

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 6556

118 (KENRICK AVE.)

OVER

LAKE MARION

CITY OF LAKEVILLE



MAY 22, 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 inspected at Structure No. 6556, the North and South Abutments, were found to be in satisfactory condition with no defects of structural significance.

INSPECTION FINDINGS:

- (A) A spall measuring 3 feet wide by 1 foot high with a typical penetration of 1 inch and a maximum penetration of 2 inches was observed at the east wingwall of the North Abutment extending from 3 feet above the waterline to 2 feet below the top of the wingwall.
- (B) An area of poorly consolidated concrete was observed at the west end of the North Abutment at 5 feet below the waterline. The area measured 2 feet wide by 1 foot high with up to 1.5 inches of penetration.
- (C) The channel bottom material consisted of silt, gravel, and stones up to 12 inches in diameter with up to 4 inches of probe rod penetration.

RECOMMENDATIONS:

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

Inspection Team Leader:



Ryan P. Breen, P.E.

Respectfully submitted,

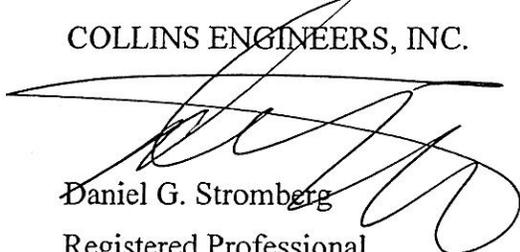
PROFESSIONAL ENGINEER

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.



Daniel G. Stromberg

Registered Professional

Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 6556

Feature Crossed: Lake Marion

Feature Carried: 118 (Kenrick Ave.)

Location: Dakota County, City of Lakeville

Bridge Description: The superstructure consists of a reinforced concrete deck slab. The bridge is supported by two reinforced concrete abutments. The abutments are referred to as the North and South Abutments.

2. INSPECTION DATA

Professional Engineer Diver: Ryan P. Breen, P.E.

Dive Team: Marc B. Parker, Michael J. Banasiak

Date: May 22, 2012

Weather Conditions: Sunny, 70° F

Underwater Visibility: 3 feet

Waterway Velocity: None / Negligible

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: The North and South Abutments

General Shape: The abutments each consist of a reinforced concrete abutment wall with a reinforced concrete wingwall along both sides.

Maximum Water Depth at Substructure Inspected: Approximately 7.9 feet.

4. WATERLINE DATUM

Water Level Reference: Top of South Abutment at the east wingwall to abutment wall interface.

Waterline Elevation: The waterline was approximately 8.2 feet below the reference.
Assumed Waterline Elevation 91.8.

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

Item 60: Substructure: Code 6

Item 61: Channel and Channel Protection: Code 8

Item 92B: Underwater Inspection: Code B/05/12

Item 113: Scour Critical Bridges: Code F/12

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

Yes No

6. STRUCTURAL ELEMENT CONDITION RATING:

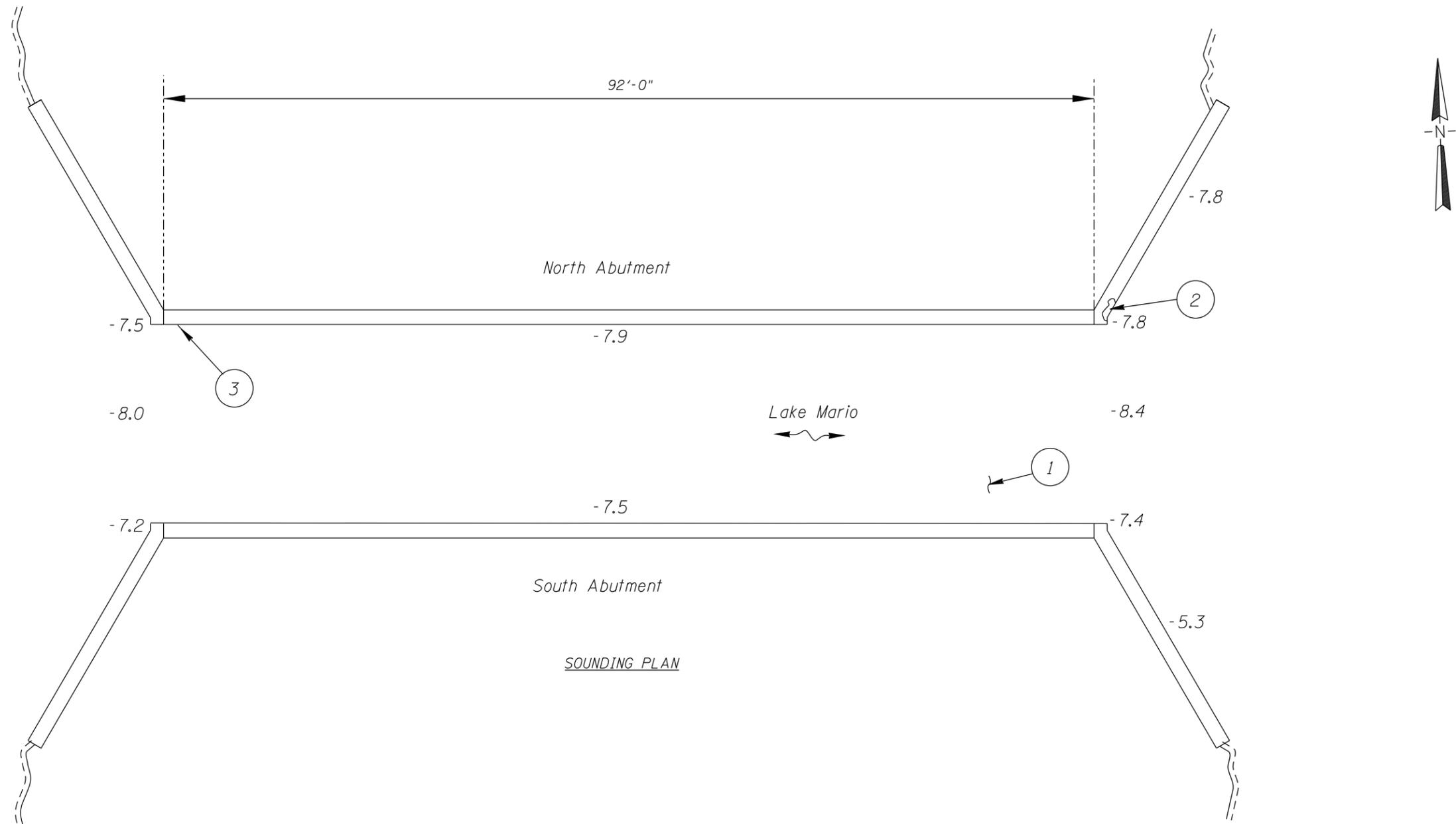
Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
215	Reinforced Conc. Abutment Wall	184	LF	180	4			
387	Reinforced Conc. Wingwall	4	EA	4				



Photograph 1. View of the North Abutment and Northeast Wingwall, Looking Northwest.



Photograph 2. View of South Abutment and Southwest Wingwall, Looking Southeast.



INSPECTION NOTES:

- 1 The channel bottom material consisted of silt, gravel, and stones up to 12 inches in diameter with up to 4 inches of probe rod penetration.
- 2 A spall, 3 feet wide by 1 foot high, with a typical penetration of 1 inch and a maximum penetration of 2 inches was observed at the northeast wingwall extending from 3 feet above the waterline to 2 feet below the top of the headwall. No reinforcing steel was exposed.
- 3 Area of poorly consolidated concrete at the west end of the North Abutment at 5 feet below the waterline. The area measured 2 feet wide by 1 foot high with a maximum penetration of 1.5 inches.

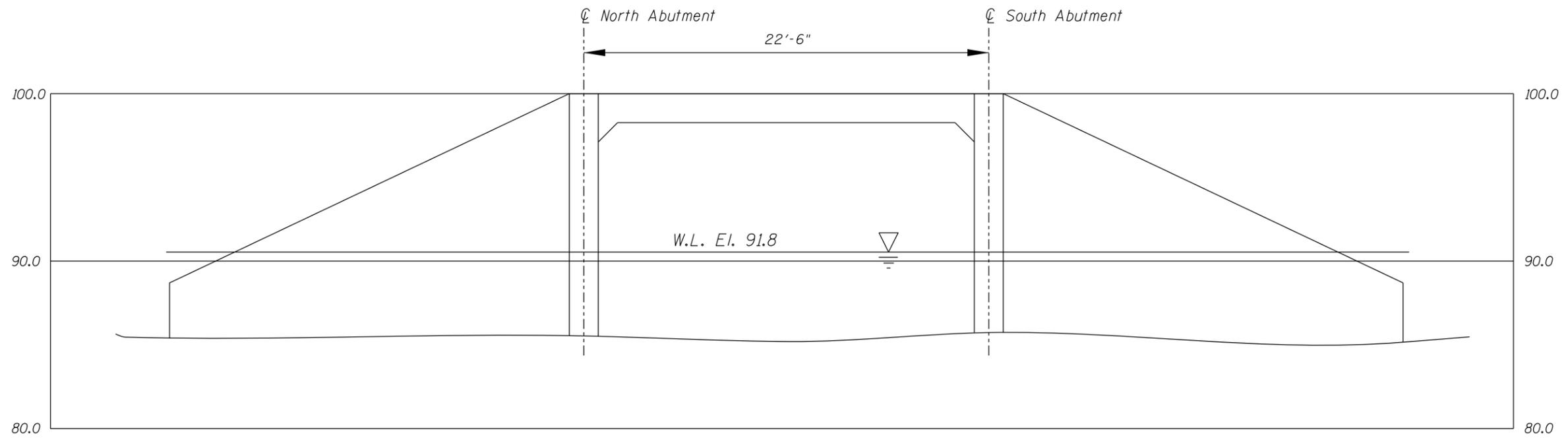
GENERAL NOTES:

- 1. The North and South Abutments and four wingwalls were inspected underwater.
- 2. At the time of inspection, on May 22, 2012, the waterline was located approximately 8.2 feet below the top of the abutment. Since insufficient elevation information was available, a waterline reference of 100.0 was assumed. This corresponds to a waterline elevation of 91.8.
- 3. Soundings indicate the water depth at the time of inspection and are measured in feet.
- 4. Soundings were taken at approximately midpoints on the abutments.

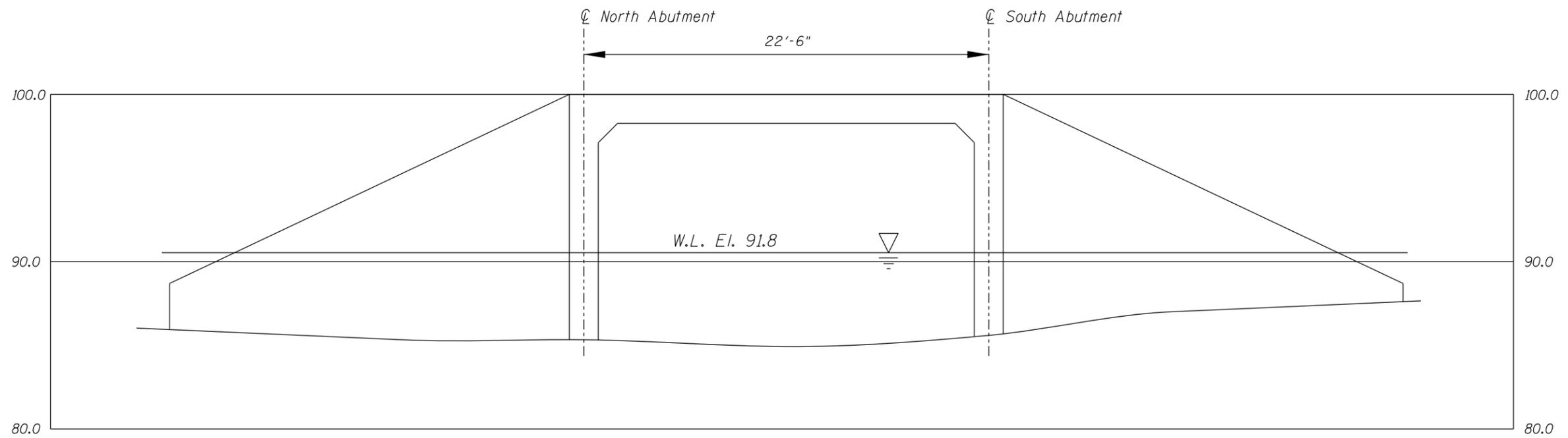
Legend

- 0.4 Sounding Depth (10/22/12)
- 1 Inspection Note

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 6556 118 KENRICK AVE. OVER LAKE MARIO CITY OF LAKEVILLE		
INSPECTION AND SOUNDING PLAN		
Drawn By: MBP	COLLINS ENGINEERS	Date: June, 2012
Checked By: RPB	<small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Scale: NTS
Code: 74236556		Figure No.: 1



West Fascia Profile



East Fascia Profile

Note: _____
 Refer to Figure 1 for General Notes.

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 6556 118 KENRICK AVE. OVER LAKE MARIO CITY OF LAKEVILLE		
CENTERLINE ELEVATION PROFILE		
Drawn By: MBP	COLLINS ENGINEERS	June 2012
Checked By: RPB		Scale: NTS
Code: 74236556		Figure No.: 2

123 North Wacker Drive
 Suite 900
 Chicago, IL 60606
 (312) 704-9300
 www.collinsengr.com

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

INSPECTORS: Collins Engineers, Inc. DATE: May 22, 2012

ON-SITE TEAM LEADER: Ryan P. Breen, P.E.

BRIDGE NO: 6556 WEATHER: Sunny, 70° F

WATERWAY CROSSED: Lake Mario

DIVING OPERATION: SCUBA SURFACE SUPPLIED AIR
 OTHER

PERSONNEL: Marc B. Parker, Michael J. Banasiak

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

TIME IN WATER: 9:00 a.m.

TIME OUT OF WATER: 9:25 a.m.

WATERWAY DATA: VELOCITY None / Negligible

VISIBILITY 3 feet

DEPTH 7.9 feet maximum at the North Abutment

ELEMENTS INSPECTED: The North and South Abutment

REMARKS: Overall, the North and South Abutments were in satisfactory condition. There was an area of poorly consolidated concrete at the west end of the North Abutment. There was a spall measuring 3 feet wide by 1 foot high on the east wingwall of the North Abutment. The channel bottom material was stable and showed no signs of scour.

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. 6556
 INSPECTORS Collins Engineers, Inc.
 ON-SITE TEAM LEADER Ryan P. Breen, P.E.
 WATERWAY CROSSED Lake Mario

INSPECTION DATE May 22, 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 (WINGWALLS)	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
1	North Abutment	7.9'	N	6	N	8	6	6	N	N	N	N	8	6	N	N	7	N	N
2	South Abutment	7.5'	N	7	N	8	7	7	N	N	N	N	8	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, the North and South Abutments were in satisfactory condition. There was an area of poorly consolidated concrete at the west end of the North Abutment. There was a spall measuring 3 feet wide by 1 foot high on the east wingwall of the North Abutment. The channel bottom material was stable and showed no signs of 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.