

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 66523
MSAS 125 (HULET AVENUE)
OVER THE
CANNON RIVER
CITY OF FARBAULT, 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 below water at Bridge No. 66523, the North and South Abutments (out of the water at the time of inspection) and Pier 1, were found to be in good condition with no defects of structural significance observed. A light accumulation of timber debris was observed at Pier 1, and the channel bottom appeared to be in stable condition at both piers with no notable scour present and no significant changes since the previous underwater inspection.

INSPECTION FINDINGS:

- (A) The concrete was in smooth and sound condition with no notable deterioration.
- (B) The channel bottom material at Pier 1 consisted of silty sand with scattered rock and up to 2 inches of probe rod penetration.
- (C) The channel bottom material along the North and South Abutments consisted of 2-foot-diameter and smaller riprap.
- (D) A light accumulation of timber debris consisting of 1-foot-diameter and smaller logs and branches was observed from the channel bottom up 1 foot at the upstream nose and along the northern downstream half of Pier 1.

RECOMMENDATIONS:

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

Inspection Team Leader

Roy Forsyth

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.

[Signature]
Daniel G. Stromberg

Registered Professional

Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 66523

Feature Crossed: Cannon River

Feature Carried: MSAS 125 (Hulet Avenue)

Location: City of Faribault, Rice County

Bridge Description: The superstructure consists of two spans of multiple steel stringers supporting a reinforced concrete deck. The bridge is supported by two reinforced concrete abutments and one reinforced concrete pier.

2. INSPECTION DATA

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

Dive Team: Brandon Corr, Charles Euwema

Date: September 13, 2012

Weather Conditions: Sunny, 60° F

Underwater Visibility: 1.0 foot

Waterway Velocity: 1.0 ft/s

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: North and South Abutments and Pier 1.

General Shape: The pier consisted of an oblong rectangular pier shaft with rounded upstream and downstream ends. The abutments consisted of vertical concrete breastwalls. No footing information was available.

Maximum Water Depth at Substructure Inspected: Approximately 4.6 feet at Pier 1.

4. WATERLINE DATUM

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

Water Surface: The waterline was approximately 6.1 feet below reference.
Waterline Elevation = 93.9.

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 7

Item 92B: Underwater Inspection: Code B/09/12

Item 113: Scour Critical Bridges: Code L

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
215	Concrete Abutment	115	LF	115				
210	Concrete Pier Wall	56	LF	56				



Photograph 1. Overall View of Bridge, Looking Northeast.



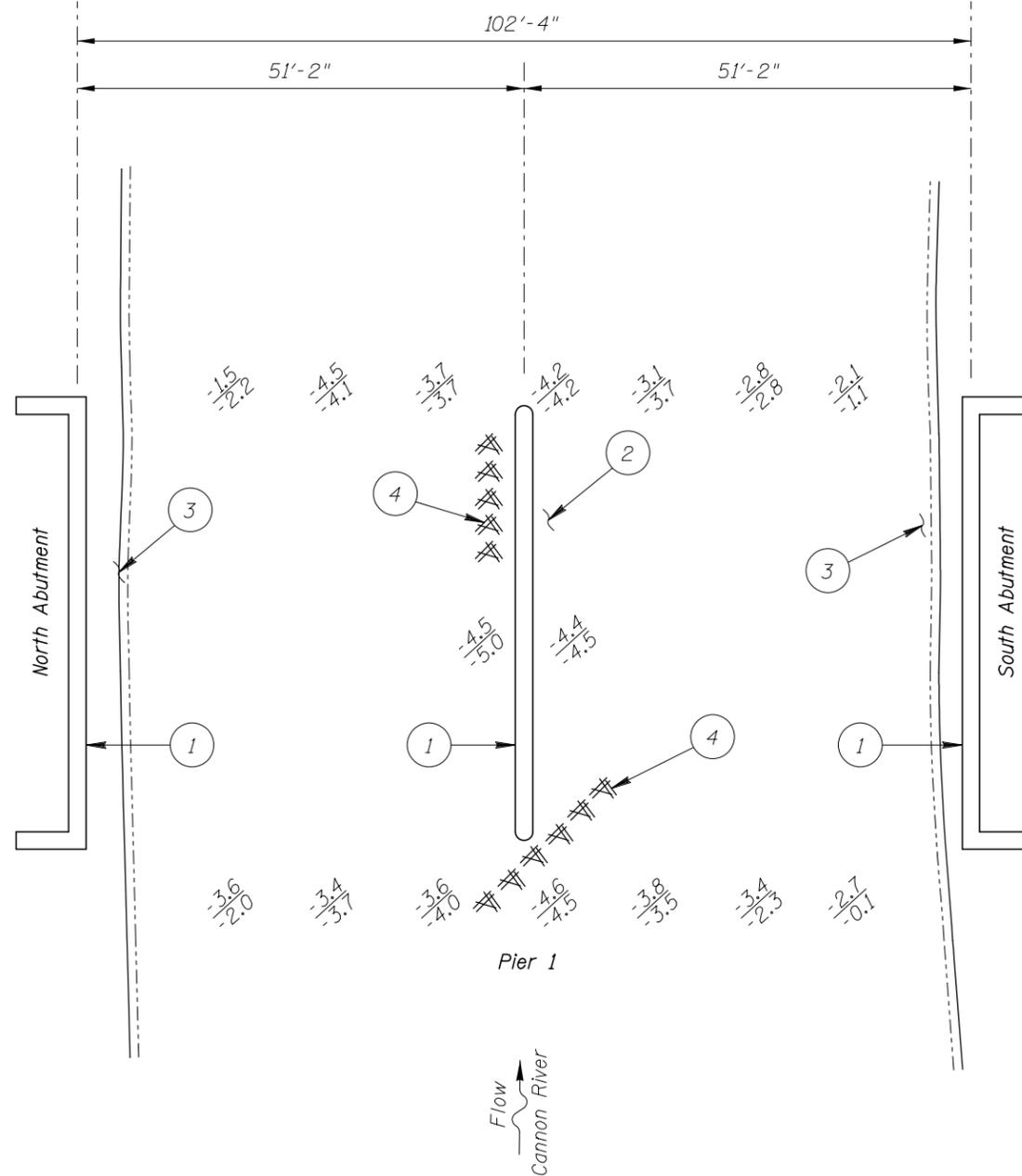
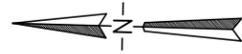
Photograph 2. View of Pier 1, Looking Northeast.



Photograph 3. View of the North Abutment, Looking Northwest.



Photograph 4 View of the South Abutment, Looking Southwest.



SOUNDING PLAN

INSPECTION NOTES:

- ① The concrete was in smooth and sound condition with no notable deterioration.
- ② The channel bottom at Pier 1 consisted of silty sand with scattered rock and up to 2 inches of probe rod penetration.
- ③ The channel bottom along the North and South Abutments consisted of 2-foot-diameter and smaller riprap.
- ④ A light accumulation of timber debris consisting of 1-foot-diameter and smaller logs and branches was observed from the channel bottom up 1 foot at the upstream nose and along the northern downstream half of Pier 1.

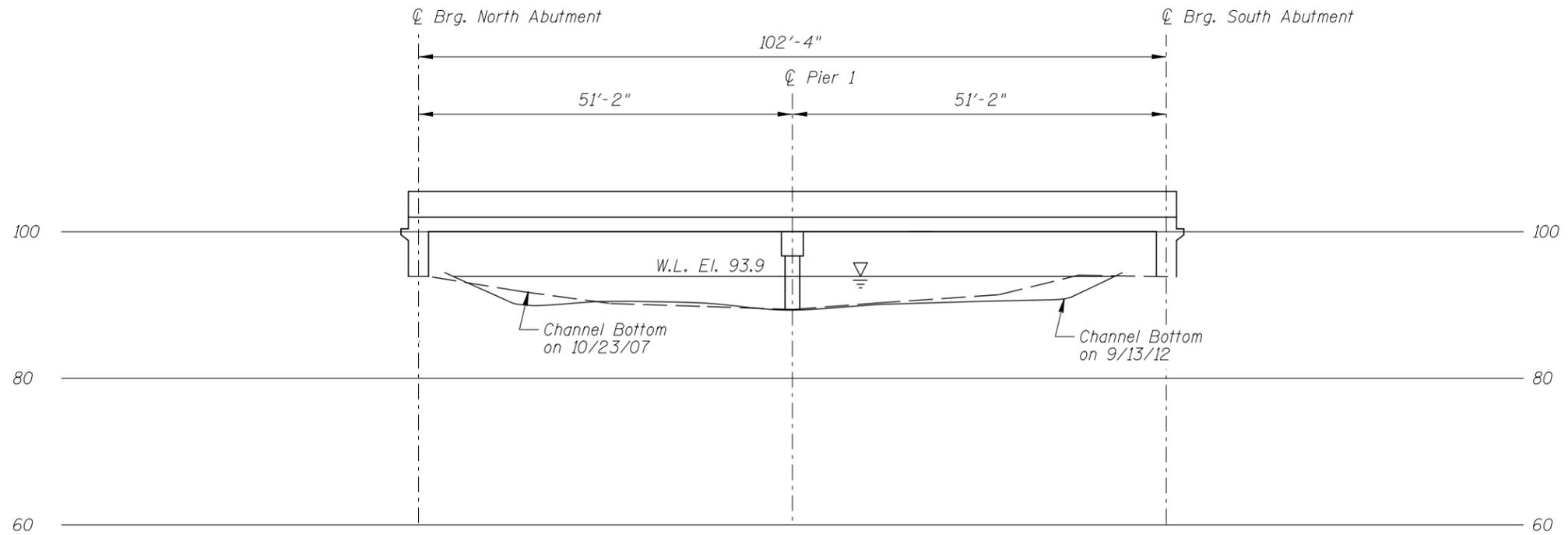
GENERAL NOTES:

- 1. The North and South Abutments and Pier 1 were inspected.
- 2. At the time of inspection, on September 13, 2012 the waterline was located approximately 6.1 feet below the top pier cap of Pier 1 on the upstream end. Since insufficient bridge elevation information was available, a reference elevation of 100.0 was assumed. Based on the assumed reference, the waterline elevation was 93.9.
- 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.

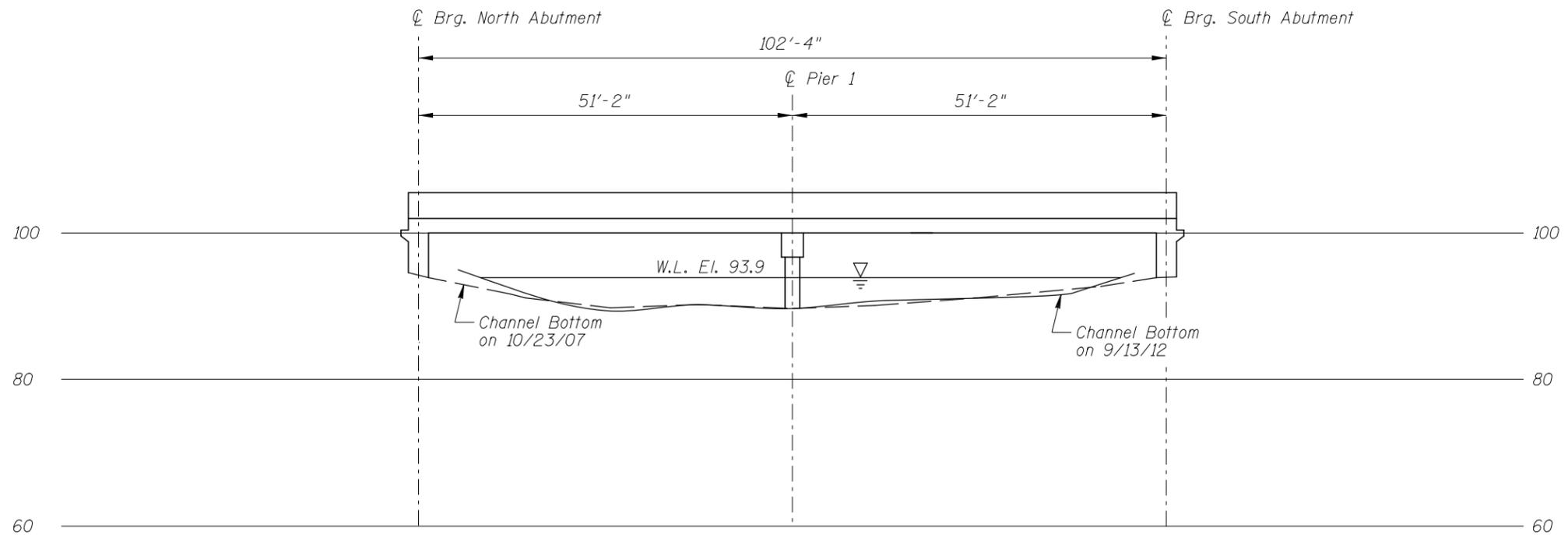
Legend

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

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 66523 MSAS 125 (HULET AVE.) OVER THE CANNON RIVER CITY OF FARIBAULT, 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: 52216523		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. 66523 MSAS 125 (HULET AVE.) OVER THE CANNON RIVER CITY OF FARIBAULT, RICE COUNTY		
UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: JTF	COLLINS ENGINEERS	Date: Sept. 2012
Checked By: DGS	<small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Scale: 1"=20'
Code: 52216523		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: 66523 WEATHER: Sunny, 60° F

WATERWAY CROSSED: Cannon River

DIVING OPERATION: SCUBA SURFACE SUPPLIED AIR
 OTHER

PERSONNEL: Brandon Corr, Chalres Euwema

EQUIPMENT: Commercial Scuba, Sounding Pole, Probe Rod, Camera, Hand Tools

TIME IN WATER: 11:20 A.M.

TIME OUT OF WATER: 11:50 A.M.

WATERWAY DATA: VELOCITY 1 ft/s

VISIBILITY 1.0 foot

DEPTH 4.6 feet maximum at Pier 1.

ELEMENTS INSPECTED: North and South Abutments and Pier 1

REMARKS: The concrete was typically in smooth and sound condition with no notable deterioration. A light accumulation of timber debris, consisting of 1-foot-diameter and smaller logs and branches was observed at the upstream end and along the downstream half of Pier 1. The channel bottom appeared to be in stable condition with silty sand allowing up to 2 inches of probe rod penetration surrounding Pier 1 and 2-foot-diameter riprap along the North and South Abutments. No notable scour was observed at the bridge.

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. 66523
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Roy A. Forsyth, P.E.
WATERWAY CROSSED The 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
	North Abutment	0.0'	N	7	N	9	N	7	8	N	N	N	8	7	N	N	N	N	N
	Pier 1	4.6'	N	7	N	9	N	7	8	N	N	7	7	7	N	N	N	N	N
	South Abutment	0.0'	N	7	N	9	N	7	8	N	N	N	8	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: The concrete was typically in smooth and sound condition with no notable deterioration. A light accumulation of timber debris, consisting of 1-foot-diameter and smaller logs and branches was observed at the upstream end and along the downstream half of Pier 1. The channel bottom appeared to be in stable condition with silty sand allowing up to 2 inches of probe rod penetration surrounding Pier 1 and 2-foot-diameter riprap along the North and South Abutments. No notable scour was observed at the bridge.

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.