

UNDERWATER BRIDGE INSPECTION REPORT

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STRUCTURE NO. 66512  
PEDESTRIAN WALKWAY  
OVER THE  
CANNON RIVER  
DISTRICT 6 - RICE COUNTY

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PREPARED FOR THE  
MINNESOTA DEPARTMENT OF TRANSPORTATION  
BY  
COLLINS ENGINEERS, INC.  
JOB NO. 5221

MINNESOTA DEPARTMENT OF TRANSPORTATION  
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected at Bridge No. 66512, North and South Piers, were found to be in good condition with no defects of structural significance observed. Moderate timber debris was observed at the South Pier. The channel bottom around the substructure units appeared to be in stable condition with no evidence of significant scour.

INSPECTION FINDINGS:

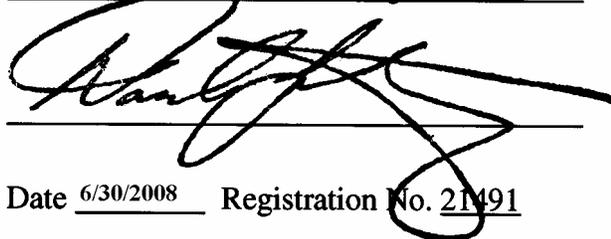
- (A) The concrete of the piers was smooth and sound with no notable defects.
- (B) A 3 foot diameter tree trunk was found at the upstream nose and along the south side of the South Pier.

RECOMMENDATIONS:

- (A) 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.

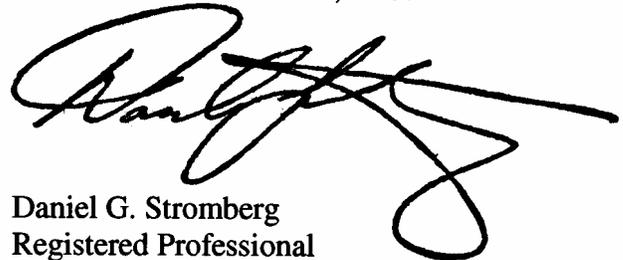
Daniel G. Stromberg



Date 6/30/2008 Registration No. 21491

Respectfully submitted,

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: Daniel G. Stromberg, P.E., S.E.

Dive Team: Clayton G. Brookins, Valerie Roustan

Date: October 23, 2007

Weather Conditions: Sunny, 55 °F

Underwater Visibility: 1.0 foot

Waterway Velocity: 2.0 f.p.s.

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: North and South Piers.

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

Maximum Water Depth at Substructure Inspected: Approximately 5.2 feet.

4. WATERLINE DATUM

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

Water Surface: The waterline was approximately 13.0 feet below reference.  
Assumed Waterline Elevation = 87.0.

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/10/07

Item 113: Scour Critical Bridges: Code G/07

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

       Yes   X   No



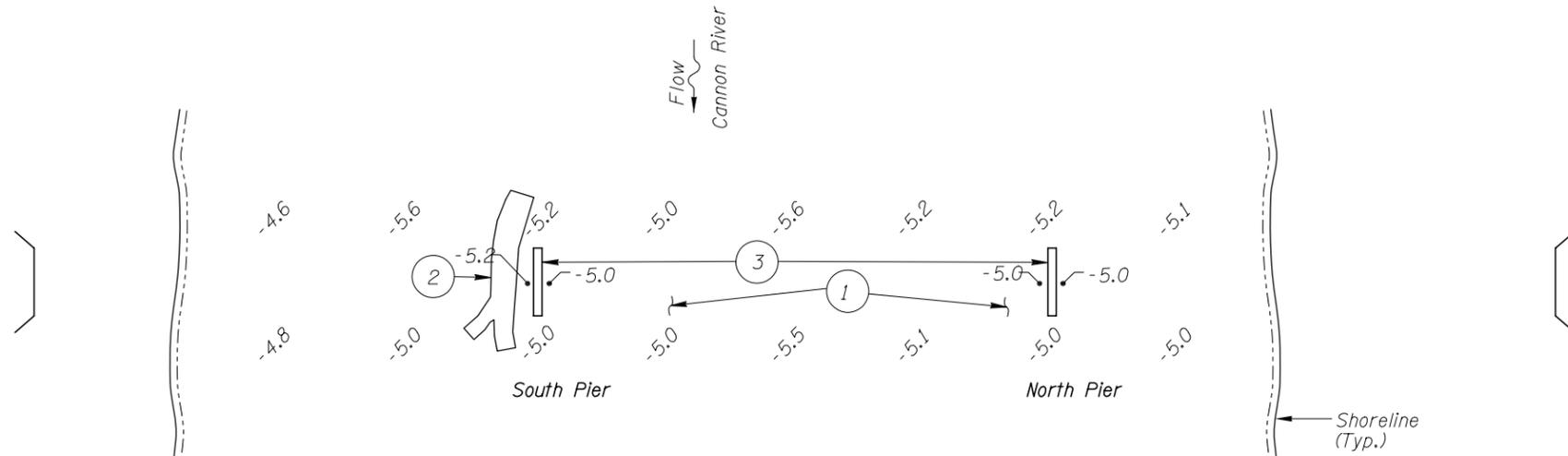
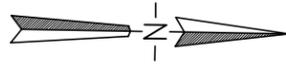
Photograph 1. Overall View of Structure, Looking Southeast.



Photograph 2. View of the North Pier, Looking South.



Photograph 3. View of the South Pier, Looking South.



SOUNDING PLAN

GENERAL NOTES:

1. The North and South Piers were inspected underwater.
2. At the time of inspection, on October 23, 2007, the waterline was located approximately 13.0 feet below the top of pier cap at the upstream end of the North Pier. Due to lack of design plan information, the reference elevation was assumed to be 100.0 feet. This corresponds to a waterline elevation of 87.0 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 at North and South Piers consisted of rock and gravel with no appreciable probe rod penetration.
- ② A 3 foot diameter tree trunk was found at the upstream nose and along the south side of South Pier.
- ③ Overall concrete was smooth and sound with no notable defects.

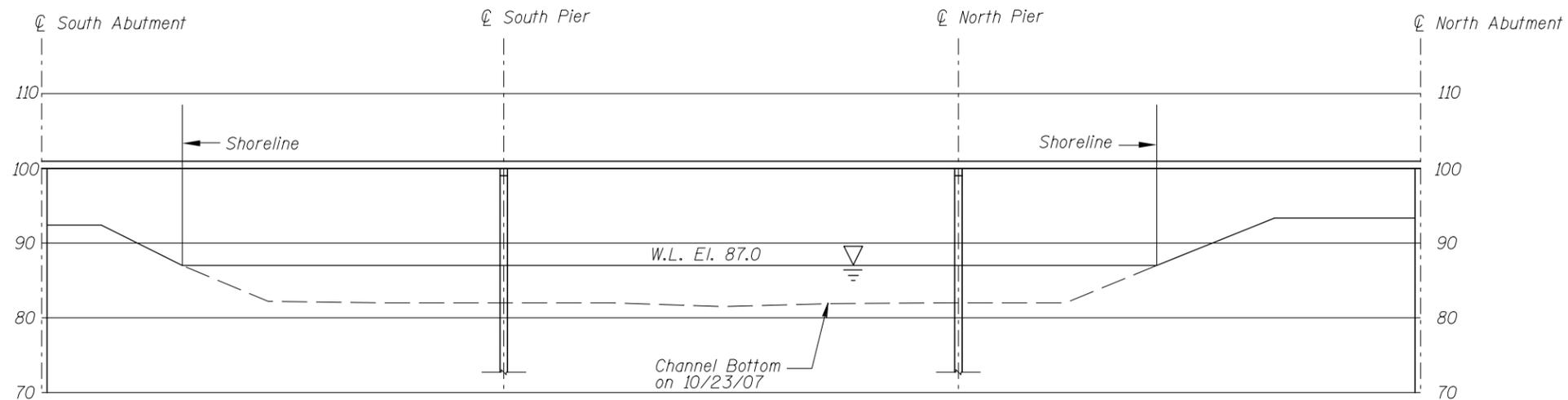
Legend

-0.4 Sounding Depth (10/23/07)

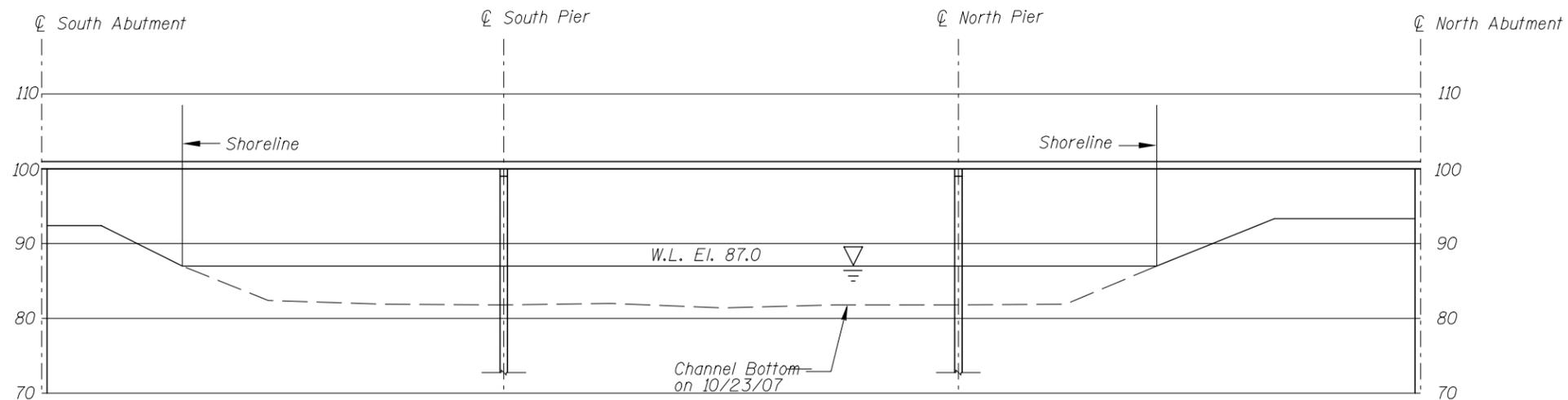
TYPICAL END VIEW OF EACH PIER SECTION

<b>MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION</b>		
STRUCTURE NO. 66512 OVER THE CANNON RIVER DISTRICT 6, RICE COUNTY		
<b>INSPECTION AND SOUNDING PLAN</b>		
Drawn By: CAI	<b>COLLINS ENGINEERS</b>	Date: OCT, 2007
Checked By: MDK		Scale: NTS
Code: 522166512		Figure No.: 1

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UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note: \_\_\_\_\_  
 Refer to Figure 1 for General Notes.

<b>MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION</b>		
STRUCTURE NO. 66512 OVER THE CANNON RIVER DISTRICT 6, RICE COUNTY		
<b>UPSTREAM AND DOWNSTREAM FASCIA PROFILES</b>		
Drawn By: CAI	<b>COLLINS ENGINEERS</b> <small>133 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Date: OCT, 2007
Checked By: MDK		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: October 23, 2007

ON-SITE TEAM LEADER: Daniel G. Stromberg, P.E., S.E.

BRIDGE NO: 66512 WEATHER: Sunny, 55 °F

WATERWAY CROSSED: Straight River

DIVING OPERATION:  SCUBA  SURFACE SUPPLIED AIR  
 OTHER

PERSONNEL: Clayton G. Brookins, Valerie Roustan

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

TIME IN WATER: 2:00 p.m.

TIME OUT OF WATER: 2:30 p.m.

WATERWAY DATA: VELOCITY 2.0 f.p.s.

VISIBILITY 1.0 feet

DEPTH 5.2 feet maximum at North and South Piers

ELEMENTS INSPECTED: North and South Piers

REMARKS: Overall, the concrete of the piers was in good condition with no defects of structural significance observed. A 3 foot diameter tree trunk was found at the upstream nose and along the south side of the South Pier.

FURTHER ACTION NEEDED:  YES  NO

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. 66512  
 INSPECTORS Collins Engineers, Inc.  
 ON-SITE TEAM LEADER Daniel G. Stromberg, P.E., S.E.  
 WATERWAY CROSSED Cannon River

INSPECTION DATE October 23, 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	5.2'	N	7	N	9	N	7	8	8	8	N	8	7	N	N	N	N	N
	Pier 2	5.2'	N	7	N	9	N	7	8	8	8	6	6	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. A 3 foot diameter tree trunk was found at the upstream nose and along the south side of the South Pier.

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.