

2016 UNDERWATER BRIDGE INSPECTION REPORT



BRIDGE # 01508 CSAH 5 over RICE RIVER

DISTRICT: District 3

COUNTY: Aitkin

CITY/TOWNSHIP: KIMBERLY

STATE: Minnesota

Date of Inspection: 06/07/2016

Equipment Used:

Owner: County Highway Agency

Inspected By: Stromberg, Dan

Report Written By: Dan Stromberg

Report Reviewed By:

Final Report Date:



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UNDERWATER INSPECTION

REPORT SUMMARY

The substructure units inspected at Bridge No. 01508, Piers 1 and 2, were found to be in good to satisfactory condition with no defects of structural significance below water. The timber piling and bracing exhibited minor checking up to 1/8 inch wide, and two areas of splitting were observed on the diagonal bracing at Pier 1, but both connections were still effective. The channel bottom appeared to be in stable condition with no notable scour depressions observed.

INSPECTION FINDINGS

- (A) The timber piling and bracing was typically in good to satisfactory condition with only minor checking up to 1/8 inch wide.
- (B) The abutment slopes were moderately armored with riprap up to 3 feet in diameter.
- (C) The channel bottom material consisted of rock up to 2 feet in diameter with gravel infill allowing no probe rod penetration.
- (D) The diagonal brace on the north side of Pile 1 at Pier 1 exhibited a 1/4 inch wide split that was 4 feet long through the fastener, but the connection was still effective.
- (E) The diagonal brace on both sides of Pile 3 at Pier 1 exhibited two 1/4 inch wide splits that were 4 feet long on both sides of the fastener, but the connection remains sound.

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 #: 01508
Feature Intersected: RICE RIVER
Facility Carried: CSAH 5
District: District 3
County: 001 - Aitkin
Bridge Description:

The superstructure consists of three spans of timber deck. The superstructure is supported by two timber pile, end bent abutments and two timber pile bent piers. The piers are numbered 1 and 2 starting from the north end of the bridge.

2. INSPECTION DATA

Professional Engineer/Team Leader: Daniel G. Stromberg
Inspection Diver: Daniel G. Stromberg
Date of Underwater Inspection: 06/07/2016
Weather Conditions: Sunny, 70°F
Underwater Visibility (feet): 1.0 foot
Waterway Velocity (ft/sec): 1.0 ft/sec

3. SUBSTRUCTURE INSPECTION DATA

Substructure(s) Inspected: Piers 1 and 2
General Shape:

Piers 1 and 2 consist of a single line of seven timber piles with timber bracing supporting a timber cap.

Maximum Water Depth at Substructure(s) Inspected (feet): 3.0 feet

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap at the downstream end of Pier 2.
Waterline Elevation (feet): 88.20 feet
Description: The waterline was located approximately 9.7 feet below the reference.

5. NBIS CODING INFORMATION

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

Item 60: Substructure: Code: 6
Item 61: Channel and Channel Protection: Code: 6
Item 62: Culvert: Code:
Item 92B: Underwater Inspection: Code: Y 48 06/2016

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 |
| 228 | Timber Piling | 14 | EA | 14 | | | |
| 855 | Secondary Members (Super) | 1 | EA | 1 | | | |
| 885 | Scour | 1 | EA | 1 | | | |
| | | | | | | | |
| | | | | | | | |

UNDERWATER INSPECTION

INSPECTION PROCEDURES

The routine underwater inspection of Bridge 01508 (CSAH 5 over Rice River) was completed on June 7, 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. Due to waterway conditions at the time of the inspection, the inspection could be accomplished by wading 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 pile bent piers. According to the design drawings, Piers 1 and 2 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: 01508

CSAH 5 over RICE RIVER

Date: 10/04/2016

| + GENERAL + | + ROADWAY + | + INSPECTION + | | |
|---|---|--|------------------------|-----------------------|
| Agency Br. No. Crew District 03 Maint. Area County 001 - Aitkin City Township 01015 - KIMBERLY Desc. Loc. 0.5 MI S OF KIMBERLY Sect., Twp., Range 14 - 047N - 25W Latitude 46 ° 33 ' 19.11 " Longitude 93 ° 28 ' 19.83 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1969 MN Year Reconstructed FHWA Year Reconstructed MN Temporary Status - Bridge Plan Location 3 - COUNTY Date Opened to Traffic 1/1/1901 On - Off System 1 - ON Legislative District 03B Potential ABC 2 - N/A | Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 5 Roadway Name or Description CSAH 5 (NATURE AVE) Level of Service 1 - MAINLINE Roadway Type 2 - 2-way traffic Control Section (TH Only) Reference Point 007+00.230 Detour Length 19.9 mi. Lanes ON 2 UNDER 0 ADT 90 YEAR 2008 HCA DT ADTT % Functional Class 07 - Rural - Major Collector | Userkey 41 Structurally Deficient N Functionally Obsolete N Sufficiency Rating 98.3 Routine Inspection Date 11/02/2015 Routine Inspection Frequency 12 Inspector Name Stromberg, Dan Status P - Posted for Load | | |
| | | + NBI | CONDITION | RATINGS + |
| | | Deck | 7 | Unsound Deck % |
| | | Superstructure | 7 | |
| | | Substructure | 6 | |
| | | Channel | 6 | |
| | | Culvert | N | |
| | | + NBI | APPRAISAL | RATINGS + |
| | | Structure Evaluation | 6 | |
| | | Deck Geometry | 7 | |
| | | Underclearances | N | |
| | | Waterway Adequacy | 8 | |
| | | Approach Alignment | 8 | |
| | | + SAFETY FEATURES + | | |
| | | Bridge Railing | 0 - SUBSTANDARD | |
| | | GR Transition | N - NOT REQUIRED | |
| | | Appr. Guardrail | N - NOT REQUIRED | |
| | | GR Termini | N - NOT REQUIRED | |
| | | + IN DEPTH INSP. + | | |
| | | | Y/N | Freq Date |
| | | Frac. Critical | | |
| | | Underwater | 60 | 06/07/2016 |
| | | Pinned Asbly. | | |
| | | Spec. Feat. | | |
| | | + WATERWAY + | | |
| | | Drainage Area (sq. mi.) | | |
| | | Waterway Opening (sf.) | 700 | |
| | | Navigation Control | 0 - No nav. control on | |
| | | Pier Protection | | |
| | | Nav. Clr. (ft.) | Vert. 0.0 | Horiz. 0.0 |
| | | Nav. Vert. Lift Bridge Clear. (ft.) | 0 | |
| | | MN Scour Code | O - STBL - ACT | Year 2005 |
| | | + CAPACITY RATINGS + | | |
| | | Design Load | 4 - H 20 | |
| | | Operating Rating | 2 - HS TRUCK | 26.0 |
| | | Inventory Rating | 2 - HS TRUCK | 18.1 |
| | | Posting VEH: 32 | SEMI: | DBL: |
| | | Rating Date | 02/22/2011 | |
| | | 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 7 - Timber Main Span Design 09 - Slab Span Main Span Detail - Appr. Span Type - Appr. Span Design Appr. Span Detail - Skew 20 LEFT Culvert Type Barrel Length Cantilever ID - Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 26.2 ft. Structure Length 78.7 ft. Deck Width (Out-to-Out) 32.8 ft. Deck Material 8 - Wood or Timber Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.00 ft. Deck Membrane 0 - None Deck Rebars N - Not Applicable (no deck) Deck Rebars Install Year Structure Area (Out-to-Out) 2506 sq. ft. Roadway Area (Curb-to-Curb) 2357 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 38 Rt 38 | If Divided NB-EB SB-WB Roadway Width 29.53 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. 29.5 ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 26.2 ft. Bridge Roadway Width 29.5 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) 2 - TIMBER | | |
| | | Pier Foundation (Material/Type) 4 - PILE BENT | | |
| | | Pier Foundation (Material/Type) 2 - TIMBER | | |
| | | Historic Status 4 - PILE BENT | | |
| | | Historic Status 5 - Not eligible | | |
| | | + PAINT + | | |
| | | Year Painted | | |
| | | Unsound Paint % | | |
| | | Painted Area sq. ft. | | |
| | | Primer Type - | | |
| | | Finish Type - | | |
| | | + BRIDGE SIGNS + | | |
| | | Posted Load 2 - Vehicle & Semi (Type R12-5) | | |
| | | Traffic 0 - Not Required | | |
| | | Horizontal 1 - Object Markers | | |
| | | Vertical N - Not Applicable | | |

MINNESOTA BRIDGE INSPECTION REPORT

10/19/2016

Inspector: CO Bridge

BRIDGE 01508 CSAH 5 OVER RICE RIVER

| | | |
|--|---|--|
| County: Aitkin | Location: 0.5 MI S OF KIMBERLY | Length: 78.7 ft. |
| City: | Route: 04 - CSAH 5 Ref. Pt.: 007+00.230 | Deck Width: 32.8 ft. |
| Township: 01015 - KIMBERLY | Control Section: | Rdwy. Area/ Pct. Unsnd: 2357 sq. ft. / % |
| Section: 14 Township: 047N Range: 25W Maint. Area: | | Paint Area/ Pct. Unsnd: sq. ft. / % |
| Span Type: 7 - Wood or Timber 1 - Slab | Local Agency Bridge Nbr.: | Culvert: N/A |
| List: | | Postings: 32 |

NBI Deck: 7 Super: 7 Sub: 6 Chan: 6 Culv: N
 Open, Posted, Closed: P - Posted for Load
 MN Scour Code: O - STBL - ACT REQD

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 98.3

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|--|--------------------|-----------------|------------|----------|-------------|-------------|-------------|-------------|
| 54 | Timber Slab | Underwater | 10/04/2016 | 2506 SF | 2506 | 0 | 0 | 0 |
| | | Migrated Values | | 2506 SF | 2506 | 0 | 0 | 0 |
| Notes: [2016] Migrator assumed CS1. | | | | | | | | |
| 510 | - Wearing Surfaces | Underwater | 10/04/2016 | 2357 SF | 2357 | 0 | 0 | 0 |
| | | Migrated Values | | 2357 SF | 2357 | 0 | 0 | 0 |
| Notes: [2012-2015] No new deficiencies. [2014] Deck planks are uneven, but appear to flex together under traffic loads. [2011] In the east span the 12th plank from the south has a splinter on the underside of the deck. [20xx] SEVERAL OF THE SCUPPERS ARE OPEN AND ALLOWING SOME DRAINAGE. THERE IS STILL 1/2 IN OF DIRT ON THE DECK. GRASS GROWING ON EDGES OF DECK. | | | | | | | | |
| 156 | Timber Floor Beam | Underwater | 10/04/2016 | 102 LF | 102 | 0 | 0 | 0 |
| | | Migrated Values | | 102 LF | 102 | 0 | 0 | 0 |
| Notes: [2014-2015] Many deck planks not in contact with spreader beam. Beams themselves are in good condition. [20xx-2013] GOOD CONDITION | | | | | | | | |
| 216 | Timber Abutment | Underwater | 10/04/2016 | 122 LF | 82 | 40 | 0 | 0 |
| | | Migrated Values | | 122 LF | 82 | 40 | 0 | 0 |
| Notes: [2016] Migrator added 40 LF to abutment quantity to account for wingwalls (CS1:0 CS2:40 CS3:0 CS4:0). [2014-2015] Timber elements appear sound. See element 985 for measurements. [2013] 18" from planks to rocks on W abut now. [2012] Marked and measured dist from plank to rocks on W abut. 14" worst case. Fabric is still holding. Old bridge deck chunk is jacking against 2nd pile from S on W abut. Pic. [2011] The bottom of the backing planks are exposed on the east abutment also. [2010] 6 to 8 in. of fabric is exposed below the west abutment planks. RIP-RAP PROTECTION MOSTLY GONE SOME UNDER MINING OF THE WEST ABUTMENT. | | | | | | | | |
| Wingwall notes: [2014-2015] Moderate decay on wing caps. CS 2. [20xx-2013] SOME STAINING ON THE WING CAPS | | | | | | | | |
| 228 | Timber Pile | Underwater | 10/04/2016 | 32 EA | 14 | 18 | 0 | 0 |
| | | Migrated Values | | 32 EA | 14 | 18 | 0 | 0 |
| Notes: [2013-2015] No new deficiencies. [2014] Pier 2 pile 7 has 2-3" of pile not in contact with cap. Likely constructed that way. [2012] E pier, 3rd from S has section loss; still solid inside. All pier piling plus 3rd and 6th from N on E abut moved to CS 2 due to minor decay. [2010] E. abutment the 3rd and 4th pile from the north are split and have some decay others are questionable. APPEAR TO BE OK. NO TESTING DONE ON THEM [7/8/09] Special inspection notes: Some pier pile have minor rot and others have surface damage. West abutment piles are slightly bowed from earth pressure. [2013] Measured plumb of W abut piles. Could not confirm more than 1/8" /ft from plumb. Piles appear straight. | | | | | | | | |

BRIDGE 01508 CSAH 5 OVER RICE RIVER

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|--|--|-----------------|------------|----------|----------|----------|----------|----------|
| 235 | Timber Pier Cap | Underwater | 10/04/2016 | 151 LF | 151 | 0 | 0 | 0 |
| | | Migrated Values | | 151 LF | 151 | 0 | 0 | 0 |
| Notes: [2014-2015] Pier 1 over pile #6, cap is tilted top towards E. 3/4" from plumb. Appears to be bearing on piling evenly. [2009-2013] Minor cracks typical. | | | | | | | | |
| 332 | Timber Bridge Railing | Underwater | 10/04/2016 | 161 LF | 0 | 161 | 0 | 0 |
| | | Migrated Values | | 161 LF | 0 | 161 | 0 | 0 |
| Notes: [2015] No new deficiencies. [2014] N rail posts 2 and 3 from West have a space of up to 1 1/8" from rail posts to deck planks. Appear to be plumb. Pic. [2013] Moderate weathering typical, slight misalignment. [2010] 1-1/2 in hump in south rail. [2009] S rail over pier 2 has plow damage to a 4 ft. length of curb by the hump area. String line on the bottom of the railing revealed a 2 in. hump at east pier in the south rail. | | | | | | | | |
| 800 | Critical Deficiencies or Safety Hazards | Underwater | 10/04/2016 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: No critical structural deficiencies or serious safety hazards are present on this structure. | | | | | | | | |
| 823 | Gravel Approach Roadway | Underwater | 10/04/2016 | 2 EA | 2 | 0 | 0 | 0 |
| | | Migrated Values | | 2 EA | 2 | 0 | 0 | 0 |
| Notes: [20xx-2015] GOOD CONDITION | | | | | | | | |
| 855 | Secondary Members (Superstructure) | Underwater | 10/04/2016 | 1 EA | 0 | 1 | 0 | 0 |
| | | Migrated Values | | 1 EA | 0 | 1 | 0 | 0 |
| Notes: [20xx-2015] 1 CROSS MEMBER IN THE WEST PIER, NORTH END HAS SPLIT AT TOP ABOUT 1/2" WIDE. 1 IN THE EAST PIER SWAY BRACE HAS SPLIT FROM THE BOTTOM UPWARD ABOUT 1/2" WIDE. | | | | | | | | |
| 885 | Scour | Underwater | 10/04/2016 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: [2012-2015] Washing behind E abut wall on N end. Planks sound hollow. O - Stable for scour. Additional action required. | | | | | | | | |
| 890 | Load Posting or Vertical Clearance Signing | Underwater | 10/04/2016 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: [2016] Structure requires a vertical clearance sign or load posting sign. | | | | | | | | |
| 891 | Other Bridge Signing | Underwater | 10/04/2016 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: [2015] No changes. Posting signs in place. [2014] New sign panels. Back to CS 1. [2011] Posted 32 ton single unit vehicles. [2010-2013] All have cracked faces. CS 2. SHOTGUN DAMAGE TO THE O.M. ON THE NE | | | | | | | | |
| 892 | Slopes & Slope Protection | Underwater | 10/04/2016 | 1 EA | 0 | 0 | 0 | 1 |
| | | Migrated Values | | 1 EA | 0 | 0 | 0 | 1 |
| Notes: [2014-2015] W abut distance from bottom plank to dirt between piles 1 and 2 (from S) 8", no measure btwn 2 and 3, 10", 14", 12", 18", 12", and 5" between piles 8 and 9. [2013] Riprap has failed; is washed into stream. Loss of material from behind abutments is minor at this time. Brush cut in 2013. [2010] Settlement is to the bottom of the planks on the east. Some fabric is exposed on the west abutment on the north end due to erosion. | | | | | | | | |
| 894 | Deck & Approach Drainage | Underwater | 10/04/2016 | 1 EA | 1 | 0 | 0 | 0 |
| | | Migrated Values | | 1 EA | 1 | 0 | 0 | 0 |
| Notes: [2015] Drainage is functional. [2014] Deck gravel re-shaped and scuppers cleaned 2014. CS 1. [20xx-2013] THERE IS GRAVEL ON THE DECK RESTRICTING THE WATER FROM RUNNING OFF THE DECK. WASHING BEHIND THE SE WING WALL HAS STABILIZED. | | | | | | | | |

BRIDGE 01508 CSAH 5 OVER RICE RIVER

| ELEM NBR | ELEMENT NAME | REPORT TYPE | INSP. DATE | QUANTITY | QTY CS 1 | QTY CS 2 | QTY CS 3 | QTY CS 4 |
|-------------|-------------------|-----------------|------------|----------|-------------|-------------|-------------|-------------|
| 900 | Protected Species | Underwater | 10/04/2016 | 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: 06/07/2016 Underwater Inspection - Collins Engineers

[7/8/09] Special inspection notes; NBI- Abutment taller than design, piles bowed . Slope degradation- only reason road not affected is geotextile is currently holding some affect on abut. sec note on left.

58. Deck NBI: Minor weathering. Isolated deterioration of timber elements. Condition of bituminous wearing surface is unknown due to gravel cover.

36A. Brdg Railings NBI: Rail type 38.

36B. Transitions NBI: ADT below 400. Bridge surface is wider than approaches.

36C. Appr Guardrail NBI: ADT below 400. Bridge surface is wider than approaches.

36D. Appr Guardrail Terminal NBI: ADT below 400. Bridge surface is wider than approaches.

59. Superstructure NBI: Minor weathering .

60. Substructure NBI: Minor decay, but moderate scour and erosion at abutments.

61. Channel NBI: Some downstream bank undermining.

62. Culvert NBI:

71. Waterway Adeq NBI:

72. Appr Roadway Alignment NBI:

Inventory Notes:

Inspector's Signature

Reviewer's Signature

Pictures



Photo 1 - Upstream Fascia, Looking West



Photo 2 - Downstream Fascia, Looking Northeast

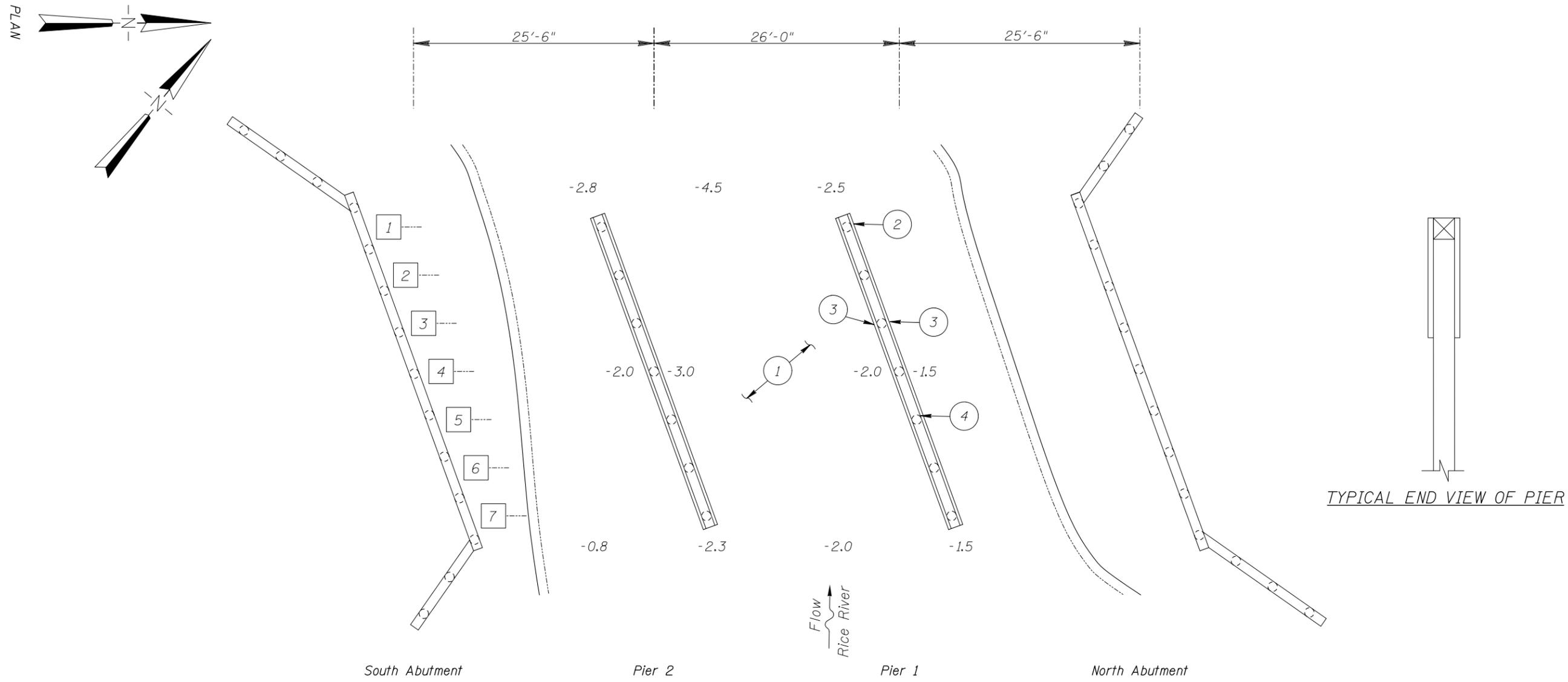
Pictures



Photo 3 - Pier 1, Looking Southwest



Photo 4 - Pier 2, Looking Northwest



SOUNDING PLAN

GENERAL NOTES:

1. Piers 1 and 2 were inspected underwater.
2. At the time of inspection on June 7, 2016, the waterline was located approximately 9.7 feet below the top of the pier cap at the downstream end of Pier 2. Based on the bridge plans dated April 8, 1969, this corresponds to a waterline elevation of 88.20.
3. The timber piling and bracing was typically in good to satisfactory condition with only minor checking up to 1/8 inch wide.
4. The abutment slopes were moderately armored with riprap up to 3 feet in diameter.
5. Soundings indicate the water depth at the time of inspection and are measured in feet.
6. Soundings were taken parallel to the bridge at mid point intervals between the substructure units.

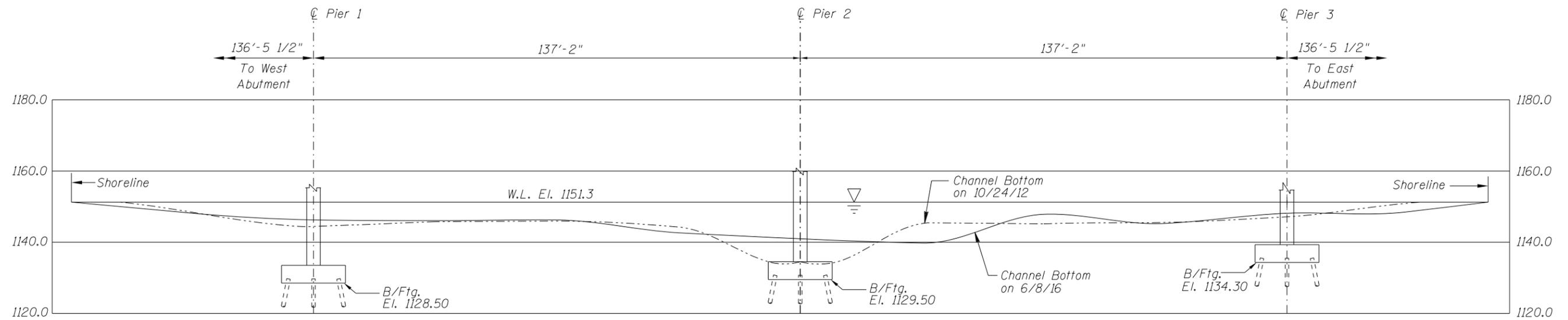
INSPECTION NOTES:

- ① The channel bottom material consisted of rock up to 2 feet in diameter with gravel infill allowing no probe rod penetration.
- ② The diagonal brace on the north side of Pile 1 at Pier 1 exhibited a 1/4 inch wide split that was 4 feet long through the fastener, but the connection was still effective.
- ③ The diagonal brace on both sides of Pile 3 at Pier 1 exhibited two 1/4 inch wide splits that were 4 feet long on both sides of the fastener, but the connection remains sound.
- ④ On the northeast side of Pile 5 at Pier 1 an area of decay, section loss (up to 5% of pile), and soft wood was present from 0.5 feet above the waterline to 0.5 feet below, for a width of 1 foot allowing 1.5 inches of penetration.

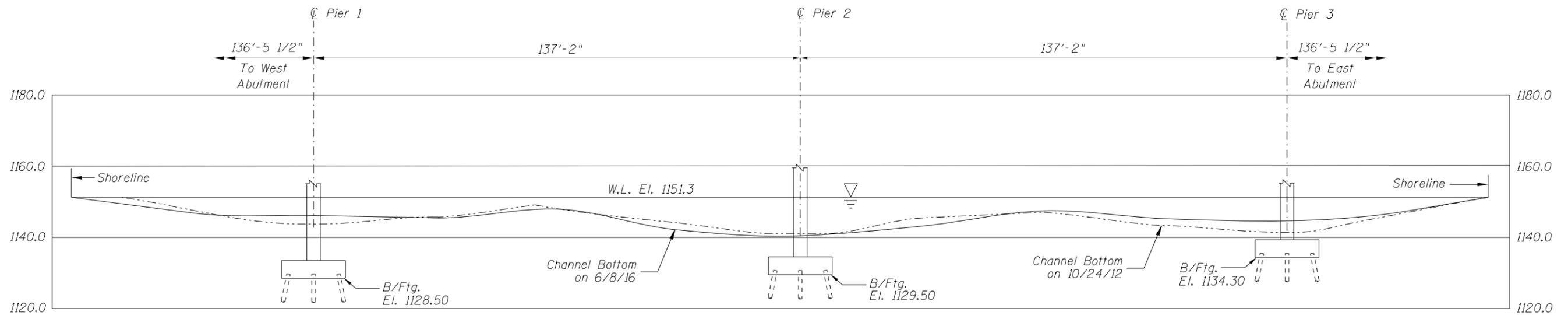
Legend

- 2.5 Sounding Depth from Waterline (6/7/16)
- Timber Pile

| | | |
|--|--|--------------------|
| MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION | | |
| STRUCTURE NO. 01508 OVER RICE RIVER DISTRICT 3, AITKIN COUNTY | | |
| INSPECTION AND SOUNDING PLAN | | |
| DRAWN BY: ELN | COLLINS ENGINEERS | DATE: JUNE 7, 2016 |
| CHECKED BY: DGS | <small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small> | SCALE: NTS |
| CODE: 968701508 | | FIGURE NO.: I |



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:
Refer to Figure 1 for General Notes.

| | | |
|---|--|--------------------|
| MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION | | |
| STRUCTURE NO. 18509 OVER THE MISSISSIPPI RIVER DISTRICT 3, CROW WING COUNTY, CITY OF BRAINERD UPSTREAM AND DOWNSTREAM FASCIA PROFILES | | |
| DRAWN BY: ELN | COLLINS ENGINEERS <small>133 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small> | DATE: JUNE 8, 2016 |
| CHECKED BY: DGS | | SCALE: 1"=30' |
| CODE: 968718509 | | FIGURE NO.: 2 |