

2017 UNDERWATER BRIDGE INSPECTION REPORT



BRIDGE # 33528 TWP 1 over SNAKE RIVER

DISTRICT: District 3

COUNTY: Kanabec

CITY/TOWNSHIP: FORD

STATE: Minnesota

Date of Inspection: 04/13/2017

Equipment Used:

Owner: Town or Township Highway Agency

Inspected By: Stuber, Cory

Report Written By: Cory Stuber

Report Reviewed By:

Final Report Date:



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UNDERWATER INSPECTION

REPORT SUMMARY

The substructure units inspected at Bridge No. 33528, Pier 1, was found to be in good condition with no defects of structural significance observed. However, the protective coating/paint system has experienced a 10% loss of coverage throughout. A scour depression was observed around the upstream nose of Pier 1, with a 2 foot radius and a 6 inch depth. A moderate timber debris accumulation, up to 6 inch diameters, was observed at Pier 1. Aside from localized scour around Pier 1, the channel bottom around the substructure units appeared stable, consisting of a gravelly sand with random cobbles. This report represents the initial underwater inspection for this structure.

INSPECTION FINDINGS

(A) Channel bottom material consisted of a gravelly sand with cobbles, up to 18 inches in diameter.

(B) Paint system of CIP piles failed at approximately 10% of surface area, with rust staining observed at the waterline.

(C) Scour depression observed on the upstream nose with a 6 inch depth and a 2 foot radius.

(D) Moderate timber debris accumulation, up to 6 inch diameters, was observed from the channel bottom to the waterline beginning at the upstream pile and extending to the downstream 1/4 point of the west side of the pier and into the main channel.

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 #: 33528
Feature Intersected: SNAKE RIVER
Facility Carried: TWP 1
District: District 3
County: 033 - Kanabec
Bridge Description:

The bridge superstructure consists of two spans. The superstructure is supported by one pile bent pier and two reinforced concrete abutments. The pier is comprised of a reinforced concrete cap supported by six steel encased cast-in-place piles. Substructure units were designated as follows: South Abutment, Pier 1, North Abutment.

2. INSPECTION DATA

Professional Engineer/Team Leader: Cory Stuber, P.E.
Inspection Diver: Cory Stuber, P.E.
Date of Underwater Inspection: 04/13/2017
Weather Conditions: Cloudy, 43°F
Underwater Visibility (feet): 5
Waterway Velocity (ft/sec): 1.5

3. SUBSTRUCTURE INSPECTION DATA

Substructure(s) Inspected: Pier 1
General Shape:

The pier consists of a reinforced concrete pier cap with rounded ends supported by six cast-in-place concrete piles with steel casings (shells).

Maximum Water Depth at Substructure(s) Inspected (feet): 3.5

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap of the downstream end of Pier 1.
Waterline Elevation (feet): 1085.3
Description: The waterline was approximately 13.3 feet below 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 04/2017

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 |
| 202 | Steel Column | 6 | EA | 6 | | | |
| 885 | Scour | 1 | EA | | 1 | | |
| | | | | | | | |
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| | | | | | | | |

UNDERWATER INSPECTION

INSPECTION PROCEDURES

The routine underwater inspection of Bridge 33528 (TWP 1 over the Snake River) was completed on April, 13, 2017. The underwater inspection was conducted from shore. The inspection was conducted by a team consisting of a PE-Diver with a valid MnDOT Team Leader certification and a dive tender. Due to waterway conditions at the time of inspection, the inspection could be accomplished by wading in accordance with OSHA regulations. 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 one steel bent pier. According to the bridge inventory or design drawings, Pier 1 was founded on six CIP piles. Inspection procedures followed FHWA guidance and the MnDOT Bridge and Structure Inspection Program Manual with channel bottom probing to search for foundations. The routine underwater inspection frequency is recommended to remain at a maximum of 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: 33528

TWP 1 over SNAKE RIVER

Date: 05/11/2017

| + GENERAL + | + ROADWAY + | + INSPECTION + | | | | | | | | | | | | | | | | | | | | |
|--|---|---|------------|-----|------|------|-----------------------|--|--|--|-------------------|--|--|------------|----------------------|--|--|--|--------------------|--|--|--|
| Agency Br. No. Crew District 03 Maint. Area County 033 - Kanabec City Township 33005 - FORD Desc. Loc. 3.7 MI NE OF JCT TH 65 Sect., Twp., Range 14 - 042N - 23W Latitude 46 ° 7' 30.92 " Longitude -93 ° 13' 17.37 " Custodian 03 - Town or Township Highway Owner 03 - Town or Township Highway BMU Agreement Year Built 1995 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 08B Potential ABC 2 - N/A | Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 08 - TWNS Number 1 Roadway Name or Description TWNS 1 Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point Detour Length 30.0 mi. Lanes ON 2 UNDER 0 ADT 35 YEAR 1995 HCA DT ADTT % Functional Class 09 - Rural - Local | Userkey 73 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 94.9 Routine Inspection Date 11/17/2015 Routine Inspection Frequency 24 Inspector Name Stuber, Cory Status A - Open | | | | | | | | | | | | | | | | | | | | |
| | | + NBI CONDITION RATINGS + | | | | | | | | | | | | | | | | | | | | |
| | | Deck 7 Unsound Deck % Superstructure 8 Substructure 7 Channel 7 Culvert N | | | | | | | | | | | | | | | | | | | | |
| | + RDWY DIMENSIONS + | + NBI APPRAISAL RATINGS + | | | | | | | | | | | | | | | | | | | | |
| | 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 32.0 ft. Bridge Roadway Width 28.0 ft. Median Width On Bridge ft. | Structure Evaluation 8 Deck Geometry 7 Underclearances N Waterway Adequacy 8 Approach Alignment 8 | | | | | | | | | | | | | | | | | | | | |
| + STRUCTURE + | + MISC. BRIDGE DATA + | + SAFETY FEATURES + | | | | | | | | | | | | | | | | | | | | |
| 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 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 2 APPR: 0 TOTAL: Main Span Length 72.0 ft. Structure Length 145.5 ft. Deck Width (Out-to-Out) 31.3 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 1995 Structure Area (Out-to-Out) 4554 sq. ft. Roadway Area (Curb-to-Curb) 4069 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 | Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment Foundation (Material/Type) 1 - CONC 3 - FTG PILE Pier Foundation (Material/Type) 8 - CIP 4 - PILE BENT Historic Status 5 - Not eligible | Bridge Railing 1 - MEETS STANDARDS GR Transition 1 - MEETS STANDARDS Appr. Guardrail 1 - MEETS STANDARDS GR Termini 1 - MEETS STANDARDS | | | | | | | | | | | | | | | | | | | | |
| | + PAINT + | + IN DEPTH INSP. + | | | | | | | | | | | | | | | | | | | | |
| | Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type | <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></td> <td style="text-align: right;">04/13/2017</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 | | | 04/13/2017 | Pinned Asbly. | | | | Spec. Feat. | | | |
| | Y/N | Freq | Date | | | | | | | | | | | | | | | | | | | |
| Frac. Critical | | | | | | | | | | | | | | | | | | | | | | |
| Underwater | | | 04/13/2017 | | | | | | | | | | | | | | | | | | | |
| Pinned Asbly. | | | | | | | | | | | | | | | | | | | | | | |
| Spec. Feat. | | | | | | | | | | | | | | | | | | | | | | |
| | + BRIDGE SIGNS + | + WATERWAY + | | | | | | | | | | | | | | | | | | | | |
| | Posted Load 0 - Not Required Traffic 0 - Not Required Horizontal 0 - Not Required Vertical N - Not Applicable | Drainage Area (sq. mi.) 225.0 Waterway Opening (sf.) 920 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 I - LOW RISK Year | | | | | | | | | | | | | | | | | | | | |
| | | + CAPACITY RATINGS + | | | | | | | | | | | | | | | | | | | | |
| | | Design Load 9 - HS 25 (OR GREATER) Operating Rating 2 - HS TRUCK 43.00 Inventory Rating 2 - HS TRUCK 25.80 Posting VEH: SEMI: DBL: Rating Date 04/12/2016 Overweight Permit Codes A 1 - No Restriction B 1 - No Restriction C 1 - No Restriction | | | | | | | | | | | | | | | | | | | | |

MINNESOTA BRIDGE INSPECTION REPORT

05/15/2017

BRIDGE 33528 TWP 1 OVER SNAKE RIVER

| | | |
|--|---|--|
| County: Kanabec | Location: 3.7 MI NE OF JCT TH 65 | Length: 145.5 ft. |
| City: | Route: 08 - TWNS 1 Ref. Pt.: 001+00.680 | Deck Width: 31.3 ft. |
| Township: 33005 - FORD | Control Section: | Rdwy. Area/ Pct. Unsnd: 4069 sq. ft. / % |
| Section: 14 Township: 042N Range: 23W Maint. Area: | | Paint Area/ Pct. Unsnd: sq. ft. / % |
| Span Type: 5 - Prestressed Concrete 2 - List: Stringer/Multi-beam or Girder | Local Agency Bridge Nbr.: | Culvert: N/A |
| NBI Deck: 7 Super: 8 Sub: 7 Chan: 7 Culv: N | Open, Posted, Closed: A - Open | Postings: |
| | MN Scour Code: I - 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 94.9 |

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|--|---------------------------------------|-----------------|------------|----------|-------------|-------------|-------------|-------------|
| 38 | Reinforced Concrete Slab | Underwater | 04/13/2017 | 4554 SF | 4554 | 0 | 0 | 0 |
| | | Migrated Values | | 4554 SF | 4554 | 0 | 0 | 0 |
| Notes: Concrete Slab with Bituminous Overlay Notes: [2016] Migrator assumed CS1. | | | | | | | | |
| | 510 - Wearing Surfaces | Underwater | 04/13/2017 | 4069 SF | 4069 | 0 | 0 | 0 |
| | | Migrated Values | | 4069 SF | 4069 | 0 | 0 | 0 |
| Notes: Concrete Slab with Bituminous Overlay Notes: Need to remove excess gravel. One hairline crack underside at south end w/ efforcence. Several transverse cracks. Several cracks radiating out from seam joint. 2015: Most of the excess gravel gone. | | | | | | | | |
| 109 | Prestressed Concrete Open Girder/Beam | Underwater | 04/13/2017 | 584 LF | 584 | 0 | 0 | 0 |
| | | Migrated Values | | 584 LF | 584 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 202 | Steel Column | Underwater | 04/13/2017 | 6 EA | 6 | 0 | 0 | 0 |
| | | Migrated Values | | 6 EA | 6 | 0 | 0 | 0 |
| Notes: Paint is starting to peal. | | | | | | | | |
| | 515 - Steel Protective Coating | Underwater | 04/13/2017 | 999 SF | 999 | 0 | 0 | 0 |
| | | Migrated Values | | 999 SF | 999 | 0 | 0 | 0 |
| Notes: [2016] Migrator assumed quantity of 999 SF and estimated the condition states. | | | | | | | | |
| 215 | Reinforced Concrete Abutment | Underwater | 04/13/2017 | 106 LF | 106 | 0 | 0 | 0 |
| | | Migrated Values | | 106 LF | 106 | 0 | 0 | 0 |
| Notes: [2016] Migrator added 40 LF to abutment quantity to account for wingwalls (CS1:40 CS2:0 CS3:0 CS4:0). Several hairline cracks each abut. | | | | | | | | |
| Wingwall notes: No change. | | | | | | | | |
| 234 | Reinforced Concrete Pier Cap | Underwater | 04/13/2017 | 33 LF | 33 | 0 | 0 | 0 |
| | | Migrated Values | | 33 LF | 33 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 310 | Elastomeric Bearing | Underwater | 04/13/2017 | 8 EA | 8 | 0 | 0 | 0 |
| | | Migrated Values | | 8 EA | 8 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |

BRIDGE 33528 TWP 1 OVER SNAKE RIVER

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|--|---|-----------------|------------|----------|----------|----------|----------|----------|
| 313 | Fixed Bearing | Underwater | 04/13/2017 | 8 EA | 8 | 0 | 0 | 0 |
| | | Migrated Values | | 8 EA | 8 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 331 | Reinforced Concrete Bridge Railing | Underwater | 04/13/2017 | 295 LF | 295 | 0 | 0 | 0 |
| | | Migrated Values | | 295 LF | 295 | 0 | 0 | 0 |
| Notes: Numerous vert. hairline cracks. | | | | | | | | |
| 800 | Critical Deficiencies or Safety Hazards | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION. None. | | | | | | | | |
| 855 | Secondary Members (Superstructure) | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 880 | Impact Damage | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 883 | Concrete Shear Cracking | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: Use this element to monitor the presence of shear cracking on concrete elements. Pay particular attention to the prestressed concrete beams. | | | | | | | | |
| 885 | Scour | Underwater | 04/13/2017 | 1 EA | 0 | 1 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: Due to deep water, unable to check for scour at piers. 2015: Due to deep water unable to check for scour at piers, need to check in summer when low. May need to use a boat. [2017] Underwater Inspection - Scour depression observed on the upstream pile with a 6 inch depth and a 2 foot radius. | | | | | | | | |
| 891 | Other Bridge Signing | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 892 | Slopes & Slope Protection | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: Riprap on slopes is good. | | | | | | | | |
| 893 | Guardrail | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: No change. | | | | | | | | |
| 894 | Deck & Approach Drainage | Underwater | 04/13/2017 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: All drains functioning as intended. | | | | | | | | |
| 900 | Protected Species | Underwater | 04/13/2017 | 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: PONTIS inspection comments - 2001 inspection - Structure remains in good condition. Structural concrete is in good condition. Minor expansion cracks in J-railings. CIP pilings need to have approximately 10% of them repainted. Abutments and pier in good condition overall. Paint over graffiti on beams and abutments. Bearing devices are working. Floor drains are open. All signs are up and in good condition. Excess gravel should be removed from structural slab. No erosion problems or

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|----------|---|-------------|------------|----------|----------|----------|----------|----------|
| | <p>scour noted at this time. 2002 inspection - Structure is in good condition. Abutments and piers are in good condition. All concrete is sound. No problems at this time. Minor cracks in j-railing remain the same, South Abutment needs additional riprap placed on it. Excess gravel should be removed from the deck. No obvious erosion or scour problems observed during this inspection. 2003 inspection - Structure remains in good to very good condition. No changes since last inspection. 2005 - This prestressed concrete concrete beam span structure remains in good condition. Superficial cracks in j-railings. CIP pier piling need to be painted. Concrete abutments and pier caps are in good condition. No cracks. Bearings are in good condition. South abutment slope needs riprap. Gravel approaches and signs are in good condition. Remove excess gravel from slab. 2007 inspection - Structure remains in good condition. Concrete railings have superficial cracks in them. Concrete abutments and pier caps are sound and have no cracks at this time. CIP pier piling still need to be painted (10%). South abutment slope needs riprap. Drains are clear. Bearing pads look good. Signs and approaches are in good condition. Remove excess gravel from bridge slab. 2009 - No change in structural condition. Bridge has been repainted. Brush needs to be cut on slopes. No scour found at this time. ET-Plus guardrail in good condition.</p> <p>2011 - Structure is still in good condition. Railings have superficial cracks. Pier piling need paint. South abutment slope needs riprap. Approaches, drains, and signs are in good condition. Brush needs cut off the slopes. et plus guardrail in good condition. No scour found at this time. Sand and gravel needs to be removed from the deck. Bridge rail paint in good condition.</p> <p>2013 - Same as 2011 notes. Except riprap on slopes is good. Brush needs to be cleared from all bridge corners.</p> <p>2015: Due to high water unable to check for scour @ piers. Br. is in good condition, no changes found since previous inspection.</p> | | | | | | | |

58. Deck NBI: No change.

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail Terminal NBI:

59. Superstructure NBI: No change.

60. Substructure NBI: No change.
 [2017] Underwater Inspection - Piles exhibit minor paint failure with rust staining observed at the waterline.

61. Channel NBI: No change.

62. Culvert NBI:

71. Waterway Adeq NBI: No change.

72. Appr Roadway Alignment NBI: No change.

Inspector's Signature

Reviewer's Signature

Pictures



Photo 1 - East Elevation Looking Northwest

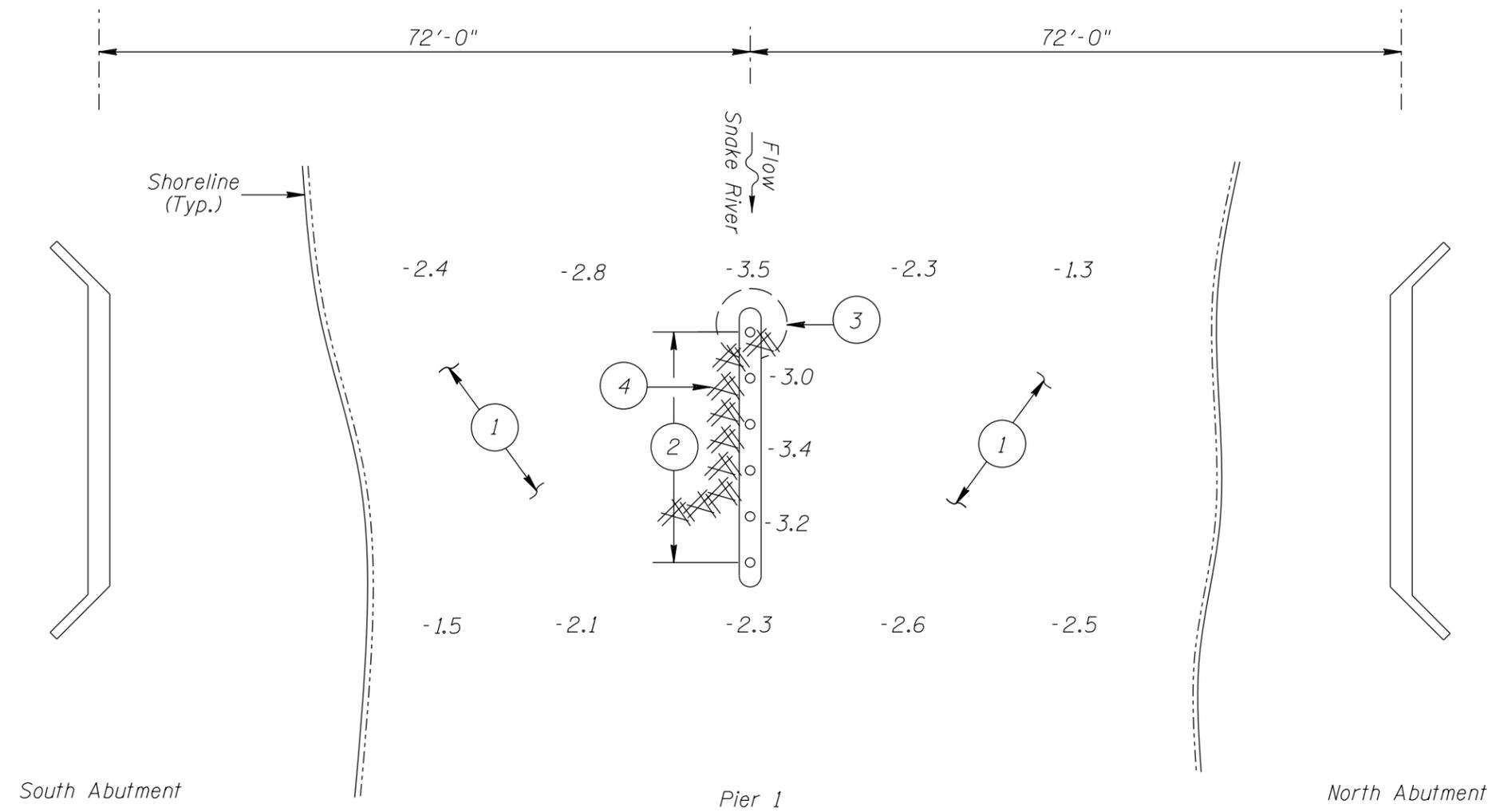
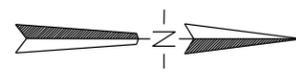


Photo 2 - West Elevation Looking Southeast

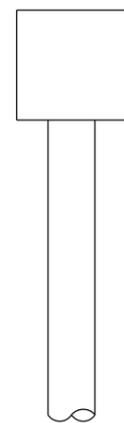
Pictures



Photo 3 - Pier 1 Looking North



SOUNDING PLAN



TYPICAL END VIEW OF PIER

GENERAL NOTES:

1. Pier 1 was inspected underwater.
2. At the time of inspection on April 13, 2017, the waterline was located approximately 13.3 feet below the top of the pier cap at the downstream end of Pier 1. This corresponds with a waterline elevation of 1085.3 feet based on design drawings dated July 1995.
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.

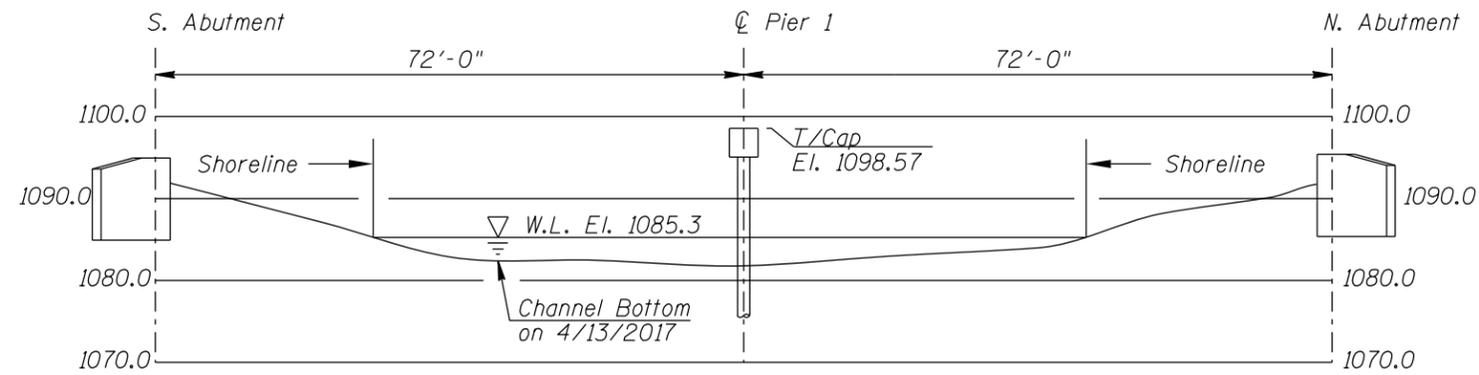
INSPECTION NOTES

1. Channel bottom material consisted of a gravelly sand with cobbles, up to 18 inches in diameter.
2. Paint system of CIP piles failed at approximately 10% of surface area, with rust staining observed at the waterline.
3. Scour depression observed on the upstream nose with a 6 inch depth and a 2 foot radius.
4. Moderate timber debris accumulation, up to 6 inch diameters, was observed from the channel bottom to the waterline beginning at the upstream pile and extending to the downstream 1/4 point of the west side of the pier and into the main channel.

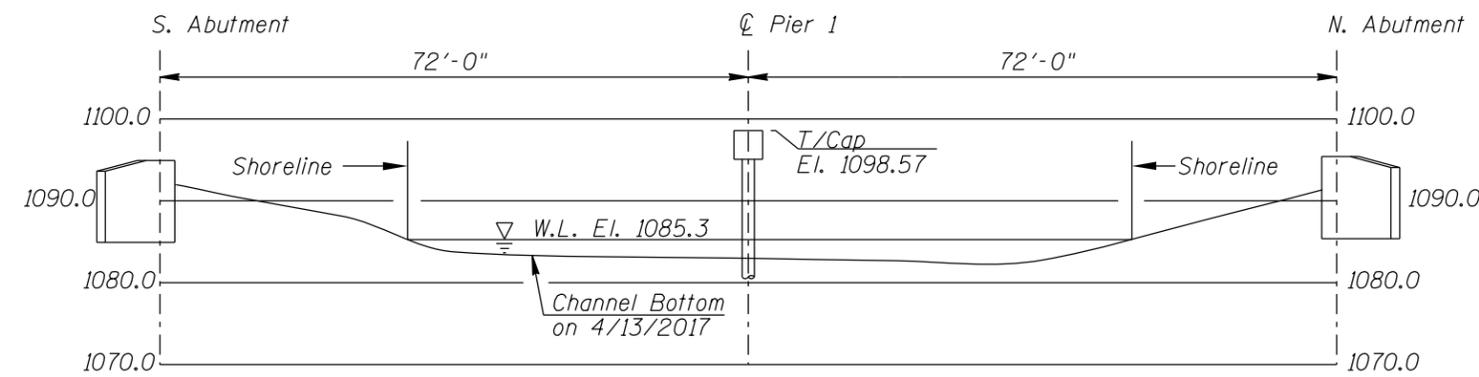
Legend

- 6.2 Sounding Depth from Waterline (4/13/2017)
- o CIP Pile
- X Timber Debris
- () Scour Depression

| | | |
|--|--|------------------|
| MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION | | |
| STRUCTURE NO. 33528 OVER THE SNAKE RIVER DISTRICT 3, KANABEC COUNTY | | |
| INSPECTION AND SOUNDING PLAN | | |
| Drawn By: JMF | COLLINS ENGINEERS | Date: APRIL 2017 |
| Checked By: CRS | <small>1599 Selby Avenue Suite 206 St. Paul, MN 55104 (651) 646-8502 www.collinsengr.com</small> | Scale: NTS |
| Code: 63-9687 | | 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. 33528 OVER THE SNAKE RIVER DISTRICT 3, KANABEC COUNTY | | |
| UPSTREAM AND DOWNSTREAM FASCIA PROFILES | | |
| Drawn By: JMF | COLLINS ENGINEERS <small>1599 Selby Avenue Suite 206 St. Paul, MN 55104 (651) 646-8502 www.collinsengr.com</small> | Date: APRIL 2017 |
| Checked By: CRS | | Scale: 1"=10' |
| Code: 63-9687 | | Figure No.: 2 |