

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 57517

CR No. 63

OVER THE

THIEF RIVER

DISTRICT 2 - PENNINGTON COUNTY, CITY OF THIEF RIVER FALLS



PREPARED FOR THE
MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO. 5221 (CEI)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected at Bridge No. 57515, Piers 1 and 2, were in good condition with no defects of structural significance observed. The channel bottom appeared to be stable with no evidence of significant scour.

INSPECTION FINDINGS:

- (A) The 20 inch diameter steel pile encasements of both piers from the top of pile down 6 feet were coated. The coating exhibited minor random areas of coating loss on less than one percent of total surface area. In areas of coating loss, the exposed steel exhibited minor corrosion with no appreciable section loss.
- (B) The 20 inch diameter steel pile encasement from 6 feet below the top of the pile to the channel bottom exhibited no protective coating (primer only) and corrosion was observed on up to 75 percent of surface area consisting of rust nodules up to ½ inch diameter and minor pitting (less than 1/32 inch deep).
- (C) A light accumulation of timber debris consisting of 3 inch diameter and smaller branches was observed along both sides and in between all piles at Pier 2.
- (D) A moderate accumulation of timber debris consisting of 1 foot diameter and smaller branches was observed along both sides and in between all piles at Pier 1.

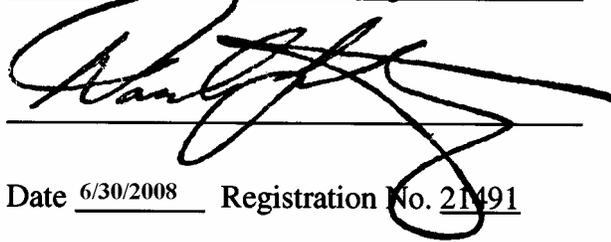
RECOMMENDATIONS:

- (A) Monitor the timber debris, and if found to be increasing in the future, removal operations may become warranted.

- (B) Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Daniel G. Stromberg

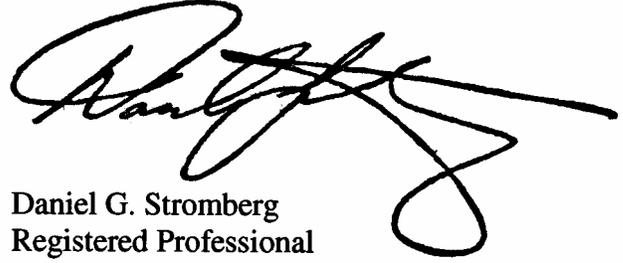


A large, stylized handwritten signature in black ink, written over two horizontal lines. The signature is cursive and appears to read 'Daniel G. Stromberg'.

Date 6/30/2008 Registration No. 21491

Respectfully submitted,

COLLINS ENGINEERS, INC.



A large, stylized handwritten signature in black ink, written over two horizontal lines. The signature is cursive and appears to read 'Daniel G. Stromberg'.

Daniel G. Stromberg
Registered Professional
Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 57517

Feature Crossed: Thief River

Feature Carried: CR No. 63

Location: District 2 - Pennington County, City of Thief River Falls

Bridge Description: The Bridge is a three span structure consisting of a prestressed I-beam superstructure supporting a reinforced concrete deck. The superstructure is supported by two reinforced concrete abutments and two reinforced concrete pier caps founded on 7 piles. The piers are numbered 1 and 2 starting from the south end of the bridge. The abutment and pier footings are supported by steel H-piles.

2. INSPECTION DATA

Professional Engineer/Team Leader: Bradley A. Syler, P.E., S.E.

Dive Team: John J. Loftus, Valerie Roustan

Date: August 18, 2007

Weather Conditions: Sunny, 69°F

Underwater Visibility: 3.0 feet

Waterway Velocity: None/Negligible

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2.

General Shape: A 3.5 feet wide by 3.5 feet high reinforced concrete cap supported by seven driven steel H-piles encased by 20 inch diameter steel shell encasements.

Maximum Water Depth at Substructure Inspected: Approximately 9.7 Feet.

4. WATERLINE DATUM

Water Level Reference: The top of the deck at the upstream end of Pier 1.

Water Surface: The waterline was approximately 14.7 feet below reference.
Waterline Elevation = 1110.68.

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 6

Item 92B: Underwater Inspection: Code B/08/07

Item 113: Scour Critical Bridges: Code F/07

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site.

 Yes X No



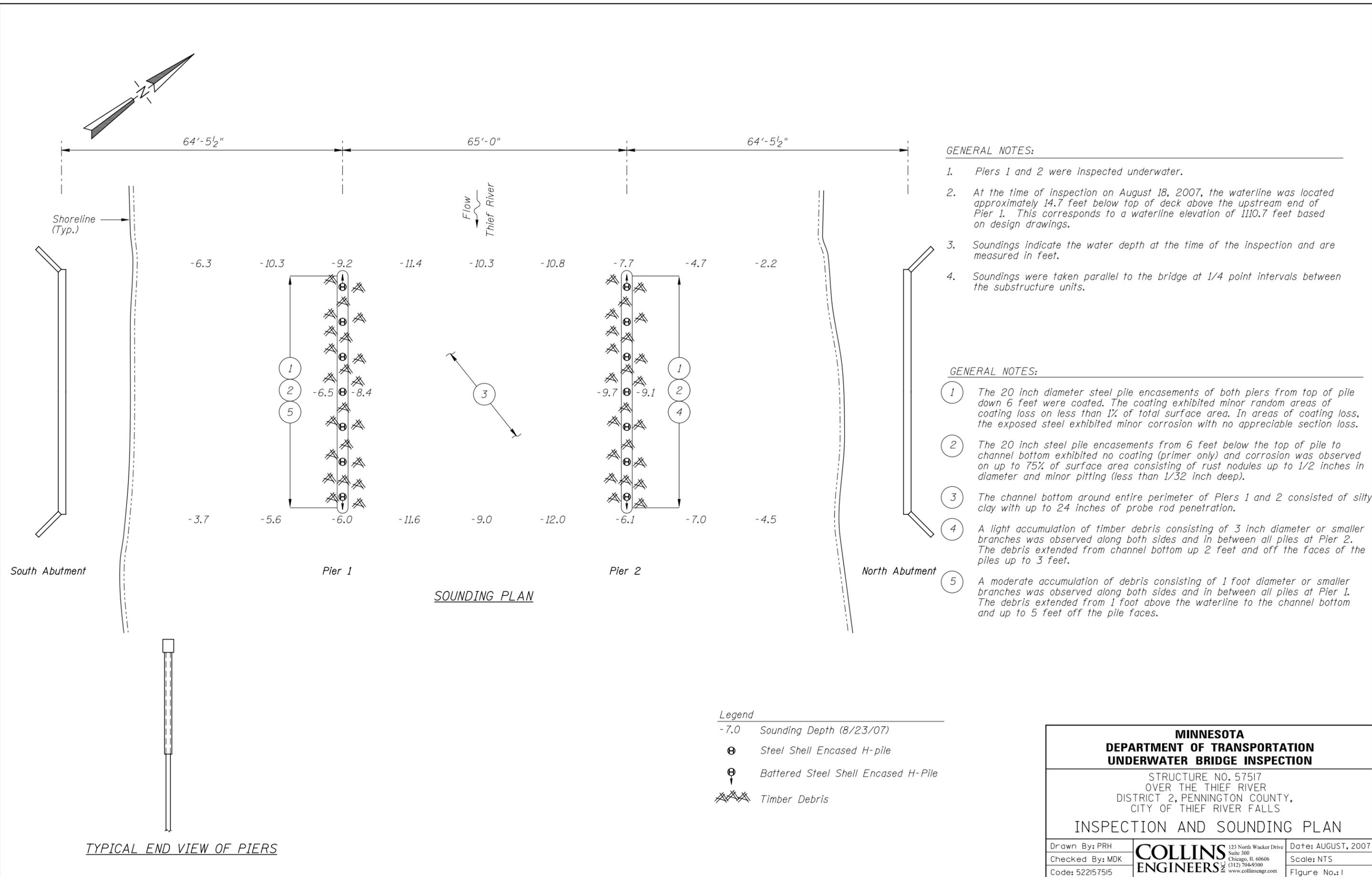
Photograph 1. Overall View of the Structure, Looking South.



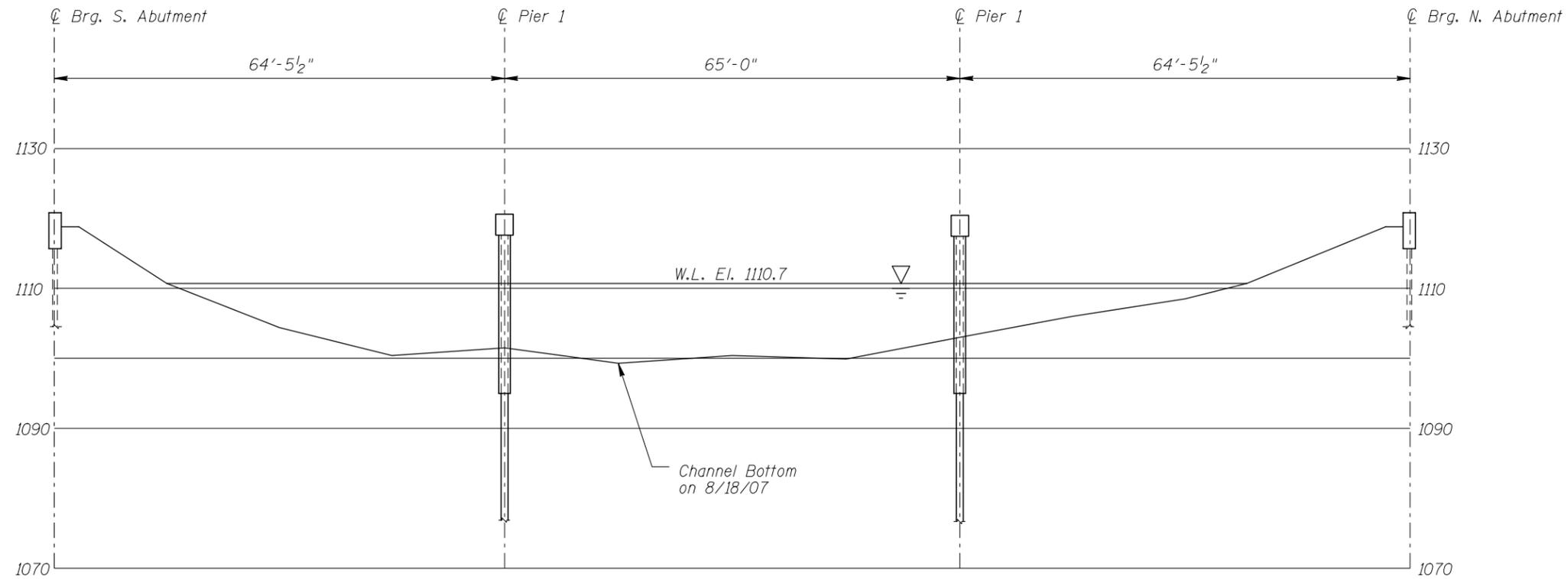
Photograph 2. View of Pier 1, Looking Southeast.



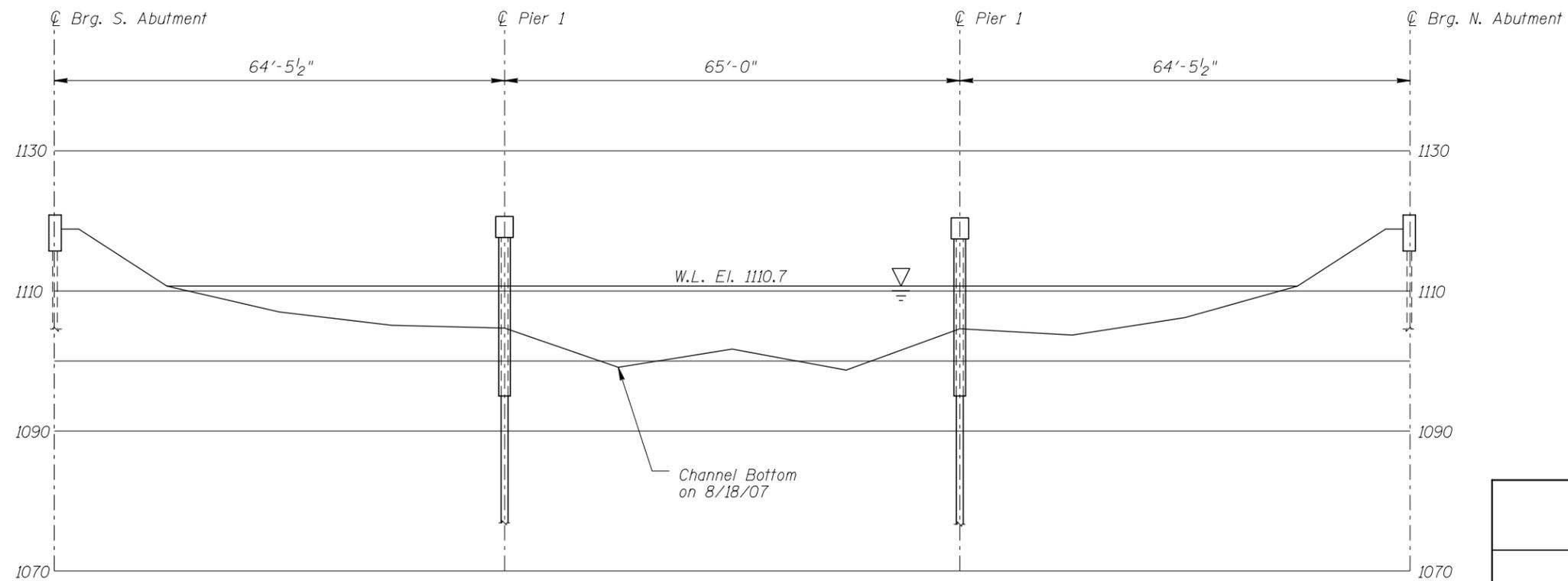
Photograph 3. View of Pier 2, Looking South.



MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 57517 OVER THE THIEF RIVER DISTRICT 2, PENNINGTON COUNTY, CITY OF THIEF RIVER FALLS		
INSPECTION AND SOUNDING PLAN		
Drawn By: PRH	COLLINS ENGINEERS <small>Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Date: AUGUST, 2007
Checked By: MDK		Scale: NTS
Code: 522157515		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. 57517 OVER THE THIEF RIVER DISTRICT 2, PENNINGTON COUNTY, CITY OF THIEF RIVER FALLS UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: PRH	COLLINS ENGINEERS	Date: AUGUST, 2007
Checked By: MDK		Scale: 1"=20'
Code: 522157515		Figure No.: 2

123 North Wacker Drive
Suite 300
Chicago, IL 60606
(312) 704-9300
www.collinsengr.com

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES
DAILY DIVING REPORT

INSPECTORS: Collins Engineers, Inc. DATE: August 18, 2007

ON-SITE TEAM LEADER: Bradley A. Syler, P.E., S.E.

BRIDGE NO: 57517 WEATHER: Sunny, 69°F

WATERWAY CROSSED: Thief River

DIVING OPERATION: SCUBA SURFACE SUPPLIED AIR
 OTHER

PERSONNEL: John J. Loftus, Valerie Roustan

EQUIPMENT: Scuba, U/W Light, Scraper, Sounding Pole, Lead Line, Probe Rod, Camera

TIME IN WATER: 1:40 p.m.

TIME OUT OF WATER: 2:10 p.m.

WATERWAY DATA: VELOCITY Negligible/None

VISIBILITY 3.0 feet

DEPTH 9.7 feet maximum at Pier 2.

ELEMENTS INSPECTED: Piers 1 and 2

REMARKS: The 20 inch diameter steel pile encasements of both piers from the top of pile down 6 feet were coated. The coating exhibited minor random areas of coating loss on less than one percent of total surface area. In areas of coating loss, the exposed steel exhibited minor corrosion with no appreciable section loss. From 6 feet below the top of the pile to the channel bottom, the encasements exhibited no coating (primer only) and corrosion was observed on up to 75 percent of the surface area. A light to moderate accumulation of timber debris was observed at both piers. The channel bottom material was silty clay with up to 24 inches of probe rod penetration.

FURTHER ACTION NEEDED: YES NO

Monitor the timber debris, and if found to be increasing in the future, removal operations may become warranted.

Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES

UNDERWATER INSPECTION CONDITION RATING FORM

BRIDGE NO. 57517
 INSPECTORS Collins Engineers, Inc.
 ON-SITE TEAM LEADER Bradley A. Syler, P.E., S.E.
 WATERWAY CROSSED Thief River

INSPECTION DATE August 18, 2007
 NOTE: USE ALL APPLICABLE CONDITION
 DEFINITIONS AS DEFINED IN THE MINNESOTA
 RECORDING AND CODING GUIDE INCLUDING
 GENERAL, SUBSTRUCTURE, CHANNEL AND
 PROTECTION, AND CULVERTS AND WALL
 DEFINITIONS TO COMPLETE THIS FORM.

CONDITION RATING

UNIT REFERENCE NO.	UNIT DESCRIPTION	MAXIMUM DEPTH OF WATER	SUBSTRUCTURE						CHANNEL					GENERAL					
			PILING	COLUMNS, SHAFTS, OR FACES*	FOOTINGS	DISPLACEMENT	OTHER	OVERALL SUBSTRUCTURE CONDITION CODE*	SCOUR	EMBANKMENT EROSION	EMBANKMENT PROTECTION	OTHER (DRIFT/DEBRIS)	OVERALL CHANNEL & PROTECTION CONDITION	CONCRETE	STEEL	TIMBER	LOSS OF SECTION	PREVIOUS REPAIR OR MAINTENANCE	OTHER
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Pier 1	8.4'	7	N	N	9	N	7	8	8	8	6	6	N	7	N	7	N	N
	Pier 2	9.7'	7	N	N	9	N	7	8	8	8	7	7	N	7	N	7	N	N

*UNDERWATER PORTION ONLY

REMARKS: The 20 inch diameter steel pile encasements of both piers from the top of pile down 6 feet were coated. The coating exhibited minor random areas of coating loss on less than one percent of total surface area. In areas of coating loss, the exposed steel exhibited minor corrosion with no appreciable section loss. From 6 feet below the top of the pile to the channel bottom, the encasements exhibited no coating (primer only) and corrosion was observed on up to 75 percent of the surface area. A light to moderate accumulation of timber debris was observed at both piers. The channel bottom material was silty clay with up to 24 inches of probe rod penetration.

NOTES: ATTACH SKETCHES AS NEEDED, IDENTIFY REMARK BY REFERRING TO UNIT REFERENCE NO. AND REMARK NO.
 USE GENERAL SECTION TO IDENTIFY OVERALL PRESENCE OF SPALLS, CRACKS, CORROSION, ETC.