.  
 No Guardrail.  
 [2013] May 9 water high a return inspection required when water goes down.  
 [2012]Water appears to be at a high level. There is 1 foot of clearance from low member to the water level. There is about 4' of water under the structure at the time of inspection.  
 Can't see under in 2003 high water. No Guardrail.
58. Deck NBI: [2016] About 1' of bituminous is missing on north and south ends of deck. Leakage through deck is indicating the presence of moderate width cracks in bituminous overlay (deck covered in gravel) with a spacing of 5' to 10'. Isolated loss of wood preservative on underside of deck.  
 [2014] Deck covered with gravel.  
 [2013] Bituminous wearing surface has potholes and cracking.
- 36A. Brdg Railings NBI: W-beam with angle iron posts. Substandard for all speeds.
- 36B. Transitions NBI: Bridge width is equal or larger than approach width and ADT < 400. Guardrail not required.
- 36C. Appr Guardrail NBI: Bridge width is equal or larger than approach width and ADT < 400. Guardrail not required.
- 36D. Appr Guardrail Terminal NBI: Bridge width is equal or larger than approach width and ADT < 400. Guardrail not required.
59. Superstructure NBI: [2016] Beams 1 through 8 ends on south abutment buried in gravel with flaking rust present having little section loss. Possible that beams are salvaged due to minor pitting on bottom of some bottom flanges being painted over. Beam 10 on south end has some flaking paint on east side. North half of Beam 1 is rotated to the west from impact to rail causing north bearing to lift off cap 1.5" and north end diaphragm weld to break (1.5" gap between end of diaphragm and web. Surface corrosion and flaking rust on bearings.  
 [2014-2012] Beams show signs of minor corrosion.
60. Substructure NBI: [2016 U/W] Timber piles exhibit only minor checking/weathering.  
 [2016] 4 out of 6 piling on south abutment have shims and shims are not loose. Caps have 1/16" wide checks with a depth of 1". Caps sound of little to no decay. 1' of piling exposed and sound of minor to moderate deterioration when sounded.  
 [2014] Vegetation growth on east end of south cap. Damage to bottom south corner of west end of south cap.  
 [2012 Underwater] Piles and caps have minor weathering with splitting.
61. Channel NBI: [2016] Damage to stream banks due to regularly high water due to beaver activity.
62. Culvert NBI:
71. Waterway Adeq NBI: [2016] Approaches slightly lower than bridge.

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
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72. Appr Roadway [2016-2014] No sight distance issues or speed reduction required.  
Alignment NBI:

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Inspector's Signature

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Reviewer's Signature

# Pictures



Photo 1 - West Fascia, Looking Northeast

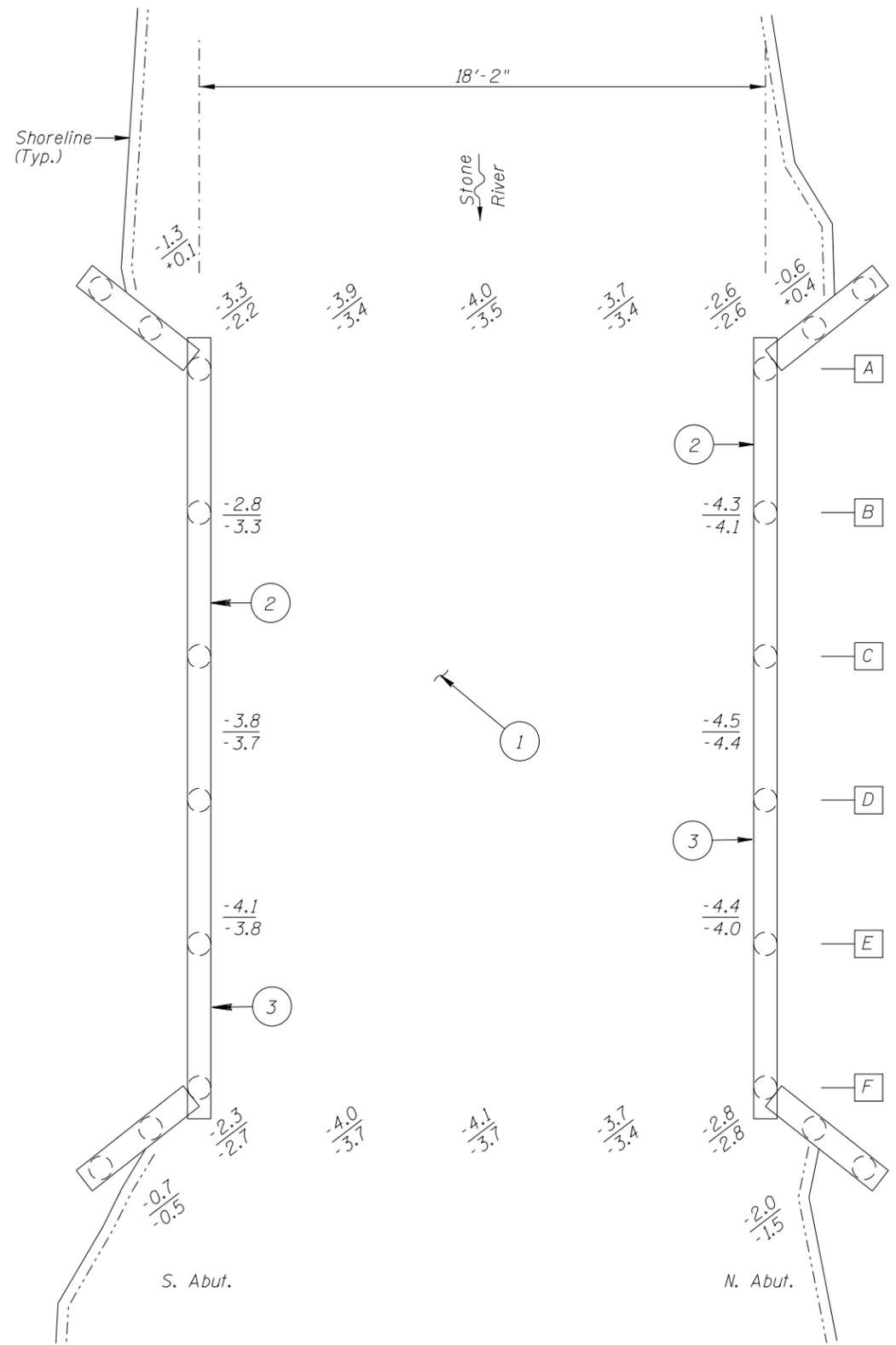
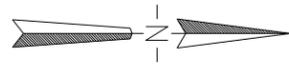


Photo 2 - East Fascia, Looking West

## Pictures



Photo 3 - Typical Timber Pile Condition at Waterline, Looking North



SOUNDING PLAN

**GENERAL NOTES:**

1. The North and South Abutment were inspected underwater.
2. At the time of inspection on September 13, 2016, the waterline was located approximately 1.9 feet below the bottom of the west girder on the south end. Since insufficient bridge elevation information was available a reference elevation of 100.0 was assumed. Based on the assumed reference the waterline elevation was 98.1.
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.

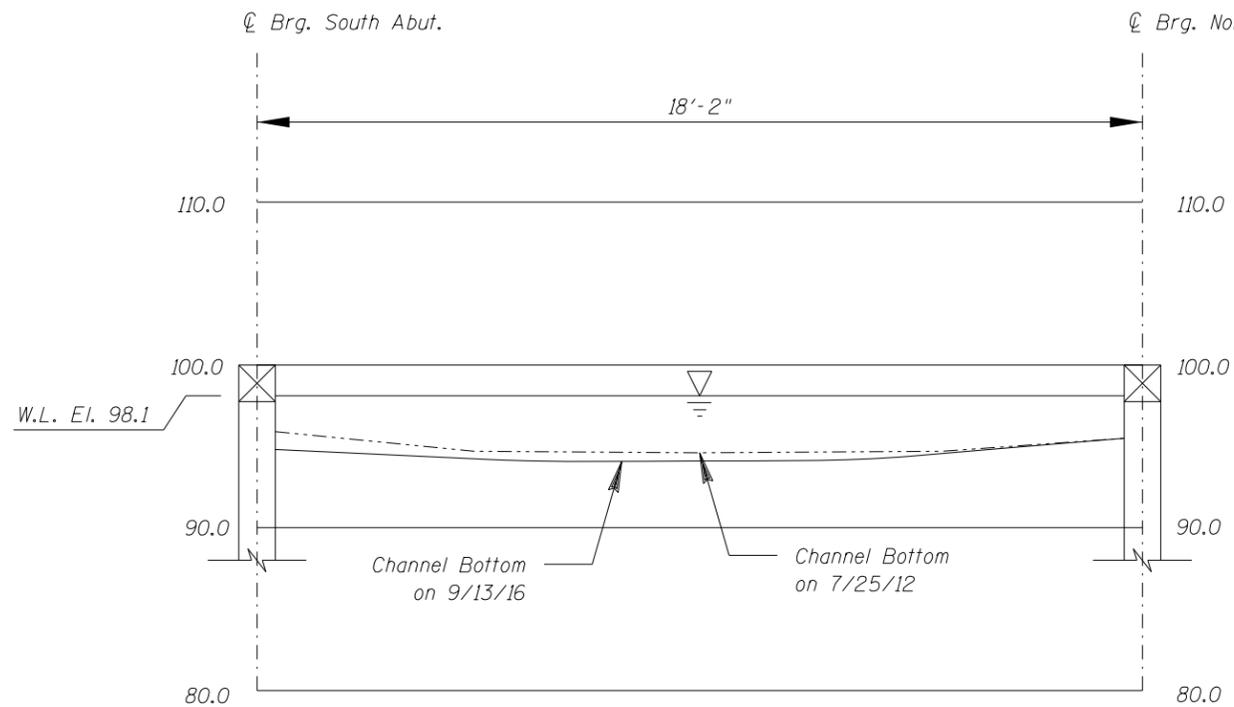
**INSPECTION NOTES:**

- ① The channel bottom consisted of soft silt allowing up to 1 foot of probe rod penetration.
- ② Timber piles and pile caps were generally in good condition, with no significant defects and only minor checking/weathering present.
- ③ The timber backwalls are in good condition with no notable gaps or loss of backfill present.

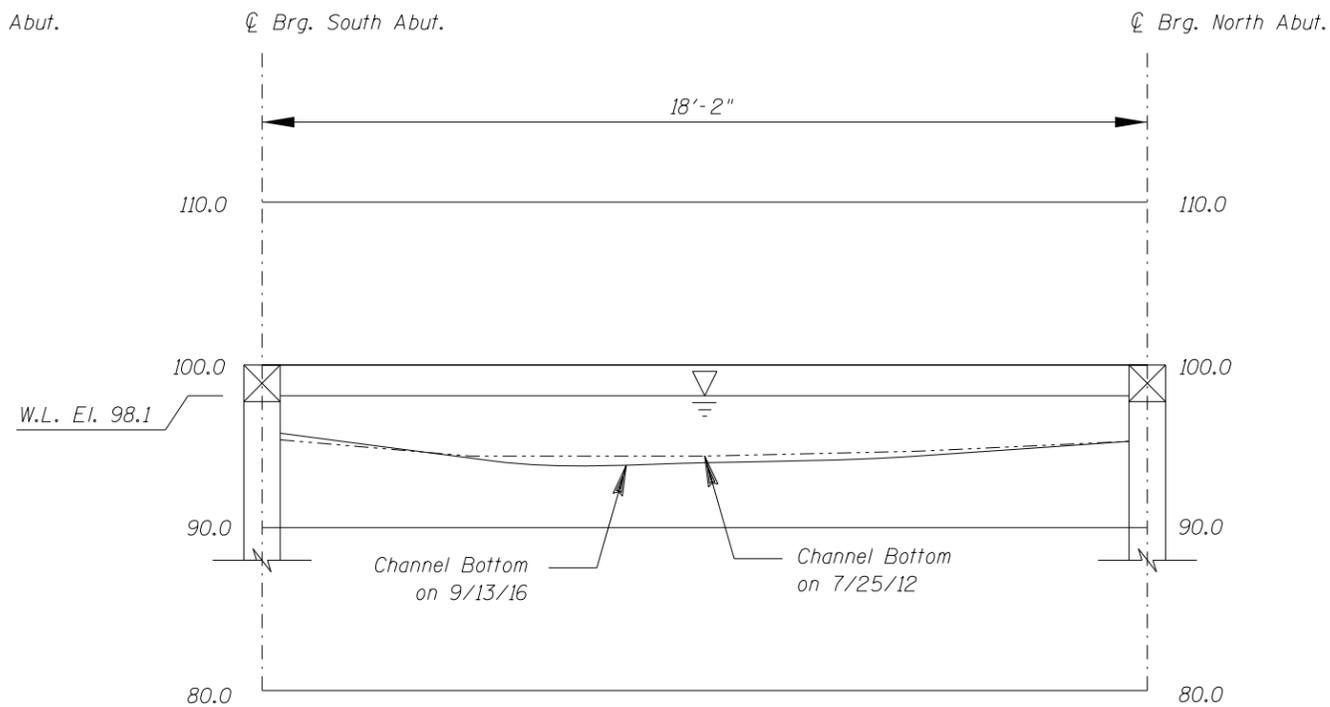
**Legend**

- 3.3 Sounding Depth from Waterline (9/13/16)
- 2.2 Sounding Depth from Waterline (7/25/12)
- 12"  $\phi$  Timber Pile
- [F] Pile Designation

<b>MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION</b>		
STRUCTURE NO. 92626 CR 207 OVER THE STONE RIVER DISTRICT I, ST LOUIS COUNTY		
<b>INSPECTION AND SOUNDING PLAN</b>		
DRAWN BY: ELN	<b>COLLINS ENGINEERS</b>	DATE: SEPT 13, 2016
CHECKED BY: MBP	<small>123 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	SCALE: NTS
CODE: 968792626		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. 92626 CR 207 OVER THE STONE RIVER DISTRICT I, ST LOUIS COUNTY <b>UPSTREAM AND DOWNSTREAM FASCIA PROFILES</b>		
DRAWN BY: ELN	<b>COLLINS ENGINEERS</b> <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"=15'-0"
CODE: 968792626		FIGURE NO.: 2