

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 24542

LAKEVIEW BLVD.

OVER THE

FOUNTAIN LAKE

DISTRICT 6 - FREEBORN COUNTY, CITY OF ALBERT LEA



SEPTEMBER 30, 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 at Bridge No. 24542, Piers 1 and 2, were found to be in good condition. The steel piles exhibited only light surface corrosion with no structural deficiencies. The channel bottom material consisted of silty sand with scattered 6 inch to 24 inch diameter riprap.

INSPECTION FINDINGS:

- (A) The steel pile casings typically exhibited light surface corrosion from 1 foot above the waterline to the channel bottom.
- (B) The channel bottom material typically consisted of silty sand with 2 inches of probe rod penetration and scattered 6 inch to 24 inch diameter riprap.

RECOMMENDATIONS:

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

Inspection Team Leader



Roy A. Forsyth, PE
Date 6/30/2014 License# 49270

Respectfully submitted,

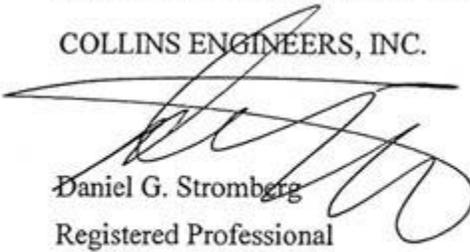
PROFESSIONAL ENGINEER

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.



Daniel G. Stromberg

Registered Professional

Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 24542

Feature Crossed: Fountain Lake

Feature Carried: Lakeview Blvd.

Location: District 6 - Freeborn County, City of Albert Lea

Bridge Description: The bridge consists of three spans of precast concrete double-tees. The superstructure is supported by two reinforced concrete abutments and two steel encased pile bents. The bents are labeled Piers 1 and 2 starting from the westerly direction.

2. INSPECTION DATA

Professional Engineer/Team Leader: Roy A. Forsyth, P.E.

Dive Team: Charles R. Euwema, Jordan T. Furlan, P.E.

Date: September 30, 2012

Weather Conditions: Sunny, 70°F

Underwater Visibility: 0.5 feet

Waterway Velocity: Negligible

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2.

General Shape: The abutments each consist of a reinforced concrete breastwall and two perpendicular reinforced concrete wingwalls. The piers each consist of a single line of 8 steel encased Cast-In-Place concrete piles.

Maximum Water Depth at Substructure Inspected: Approximately 3.4 feet.

4. WATERLINE DATUM

Water Level Reference: The bottom of the pier cap on the upstream nose of Pier 1.

Water Surface: The waterline was approximately 4.8 feet below reference.

Waterline Elevation = 1214.12

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
382	Cast-In-Place (CIP) Piling	16	EA	16				
985	Slopes and Slope Protection	1	EA	1				



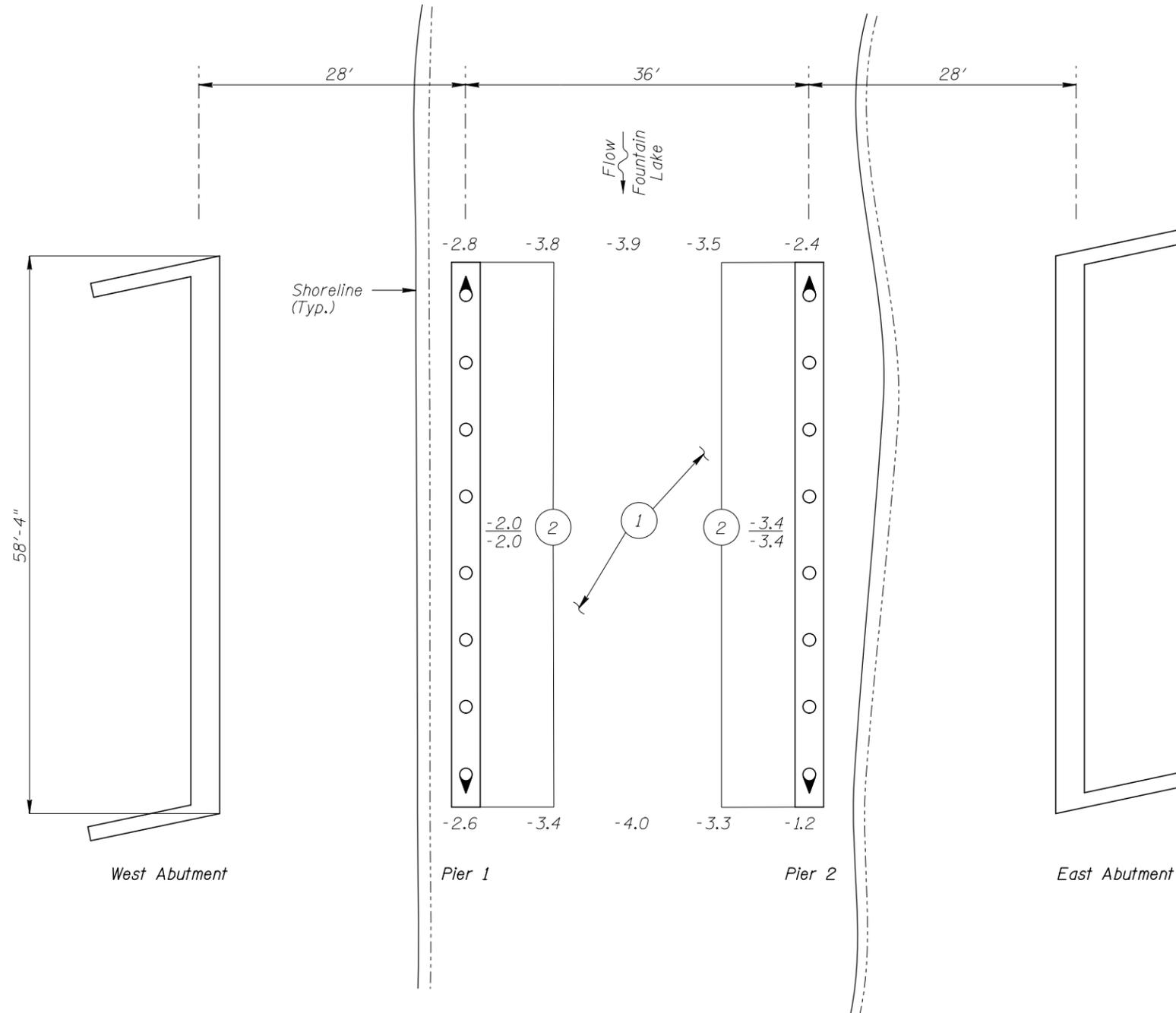
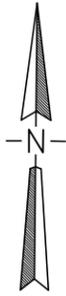
Photograph 1. View of Pier 1, Looking Southeast.



Photograph 2. View of Pier 2, Looking Northwest.



Photograph 3. Overall View of the Structure, Looking Southeast.



SOUNDING PLAN

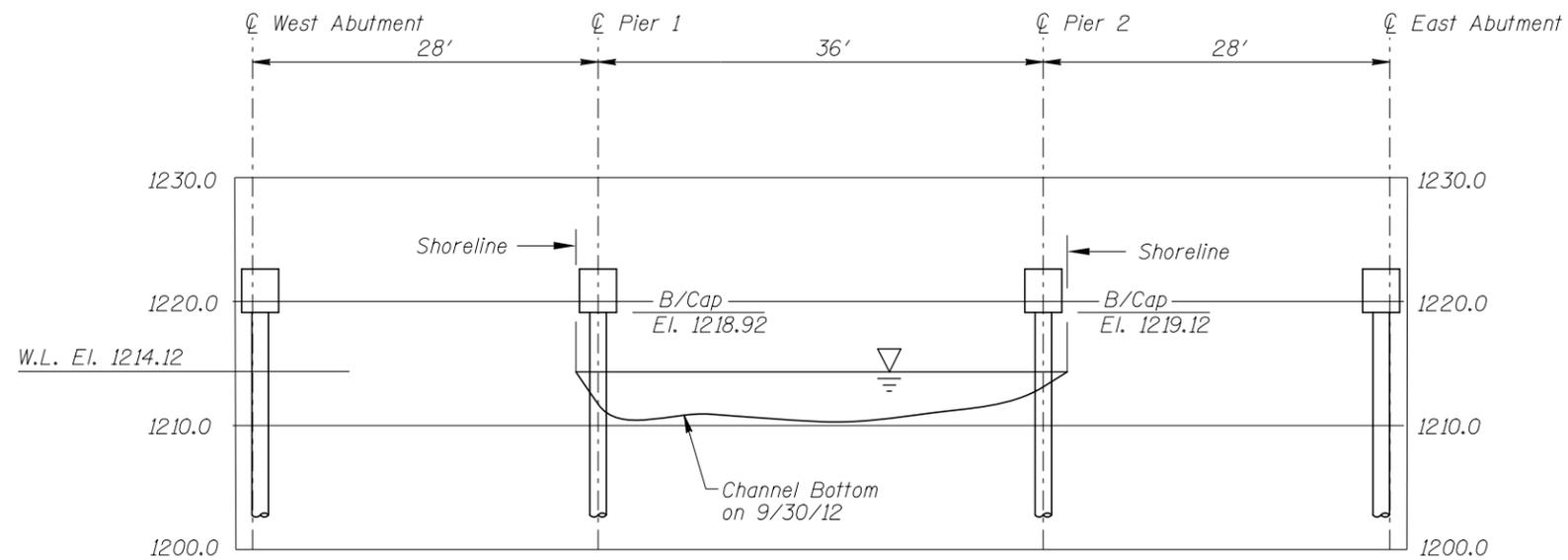
- INSPECTION NOTES:
- 1 The steel pile casings typically exhibited light surface corrosion from 1 foot above the waterline to the channel bottom.
 - 2 Channel bottom material typically consisted of silty sand with 2 inches of probe rod penetration and scattered 6 inch to 24 inch diameter riprap.

- GENERAL NOTES:
1. Piers 1 and 2 were inspected underwater.
 2. At the time of inspection on September 30, 2012, the waterline was located approximately 4.8 feet below the bottom of pier cap at the upstream end of Pier 1. This corresponds with a waterline elevation of 1214.12 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.

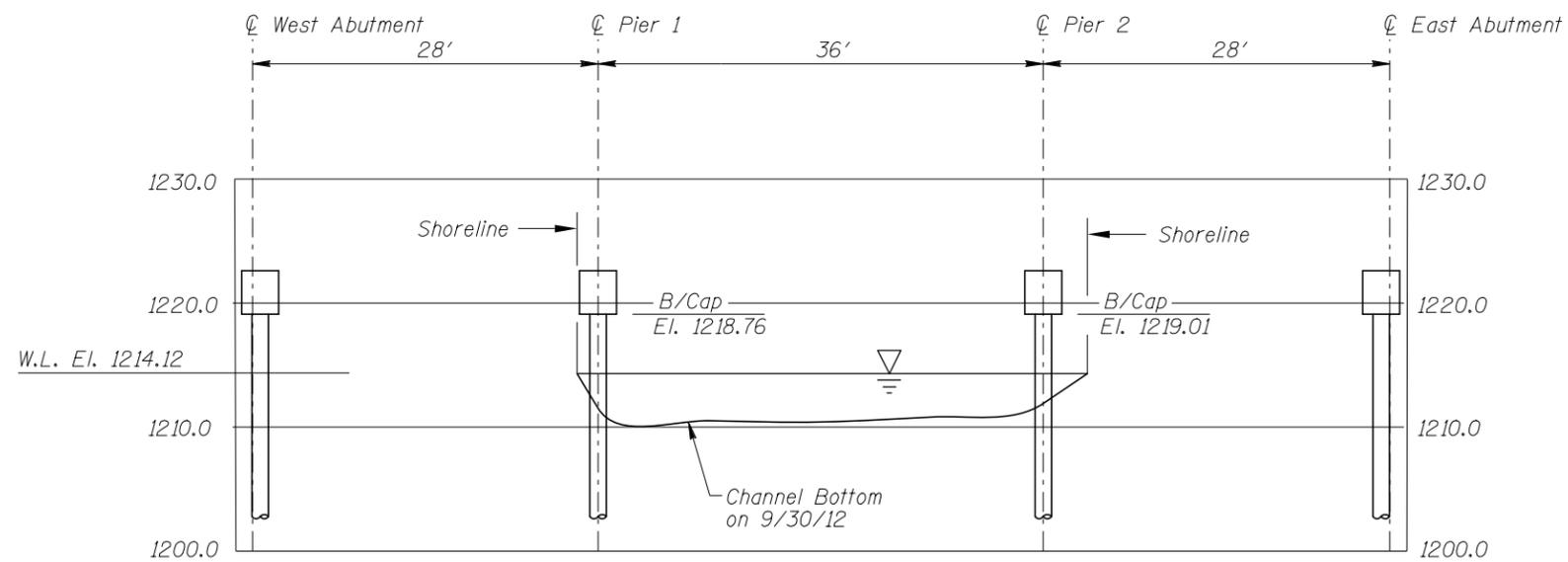
- Legend
- 18.0 Sounding Depth from Waterline (9/30/12)
 - 1 Inspection Note Number
 - Ø16" CIP Piles
 - Ⓧ Ø16" Battered CIP Piles

TYPICAL END VIEW OF PIERS

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 24542 LAKEVIEW BLVD. OVER FOUNTAIN LAKE CITY OF ALBERT LEA		
INSPECTION AND SOUNDING PLAN		
Drawn By: CRE	COLLINS ENGINEERS	Date: SEPT. 2012
Checked By: RAF		Scale: 1"=15'
Code: 742324542		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. 24542 LAKEVIEW BLVD. OVER FOUNTAIN LAKE CITY OF ALBERT LEA UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: CRE	COLLINS ENGINEERS	Date: SEPT. 2012
Checked By: RAF		Scale: 1"=15'
Code: 742324542		Figure No.: 2

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

INSPECTORS: Collins Engineers, Inc. DATE: September 30, 2012

ON-SITE TEAM LEADER: Roy A. Forsyth, P.E.

BRIDGE NO: 24542 WEATHER: Sunny, 70°F

WATERWAY CROSSED: Fountain Lake

DIVING OPERATION: _____ SCUBA _____ SURFACE SUPPLIED AIR

OTHER Wading

PERSONNEL: Charles R. Euwema, Jordan T. Furlan, P.E.

EQUIPMENT: Waders, Camera, Survey Rod, Scraper

TIME IN WATER: 10:45 p.m.

TIME OUT OF WATER: 11:00 p.m.

WATERWAY DATA: VELOCITY 0.0 ft/s

VISIBILITY 0.5 feet

DEPTH 3.4 feet maximum at Pier 2

ELEMENTS INSPECTED: Piers 1 and 2

REMARKS: Overall, Piers 1 and 2 were found to be in good condition. The steel piles exhibited light surface corrosion with no structural deficiencies. The channel bottom material consisted of silty sand with scattered 6 inch to 24 inch diameter riprap.

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. 24542
 INSPECTORS Collins Engineers, Inc.
 ON-SITE TEAM LEADER Roy A. Forsyth, P.E.
 WATERWAY CROSSED Fountain Lake

INSPECTION DATE September 30, 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* (ENCASEMENTS)	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	2.8'	7	N	N	7	N	7	N	N	7	N	7	N	7	N	N	N	N
	Pier 2	3.4'	7	N	N	7	N	7	N	N	7	N	7	N	7	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, Piers 1 and 2 were found to be in good condition. The steel piles exhibited light surface corrosion with no structural deficiencies. The channel bottom material consisted of silty sand with scattered 6 inch to 24 inch diameter riprap.

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.