

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 63516
CSAH NO. 13
OVER THE
RED LAKE RIVER
DISTRICT 2 - RED LAKE COUNTY



PREPARED FOR THE
MINNESOTA DEPARTMENT OF TRANSPORTATION
BY
COLLINS ENGINEERS, INC.
JOB NO. 3512 (CEI 172)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected at Bridge 63516, Piers 1 and 2, were in very good to good condition with no defects observed. A light accumulation of timber debris was observed at the upstream end of Pier 1. The channel bottom appeared to be in stable condition with no evidence scour around the substructure units.

INSPECTION FINDINGS:

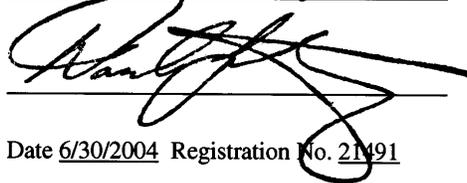
- (A) A light accumulation of 6-inch-diameter and smaller timber debris was observed at the upstream end of Pier 1 extending from the channel bottom to 3 feet above the channel bottom.

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.

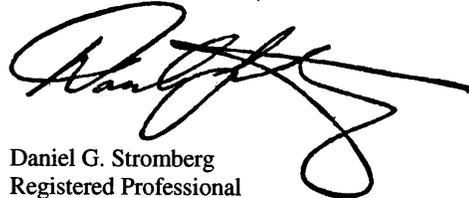
Daniel G. Stromberg



Date 6/30/2004 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: 63516

Feature Crossed: The Red Lake River

Feature Carried: CSAH No. 13

Location: District 2 - Red Lake County

Bridge Description: The bridge superstructure consists of three spans of continuous multiple prestressed concrete beams supporting a reinforced concrete deck. The superstructure is supported by two concrete abutments and two concrete piers. The piers are numbered 1 and 2 starting from the north end of the bridge.

2. INSPECTION DATA

Professional Engineer Diver: Daniel G. Stromberg
State of Minnesota, P.E. No. 21491

Dive Team: Michelle D. Koerbel, Matthew J. Lengyel

Date: August 27, 2002

Weather Conditions: Sunny, $\pm 80^{\circ}$ F

Underwater Visibility: ± 2.0 feet

Waterway Velocity: ± 1.5 fps

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2.

General Shape: Each pier consists of an oblong rectangular shaft with rounded noses, which rests upon a rectangular footing founded on steel H-piles.

Maximum Water Depth at Substructure Inspected: Approximately 12 feet.

4. WATERLINE DATUM

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

Water Surface: The waterline was approximately 12.3 feet below reference.
Waterline Elevation = 951.8.

5. NBIS CODING INFORMATION (Minnesota specific codes are used for 92B and 113)

Item 60: Substructure: Code 8

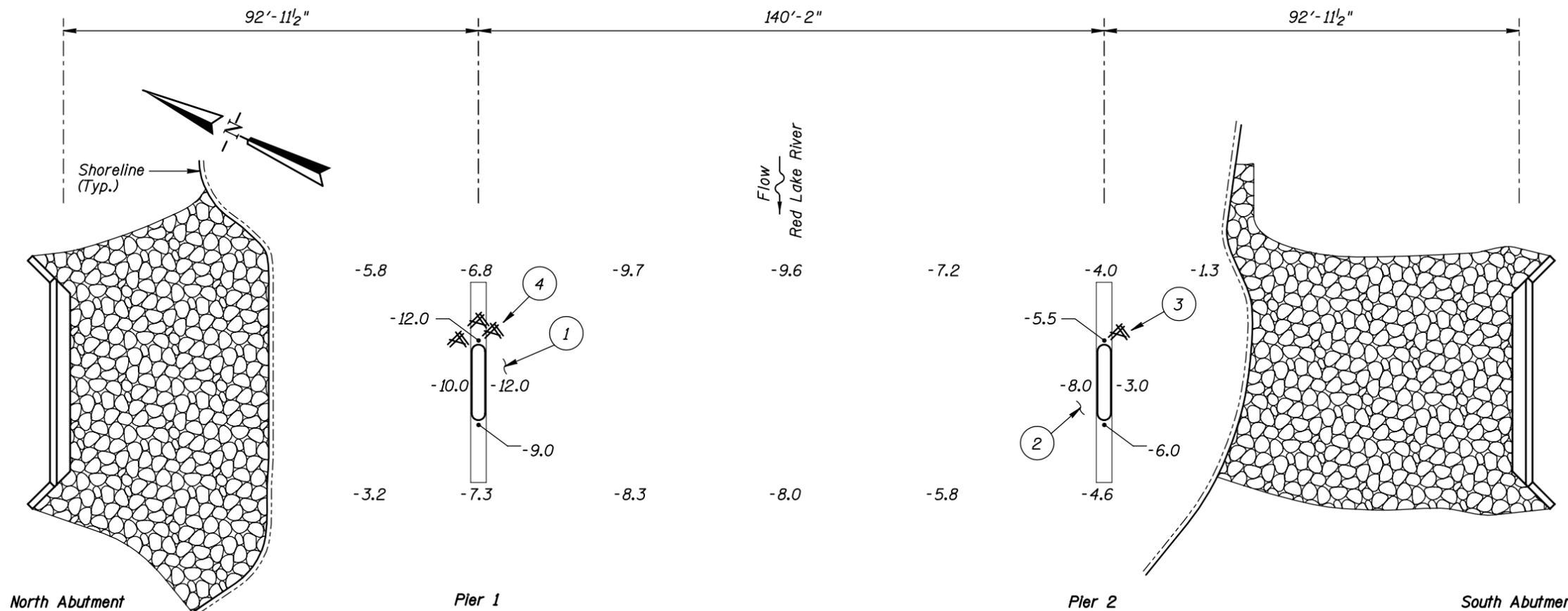
Item 61: Channel and Channel Protection: Code 7

Item 92B: Underwater Inspection: Code B/08/02

Item 113: Scour Critical Bridges: Code F/02

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

_____ Yes X No

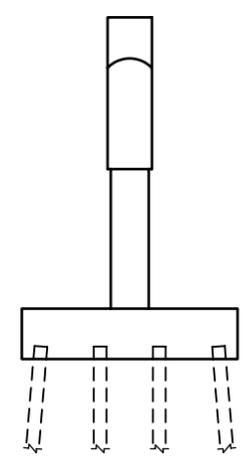


- GENERAL NOTES:**
1. Piers 1 and 2 were inspected underwater.
 2. At the time of inspection on August 27, 2002 the waterline was located approximately 12.3 feet below the top of the cap at the upstream end of Pier 1. This corresponds to a waterline elevation of 951.8 based on design drawings.
 3. Soundings 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.

SOUNDING PLAN

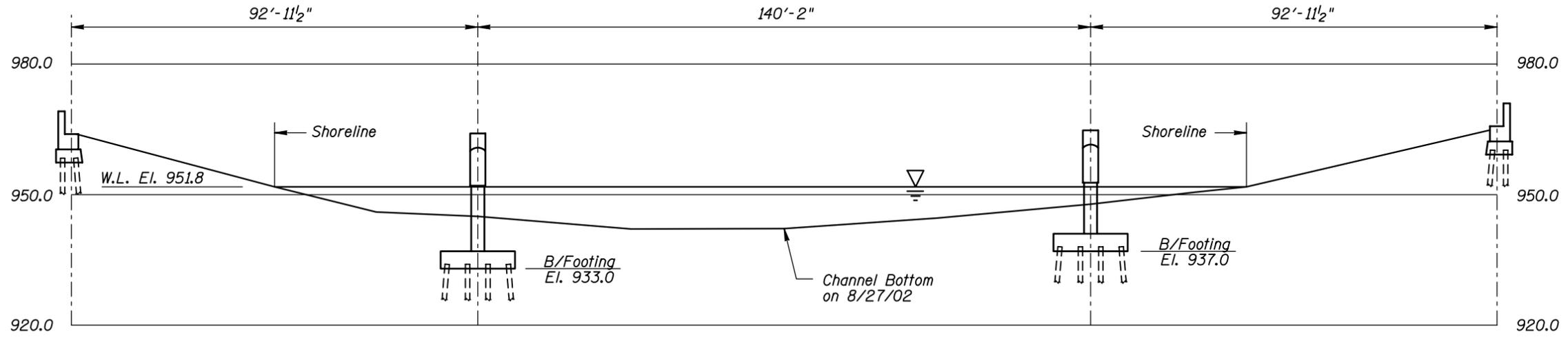
- INSPECTION NOTES:**
- 1 The channel bottom consisted of riprap and interspersed sandy gravel with no probe rod penetration.
 - 2 The channel bottom consisted of soft silt and scattered riprap with 1 foot of probe rod penetration.
 - 3 A 4-inch-diameter piece of timber was embedded in the channel bottom at the upstream nose of Pier 2.
 - 4 A light accumulation of 6-inch-diameter and smaller timber debris was observed at the upstream nose of Pier 1 extending from the channel bottom to 3 feet above the channel bottom.

- Legend**
- 4.0 Sounding Depth from Waterline
 - Timber Debris
 - 1 to 3 Foot Diameter Riprap

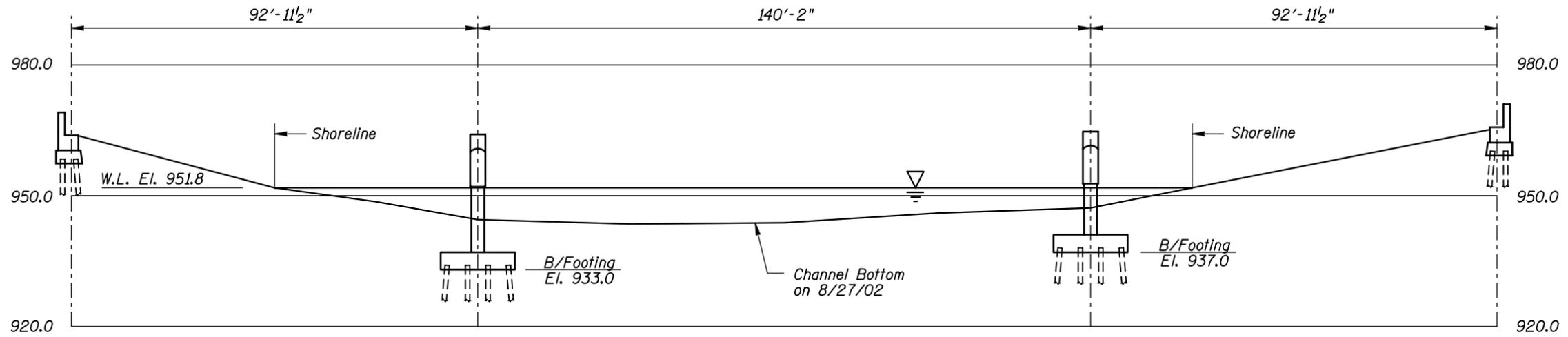


TYPICAL END VIEW OF PIERS

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 63516 OVER THE RED LAKE RIVER DISTRICT 2, RED LAKE COUNTY		
INSPECTION AND SOUNDING PLAN		
Drawn By: PRH	COLLINS ENGINEERS, INC.	Date: SEPT. 2002
Checked By: MDK	300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Scale: NTS
Code: 351263516		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. 63516 OVER THE RED LAKE RIVER DISTRICT 2, RED LAKE COUNTY		
UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: PRH	COLLINS ENGINEERS, INC. 300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Date: SEPT. 2002
Checked By: MDK		Scale: 1"=30'
Code: 351263516		Figure No.: 2



Photograph 1. View of Structure, Looking East.



Photograph 2. View of Pier 1, Looking Northeast.



Photograph 3. View of Pier 2, Looking Northeast.

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

INSPECTORS: Collins Engineers, Inc.

DATE: August 27, 2002

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

BRIDGE NO: 63516

WEATHER: Sunny, " 80° F

WATERWAY CROSSED: The Red Lake River

DIVING OPERATION: X SCUBA SURFACE SUPPLIED AIR
OTHER

PERSONNEL: Michelle D. Koerbel, Matthew J. Lengyel

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

TIME IN WATER: 4:20 P.M.

TIME OUT OF WATER: 5:00 P.M.

WATERWAY DATA: VELOCITY " 1.5 fps

VISIBILITY " 2.0 feet

DEPTH 12 feet maximum at Pier 1

ELEMENTS INSPECTED: Piers 1 and 2

REMARKS: Overall, the concrete of the bridge piers was in very good condition with no defects observed. A light accumulation of 6-inch-diameter-and-smaller timber debris was observed at the upstream end of Pier 1. The channel bottom appeared stable with no scour detected.

FURTHER ACTION NEEDED: _____ YES X 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. 63516
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Daniel G. Stromberg, P.E., No 21491
WATERWAY CROSSED The Red Lake River

INSPECTION DATE August 27, 2002
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 (BRACING)	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	12.0'	N	8	N	9	N	8	8	N	8	7	7	8	N	N	N	N	N
	Pier 2	8.0'	N	8	N	9	N	8	8	N	8	7	7	8	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, the concrete of the bridge piers was in very good condition with no defects observed. A light accumulation of 6-inch-diameter-and-smaller timber debris was observed at the upstream end of Pier 1. The channel bottom appeared stable with no scour detected.

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.