

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 40508

1ST STREET

OVER THE

CANNON RIVER

LE SUEUR COUNTY



SEPTEMBER 13, 2012

PREPARED FOR THE

MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO. 7423

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure unit inspected below water at Bridge No. 40508, Center Pier, was found to be in good condition with steel pile shells exhibiting loss of paint coating and light surface corrosion from 2 feet above the waterline to the channel bottom. The channel bottom around the substructure units appeared stable with no significant scour or debris accumulations and no significant changes since the previous underwater inspection.

INSPECTION FINDINGS:

- (A) The channel bottom material consisted of sand and gravel allowing 4 inches of maximum probe rod penetration at the west end of the pier. The channel bottom at the east end of the pier consisted of sand and gravel with 6 to 8 inch diameter stones and 2 inches of maximum probe rod penetration.
- (B) The steel pipe piles exhibited loss of paint coating with light surface corrosion over 100 percent of the surface area from channel bottom to 2 feet above the waterline.

RECOMMENDATIONS:

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

Inspection Team Leader



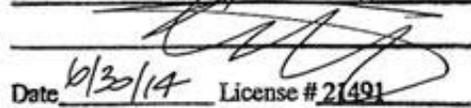
Roy A. Forsyth, PE
Date 6/30/2014 License# 49270

Respectfully submitted,

PROFESSIONAL ENGINEER

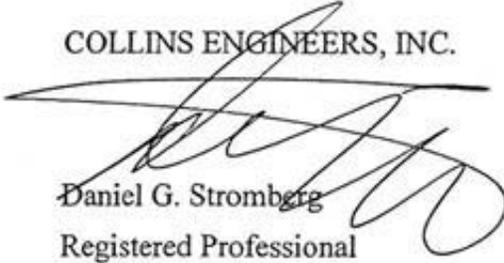
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Daniel G. Stromberg



Date 6/30/14 License # 21491

COLLINS ENGINEERS, INC.



Daniel G. Stromberg

Registered Professional

Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 40508

Feature Crossed: Cannon River

Feature Carried: 1st Street

Location: Le Sueur County

Bridge Description: The superstructure consists of two spans of multiple concrete beams.
The superstructure is supported by two reinforced concrete abutments and one steel pipe pile bent pier.

2. INSPECTION DATA

Professional Engineer/Team Leader: Roy A. Forsyth, P.E.

Dive Team: Charles R. Euwema, Brandon Corr

Date: September 13, 2012

Weather Conditions: Sunny, 60°F

Underwater Visibility: 1.0 foot

Waterway Velocity: Negligible / None

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Center Pier.

General Shape: Center Pier consists of a single line of eleven steel pipe piles supporting a reinforced concrete cap.

Maximum Water Depth at Substructure Inspected: Approximately 3.5 feet.

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap at the west end of Center Pier.

Water Surface: The waterline was approximately 7.1 feet below reference.
Waterline Elevation = 997.8.

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 8

Item 92B: Underwater Inspection: Code A/9/12

Item 113: Scour Critical Bridges: Code I

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

 Yes X No

6. STRUCTURAL ELEMENT CONDITION RATING

Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
382	Cast in Place Piling	11	EA	11				



Photograph 1. Overall View of Structure, Looking Northeast.



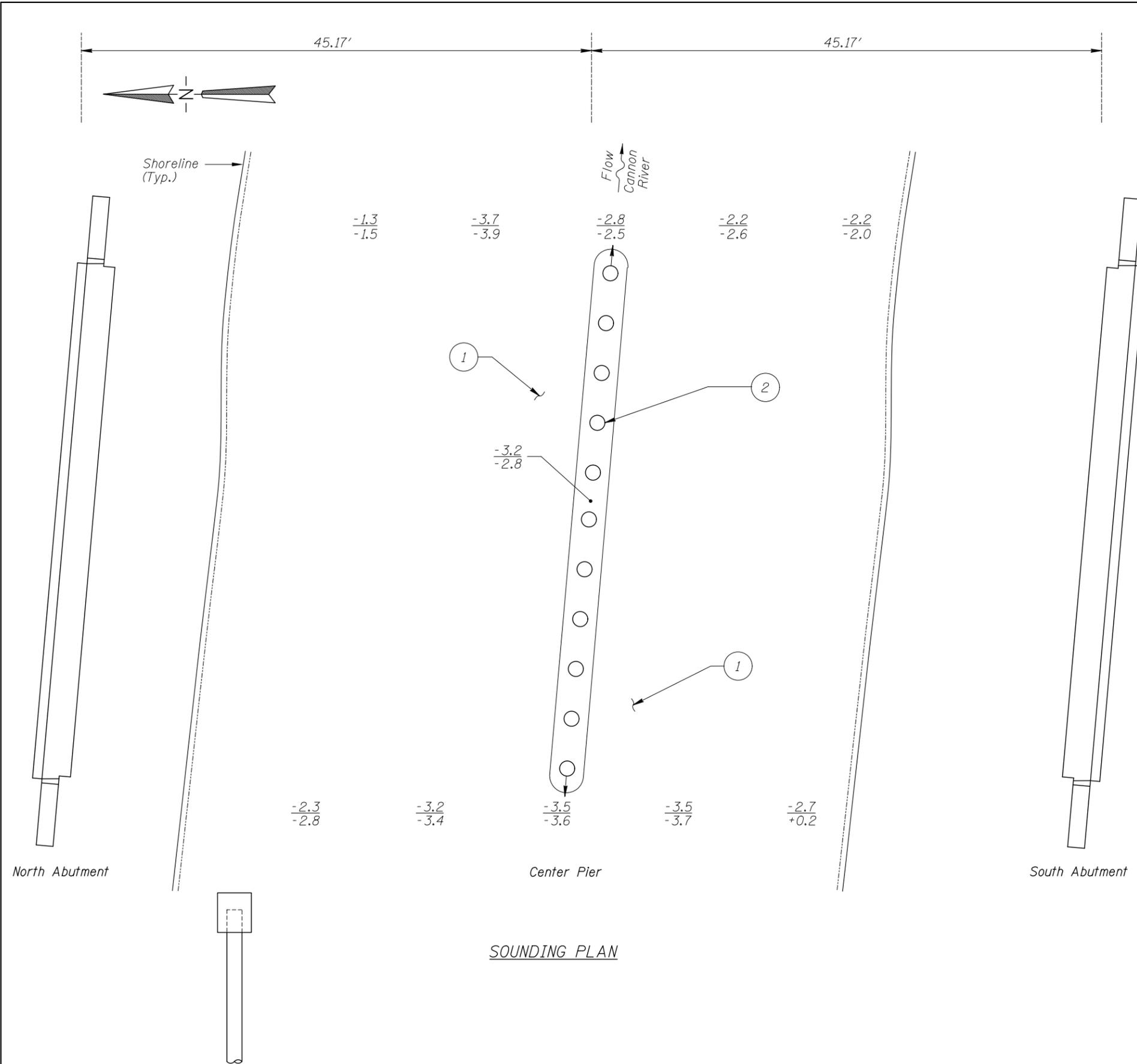
Photograph 2. View of Center Pier, Looking Northeast.



Photograph 3. View of North Abutment, Looking Northeast.



Photograph 4. View of South Abutment, Looking Southwest.



GENERAL NOTES:

1. The Center Pier was inspected underwater.
2. At the time of inspection on September 13, 2012, the waterline was located approximately 7.1 feet below top of pier cap at the downstream end of Pier. This corresponds with a waterline elevation of 997.8 feet based on design drawings.
3. Soundings indicate the water depth at the time of the 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 material consisted of sand and gravel with 4 inches of maximum probe rod penetration at the west nose. The channel bottom at the east nose consisted of sand and gravel with 6 to 8 inch diameter stones and 2 inches of maximum probe rod penetration.
- 2 The steel pipe piles exhibited loss of paint coating with light surface corrosion over 100 percent of the surface area from channel bottom to 2 feet above the waterline.

Legend

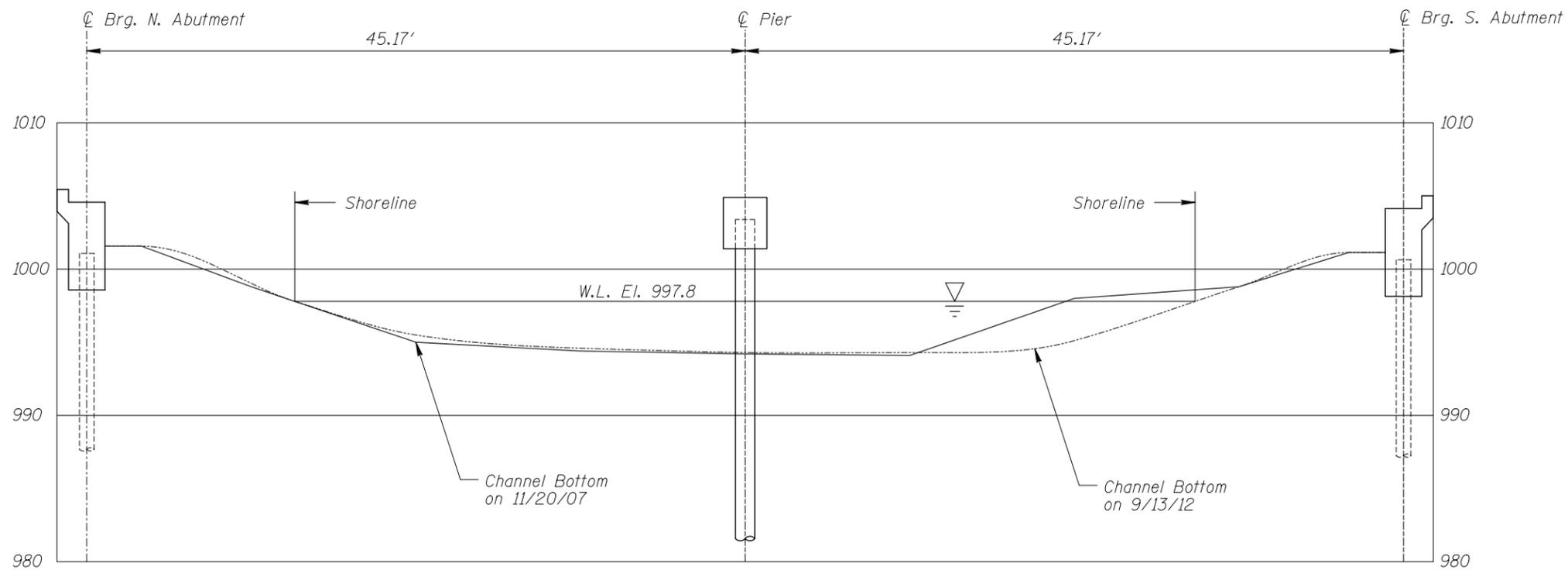
- 7.0 Sounding Depth (9/13/12)
- 7.0 Sounding Depth (11/20/07)
- Cast-In-Place Concrete Pile Encased in Steel Shell
- Cast-In-Place Concrete Battered Pile Encased in Steel Shell

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 40508 OVER THE CANNON RIVER LE SUEUR COUNTY, CITY OF MONTEVIDEO		
INSPECTION AND SOUNDING PLAN		
Drawn By: CRE	COLLINS ENGINEERS	Date: SEPT. 2012
Checked By: LJ		Scale: NTS
Code: 742340508		Figure No.: 1

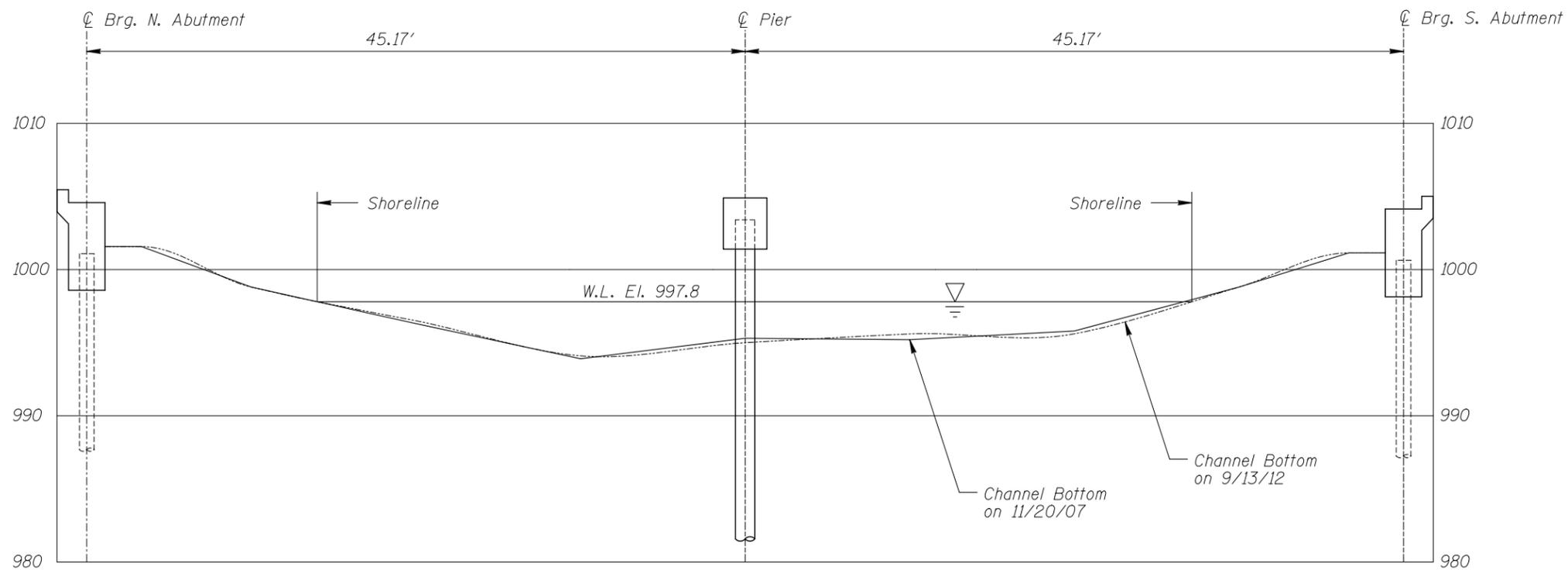
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TYPICAL END VIEW OF PIER

SOUNDING PLAN



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:
Refer to Figure 1 for General Notes.

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 40508 OVER THE CANNON RIVER LE SUEUR COUNTY, CITY OF MONTEVIDEO UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: CRE	COLLINS ENGINEERS	Date: SEPT. 2012
Checked By: LJ		Scale: 1"=10'
Code: 742340508		Figure No.: 2

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

INSPECTORS: Collins Engineers, Inc. DATE: September 13, 2012

ON-SITE TEAM LEADER: Roy A Forsyth, P.E.

BRIDGE NO: 40508 WEATHER: Sunny, 60°F

WATERWAY CROSSED: Cannon River

DIVING OPERATION: _____ SCUBA _____ SURFACE SUPPLIED AIR
 OTHER Inspection by Wading

PERSONNEL: Charles R. Euwema, Brandon Corr

EQUIPMENT: Scraper, Lead Line, Sounding Pole, Probe Rod, Camera

TIME IN WATER: 8:40 a.m.

TIME OUT OF WATER: 9:05 a.m.

WATERWAY DATA: VELOCITY Negligible / None

VISIBILITY 1.0 foot

DEPTH 3.5 feet maximum at Center Pier

ELEMENTS INSPECTED: Center Pier.

REMARKS: Overall, the Center Pier was found to be in good condition with loss of paint coating and light surface corrosion on the steel pipe piles from 2 feet above the waterline to the channel bottom. The channel bottom around the substructure units appeared stable with no significant scour or debris accumulations.

FURTHER ACTION NEEDED: _____ YES NO

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

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES

UNDERWATER INSPECTION CONDITION RATING FORM

BRIDGE NO. 40508
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Roy A. Forsyth, P.E.
WATERWAY CROSSED Cannon River

INSPECTION DATE September 13, 2012

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
	Center Pier	3.5'	7	N	N	8	N	7	8	N	N	N	8	N	7	N	7	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, the Center Pier was found to be in good condition with loss of paint coating and light surface corrosion from 2 feet above waterline to the channel bottom. The channel bottom around the substructure units appeared stable with no significant scour or debris accumulations.

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.