

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 66506

CSAH NO. 11

OVER THE

CANNON RIVER

DISTRICT 6 - RICE 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 units inspected at Bridge No. 66506, Piers 1 and 2, were found to be in good condition with no defects of structural significance observed. The channel bottom appeared stable with no changes since the previous inspection.

INSPECTION FINDINGS:

- (A) The channel bottom material consisted of gravel and 1 foot diameter and smaller cobbles, with no appreciable probe rod penetration.
- (B) The concrete was in smooth and sound condition.

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,

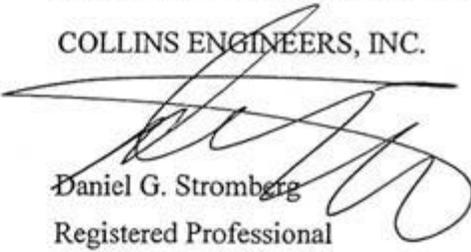
PROFESSIONAL ENGINEER

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: 66506

Feature Crossed: Cannon River

Feature Carried: CSAH No. 11

Location: District 6 - Rice County

Bridge Description: The bridge consists of three spans of multiple steel stringer bridge supporting a reinforced concrete deck. The superstructure is supported by two reinforced concrete abutments and two reinforced concrete piers. The pier and abutment footings are founded on steel H-piles. The piers are labeled Piers 1 and 2 starting from the north end of the bridge.

2. INSPECTION DATA

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

Dive Team: Brandon Corr, Charles Euwema

Date: September 13, 2012

Weather Conditions: Sunny, 75°F

Underwater Visibility: 1.0 foot

Waterway Velocity: None/Negligible

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2.

General Shape: The piers consist of concrete hammerhead shafts supported by rectangular spread footings founded on steel H-piles.

Maximum Water Depth at Substructure Inspected: Approximately 1.1 feet.

4. WATERLINE DATUM

Water Level Reference: The top of the Pier 1 on the west end.

Water Surface: The waterline was approximately 9.4 feet below reference.

Waterline Elevation = 963.7

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/09/12

Item 113: Scour Critical Bridges: Code I/91

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

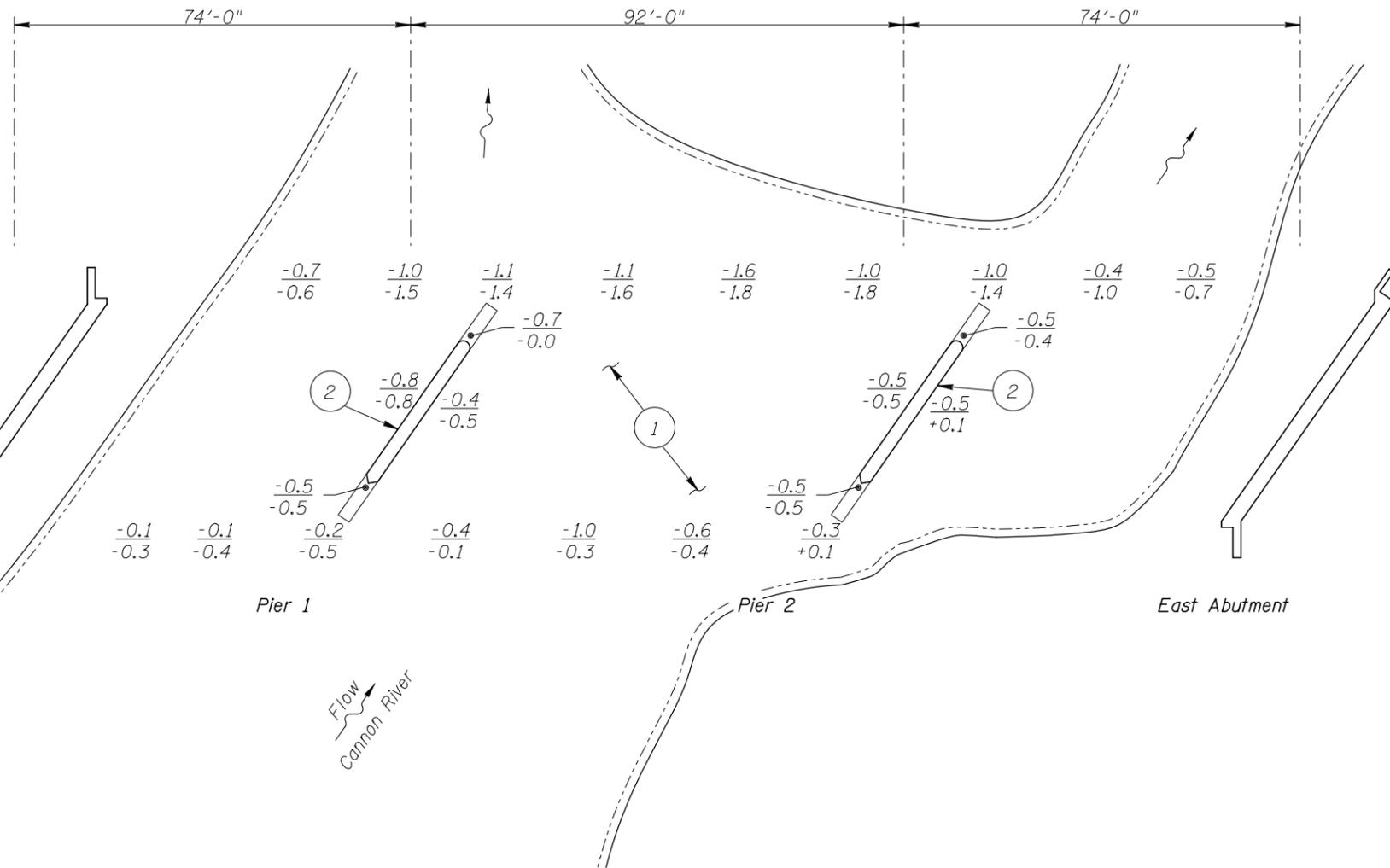
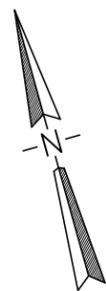
Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
210	Concrete Pier Wall	60	LF	60				



Photograph 1. View of Pier 1, Looking Northwest.



Photograph 2. View of Pier 2, Looking Southwest.



SOUNDING PLAN

GENERAL NOTES:

1. Piers 1 and 2 were inspected at the bridge.
2. At the time of inspection on September 13, 2012, the waterline was located approximately 9.4 feet below the top of the cap at the west end of Pier 1. This corresponds to a waterline elevation of 963.7 based on design drawings.
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:

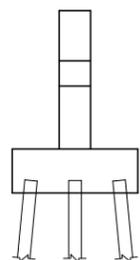
- ① The channel bottom material consisted of gravel and 1 foot diameter and smaller cobbles, with no appreciable probe rod penetration.
- ② The concrete was in smooth and sound condition.

Legend

-1.4 Sounding Depth (9/13/12)
-1.0 Sounding Depth (10/23/07)

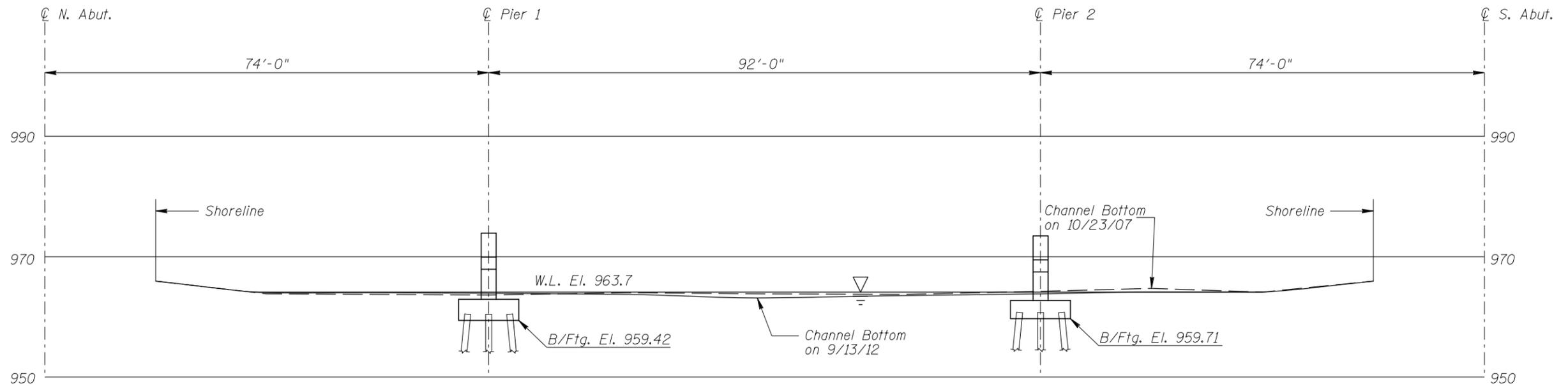
Note:

All soundings based on 2012 waterline location.

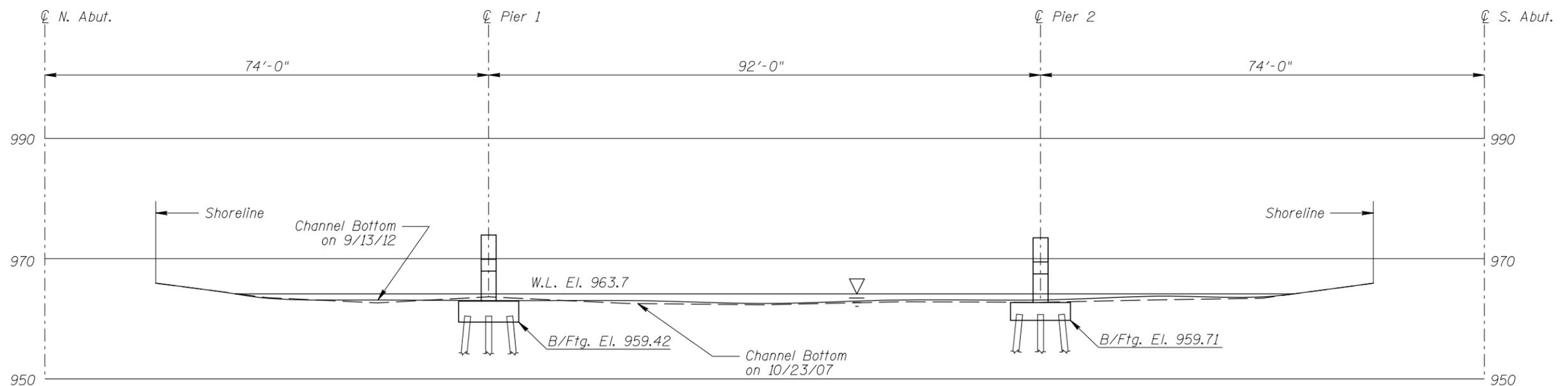


TYPICAL END VIEW OF PIERS

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 66506 OVER THE CANNON RIVER DISTRICT 6, RICE COUNTY		
INSPECTION AND SOUNDING PLAN		
Drawn By: JTF	COLLINS ENGINEERS <small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Date: Sept. 2012
Checked By: DGS		Scale: NTS
Code: 522166506		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. 66506 OVER THE CANNON RIVER DISTRICT 6, RICE COUNTY		
UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: JTF	COLLINS ENGINEERS	Date: Sept. 2012
Checked By: DGS		Scale: 1"=20'
Code: 522166506		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: 66506 WEATHER: Sunny, 75°F

WATERWAY CROSSED: Cannon River

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

PERSONNEL: Brandon Corr, Charles Euwema

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

TIME IN WATER: 12:15 p.m.

TIME OUT OF WATER: 12:40 p.m.

WATERWAY DATA: VELOCITY None/Negligible

VISIBILITY 1.0 foot

DEPTH 1.1 foot maximum at Pier 1

ELEMENTS INSPECTED: Piers 1 and 2

REMARKS: The concrete was smooth and sound and in good condition. The channel bottom appeared stable with no significant signs of degradation / scour since the last inspection.

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. 66506
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
	Pier 1	1.1'	N	7	N	9	N	7	8	8	8	N	8	7	N	N	N	N	N
	Pier 2	1.0'	N	7	N	9	N	7	8	8	8	N	8	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: The concrete was smooth and sound and in good condition. The channel bottom appeared stable with no significant signs of degradation / scour since the last inspection.

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.