UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 66512

PEDESTRIAN WALKWAY

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. 66512, Piers 1 and 2, were found to be in good condition with no defects of structural significance observed. The channel bottom around the substructure units appeared to be in stable condition with no evidence of significant scour.

INSPECTION FINDINGS:

(A) The channel bottom at Pier 1 and Pier 2 consisted of rock and gravel with no appreciable probe rod penetration.

(B) Overall, the concrete surfaces of both piers were smooth and sound with no notable defects.

RECOMMENDATIONS:

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

Respectfully submitted,

Inspection Team Leader

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

COLLINS ENGINEERS, INC.

Daniel G. Stromberg
Registered Professional
Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 66512

Feature Crossed: Cannon River

Feature Carried: Pedestrian Walkway

Location: District 6 - Rice County

Bridge Description: The bridge superstructure consists of three spans. The bridge has a timber deck that is supported by glulam girders. The superstructure is supported by two timber abutments with wingwalls and two reinforced concrete piers.

2. INSPECTION DATA

Professional Engineer Diver: Roy A. Forsyth, P.E.

Dive Team: Brandon Corr, Charles Euwema

Date: September 13, 2012

Weather Conditions: Sunny, 80 ºF

Underwater Visibility: 3.0 feet

Waterway Velocity: 0.5 ft/s

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Pier 1 and Pier 2.

General Shape: The piers each consist of a slender rectangular concrete shaft and a rectangular pier cap, both with rounded ends.

Maximum Water Depth at Substructure Inspected: Approximately 2.0 feet.

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap at the upstream end of Pier 2.

Water Surface: The waterline was approximately 17.1 feet below reference.
Assumed Waterline Elevation = 82.9

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___

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site.
_____ Yes __X__ No

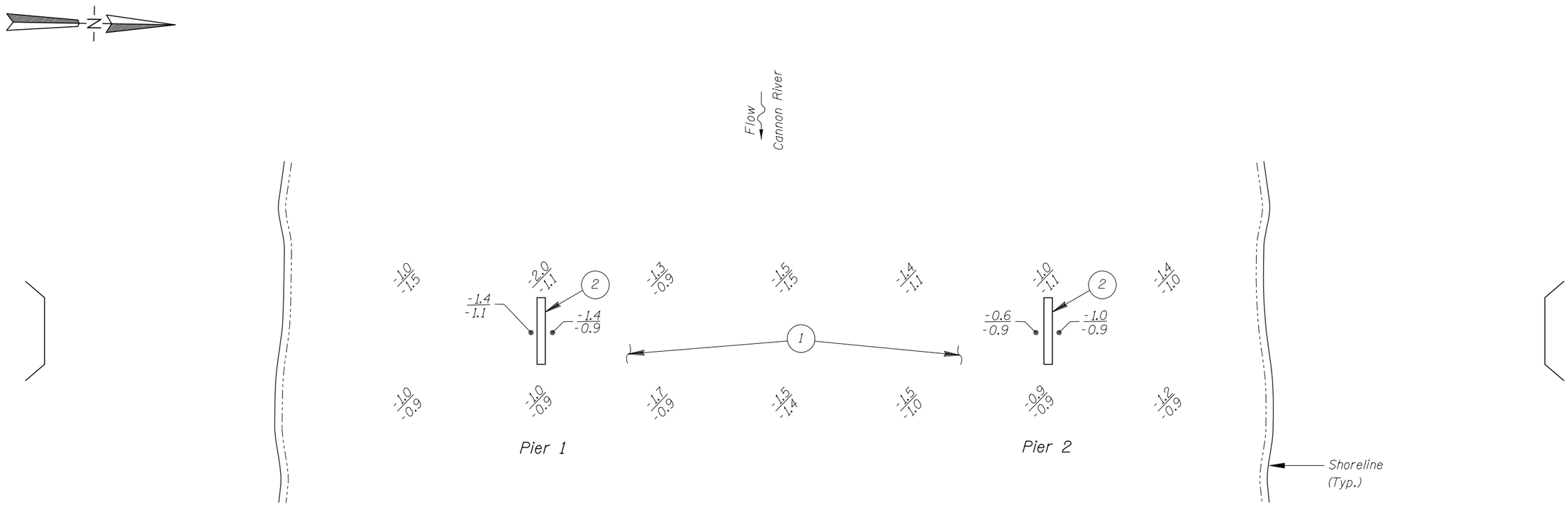
6. STRUCTURAL ELEMENT CONDITION RATING

Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
210	Reinforced Concrete Pier Wall	12	EA	12				
985	Slopes and Slope Protection	1	EA	1				

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

Photograph 2. View of Pier 1, Looking Southeast.

Photograph 3. View of Pier 2, Looking Southeast.



SOUNDING PLAN

GENERAL NOTES:

1. The Piers 1 and 2 were inspected underwater.
2. At the time of inspection, on September 13, 2012, the waterline was located approximately 17.1 feet below the top of pier cap at the upstream end of the Pier 2. Due to lack of design plan information, the reference elevation was assumed to be 100.0 feet. This corresponds to a waterline elevation of 82.9 feet.
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 as well as around the pier structures.

INSPECTION NOTES:

(1) The channel bottom material at Pier 1 and Pier 2 consisted of rock and gravel with no appreciable probe rod penetration.

(2) Overall concrete was smooth and sound with no notable defects.

Legend

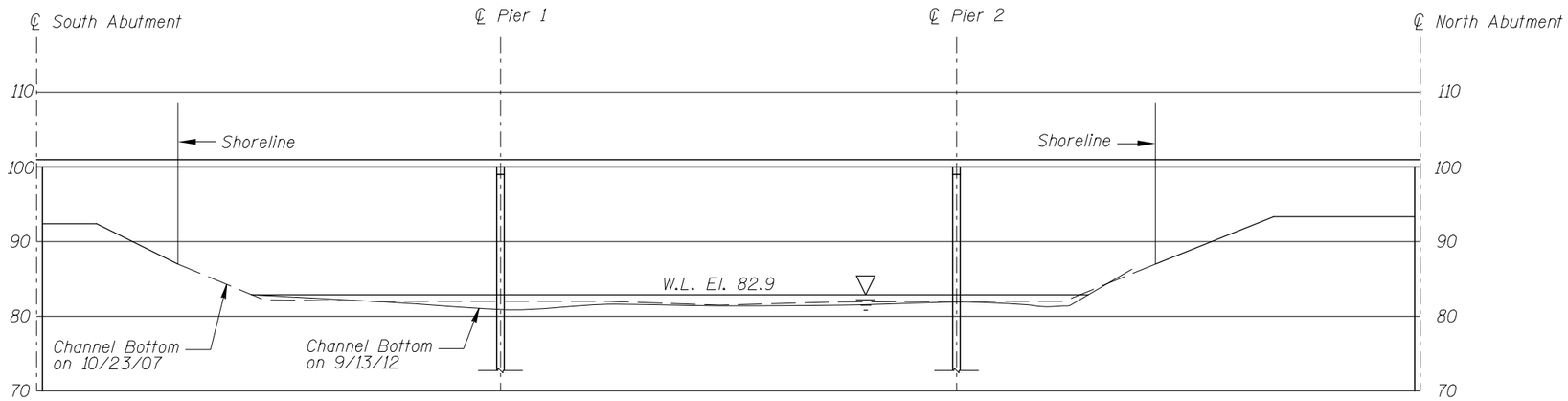
-0.4	Sounding Depth (9/13/12)
-0.4	Sounding Depth (10/23/07)

MINNESOTA
DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

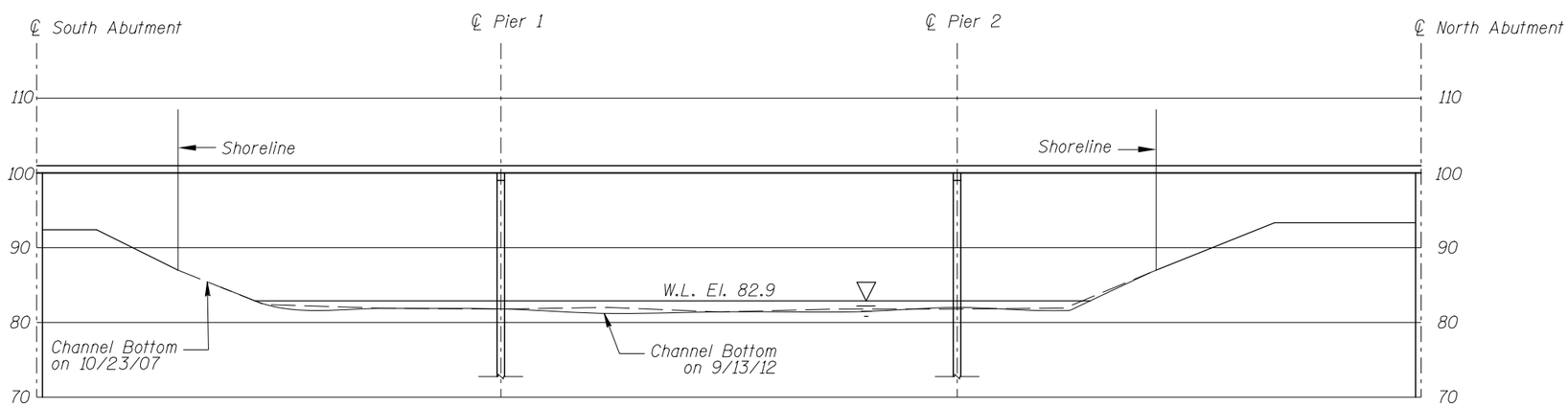
STRUCTURE NO. 66512
OVER THE CANNON RIVER
DISTRICT 6, RICE COUNTY

INSPECTION AND SOUNDING PLAN

Drawn By: JTF	COLLINS ENGINEERS 123 North Wacker Drive Suite 900 Chicago, Il. 60606 (312) 704-9300 www.collinsengr.com	Date: Sept. 2012
Checked By: DGS		Scale: NTS
Code: 522166512		Figure No.: 1



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:

Refer to Figure 1 for General Notes.

MINNESOTA
DEPARTMENT OF TRANSPORTATION
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UPSTREAM AND DOWNSTREAM FASCIA PROFILES

Drawn By: JTF	COLLINS ENGINEERS INC. 123 North Wacker Drive Suite 900 Chicago, Il. 60606 (312) 704-9300 www.collinsengr.com	Date: Sept. 2012
Checked By: DGS		Scale: 1"=20'
Code: 522166512		Figure No.: 2

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: 66512 WEATHER: Sunny, 80 ºF

WATERWAY CROSSED: Straight River

DIVING OPERATION: _____ SCUBA _____ SURFACE SUPPLIED AIR

X OTHER Inspection by Wading

PERSONNEL: Brandon Corr, Charles Euwema

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

TIME IN WATER: 5:00 p.m.

TIME OUT OF WATER: 5:45 p.m.

WATERWAY DATA: VELOCITY 0.5 ft/s

VISIBILITY 3.0 feet

DEPTH 2.0 feet maximum at Pier 1

ELEMENTS INSPECTED: Pier 1 and Pier 2

REMARKS: Overall, the concrete of the piers was in good condition with no defects of structural significance observed. The channel bottom around the substructure units appeared to be in stable condition with no evidence of significant scour.

FURTHER ACTION NEEDED: _____ YES X 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. 66512
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

			SUBSTRUCTURE						CHANNEL					GENERAL					
UNIT REFERENCE NO.	UNIT DESCRIPTION	MAXIMUM DEPTH OF WATER	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	2.0	N	7	N	9	N	7	N	8	8	N	8	7	N	N	N	N	N
	Pier 2	1.0	N	7	N	9	N	7	N	8	8	N	8	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, the concrete of the piers was in good condition with no defects of structural significance observed. The channel bottom around the substructure units appeared to be in stable condition with no evidence of significant scour.

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.