

UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 55J11

TWP 197 (70TH AVE NW)

OVER A

STREAM

DISTRICT 6 – OLMSTED COUNTY



OCTOBER 2, 2012

PREPARED FOR THE

MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO. 7423

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

Structure No. 55J11, concrete box culvert, was found to be generally in good condition with no defects of structural significance observed. The concrete of the structure was generally smooth and sound. A 1 foot thick layer of silt typically covered the culvert floor.

INSPECTION FINDINGS:

- (A) The culvert floor was typically covered by a 1 foot thick layer of soft silt.
- (B) The concrete was typically smooth and sound.
- (C) The culvert joints were bell and spigot type with 1/2 to 1 inch typical gaps and no loss of fill material.

RECOMMENDATIONS:

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

Inspection Team Leader

Roy Forsyth

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
Daniel G. Stromberg

Date 6/30/14 License # 21491

COLLINS ENGINEERS, INC.

Daniel G. Stromberg
Daniel G. Stromberg

**Registered Professional
Engineer, State of Minnesota**

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 55J11

Feature Crossed: A stream

Feature Carried: TWP 197 (70th Ave NW)

Location: District 6 – Olmsted County

Bridge Description: The structure consists of a single rectangular concrete box culvert with tapered wingwalls at both openings.

2. INSPECTION DATA

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

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

Date: October 2, 2012

Weather Conditions: Sunny, 47° F

Underwater Visibility: None/Negligible

Waterway Velocity: None/Negligible

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Box Culvert.

General Shape: Rectangular, 5 feet high by 11.5 feet wide, reinforced concrete box culvert.

Maximum Water Depth at Substructure Inspected: Approximately 3.0 feet.

4. WATERLINE DATUM

Water Level Reference: The bottom of headwall at the west opening.

Assumed Elevation = 100.0

Water Surface: The waterline was approximately 2.0 feet below reference.

Assumed Waterline Elevation = 98.0

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

Item 62: Culvert: Code 7

Item 61: Channel and Channel Protection: Code 7

Item 92B: Underwater Inspection: Code A/10/12

Item 113: Scour Critical Bridges: Code E

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

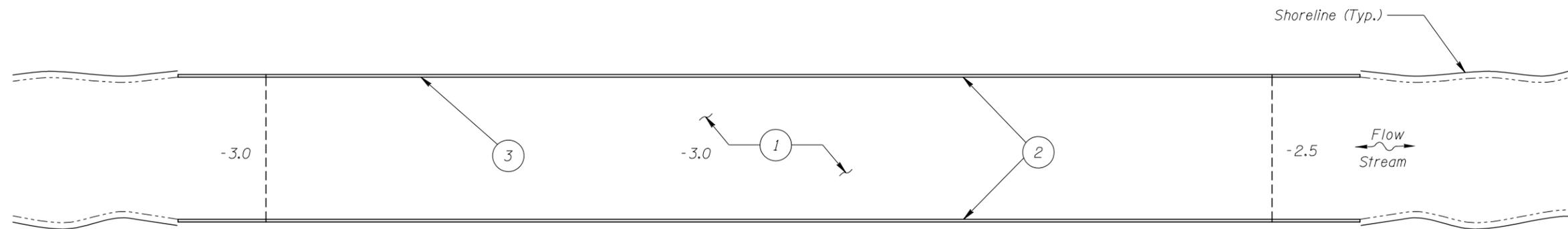
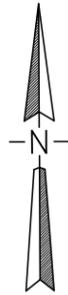
Item #	Element Description	Quantity	Unit	Conditions				
				1	2	3	4	5
241	Concrete Culvert	78	LF	78				
388	Concrete Headwall	2	EA	2				



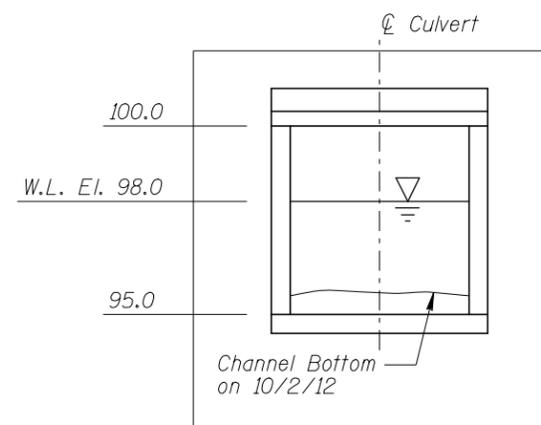
Photograph 1. Overall View of the West Opening, Looking Southeast.



Photograph 2. Overall View of the East Opening, Looking West.



INSPECTION AND SOUNDING PLAN
NTS



TYPICAL CULVERT PROFILE
Scale: 1" = 5'

GENERAL NOTES:

1. The pipe culvert was inspected underwater.
2. At the time of inspection on Oct. 2, 2012 the waterline was located approximately 2.0 feet below the bottom of headwall at the west opening of the culvert. Since no plans were available at the time of the inspection, a waterline reference elevation of 100.0 feet was assumed. This corresponds with a waterline elevation of 98.0 feet.
3. Soundings indicate the water depth at the time of inspection and are measured in feet.
4. Soundings were taken at the upstream and downstream openings and at half point intervals inside the culvert.

INSPECTION NOTES:

- ① The channel bottom material consisted of a 1 foot thick layer of soft silt infill.
- ② The concrete was typically smooth and sound.
- ③ The culvert joints were bell and spigot type with 1/2 to 1 inch typical gaps and no loss of fill material.

Legend

-1.0 Sounding Depth from Waterline (10/2/12)

MINNESOTA DEPARTMENT OF TRANSPORTATION UNDERWATER BRIDGE INSPECTION		
STRUCTURE NO. 55JII OVER A STREAM DISTRICT 6, OLMSTED COUNTY		
INSPECTION AND SOUNDING PLAN OPENING PROFILE		
Drawn By: JTF	COLLINS ENGINEERS	Date: OCT. 2012
Checked By: DGS	<small>123 North Wacker Drive Suite 900 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com</small>	Scale: As Noted
Code: 547396218		Figure No.: 1

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

INSPECTORS: Collins Engineers, Inc. DATE: October 2, 1012

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

BRIDGE NO: 55J11 WEATHER: Sunny, 47° F

WATERWAY CROSSED: A stream

DIVING OPERATION: _____ SCUBA _____ SURFACE SUPPLIED AIR
 OTHER Wading inspection only.

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

EQUIPMENT: Dry Suit, Sounding Pole, Flashlight, Camera.

TIME IN WATER: 9:00 A.M.

TIME OUT OF WATER: 9:15 A.M.

WATERWAY DATA: VELOCITY None/Negligible

VISIBILITY None/Negligible

DEPTH 3.0 ft

ELEMENTS INSPECTED: Culvert (precast concrete) and Wingwalls

REMARKS: Structure No. 55J11, concrete box culvert, was found to be generally in good condition with no defects of structural significance observed. The concrete of the structure was generally smooth and sound. A 1 foot thick layer of silt typically covered the culvert floor.

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. 55J11
 INSPECTORS Collins Engineers, Inc.
 ON-SITE TEAM LEADER. Roy A Forsyth, P.E.
 WATERWAY CROSSED A Stream

INSPECTION DATE October 2, 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
	Culvert	3.0'	N	7	N	8	N	7	N	N	N	7	7	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

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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.