UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 69530

CSAH NO. 139

OVER THE

LITTLE FORK RIVER

DISTRICT 1 - ST. LOUIS COUNTY

PREPARED FOR THE

MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO. 3512 (CEI 11)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected at Bridge No. 69530, Piers 1 and 2, were found to be in good condition with no defects of structural significance observed. No footing exposure was detected, however, the footings along the south side of Pier 2 and along the north side of Pier 1 were located below 1 to 1.5 feet of soft silt. The channel bottom around the substructure units appears well established and stable with no evidence of significant scour and no appreciable changes since the previous inspection.

INSPECTION FINDINGS:

(A) No defects of structural significance were detected.

(B) The footing along the south side of Pier 2 was located below 1 foot of soft silt. The footing along the north side of Pier 1 was located below 1.5 feet of soft silt.

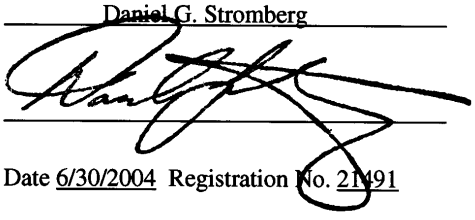
RECOMMENDATIONS:

(A) Monitor the footings for exposure during future underwater inspections.

(B) 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.

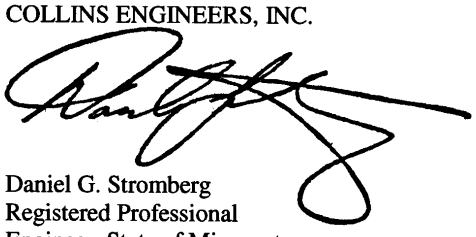
Daniel G. Stromberg



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: 69530

Feature Crossed: The Little Fork River

Feature Carried: CSAH No. 139

Location: District 1 - St. Louis County

Bridge Description: The bridge consists of a three span precast concrete I-beam superstructure supported by two concrete abutments and two concrete piers. The abutments and piers are founded on concrete piles. The piers are numbered 1 and 2 starting from the south.

2. INSPECTION DATA

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

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

Date: August 28, 2002

Weather Conditions: Cloudy, "65EF

Underwater Visibility: "1 foot

Waterway Velocity: Negligible/None

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2.

General Shape: The pier shafts are rectangular with rounded noses and they sit on rectangular footings founded on piles.

Maximum Water Depth at Substructure Inspected: Approximately 9.0 Feet.

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap on the east end of Pier 1.

Water Surface: The waterline was approximately 21.4 feet below reference.
Waterline Elevation = 1242.5.

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

Item 60: Substructure: Code 8

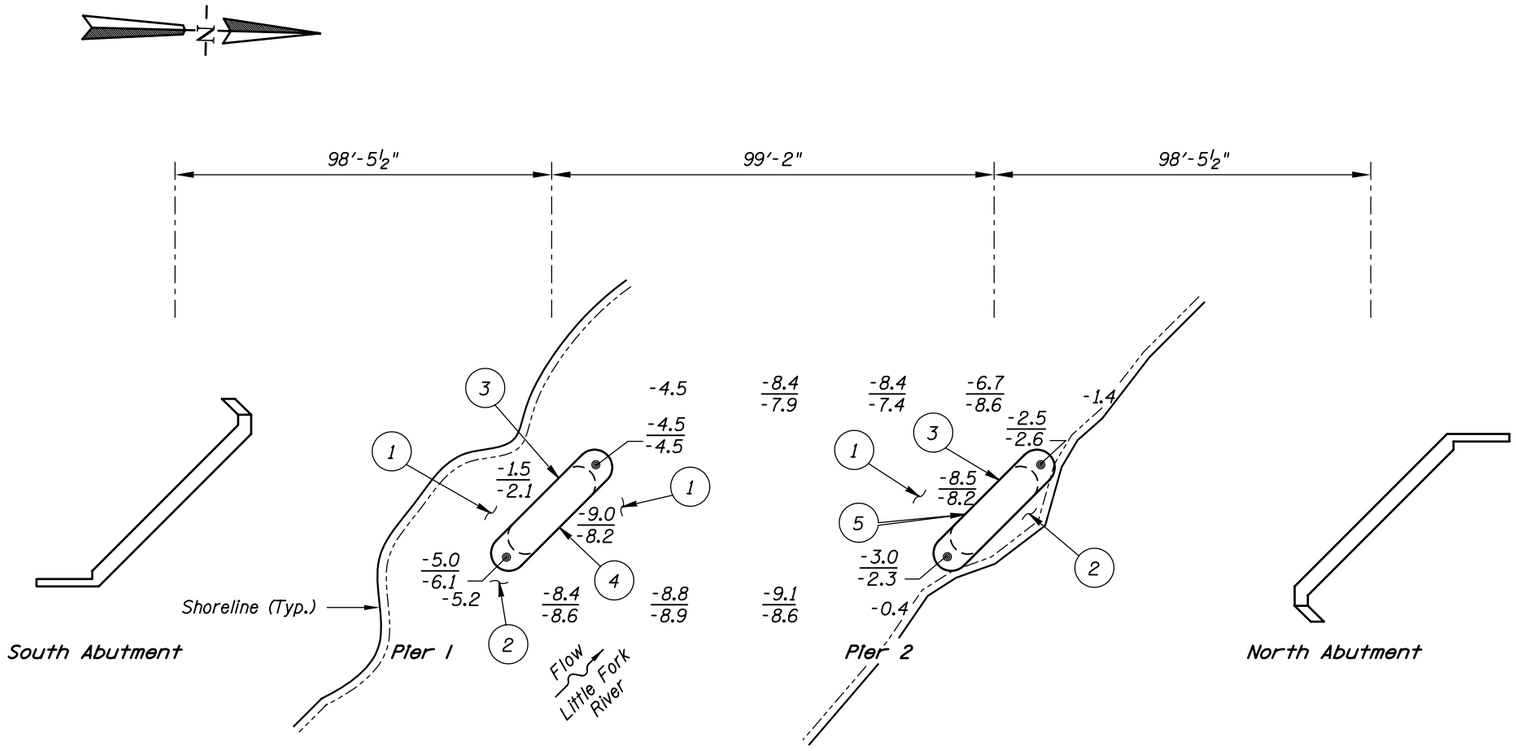
Item 61: Channel and Channel Protection: Code 7

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

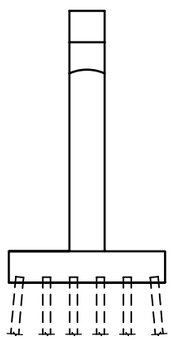
Item 113: Scour Critical Bridges: Code I/92

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

_____ Yes __X__ No



SOUNDING PLAN



TYPICAL END VIEW OF PIERS

GENERAL NOTES:

1. Piers 1 and 2 were inspected at this bridge.
2. At the time of inspection, on August 28, 2002, the waterline was located approximately 21.4 feet below the top of the cap at the upstream end of Pier 1. This corresponds to a waterline elevation of 1242.5 based on the previous report dated August 22, 1997.
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 soft silt and scattered riprap with probe rod penetrations up to 1 foot at Pier 2 and up to 1.5 feet at Pier 1.

(2) The channel bottom material consisted of 6-inch to 1-foot-diameter riprap at the upstream nose of Pier 1 and along the north face of Pier 2.

(3) The concrete at both piers was smooth and in good condition below water.

(4) The top of the footing along the north face of Pier 1 was located with a probe rod below 1.5 feet of soft silt.

(5) The top of the footing along the south face of Pier 2 was located with a probe rod below 1 foot of soft silt.

Legend

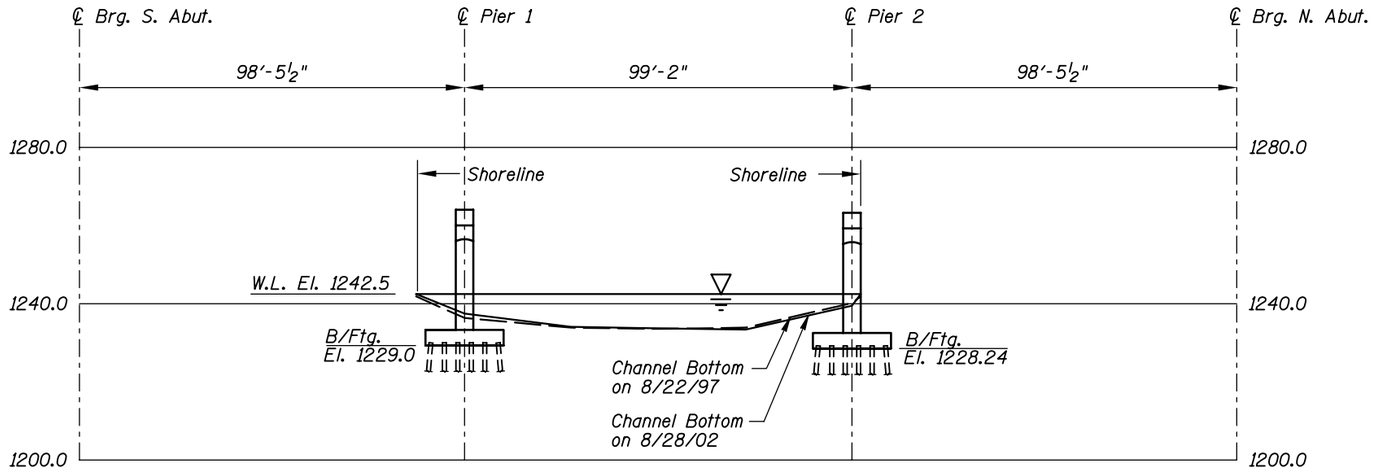
-8.8	Sounding Depth from Waterline (8/28/02)
-8.9	Sounding Depth from Waterline (8/22/97)

MINNESOTA
DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

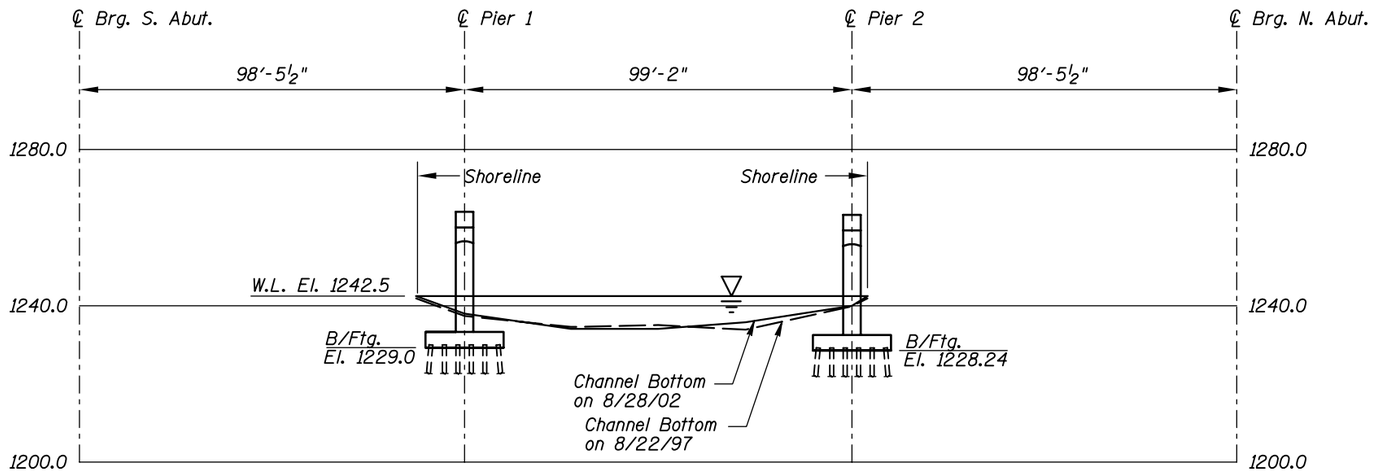
STRUCTURE NO. 69530
OVER THE LITTLE FORK RIVER
DISTRICT 1, ST. LOUIS COUNTY

INSPECTION AND SOUNDING PLAN

Drawn By: PRH	COLLINS ENGINEERS, INC.	Date: AUG. 2002
Checked By: MDK	300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Scale: NTS
Code: 35120011		Figure No.: 1



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:

Refer to Figure 1 for General Notes.

MINNESOTA
DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

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OVER THE LITTLE FORK RIVER
DISTRICT 1, ST. LOUIS COUNTY

UPSTREAM AND DOWNSTREAM FASCIA PROFILES

Drawn By: PRH	COLLINS ENGINEERS, INC.	Date: AUG. 2002
Checked By: MDK	300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Scale: 1"=40'
Code: 35120011		Figure No.: 2

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

Photograph 2. View of Pier 1, Looking Northeast.

Photograph 3. View of Pier 2, Looking Northwest.

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

INSPECTORS: Collins Engineers, Inc. DATE: August 28, 2002
ON-SITE TEAM LEADER: Daniel G. Stromberg, P.E.
BRIDGE NO: 69530 WEATHER: Cloudy, "65EF
WATERWAY CROSSED: The Little Fork River
DIVING OPERATION: X SCUBA SURFACE SUPPLIED AIR
OTHER
PERSONNEL: Michelle D. Koerbel, Matt J. Lengyel
EQUIPMENT: Scuba, U/W Light, Scraper, Sounding Pole, Lead Line, Probe Rod, and Camera
TIME IN WATER: 4:10 p.m.
TIME OUT OF WATER: 4:30 p.m.
WATERWAY DATA: VELOCITY Negligible/None
VISIBILITY "1 Foot
DEPTH 9.0 Feet maximum at Pier 1
ELEMENTS INSPECTED: Piers 1 and 2
REMARKS: The below water concrete at both piers was in good, sound and smooth condition with no defects of structural significance observed. No footing exposure was detected, however, the top of the footings along the south side of Pier 2 and along the north side of Pier 1 were located with a probe rod below 1 to 1.5 feet of soft silt.

FURTHER ACTION NEEDED: _____ YES _____X__ NO

Monitor the footings for exposure during future underwater inspections.

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. 69530
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Daniel G. Stromberg, P.E. 21491
WATERWAY CROSSED The Little Fork River

INSPECTION DATE August 28, 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

			SUBSTRUCTURE						CHANNEL					GENERAL					
UNIT REFERENCE NO.		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
	UNIT DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Pier 1	9.0’	N	8	N	N	N	8	7	N	N	N	7	8	N	N	N	N	N
	Pier 2	8.5’	N	8	N	N	N	8	7	N	N	N	7	8	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: The below water concrete at both piers was in good, sound and smooth condition with no defects of structural significance observed. No footing exposure was detected, however, the top of the footings along the south side of Pier 2 and along the north side of Pier 1 were located with a probe rod below 1 to 1.5 feet of soft silt.

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.