

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 62555B

WABASHA STREET SOUTH BOUND (MASA 235 SB)

OVER THE

MISSISSIPPI RIVER

CITY OF ST. PAUL



OCTOBER 31, 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 concrete substructure unit inspected at Bridge No. 62555B, Pier 3, was found to be in good condition with no defects of structural significance observed. The concrete of the pier column was smooth and sound. The channel bottom appeared stable at the time of the inspection with no significant scour.

INSPECTION FINDINGS:

- (A) The concrete was in good and sound condition with no structurally significant defects observed.
- (B) The channel bottom material consisted of riprap up to 1 foot in diameter at the upstream nose of the pier.
- (C) The channel bottom material downstream of the pier consisted of sandy infilling allowing up to 1 foot of probe rod penetration.
- (D) The embankments were well armored with 1 foot diameter riprap.

RECOMMENDATIONS:

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

Inspection Team Leader:
WSB and Associates



Barritt Lovelace
Registered Professional Engineer
Bridge Safety Inspection Team Leader

Respectfully submitted,

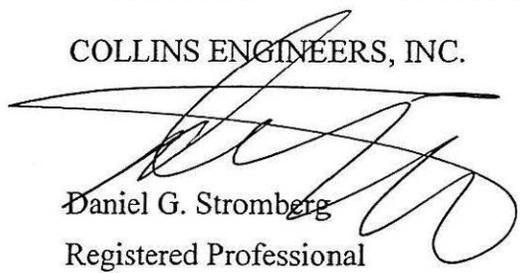
PROFESSIONAL ENGINEER

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: 62555B

Feature Crossed: Mississippi River

Feature Carried: Wabasha Street South Bound

Location: City of St. Paul

Bridge Description: The bridge superstructure consists of a four span bridge constructed of concrete segmental box girders. The superstructure is supported by two concrete abutments and three concrete piers. The piers are numbered 1 to 3 starting from the north end of the bridge.

2. INSPECTION DATA

Professional Engineer/Team Leader: Barritt R. Lovelace, P.E. (WSB)

Dive Team: Lukas Janulis, P.E., Brad Robinson (WSB)

Date: October 31, 2012

Weather Conditions: Sunny, 40°F

Underwater Visibility: 1.0 feet

Waterway Velocity: Negligible/None

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Pier 3.

General Shape: The pier consists of a rectangular concrete column on rectangular footings supported by steel H-piles.

Maximum Water Depth at Substructure Inspected: Approximately 13.8 feet.

4. WATERLINE DATUM

Water Level Reference: The top of the pier stem at the downstream end of Pier 3 at Structure No. 62555A.

Water Surface: The waterline was approximately 15.4 feet below reference.
USGS M.S.L. Waterline Elevation = 684.8

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/10/12

Item 113: Scour Critical Bridges: Code N/02

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

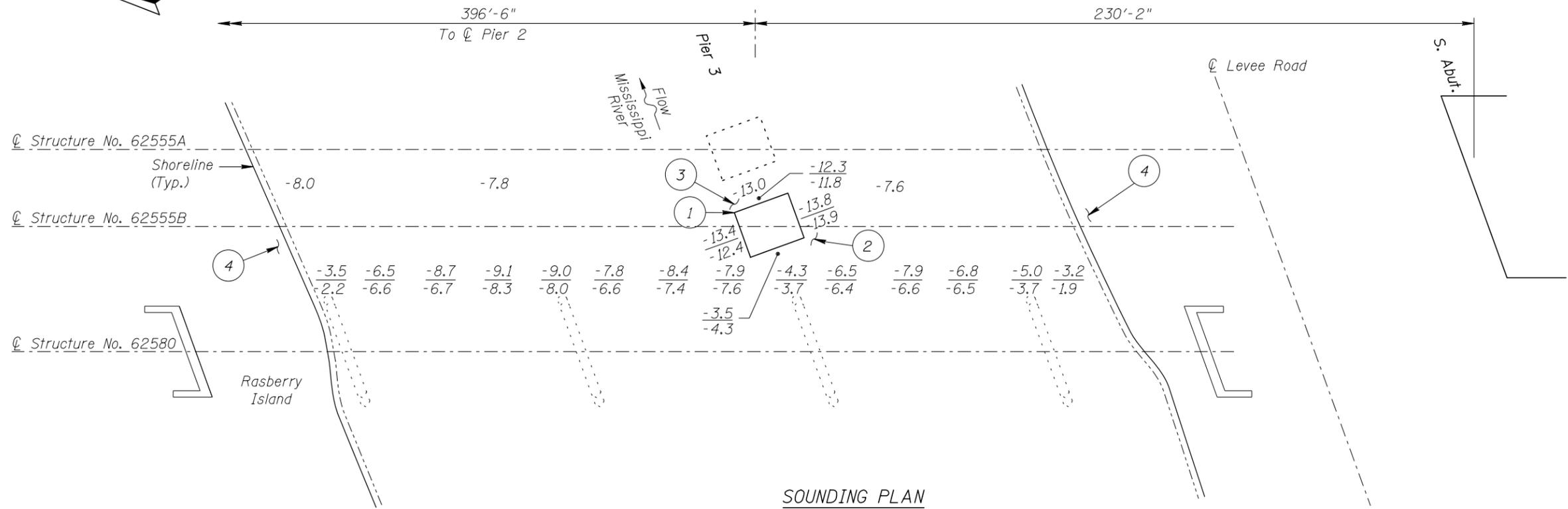
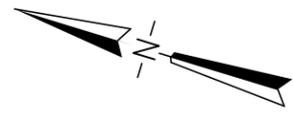
Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
205	Reinforced Concrete Column	1	EA	1				
985	Slopes and Slope Protection	1	EA	1				



Photograph 1. View of Pier 3, Looking Southwest.



Photograph 2. Overall View of the Structure, Looking West.



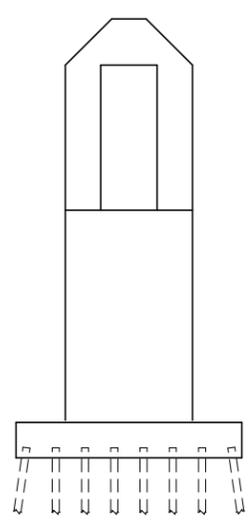
SOUNDING PLAN

INSPECTION NOTES:

- ① The concrete was in good and sound condition with no structurally significant defects observed.
- ② The channel bottom material consisted of riprap up to 1 foot in diameter at the upstream nose of the pier.
- ③ The channel bottom material downstream of the pier consisted of sandy infilling allowing up to 1 foot of probe rod penetration.
- ④ The embankments were well armored with 1 foot diameter riprap.

GENERAL NOTES:

- 1. Pier 3 was inspected underwater.
- 2. At the time of inspection on October 31, 2012, the waterline was located approximately 15.4 feet below the top of the pier stem at the downstream end of Pier 3 of the adjacent structure No. 62555A. This corresponds with a waterline elevation referenced to U.S.G.S. M.S.L. of 684.8.
- 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.



TYPICAL END VIEW OF PIER

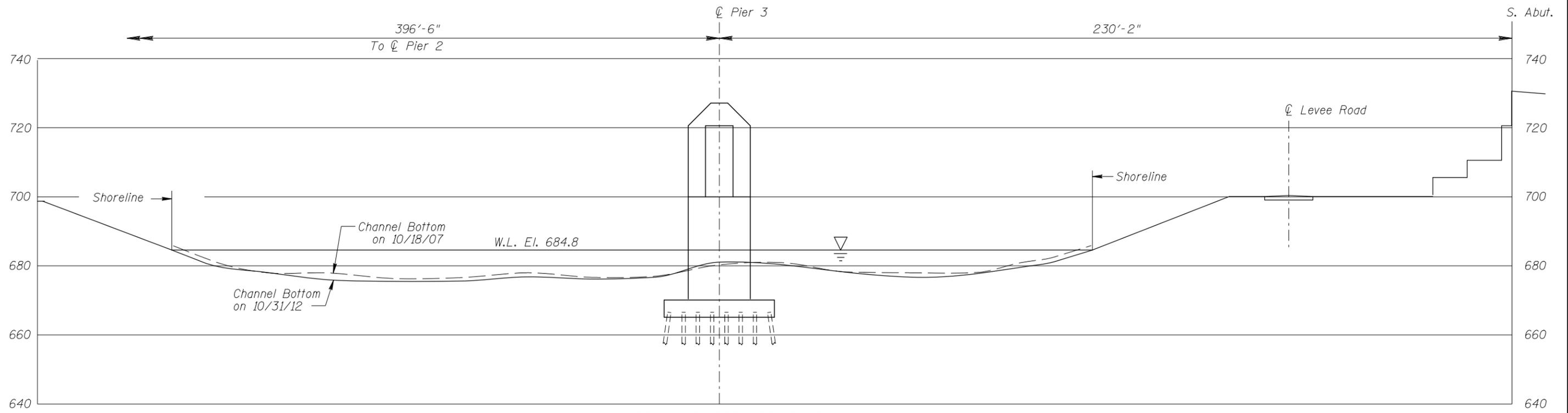
Legend

- 4.1 Sounding Depth (10/31/12)
- 4.0 Sounding Depth (10/18/07)

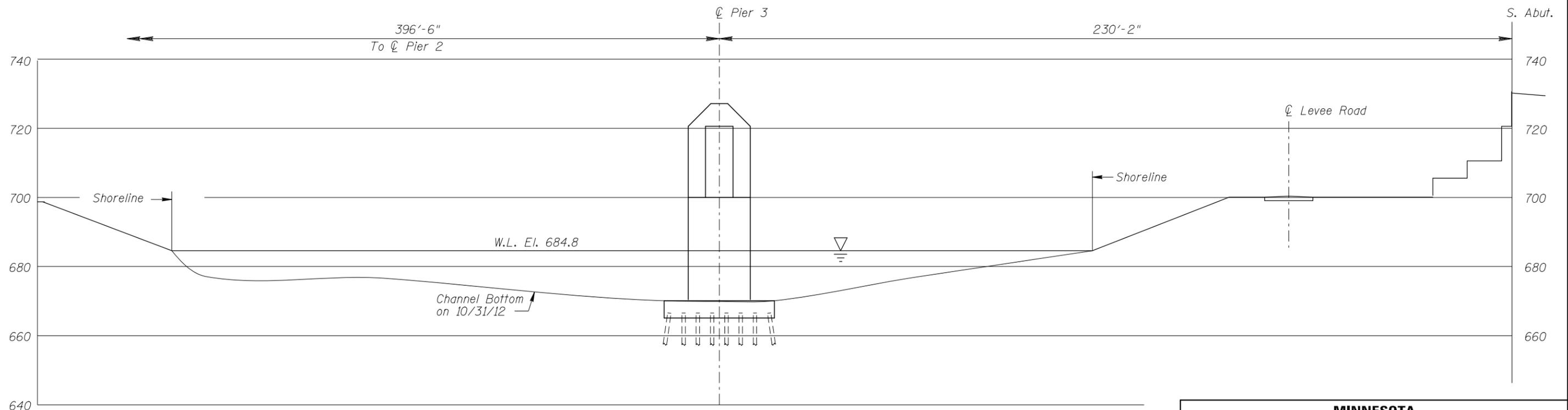
Note:

All soundings based on 2012 waterline location.

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 62555B OVER THE MISSISSIPPI RIVER CITY OF ST. PAUL		
INSPECTION AND SOUNDING PLAN		
Drawn By: CRE	COLLINS ENGINEERS	Date: OCT., 2012
Checked By: LJ	<small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Scale: NTS
Code: 742362555		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. 62555B OVER THE MISSISSIPPI RIVER CITY OF ST. PAUL		
UPSTREAM AND DOWNSTREAM FASCIA PROFILES		
Drawn By: CRE	COLLINS ENGINEERS <small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Date: OCT., 2012
Checked By: LJ		Scale: 1"=30'
Code: 742362555		Figure No.: 2

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

INSPECTORS: Collins Engineers, Inc. DATE: October 31, 2012

ON-SITE TEAM LEADER: Barritt R. Lovelace, P.E. (WSB)

BRIDGE NO: 62555B WEATHER: Sunny, 40°F

WATERWAY CROSSED: Mississippi River

DIVING OPERATION: SCUBA SURFACE SUPPLIED AIR
 OTHER

PERSONNEL: Lukas Janulis, P.E., Brad Robinson (WSB)

EQUIPMENT: Commercial Scuba, Probe Rod, Lead Line, Sounding Pole, U/W Light,
Scraper, Camera, 14' Boat.

TIME IN WATER: 9:40 A.M.

TIME OUT OF WATER: 9:50 A.M.

WATERWAY DATA: VELOCITY Negligible/None

VISIBILITY 1.0 feet

DEPTH 13.8 feet maximum

ELEMENTS INSPECTED: Pier 3

REMARKS: Overall, Pier 3 was found to be in good condition with no defects of structural
significance observed. The concrete of the pier column was smooth and sound. The channel
bottom appeared stable at the time of the inspection with no significant 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. 62555B
 INSPECTORS Collins Engineers, Inc.
 ON-SITE TEAM LEADER Barritt Lovelace, P.E. (WSB)
 WATERWAY CROSSED Mississippi River

INSPECTION DATE October 31, 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	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 3	13.8'	N	7	N	N	N	7	N	8	8	N	7	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: Overall, Pier 3 was found to be in good condition with no defects of structural significance observed. The concrete of the pier column was smooth and sound. The channel bottom appeared stable at the time of the inspection with no significant 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.