UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 6200788 (OTT-2-2839)
SR 2 OVER SANDUSKY BAY
OTTAWA COUNTY, OH
DISTRICT 2

May 2020

10/9/2020

Prepared for:

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

Prepared by:

COLLINS ENGINEERS INC.

124 Venture Court, Suite 10

Lexington, Kentucky 40511

859.367.0097 • www.collinsengr.com

TABLE OF CONTENTS

SOUNDING PLAN – ABUTMENT 1 THROUGHT BENT 7

SOUNDING PLAN – BENT 8 THROUGHT BENT 15

SOUNDING PLAN – BENT 16 THROUGH ABUTMENT 2

CHANNEL CROSS SECTIONS – 50 FT UPSTREAM – ABUTMENT 1 THROUGH BENT 7

CHANNEL CROSS SECTIONS – 50 FT UPSTREAM – BENT 8 THROUGH BENT 15

CHANNEL CROSS SECTIONS – 50 FT UPSTREAM – BENT 16 THROUGH ABUTMENT 2

CHANNEL CROSS SECTIONS – UPSTREAM FASCIA – ABUTMENT 1 THROUGH BENT 7

CHANNEL CROSS SECTIONS – UPSTREAM FASCIA – BENT 8 THROUGH BENT 15

CHANNEL CROSS SECTIONS – UPSTREAM FASCIA – BENT 16 THROUGH ABUTMENT 2

CHANNEL CROSS SECTIONS – CENTERLINE – ABUTMENT 1 THROUGH BENT 7

CHANNEL CROSS SECTIONS – CENTERLINE – BENT 8 THROUGH BENT 15

CHANNEL CROSS SECTIONS – CENTERLINE – BENT 16 THROUGH ABUTMENT 2

CHANNEL CROSS SECTIONS – DOWNSTREAM FASCIA – ABUTMENT 1 THROUGH BENT 7

CHANNEL CROSS SECTIONS – DOWNSTREAM FASCIA – BENT 8 THROUGH BENT 15

CHANNEL CROSS SECTIONS – DOWNSTREAM FASCIA – BENT 16 THROUGH ABUTMENT 2

CHANNEL CROSS SECTIONS – 50 FT DOWNSTREAM – ABUTMENT 1 THROUGH BENT 7

CHANNEL CROSS SECTIONS – 50 FT DOWNSTREAM – BENT 8 THROUGH BENT 15

CHANNEL CROSS SECTIONS – 50 FT DOWNSTREAM – BENT 16 THROUGH ABUTMENT 2

BENT 1

BENT 2

BENT 3

BENT 4

BENT 5

BENT 6

BENT 7

BENT 8

BENT 9

BENT 10

BENT 11

BENT 12

BENT 13

BENT 14

EXECUTIVE SUMMARY

Project: ODOT District 2 Underwater Bridge Inspections - 2020

Purpose of Project: To perform a detailed visual and tactile underwater investigation of underwater bridges for District 2 of the Ohio Department of Transportation.

Inspection Team: Team Leader – Joshua Johnson, P.E. – Collins Engineers, Inc.
Team Member – Matthew Rogers, E.I.T. – Collins Engineers, Inc.
Team Member – Nicholas Lane – Collins Engineers, Inc.

Inspection Date(s): May 13, 2020

Water Visibility:	1 ft	***Water Velocity:***	<1 ft/s
Water Temperature:	50 °F	***Weather:***	Clear – 55 °F
Waterline Elevation:	579.6 ft	***Type of Boat:***	23 ft Carolina Skiff
Coordinates:	41.47867°N, -82.83413°W		
Access Location:	Clemons Boats Private Boat Ramp		
Dive Mode:	Surface Supplied Air		
Waterline Reference:	18.4 ft below the bottom of cap at the downstream nose of Bent 1.		
Maximum Depth at SSU:	23.1 ft – Bent 4 downstream nose		
Shoreline Conditions:	The north and south shorelines consisted of sparsely vegetated moderate slopes with no signs of erosion.		

Summary of Findings:

- **Bent 1:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 2:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 3:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 4:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - A scour hole 5 ft diameter by 5 ft deep was observed around the North and South faces of the upstream nose at Column A.

- **Bent 5:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - A scour hole 4 ft diameter by 4 ft deep was observed on the downstream nose.
- **Bent 6:**
  - The channel bottom material consisted of hard clay with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - Timber debris consisting of logs up to 18 in. diameter by 10 ft long was found on South face of Column D.
- **Bent 7:**
  - The channel bottom material consisted of hard clay with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - A scour hole 4 ft deep by 4 ft diameter was found on the downstream nose.
- **Bent 8:**
  - The channel bottom material consisted of hard clay with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 9:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - A spall 18 in. diameter by 2 in. deep with one exposed rebar exhibiting light surface corrosion was observed on Column B, 1 ft above the waterline on the Northwest face.
- **Bent 10:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 11:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in.
- **Bent 12:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in.

- **Bent 13:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 14:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 15:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 16:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - A 2 ft vertical concrete jacket was observed around Columns B and C beginning at 10.5 ft below waterline and was observed to be in good condition.
- **Bent 17:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
  - Timber debris consisting of logs up to 10 ft long by 6 in. diameter was found on the South face of Column B.
- **Bent 18:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 19:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 20:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.
- **Bent 21:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.

- **Bent 22:**
  - The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
  - The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in.

Summary of Recommendations:

- Monitor timber debris accumulation at Bents 6 and 17.
- Monitor typical corrosion and rust nodules on steel caissons.
- Monitor scour pockets on Bents 4, 5, and 7.
- Monitor timber piles in fender system

Underwater Inspection Coding:

NBI Ratings:

Item	Description	Coding	Condition
60	Substructure	7 – Good Condition	Spall, Light Steel Corrosion
61	Channel	7 – Good Condition	Timber Debris Accumulation, Scour Depression
62	Culvert	N/A	
92B	UW Insp. Frequency	60 Months	
93B	Previous Insp. Date	05/14/20	
113	Scour Critical Bridges	5 – Within Foundation Limits	Stable (Inspector Recommended)

AASHTO National Bridge Element (NBE) Ratings:

Element #	Description	Units	Total	Condition State			
				1	2	3	4
205	Pile Extension	EA	44	36	8	0	0
227	Reinforced Concrete Pile	EA	44	0	44	0	0

Note: Ratings were developed using the FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges. The recommended ratings consider inspected elements located within the waterway and conditions existing below the water surface only. Additional consideration is necessary for the assignment of overall condition ratings for this bridge.

1.0 INTRODUCTION

1.1 Purpose and Scope

This report consists of the results of a detailed underwater investigation performed at the SR 2 Bridge over Sandusky Bay in Ottawa County, OH. Collins Engineers, Inc. (Collins) conducted the underwater investigation for District 2 of the Ohio Department of Transportation (ODOT) on May 13, 2020. The primary purpose of the investigation was as follows:

- Determine the condition of the substructure components located in the water at the time of the inspection from the waterline to the channel bottom.
- Obtain channel bottom depth measurements along the bridge fascias, upstream and downstream of the bridge, and around the submerged substructure units.
- Obtain channel profile cross sections at the upstream and downstream fascias.
- Determine the condition of the shorelines in the vicinity of the structure.
- Obtain photographs of the bridge and any significant defects.

In addition, a brief inspection was made of areas that could be submerged during periods of high water. The following report includes a description of the structure, the method of investigation, a description of existing conditions, an evaluation and recommendations based on the conditions, inspection figures, and photographs.

1.2 General Description of the Structure

Structure No. 6200788 (OTT-2-2839) spans 2112 ft, carrying SR 2 over Sandusky Bay and is approximately 91 ft wide. The bridge superstructure is constructed of 23 composite reinforced concrete deck spans. The roadway orientation of the longitudinal axis of the bridge is south to north. The substructure units are labeled as Abutments 1 and 2 and Bents 1 through 22. Existing record drawings were available at the time of the inspection. Refer to Figure 1 in Exhibit 1 for a Location Map of the bridge. Refer to Photographs 1 and 2 in Exhibit 2 for overall views of the bridge. Refer to Photographs 53 and 54 for typical views of concrete and steel bent columns. Refer to Photographs 55 through 58 for typical views of the fender system and timber piles.

1.3 Method of Investigation

A detailed field inspection was conducted to determine the physical condition of the submerged bridge substructure units from the waterline to the channel bottom. A brief visual examination of the substructure units above the waterline was also made.

A three-person team consisting of a professional engineer-diver and team leader (Joshua Johnson, P.E.) an engineer-diver (Matthew Rogers, E.I.T) and an engineer-technician (Nicholas Lane) conducted the underwater inspection. The inspection was conducted using surface supplied air diving equipment. During the inspection, the inspectors worked from a boat and a note taker in the boat recorded the inspection notes.

The underwater inspection consisted of a visual and tactile examination of the accessible surfaces of the substructure units from the waterline to the channel bottom with particular attention given to any observed areas of deterioration or apparent distress. Approximately 10 percent of the total area on the underwater surfaces of the substructure units was cleaned so that the condition could be more closely examined. Photographs were taken to document the general conditions and observed deficiencies. Underwater photographs could not be obtained due to poor water conditions. The type of channel bottom material, the presence or extent of scour, the presence or extent of riprap, the presence or extent of drift and debris, and the location of any foundation exposure or undermining were noted.

Channel bottom soundings were performed utilizing a telescoping survey rod and pneumofathometer. Soundings were collected at quarter points along the bridge centerline as well as at quarter points along the upstream and downstream fascias and 50 ft fascias. Additional soundings were collected adjacent to Bents 1 through 22 and at 10 feet intervals in-line with the bents, upstream and downstream, and the waterline was referenced to a known elevation on the bridge. A sounding plan was developed using the soundings and approximate location of the shorelines. Refer to Figures 2 through 19 in Exhibit 1 for the sounding plan and channel cross sections that show the channel limits and water depths around the structure.

2.0 EXISTING CONDITIONS

2.1 General Conditions

At the time of the inspection, the waterline of 6200788 (OTT-2-2839) was located approximately 18.4 ft below the bottom of cap at the downstream nose of Bent 1, which corresponds to a waterline elevation of 579.6 ft. During the inspection, the waterway was flowing at approximately <1 ft per second. The bridge bent

skew was consistent with the channel alignment and does not require attention at this time. The north and south shorelines consisted of sparsely vegetated moderate slopes with no signs of erosion. Refer to Photographs 3 through 8 in Exhibit 2 for views of the shorelines near the structure.

2.2 Substructure Conditions

2.2.1 Bent 1

The channel bottom material around Bent 1 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 20 in Exhibit 1 for detailed inspection notes of Bent 1. Refer to Photographs 9 and 10 in Exhibit 2 for views of Bent 1.

2.2.2 Bent 2

The channel bottom material around Bent 2 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 21 in Exhibit 1 for detailed inspection notes of Bent 2. Refer to Photographs 11 and 12 in Exhibit 2 for views of Bent 2.

2.2.3 Bent 3

The channel bottom material around Bent 3 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 22 in Exhibit 1 for detailed inspection notes of Bent 3. Refer to Photographs 13 and 14 in Exhibit 2 for views of Bent 3.

2.2.4 Bent 4

The channel bottom material around Bent 4 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. A scour hole 5 ft deep by 5 ft diameter was found around the North and South faces of the upstream nose of Column A. Refer to Figure 23 in Exhibit 1 for detailed inspection notes of Bent 4. Refer to Photographs 15 and 16 in Exhibit 2 for views of Bent 4.

2.2.5 Bent 5

The channel bottom material around Bent 5 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust

nodules up to 1 in. diameter with pitting up to 1/8 in. A scour hole 4 ft deep by 4 ft diameter was found on the downstream nose. Refer to Figure 24 in Exhibit 1 for detailed inspection notes of Pier 5. Refer to Photographs 17 and 18 in Exhibit 2 for views of Bent 5.

2.2.6 Bent 6

The channel bottom material around Bent 6 consisted of hard clay with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Timber debris consisting of logs up to 18 in. diameter by 10 ft long was found on South face of Column D. Refer to Figure 25 in Exhibit 1 for detailed inspection notes of Bent 6. Refer to Photographs 19 and 20 in Exhibit 2 for views of Bent 6.

2.2.7 Bent 7

The channel bottom material around Bent 7 consisted of hard clay with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. A scour hole 4 ft deep by 4 ft diameter was found on the downstream nose. Refer to Figure 26 in Exhibit 1 for detailed inspection notes of Bent 7. Refer to Photographs 21 and 22 in Exhibit 2 for views of Bent 7.

2.2.8 Bent 8

The channel bottom material around Bent 8 consisted of hard clay with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 27 in Exhibit 1 for detailed inspection notes of Bent 8. Refer to Photographs 23 and 24 in Exhibit 2 for views of Bent 8.

2.2.9 Bent 9

The channel bottom material around Bent 9 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. A spall 18 in. diameter by 2 in. deep with one exposed rebar exhibiting light surface corrosion was found on Column B, 1 ft above the waterline on the Northwest face. Refer to Figure 28 in Exhibit 1 for detailed inspection notes of Bent 9. Refer to Photographs 25 and 26 in Exhibit 2 for views of Bent 9.

2.2.10 Bent 10

The channel bottom material around Bent 10 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 29 in Exhibit 1 for detailed inspection notes of Bent 10. Refer to Photographs 27 and 28 in Exhibit 2 for views of Bent 10.

2.2.11 Bent 11

The channel bottom material around Bent 11 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in. Refer to Figure 30 in Exhibit 1 for detailed inspection notes of Bent 11. Refer to Photographs 29, 30, and 56 thought 58 in Exhibit 2 for views of Bent 11 and the timber fenders.

2.2.12 Bent 12

The channel bottom material around Bent 12 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in. Refer to Figure 31 in Exhibit 1 for detailed inspection notes of Bent 12. Refer to Photographs 31, 32, and 56 through 58 in Exhibit 2 for views of Bent 12 and the timber fenders.

2.2.13 Bent 13

The channel bottom material around Bent 13 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 32 in Exhibit 1 for detailed inspection notes of Bent 13. Refer to Photographs 33 and 34 in Exhibit 2 for views of Bent 13.

2.2.14 Bent 14

The channel bottom material around Bent 14 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 33 in Exhibit 1 for detailed inspection notes of Bent 14. Refer to Photographs 35 and 36 in Exhibit 2 for views of Bent 14.

2.2.15 Bent 15

The channel bottom material around Bent 15 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 34 in Exhibit 1 for detailed inspection notes of Bent 15. Refer to Photographs 37 and 38 in Exhibit 2 for views of Bent 15.

2.2.16 Bent 16

The channel bottom material around Bent 16 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. A 2 ft vertical concrete jacket was found around Columns B and C beginning at 10.5 ft below waterline and in good condition of concrete. Refer to Figure 35 in Exhibit 1 for detailed inspection notes of Bent 16. Refer to Photographs 39 and 40 in Exhibit 2 for views of Bent 16.

2.2.17 Bent 17

The channel bottom material around Bent 17 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Timber debris consisting of logs up to 10 ft long by 6 in. diameter was found on the South face of Column B. Refer to Figure 36 in Exhibit 1 for detailed inspection notes of Bent 17. Refer to Photographs 41 and 42 in Exhibit 2 for views of Bent 17.

2.2.18 Bent 18

The channel bottom material around Bent 18 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 37 in Exhibit 1 for detailed inspection notes of Bent 18. Refer to Photographs 43 and 44 in Exhibit 2 for views of Bent 18.

2.2.19 Bent 19

The channel bottom material around Bent 19 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 38 in Exhibit 1 for detailed inspection notes of Bent 19. Refer to Photographs 45 and 46 in Exhibit 2 for views of Bent 19.

2.2.20 Bent 20

The channel bottom material around Bent 20 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 39 in Exhibit 1 for detailed inspection notes of Bent 20. Refer to Photographs 47 and 48 in Exhibit 2 for views of Bent 20.

2.2.21 Bent 21

The channel bottom material around Bent 21 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 40 in Exhibit 1 for detailed inspection notes of Bent 21. Refer to Photographs 49 and 50 in Exhibit 2 for views of Bent 21.

2.2.22 Bent 22

The channel bottom material around Bent 22 consisted of riprap and sand infill with no probe rod penetration. The typical steel caisson on typical Columns B and C exhibited moderate corrosion and rust nodules up to 1 in. diameter with pitting up to 1/8 in. Refer to Figure 41 in Exhibit 1 for detailed inspection notes of Bent 22. Refer to Photographs 51 and 52 in Exhibit 2 for views of Bent 22.

3.0 EVALUATION AND RECOMMENDATIONS

Overall, the inspected substructure units of Structure No. 6200788 (OTT-2-2839) were in good condition. A comparison of the soundings recorded during the previous inspection on June 20, 2015 and the soundings taken during this inspection revealed no significant change in the channel bottom profile in the vicinity of the structure. Although no channel deficiencies were observed, the channel bottom should continue to be monitored during future underwater inspections to verify that localized scour or overall channel degradation is not occurring and that the Bent footings remain adequately embedded in the channel bottom.

The spalls observed on Bent 9 are not a structural concern at this time given its size compared to the overall pier size, and as a result, no repairs are recommended. This area should be monitored during future inspections for increasing extent or severity of the scaling and exposure of reinforcing steel. If the extent or severity of the scaling is observed to be increasing or reinforcing steel becomes exposed, it may be necessary to repair the area at that time.

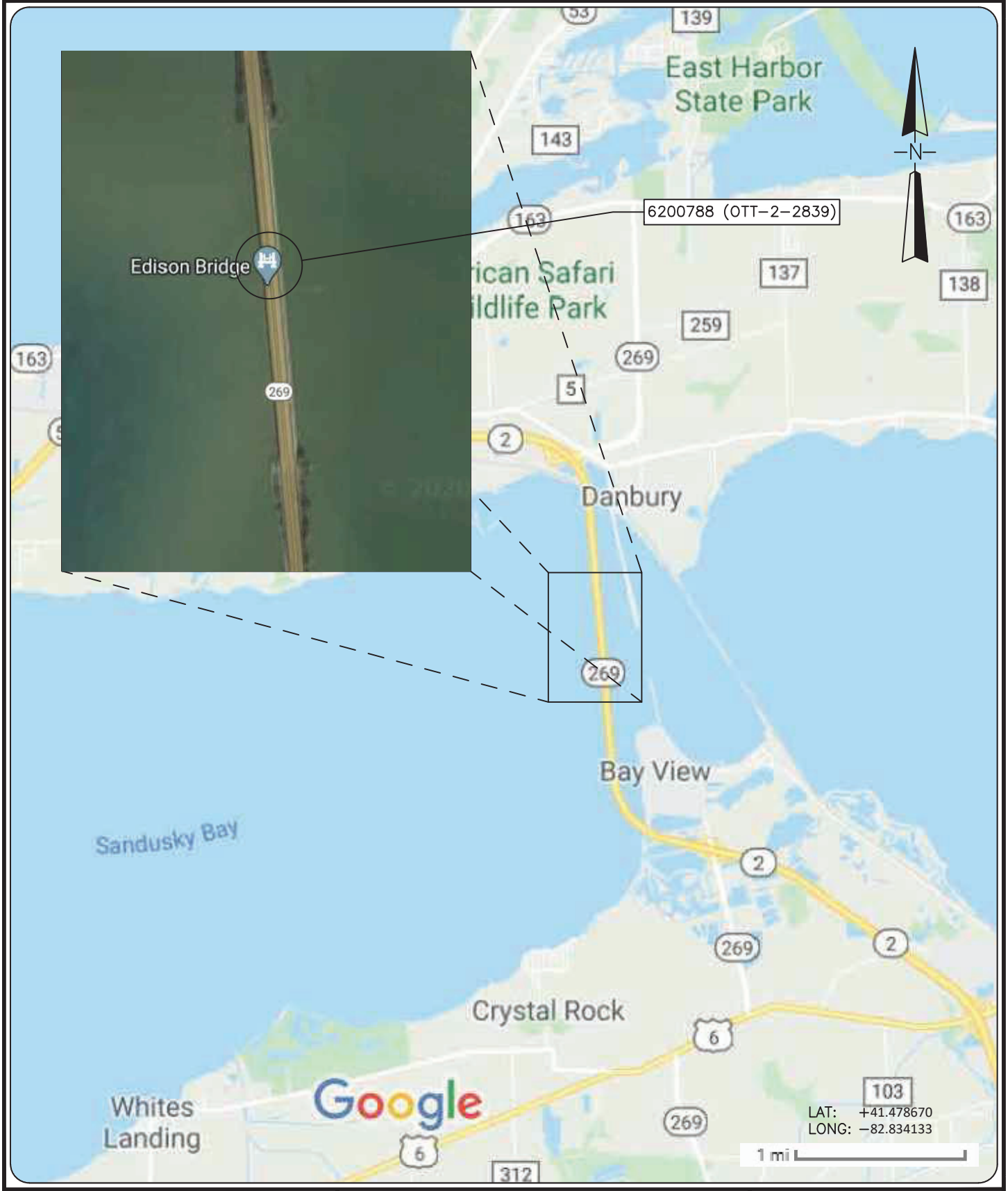
It is recommended that the submerged substructure units of Structure No. 6200788 (OTT-2-2839) be next inspected underwater at an interval not to exceed 60 months, no later than May 13, 2025.

Respectfully Submitted,
COLLINS ENGINEERS, INC.

Joshua Johnson, P.E.
Project Manager

Originated by:
Brad Mitchell

EXHIBIT 1 – FIGURES



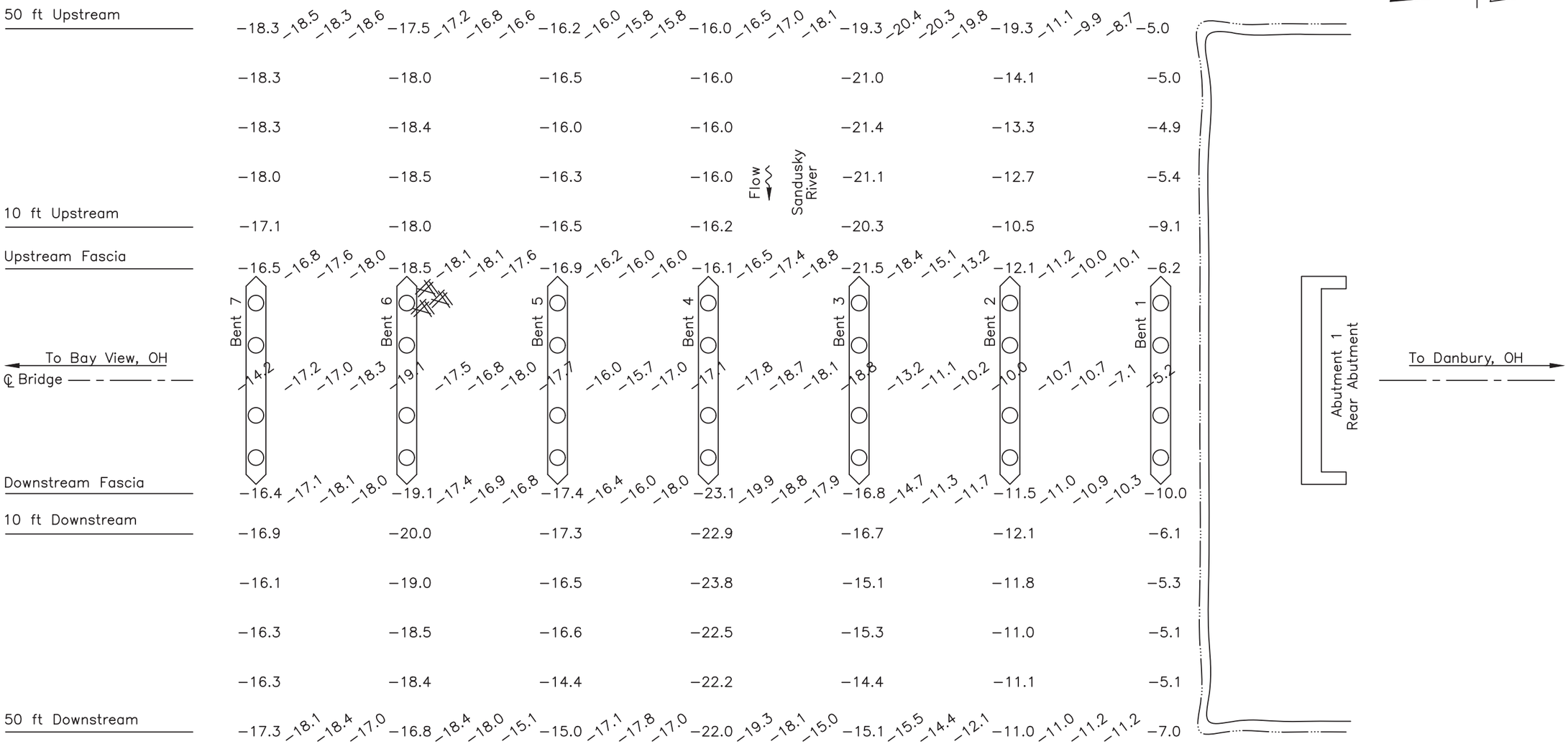
COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788
(OTT-2-2839)
LOCATION MAP
OTTAWA COUNTY, OHIO

INSPECTED BY: MOR	CEI PROJECT: 55−12239.00
DRAWN BY: BLV	DATE: 13 MAY 2020
CHECKED BY: JMJ	SHEET NO: 1

\\NASUNI-KY\KY\PROJECTS\55 - LEXINGTON\55-12239.00 - ODOT D2 UW INSP 2020\ENGINEERING\BRIDGES\6200788\6200788 (OTT-2-2839).DWG9/28/2020 11:51:55 AM



SOUNDING PLAN

GENERAL NOTES:

1. Bents 1 through 22 were inspected underwater. Substructure units are labeled according to available record drawings.
2. At the time of inspection on May 13, 2020, the waterline was located approximately 18.4 ft below Bottom of Cap at downstream nose of Bent 1 (EL. +598.2 ft). This corresponds with a waterline elevation of +579.6 ft.
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 the upstream and downstream fascias, at 10 ft intervals between the substructure units, and at 10 ft intervals in−line with the piers upstream and downstream up to 50 ft.

LEGEND

−2.7 Sounding Depth from Waterline (ft)

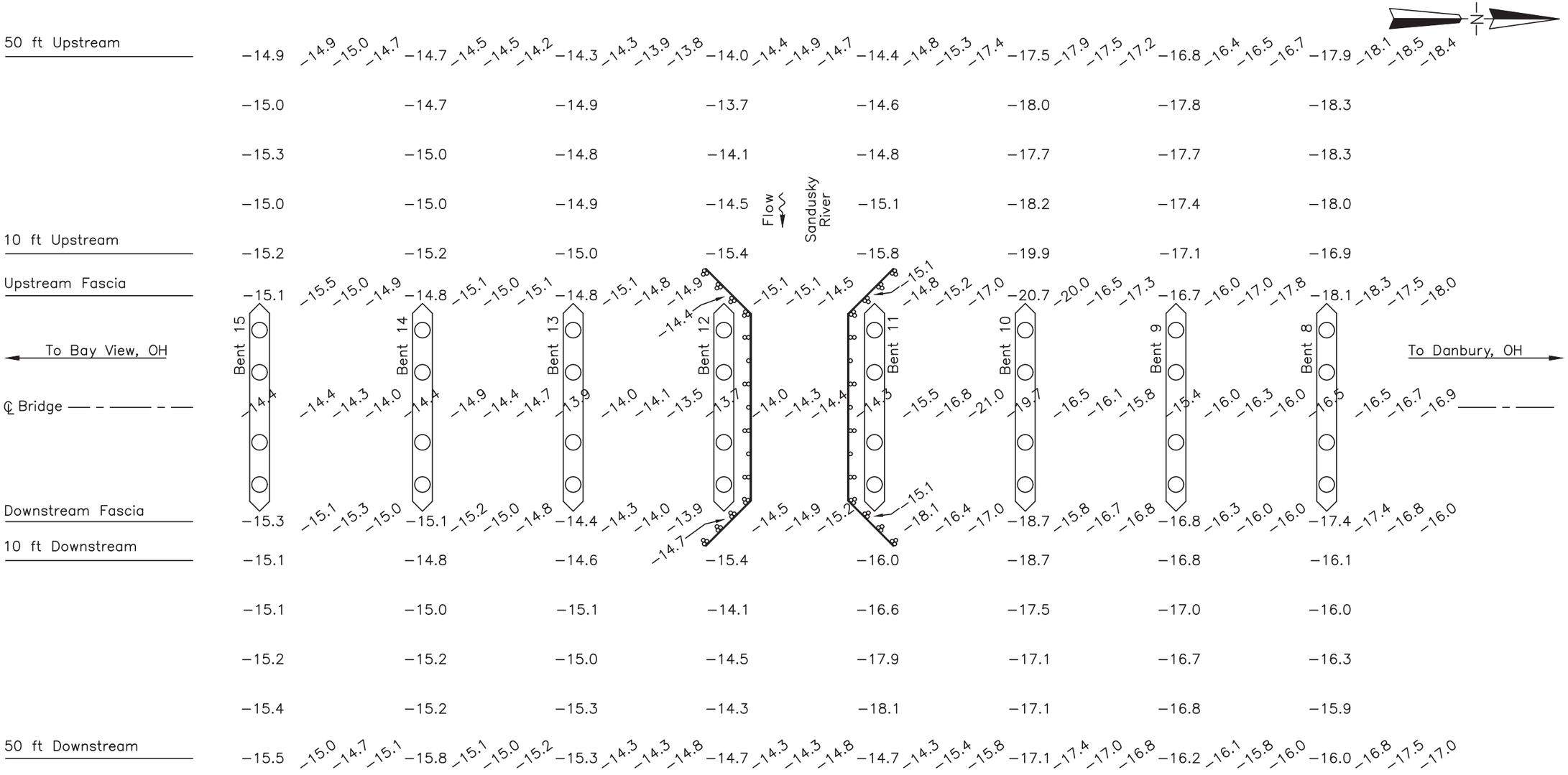
Timber Debris

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
SOUNDING PLAN
OTTAWA COUNTY, OHIO

CEI PROJECT 55−12239.00
INSPECTED BY: MOR
DRAWN BY: BLV
CHECKED BY: JMJ
DATE: MAY 2020
SHEET NO: 2



SOUNDING PLAN

GENERAL NOTES:

1. Bents 1 through 22 were inspected underwater. Substructure units are labeled according to available record drawings.
2. At the time of inspection on May 13, 2020, the waterline was located approximately 18.4 ft below Bottom of Cap at downstream nose of Bent 1 (EL. +598.2 ft). This corresponds with a waterline elevation of +579.6 ft.
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 the upstream and downstream fascias, at 10 ft intervals between the substructure units, and at 10 ft intervals in−line with the piers upstream and downstream up to 50 ft.

LEGEND

−2.7 Sounding Depth from Waterline (ft)

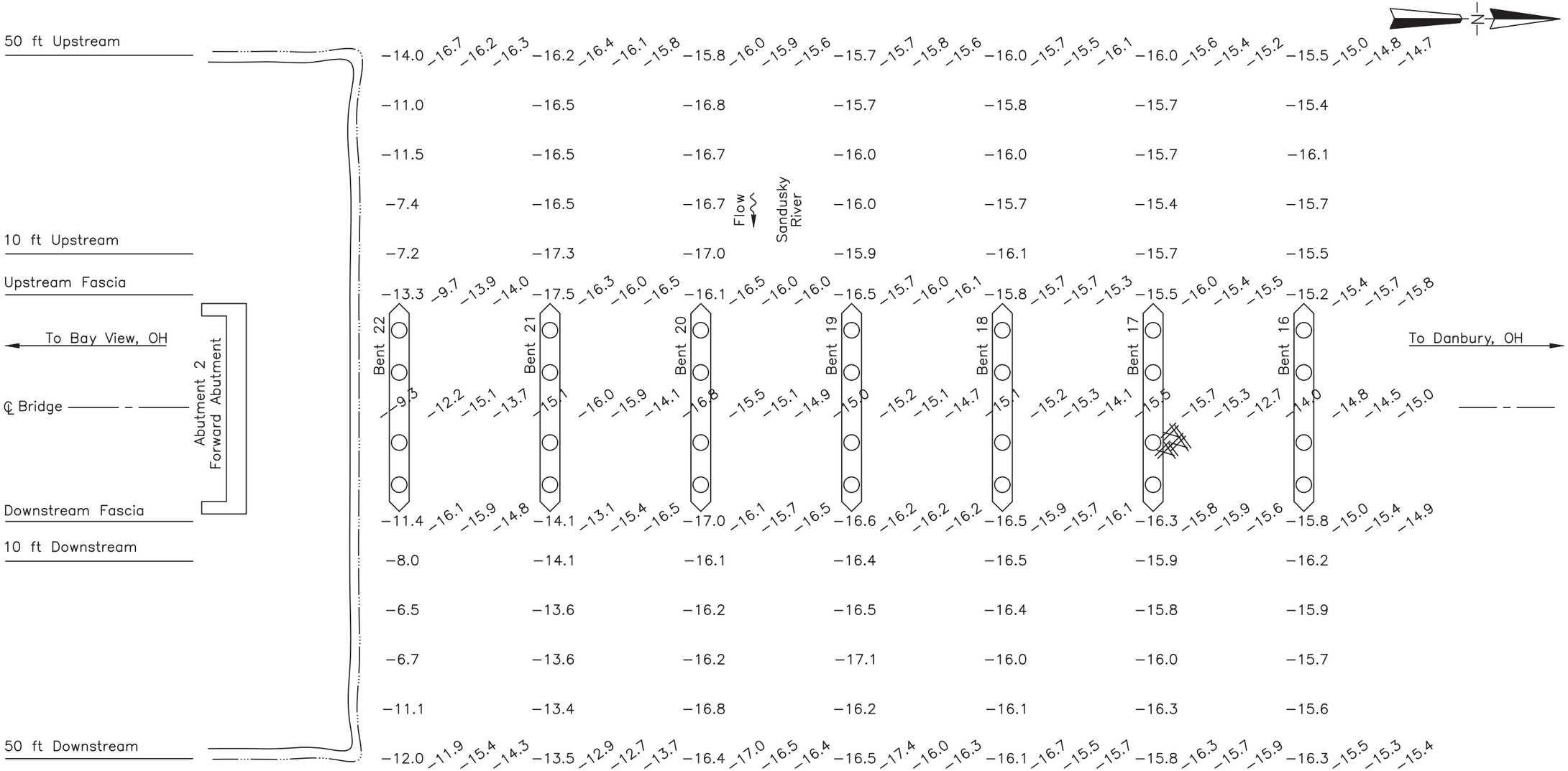
Timber Debris

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
SOUNDING PLAN
OTTAWA COUNTY, OHIO

CEI PROJECT 55−12239.00
INSPECTED BY: MOR
DRAWN BY: BLV
CHECKED BY: JMJ
DATE: MAY 2020
SHEET NO: 3



SOUNDING PLAN

GENERAL NOTES:

1. Bents 1 through 22 were inspected underwater. Substructure units are labeled according to available record drawings.
2. At the time of inspection on May 13, 2020, the waterline was located approximately 18.4 ft below Bottom of Cap at downstream nose of Bent 1 (EL. +598.2 ft). This corresponds with a waterline elevation of +579.6 ft.
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 the upstream and downstream fascias, at 10 ft intervals between the substructure units, and at 10 ft intervals in−line with the piers upstream and downstream up to 50 ft.

LEGEND

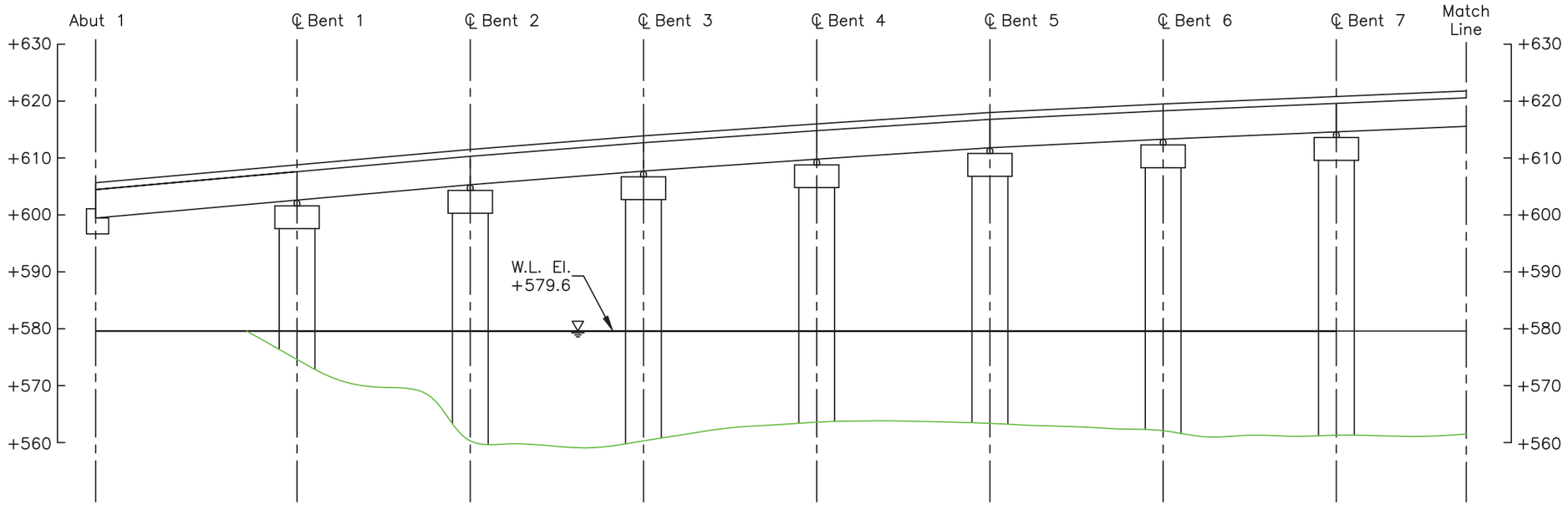
−2.7	Sounding Depth from Waterline (ft)
	Timber Debris

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
SOUNDING PLAN
OTTAWA COUNTY, OHIO

CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	4



CHANNEL CROSS SECTION
50 FT UPSTREAM
(LOOKING DOWNSTREAM)

LEGEND

———	Approximate Channel Bottom – May 2020
- - - - -	Approximate Channel Bottom – June 2015 (No Data)
– – – – –	Approximate Channel Bottom – June 2010 (No Data)
	Timber Debris
	Water Surface
+450	Elevation (ft)

Note:

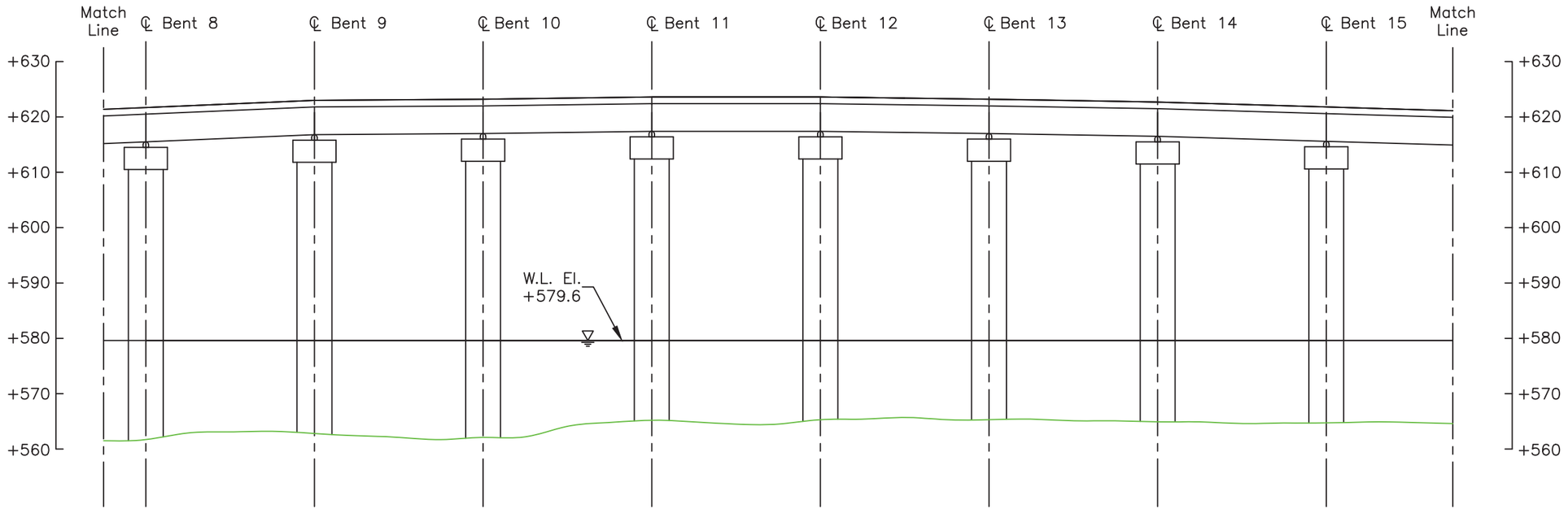
Footing elevations unknown due to unavailable record drawings.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - 50 FT UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	5



CHANNEL CROSS SECTION
50 FT UPSTREAM
(LOOKING DOWNSTREAM)

LEGEND

———	Approximate Channel Bottom – May 2020
- - - - -	Approximate Channel Bottom – June 2015 (No Data)
– – – – –	Approximate Channel Bottom – June 2010 (No Data)
	Timber Debris
	Water Surface
+450	Elevation (ft)

Note:

Footing elevations unknown due to unavailable record drawings.

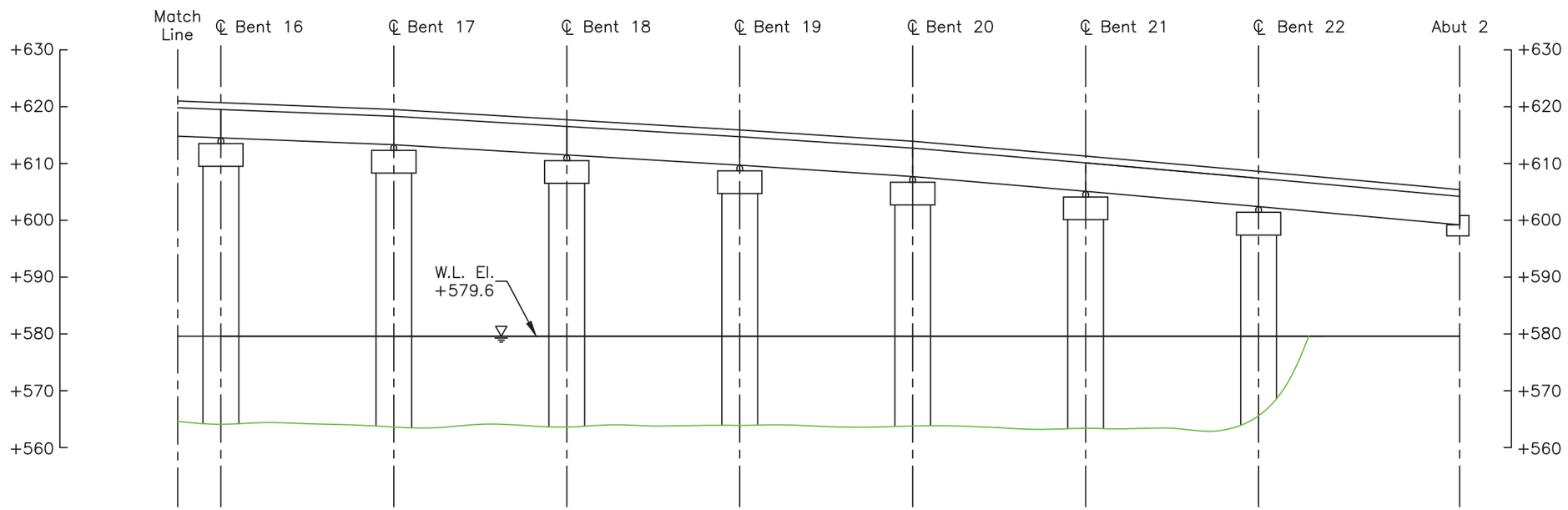
Fender system at Piers 11 & 12 not shown for clarity.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - 50 FT UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	6



CHANNEL CROSS SECTION
50 FT UPSTREAM
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

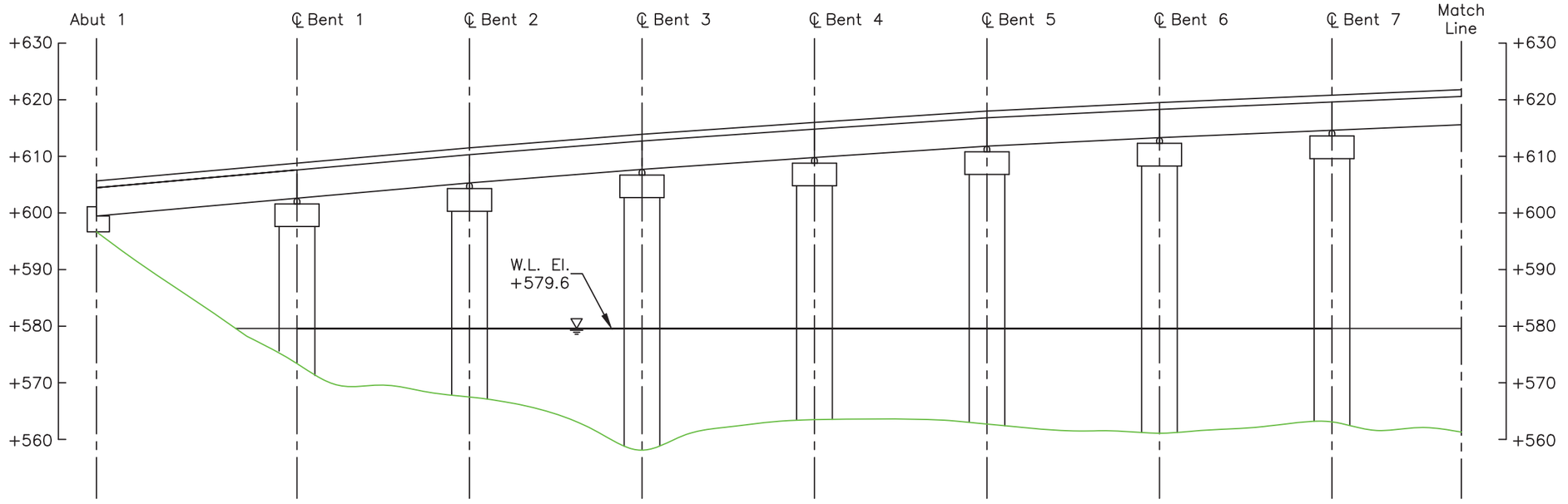
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - 50 FT UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	7

UPSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
A1	9.0
1/4	16.2
1/2	22.9
3/4	28.6
B1	35.4
1/4	40.0
1/2	40.6
3/4	42.4
B2	44.0
1/4	45.7
1/2	48.2
3/4	52.1
B3	55.8
1/4	53.6
1/2	52.8
3/4	52.4
B4	52.5
1/4	52.9
1/2	53.4
3/4	54.1
B5	55.3
1/4	56.4
1/2	57.3
3/4	57.6
B6	58.4
1/4	58.2
1/2	58.2
3/4	57.7
B7	57.7
1/4	59.4
1/2	59.2
3/4	60.2

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
UPSTREAM FASCIA
(LOOKING DOWNSTREAM)

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

Note:

Footing elevations unknown due to unavailable record drawings.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

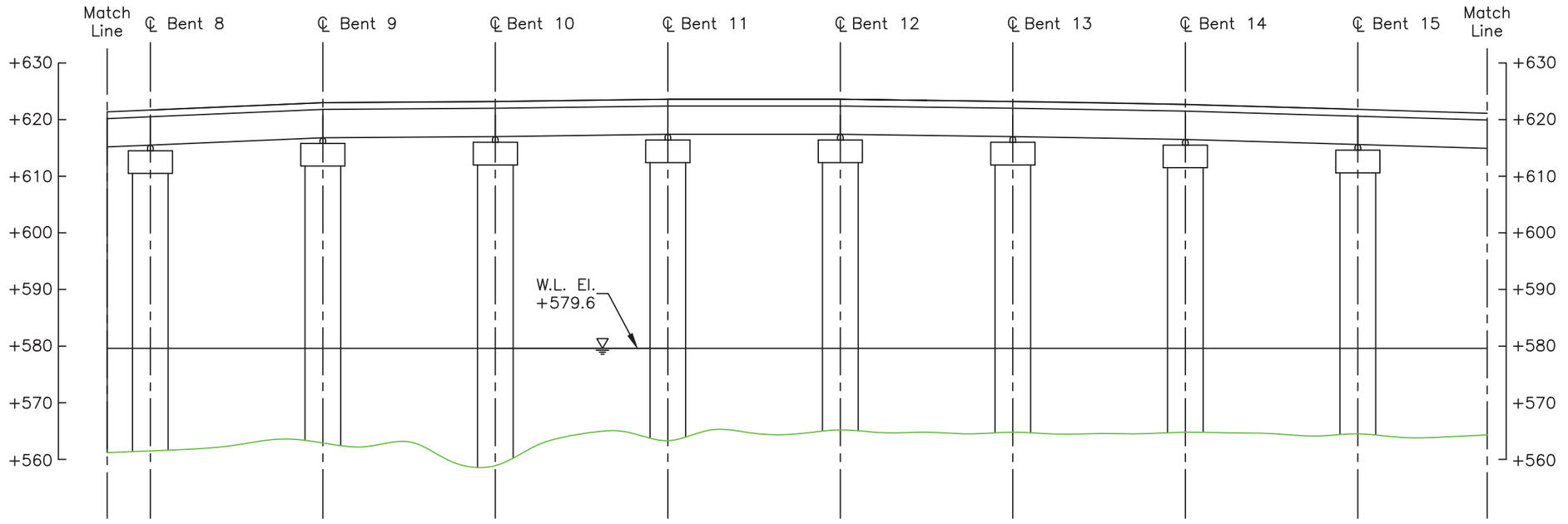
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	8

UPSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
B8	60.2
1/4	60.2
1/2	59.8
3/4	59.1
B9	60.1
1/4	60.8
1/2	60.0
3/4	63.6
B10	64.3
1/4	60.7
1/2	58.9
3/4	58.6
B11	60.3
1/4	58.4
1/2	59.0
3/4	59.1
B12	58.4
1/4	58.8
1/2	58.6
3/4	58.8
B13	58.4
1/4	58.6
1/2	58.4
3/4	58.3
B14	57.9
1/4	57.8
1/2	57.7
3/4	57.9
B15	57.3
1/4	57.7
1/2	57.4
3/4	56.8

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
UPSTREAM FASCIA
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

Fender system at Piers 11 & 12 not shown for clarity.

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

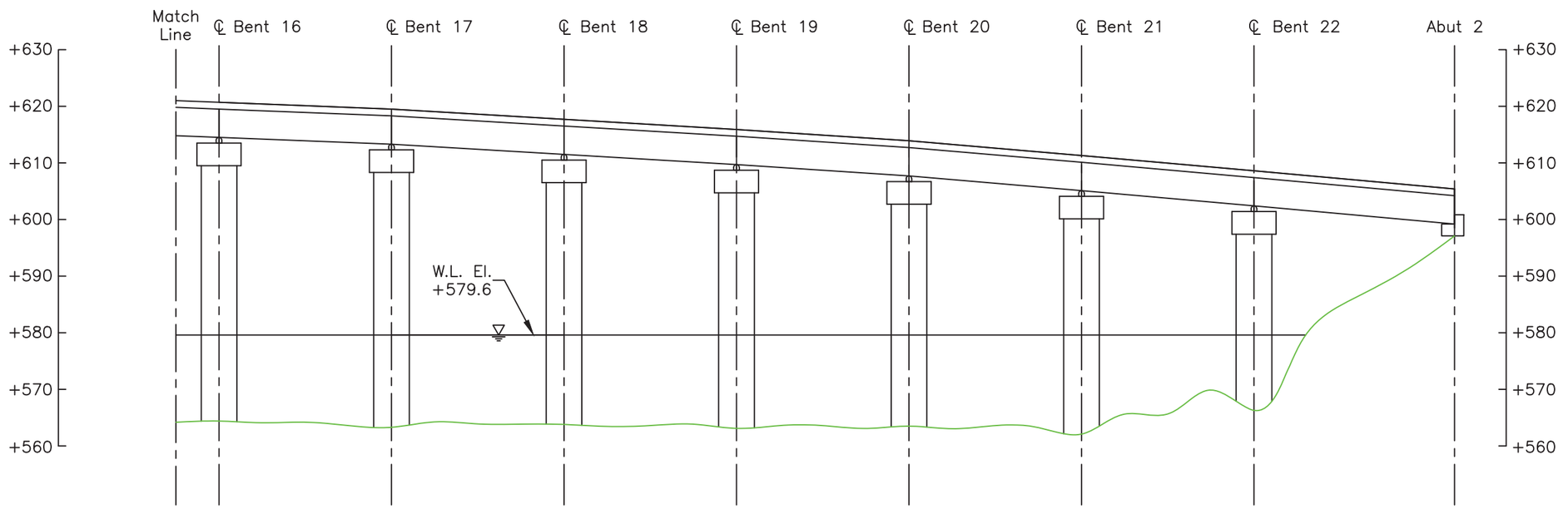
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	9

UPSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
B16	56.3
1/4	56.3
1/2	55.9
3/4	56.2
B17	55.4
1/4	54.8
1/2	54.7
3/4	54.3
B18	53.9
1/4	53.8
1/2	53.2
3/4	52.5
B19	52.8
1/4	51.8
1/2	51.3
3/4	51.3
B20	50.4
1/4	50.2
1/2	49.0
3/4	48.7
B21	49.2
1/4	45.0
1/2	44.3
3/4	39.4
B22	42.3
1/4	28.6
1/2	20.9
3/4	15.3
A2	8.3

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
UPSTREAM FASCIA
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

LEGEND

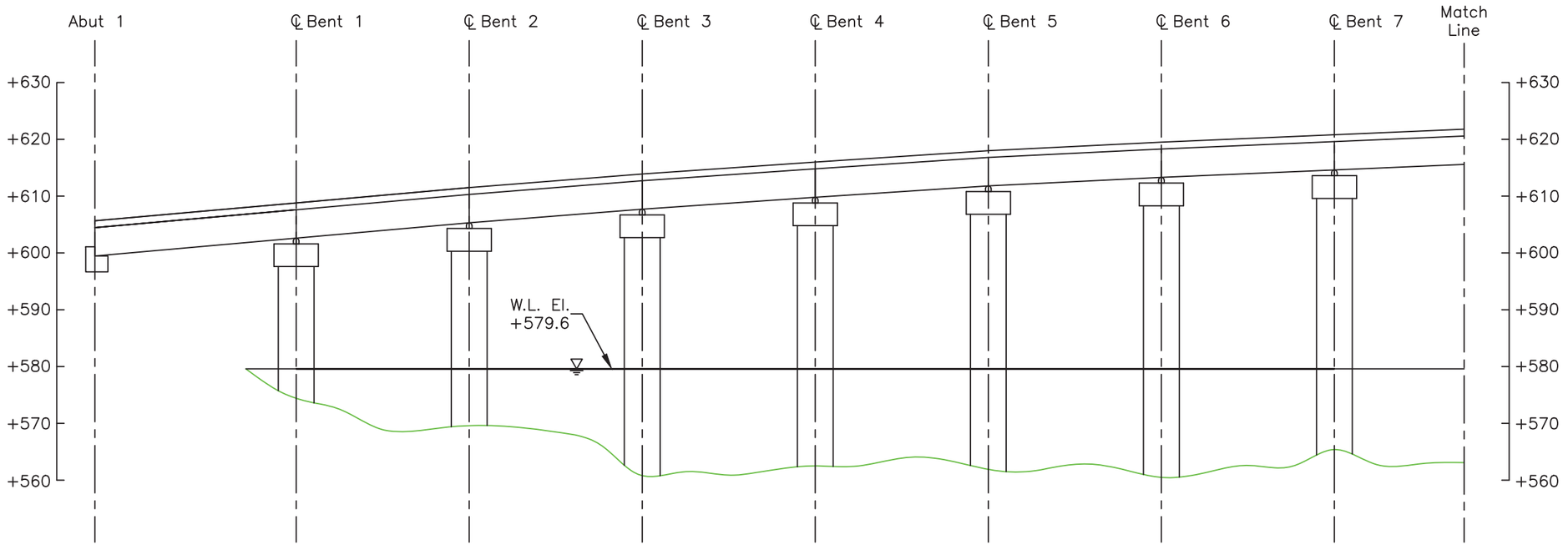
- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - UPSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	10



CHANNEL CROSS SECTION
STRUCTURE CENTERLINE
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

LEGEND

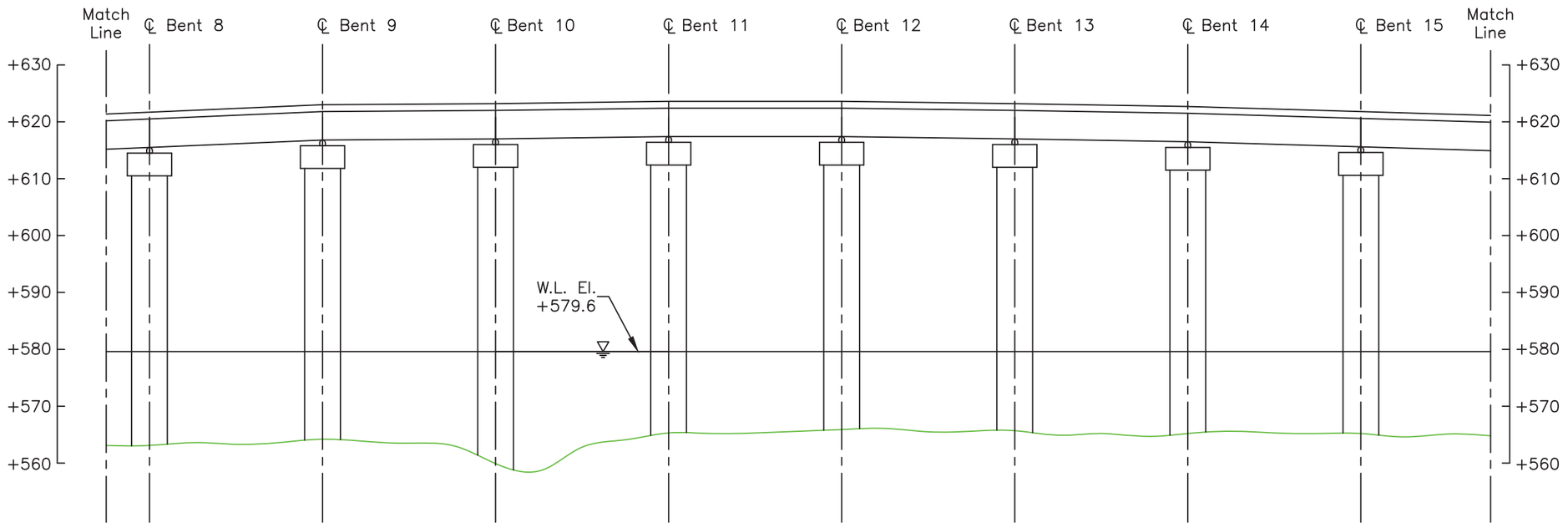
- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - CENTERLINE
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	11



CHANNEL CROSS SECTION
STRUCTURE CENTERLINE
(LOOKING DOWNSTREAM)

LEGEND

———	Approximate Channel Bottom – May 2020
- - - - - -	Approximate Channel Bottom – June 2015 (No Data)
– – – – –	Approximate Channel Bottom – June 2010 (No Data)
	Timber Debris
	Water Surface
+450	Elevation (ft)

Note:

Footing elevations unknown due to unavailable record drawings.

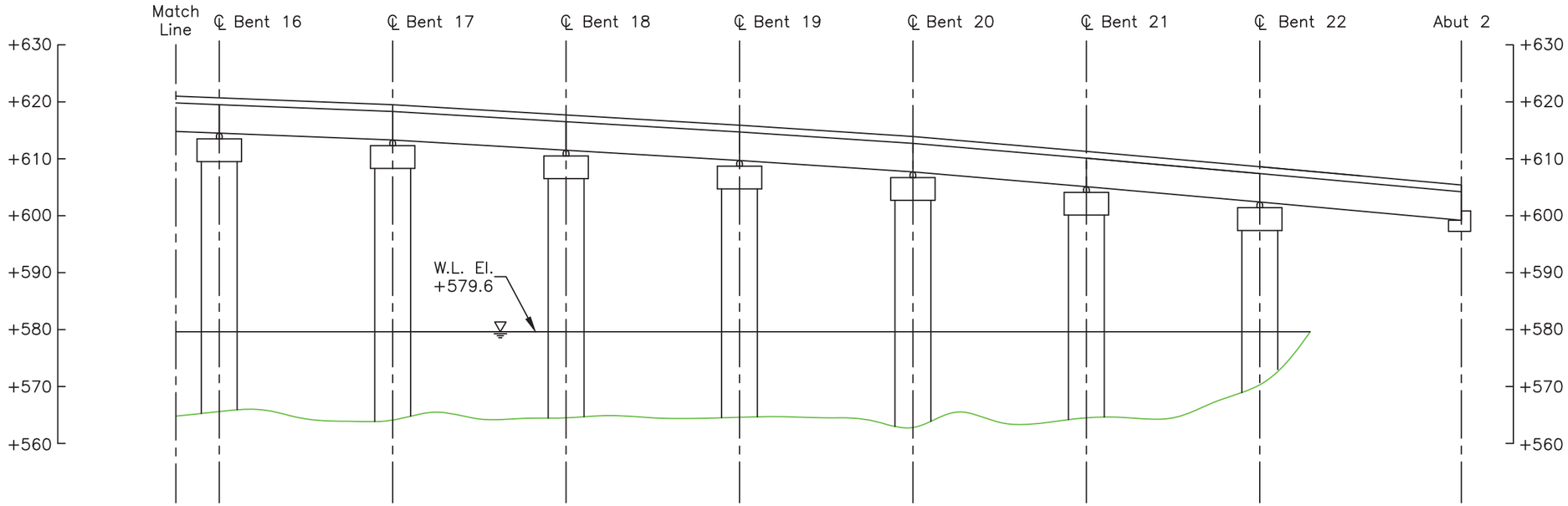
Fender system at Piers 11 & 12 not shown for clarity.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - CENTERLINE
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	12



CHANNEL CROSS SECTION
STRUCTURE CENTERLINE
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

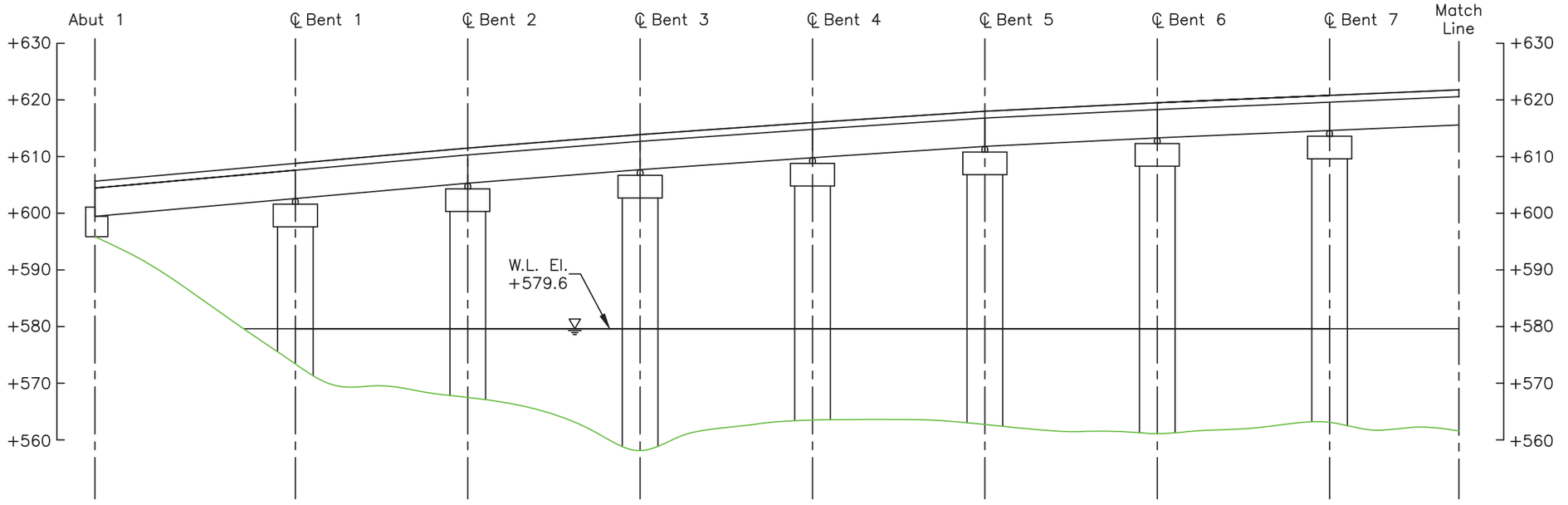
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - CENTERLINE
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	13

DOWNSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
A1	9.8
1/4	15.0
1/2	21.6
3/4	28.6
B1	35.4
1/4	40.0
1/2	40.6
3/4	42.4
B2	44.0
1/4	45.7
1/2	48.2
3/4	52.1
B3	55.8
1/4	53.6
1/2	52.8
3/4	52.4
B4	52.5
1/4	52.9
1/2	53.4
3/4	54.1
B5	55.3
1/4	56.4
1/2	57.3
3/4	57.6
B6	58.4
1/4	58.2
1/2	58.2
3/4	57.7
B7	57.7
1/4	59.4
1/2	59.2
3/4	60.2

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
DOWNSTREAM FASCIA
(LOOKING DOWNSTREAM)

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

Note:

Footing elevations unknown due to unavailable record drawings.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

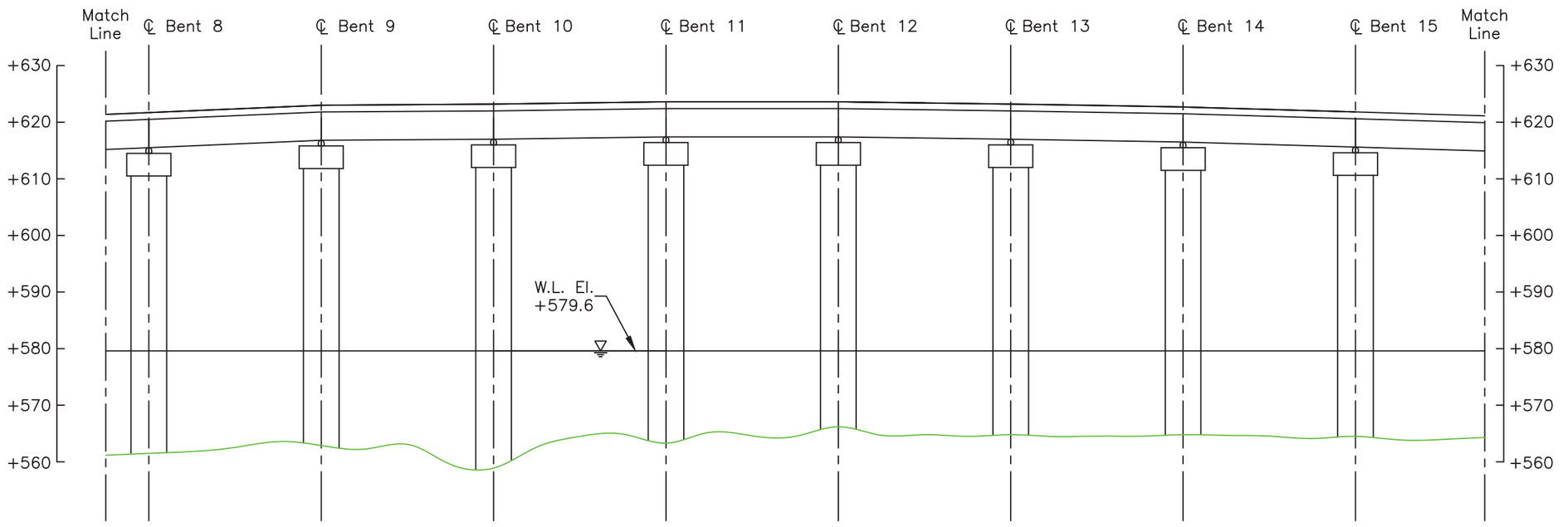
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - DOWNSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	14

DOWNSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
B8	60.2
1/4	60.2
1/2	59.8
3/4	59.1
B9	60.1
1/4	60.8
1/2	60.0
3/4	63.6
B10	64.3
1/4	60.7
1/2	58.9
3/4	58.6
B11	60.3
1/4	58.4
1/2	59.0
3/4	59.1
B12	58.4
1/4	58.8
1/2	58.6
3/4	58.8
B13	58.4
1/4	58.6
1/2	58.4
3/4	58.3
B14	57.9
1/4	57.8
1/2	57.7
3/4	57.9
B15	57.3
1/4	57.7
1/2	57.4
3/4	56.8

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
DOWNSTREAM FASCIA
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

Fender system at Piers 11 & 12 not shown for clarity.

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

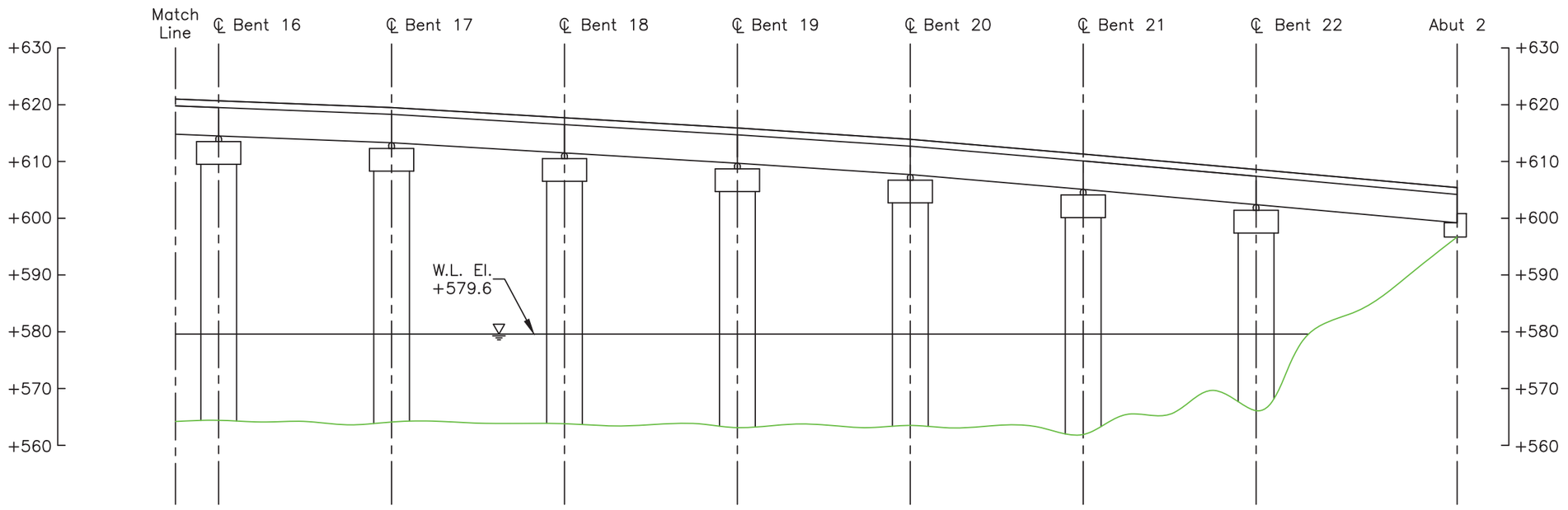
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - DOWNSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	15

DOWNSTREAM FASCIA LOOKING DOWNSTREAM	
Location	Y(ft)*
B16	56.3
1/4	56.3
1/2	55.9
3/4	56.2
B17	55.4
1/4	54.8
1/2	54.7
3/4	54.3
B18	53.9
1/4	53.8
1/2	53.2
3/4	52.5
B19	52.8
1/4	51.8
1/2	51.3
3/4	51.3
B20	50.4
1/4	50.2
1/2	49.1
3/4	48.8
B21	49.4
1/4	45.2
1/2	44.5
3/4	39.6
B22	42.5
1/4	28.6
1/2	23.4
3/4	16.5
A2	8.7

*Profile taken from Top of Deck



CHANNEL CROSS SECTION
DOWNSTREAM FASCIA
(LOOKING DOWNSTREAM)

Note:

Footing elevations unknown due to unavailable record drawings.

LEGEND

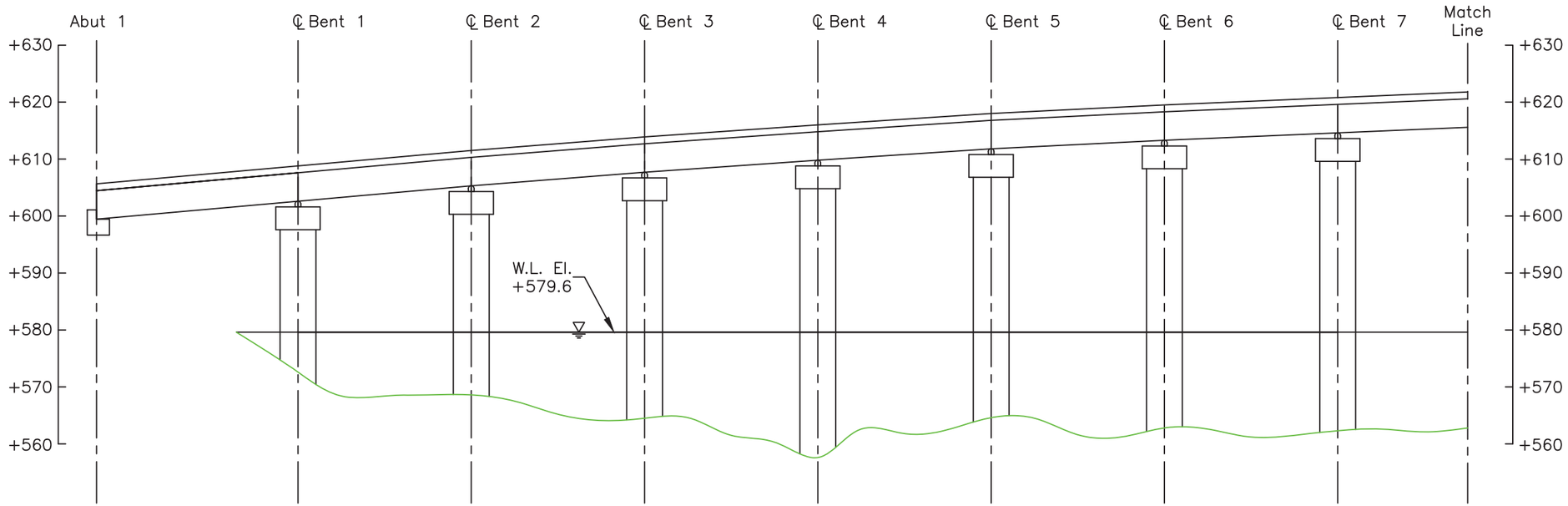
- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
CROSS SECTIONS - DOWNSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	16



CHANNEL CROSS SECTION
50 FT DOWNSTREAM
(LOOKING DOWNSTREAM)

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

Note:

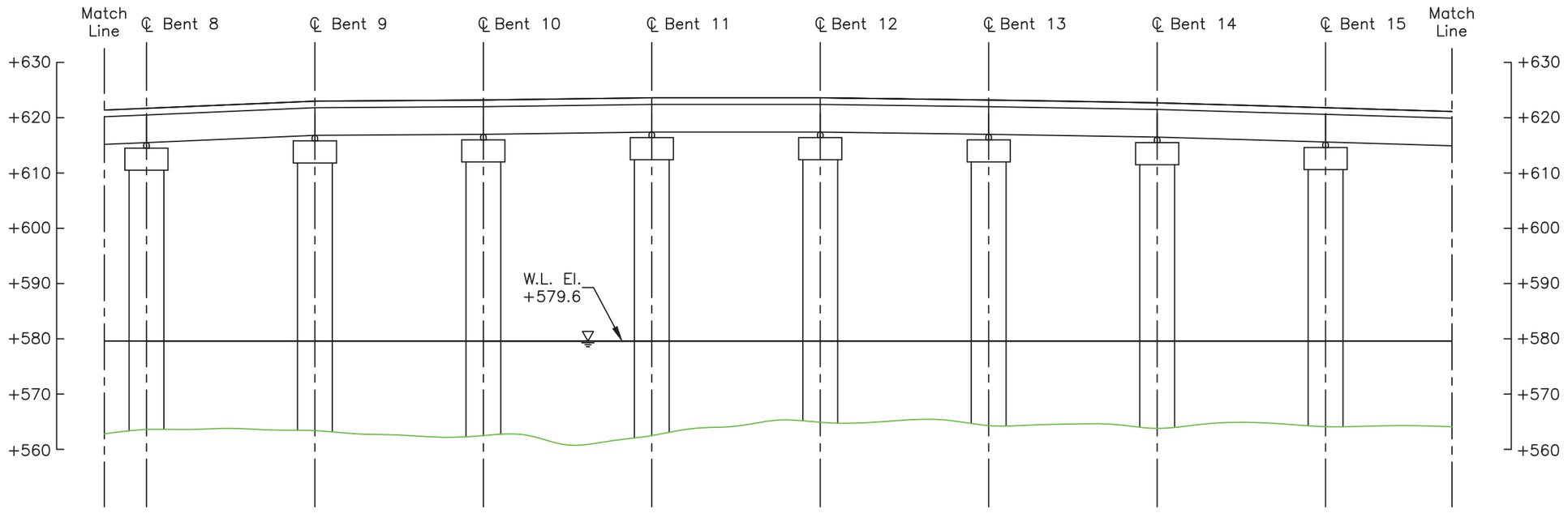
Footing elevations unknown due to unavailable record drawings.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
X-SECTIONS - 50 FT DOWNSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	17



CHANNEL CROSS SECTION
50 FT DOWNSTREAM
(LOOKING DOWNSTREAM)

LEGEND

———	Approximate Channel Bottom – May 2020
- - - - -	Approximate Channel Bottom – June 2015 (No Data)
– – – – –	Approximate Channel Bottom – June 2010 (No Data)
	Timber Debris
	Water Surface
+450	Elevation (ft)

Note:

Footing elevations unknown due to unavailable record drawings.

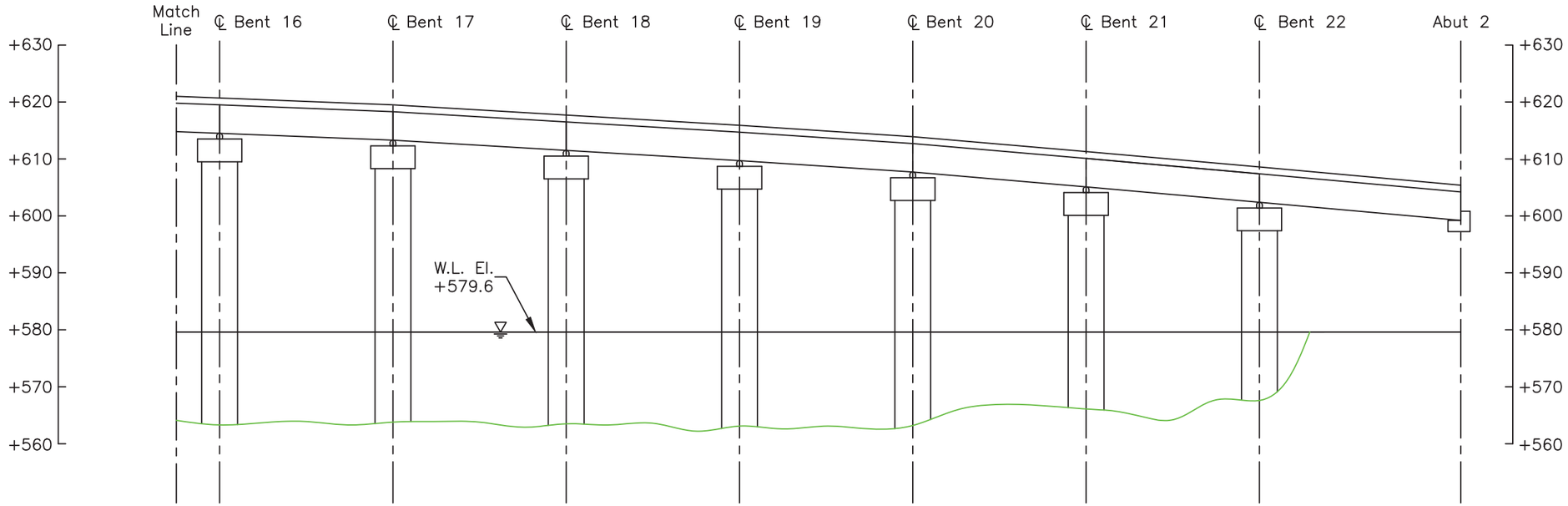
Fender system at Piers 11 & 12 not shown for clarity.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
X-SECTIONS - 50 FT DOWNSTREAM
OTTAWA COUNTY, OHIO

CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	18



CHANNEL CROSS SECTION
50 FT DOWNSTREAM
(LOOKING DOWNSTREAM)

LEGEND

- Approximate Channel Bottom – May 2020
- Approximate Channel Bottom – June 2015 (No Data)
- Approximate Channel Bottom – June 2010 (No Data)
- Timber Debris
- Water Surface
- +450 Elevation (ft)

Note:

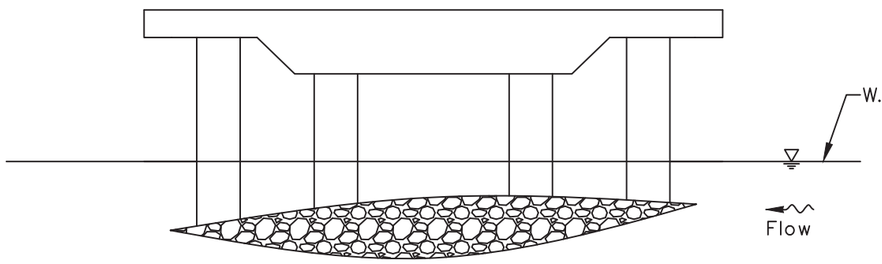
Footing elevations unknown due to unavailable record drawings.

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

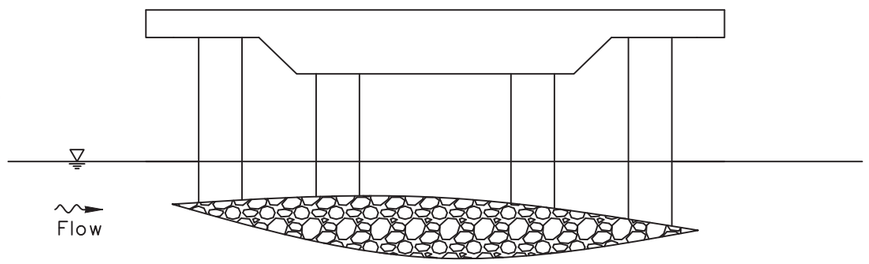
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
X-SECTIONS - 50 FT DOWNSTREAM
OTTAWA COUNTY, OHIO

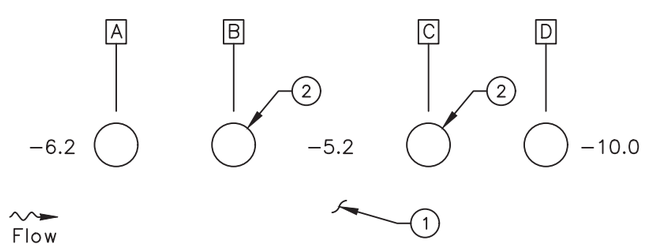
CEI PROJECT 55–12239.00
INSPECTED BY: MOR
DRAWN BY: BLV
CHECKED BY: JMJ
DATE: MAY 2020
SHEET NO: 19



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

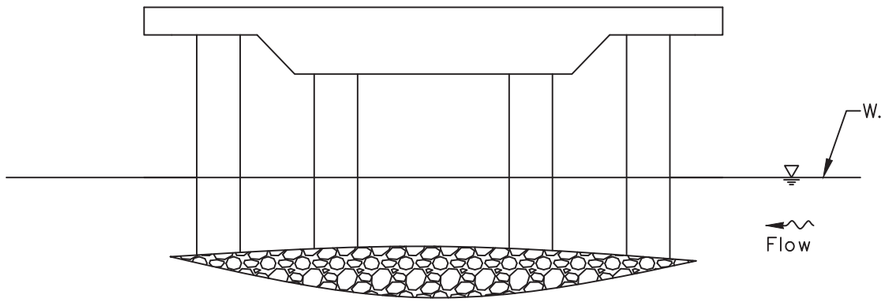
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

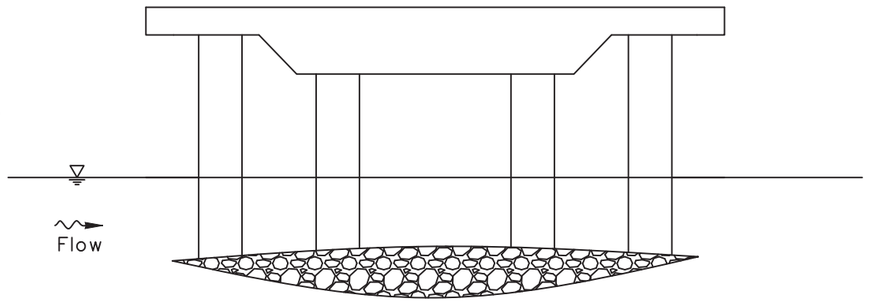
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 1
OTTAWA COUNTY, OHIO

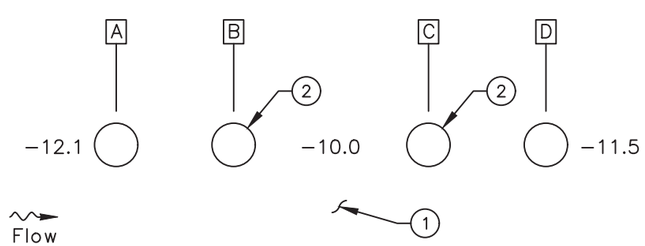
CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	20



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

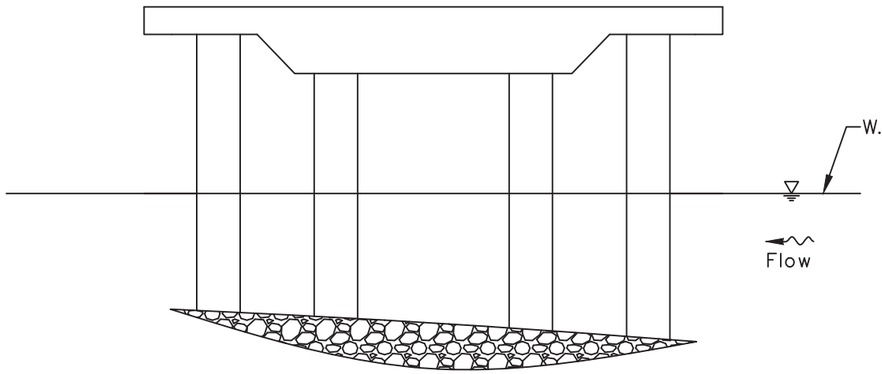
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

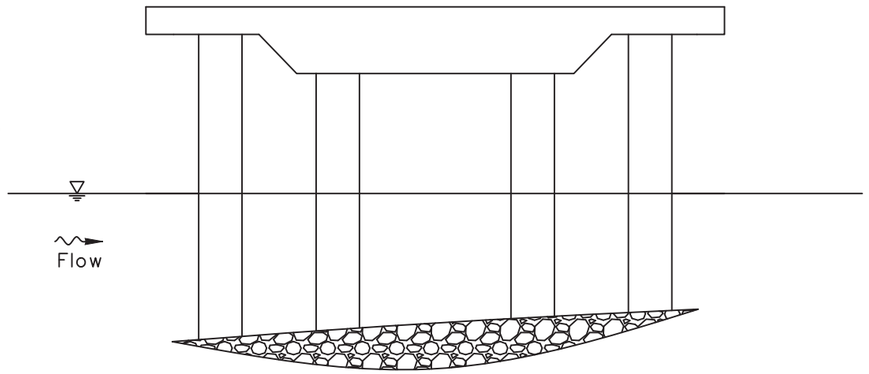
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 2
OTTAWA COUNTY, OHIO

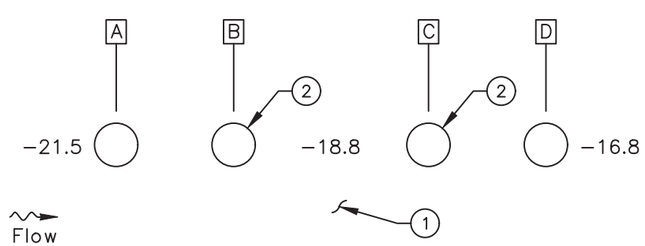
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	21



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 3
OTTAWA COUNTY, OHIO

CEI PROJECT
55−12239.00

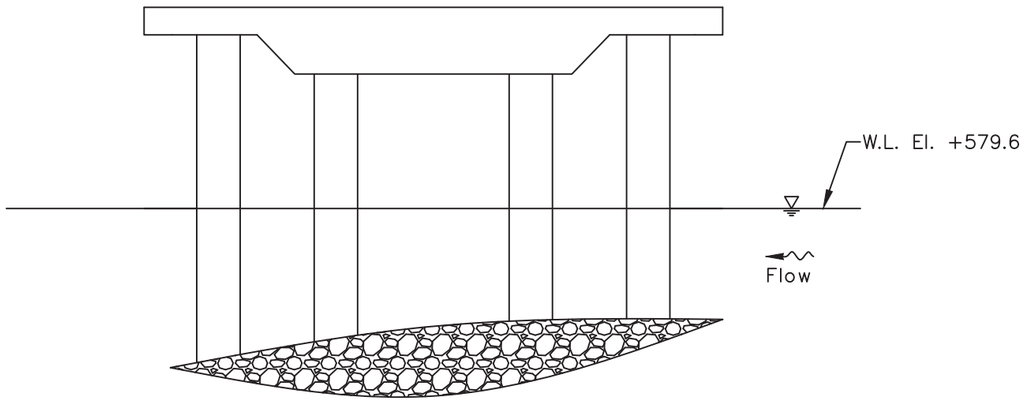
INSPECTED BY:
MOR

DRAWN BY:
BLV

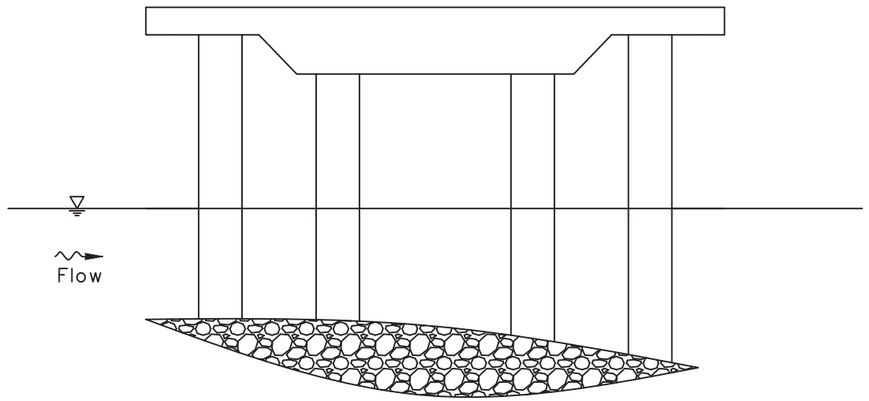
CHECKED BY:
JMJ

DATE:
MAY 2020

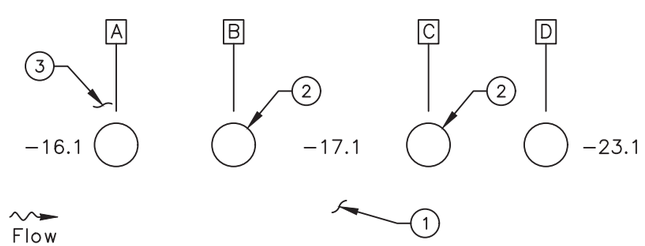
SHEET NO:
22



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.
3. A scour hole 5 ft diameter by 5 ft deep was observed around the North and South faces of the upstream nose at Column A.

LEGEND

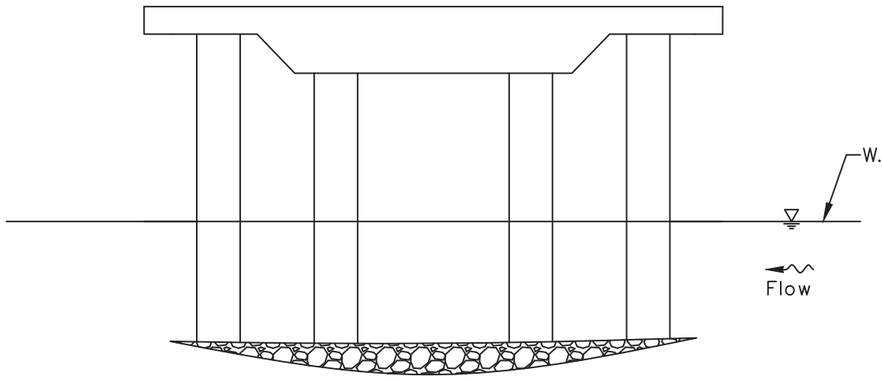
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

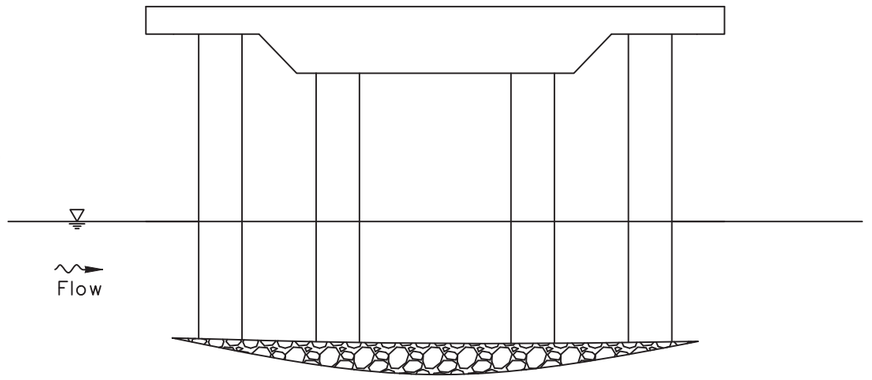
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 4
OTTAWA COUNTY, OHIO

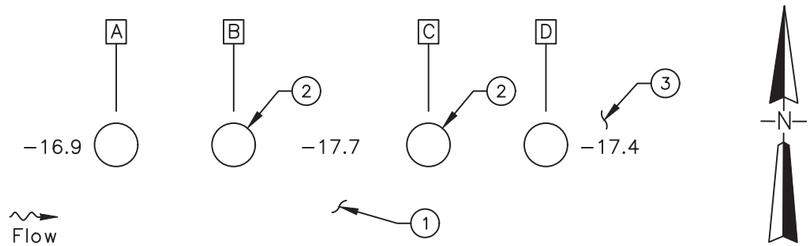
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	23



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.
3. A scour hole 4 ft diameter by 4 ft deep was observed on the downstream nose.

LEGEND

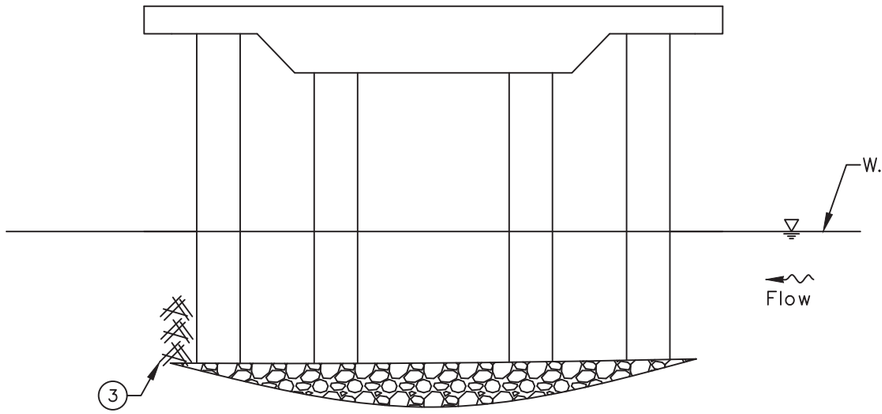
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

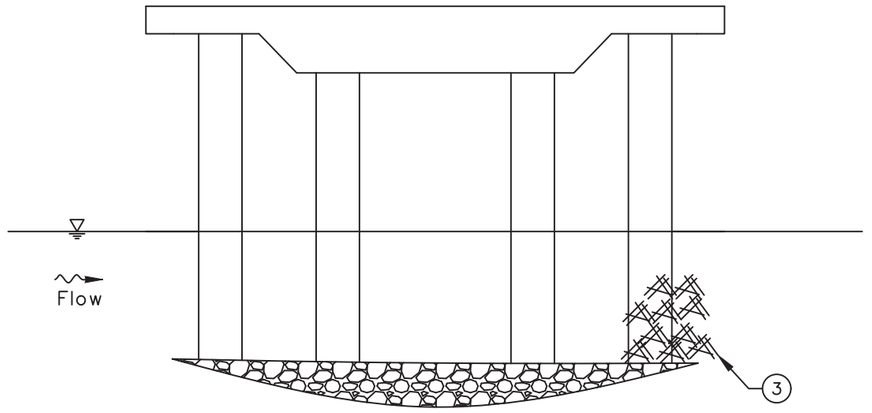
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 5
OTTAWA COUNTY, OHIO

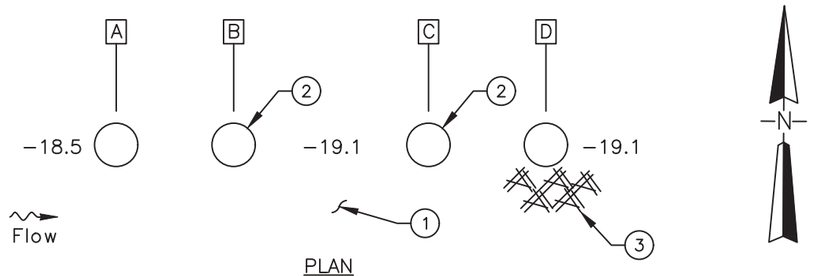
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	24



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.
3. Timber debris consisting of logs up to 18 in. diameter by 10 ft long was found on South face of Column D.

LEGEND

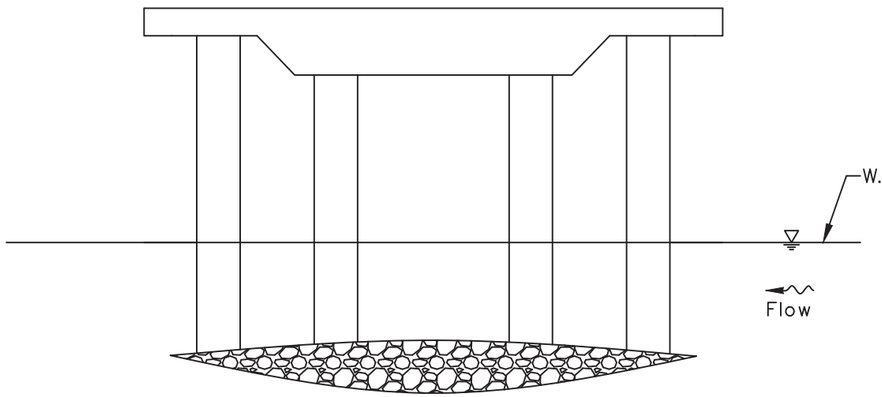
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

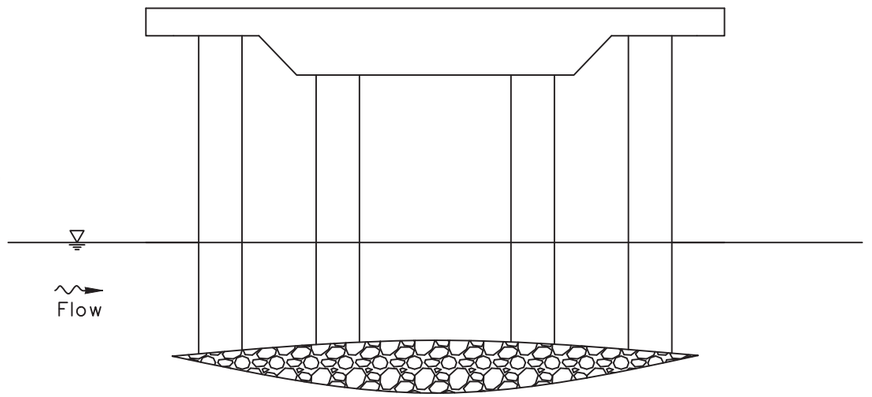
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 6
OTTAWA COUNTY, OHIO

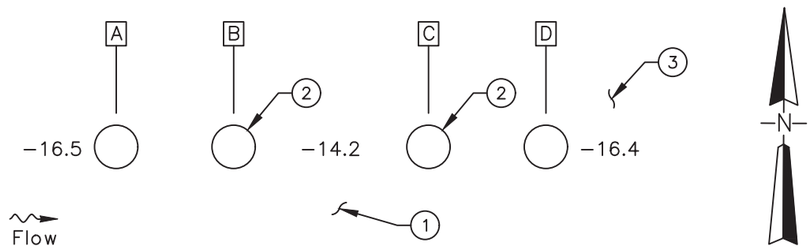
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	25



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.
3. A scour hole 4 ft deep by 4 ft diameter was found on the downstream nose.

LEGEND

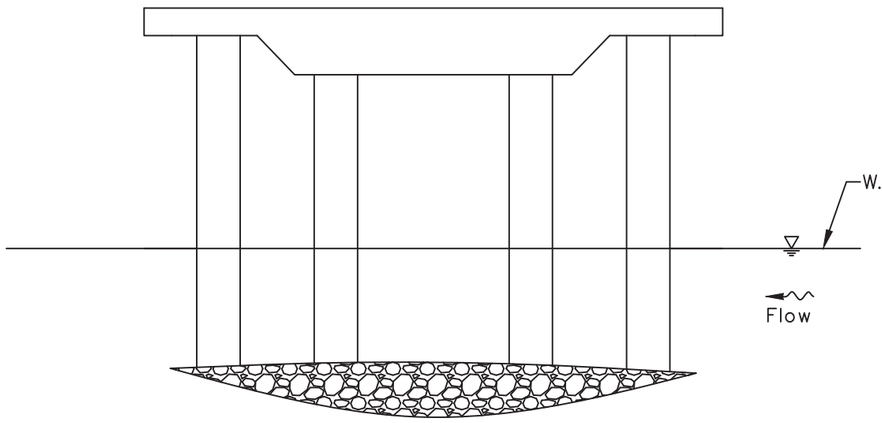
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

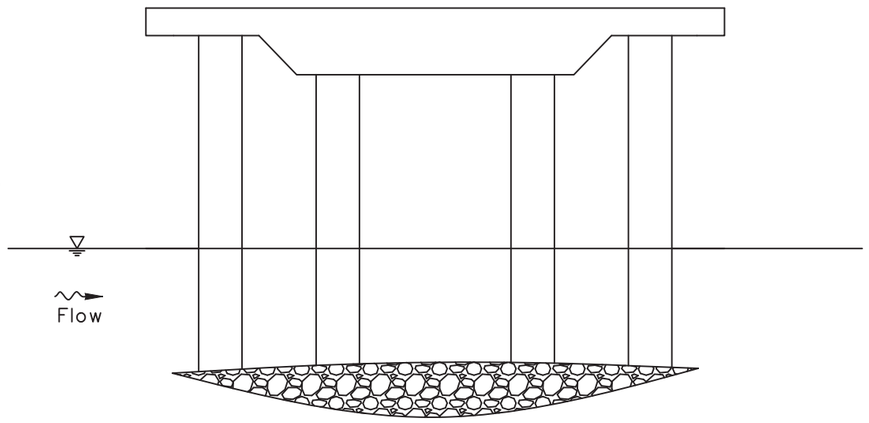
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 7
OTTAWA COUNTY, OHIO

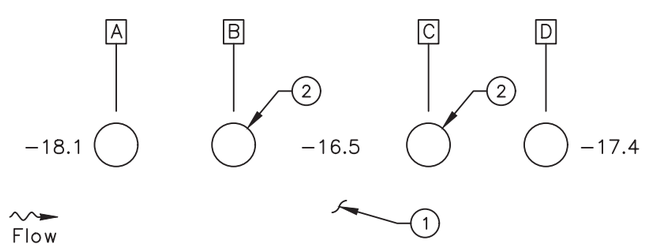
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	26



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

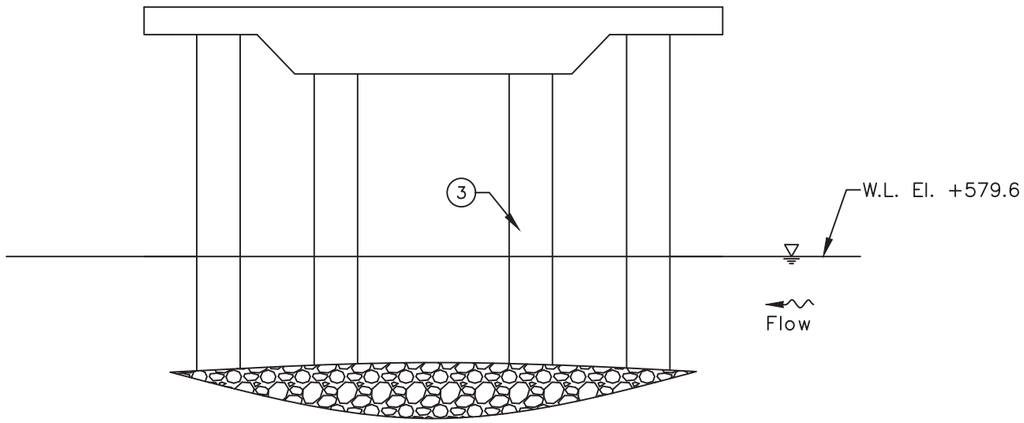
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

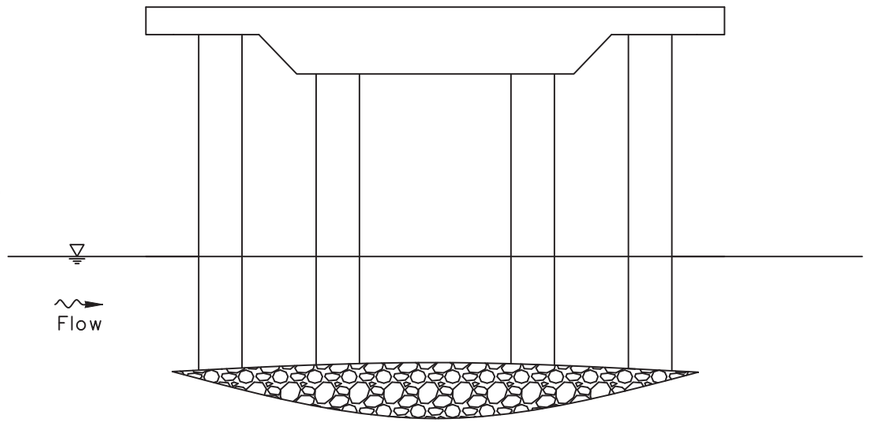
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 8
OTTAWA COUNTY, OHIO

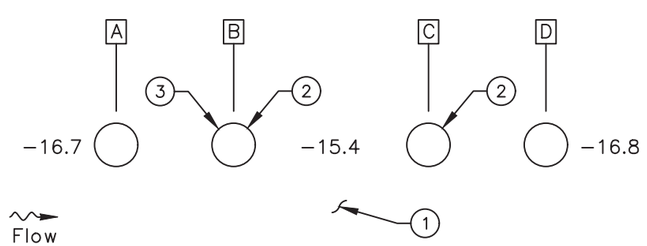
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	27



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.
3. A spall 18 in. diameter by 2 in. deep with one exposed rebar exhibiting light surface corrosion was observed on Column B, 1 ft above the waterline on the Northwest face.

LEGEND

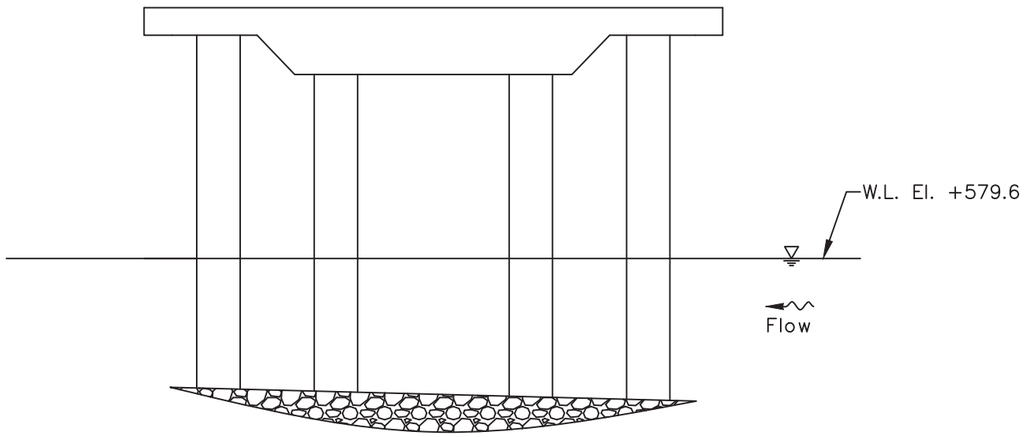
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

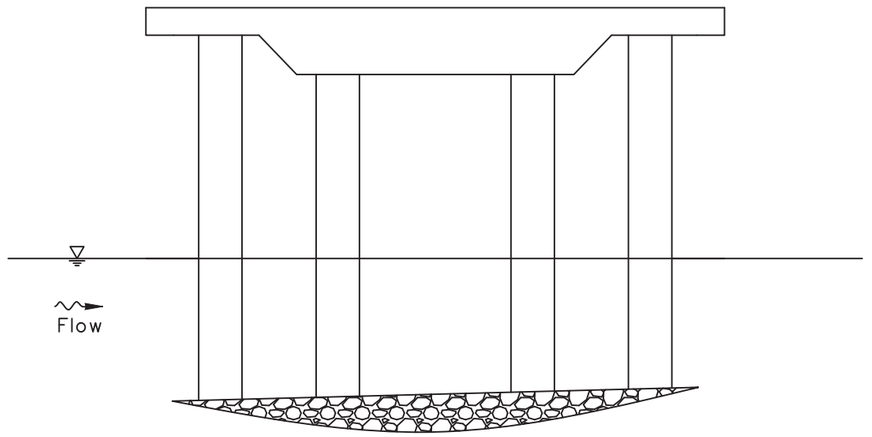
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 9
OTTAWA COUNTY, OHIO

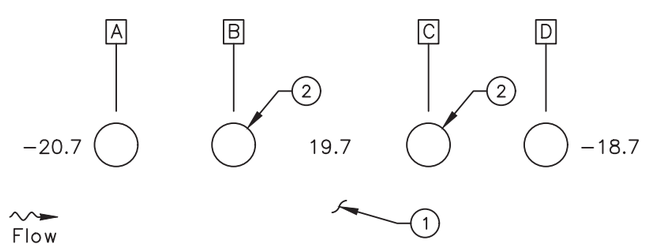
CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	28



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

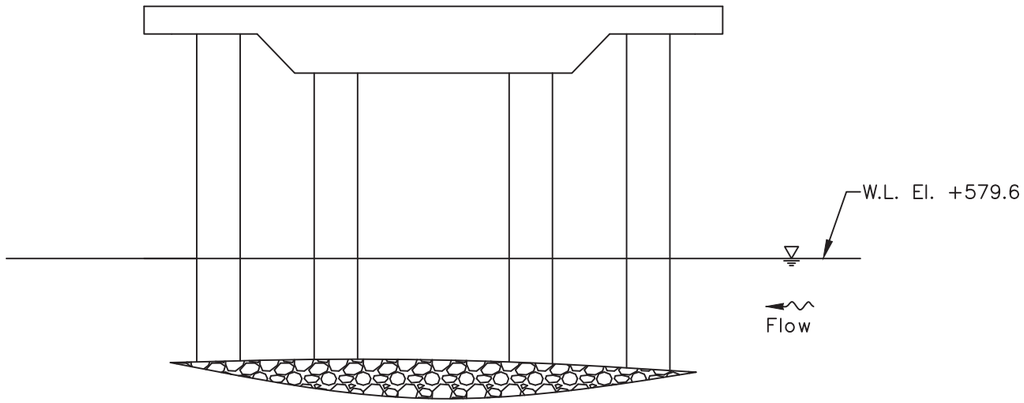
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

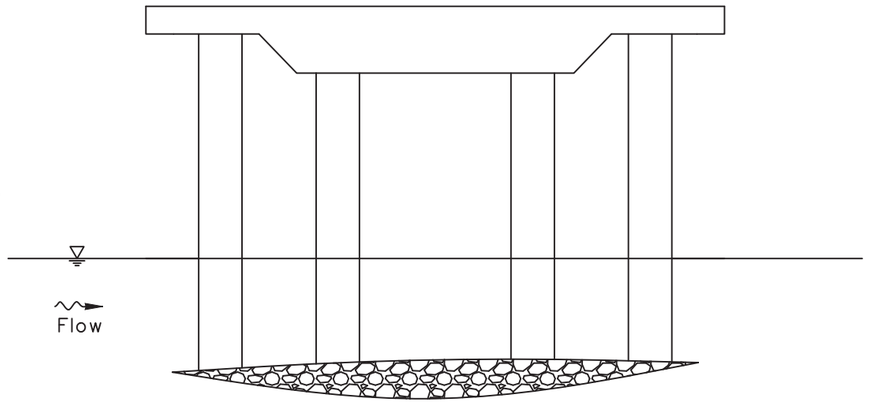
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 10
OTTAWA COUNTY, OHIO

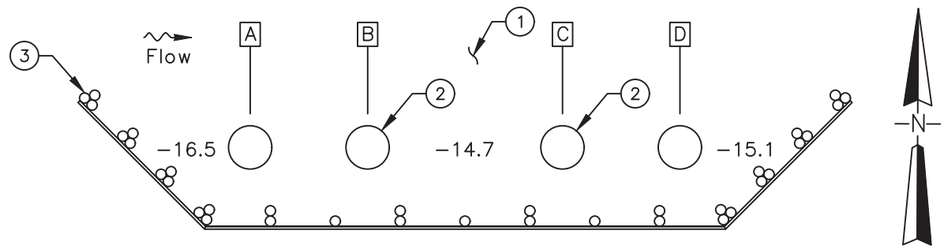
CEI PROJECT 55−12239.00
INSPECTED BY: MOR
DRAWN BY: BLV
CHECKED BY: JMJ
DATE: MAY 2020
SHEET NO: 29



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

(3) The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in.

Note: Fender system not shown in elevation views for clarity.

LEGEND

−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 11
OTTAWA COUNTY, OHIO

CEI PROJECT
55–12239.00

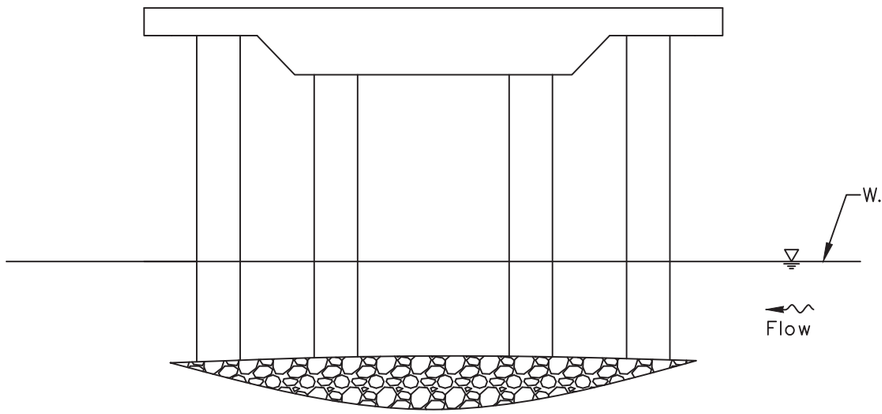
INSPECTED BY:
MOR

DRAWN BY:
BLV

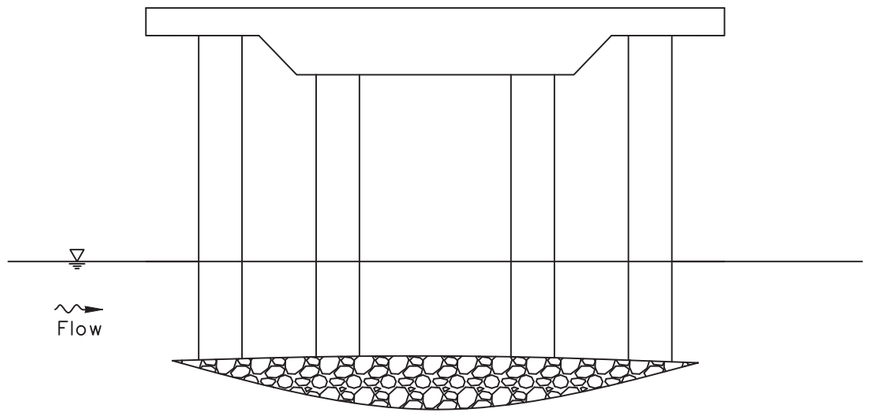
CHECKED BY:
JMJ

DATE:
MAY 2020

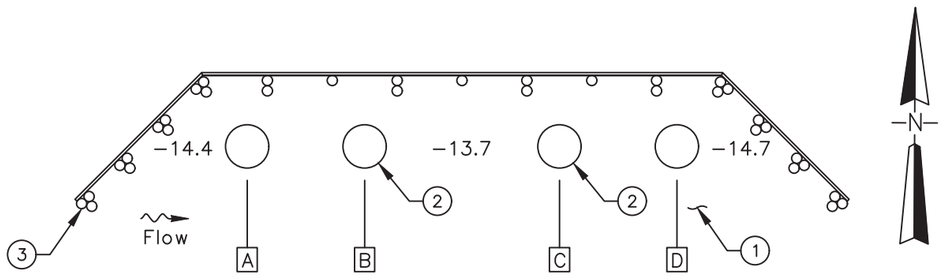
SHEET NO:
30



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

(3) The timber piles and fenders typically exhibited area splits and checks up to 1/8 in. wide with up to a maximum awl penetration of 3/16 in.

Note: Fender system not shown in elevation views for clarity.

LEGEND

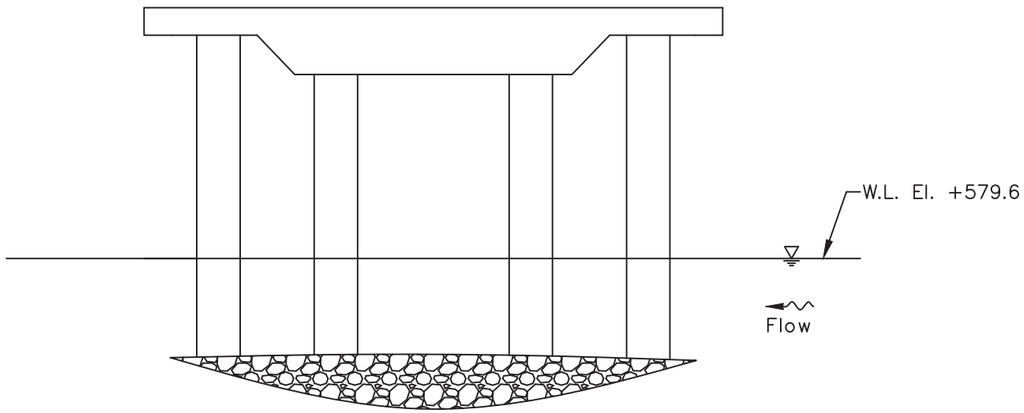
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

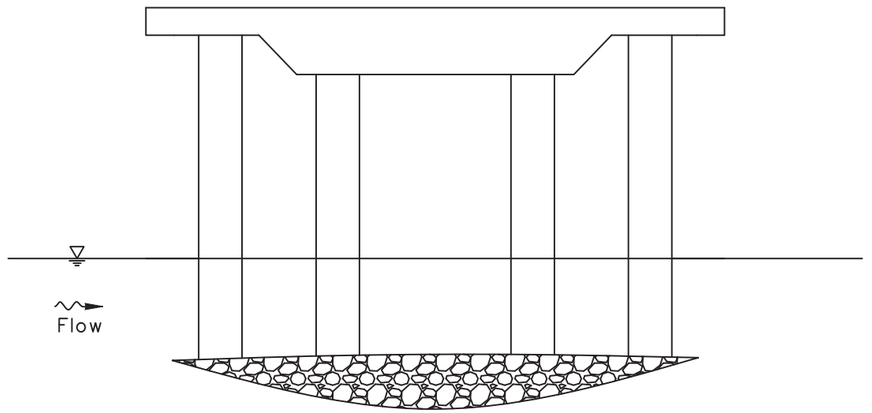
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 12
OTTAWA COUNTY, OHIO

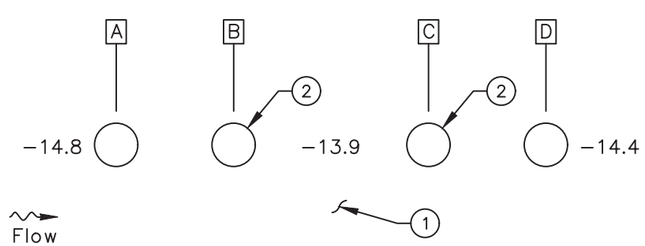
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	31



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

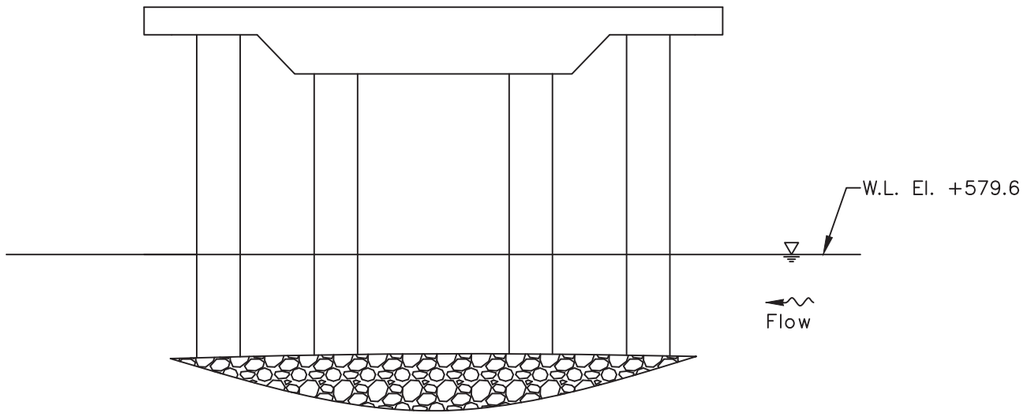
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

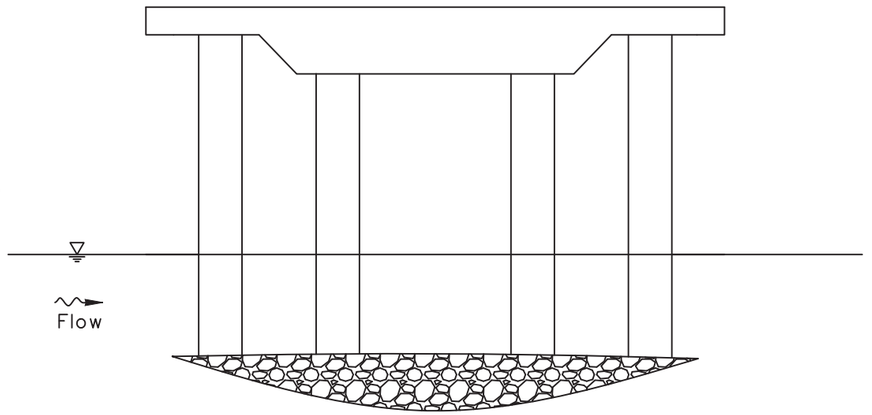
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 13
OTTAWA COUNTY, OHIO

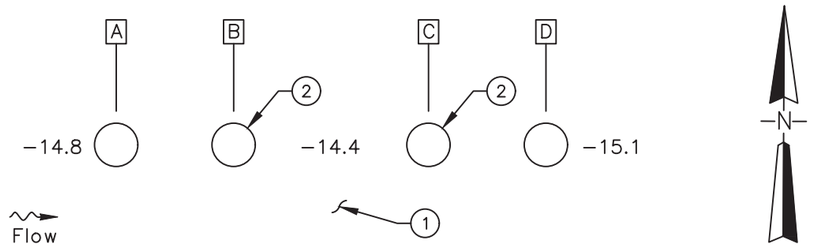
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	32



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

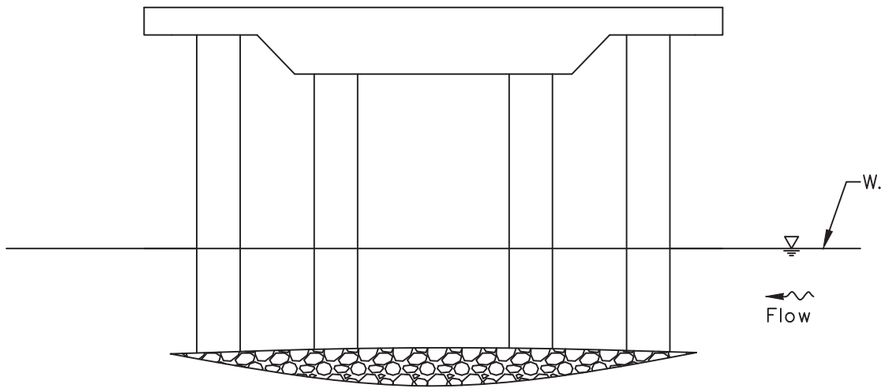
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

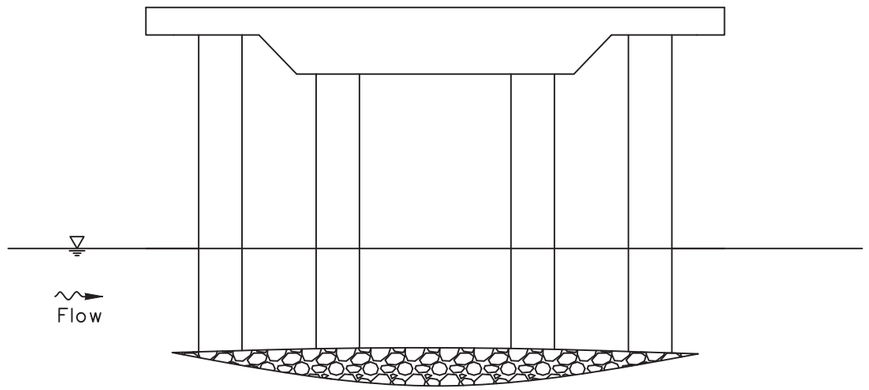
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 14
OTTAWA COUNTY, OHIO

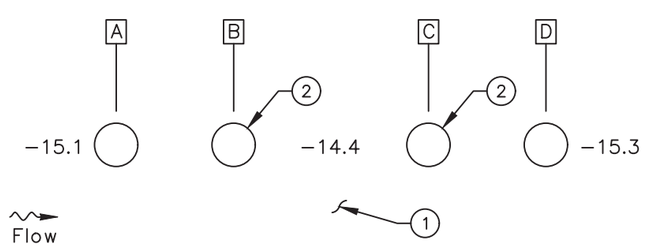
CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	33



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 15
OTTAWA COUNTY, OHIO

CEI PROJECT
55−12239.00

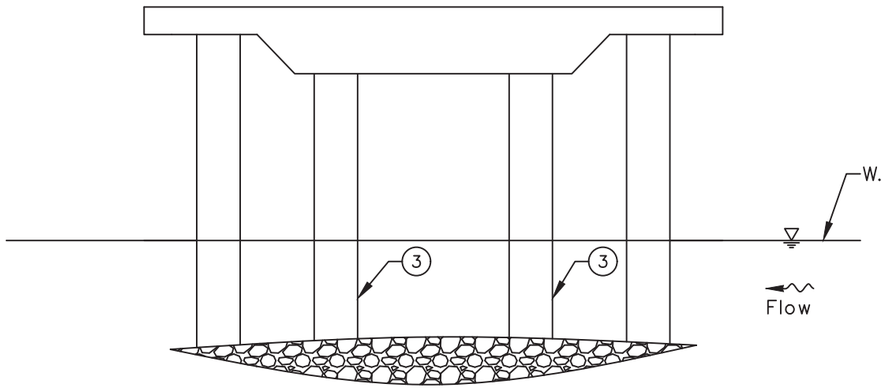
INSPECTED BY:
MOR

DRAWN BY:
BLV

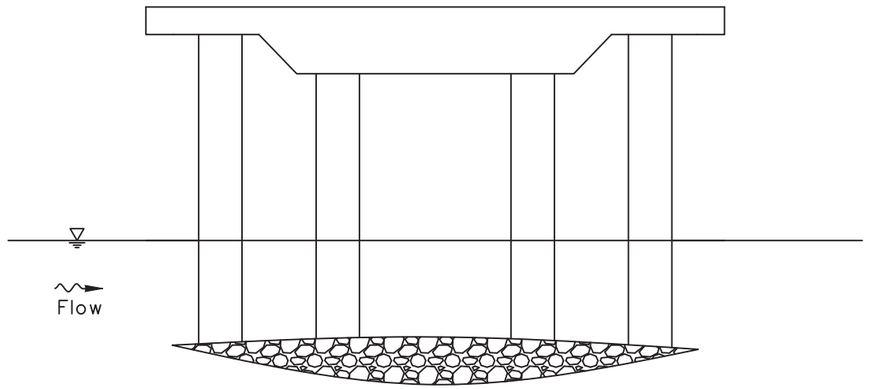
CHECKED BY:
JMJ

DATE:
MAY 2020

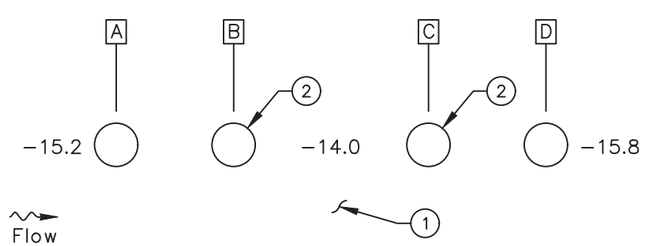
SHEET NO:
34



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

(3) A 2 ft vertical concrete jacket was observed around Columns B and C beginning at 10.5 ft below waterline and was observed to be in good condition.

LEGEND

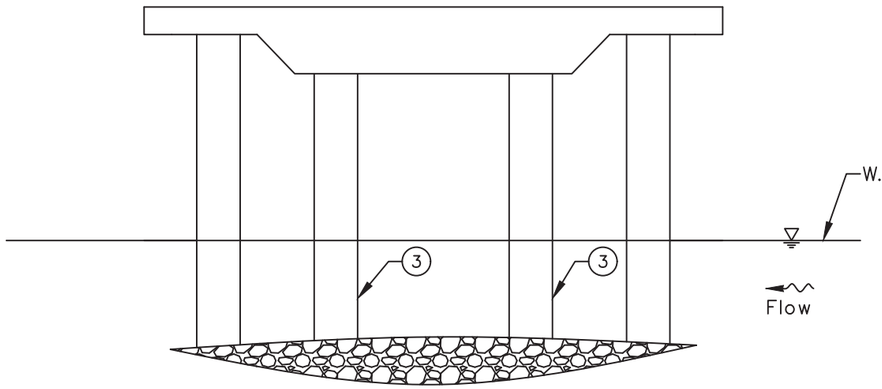
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

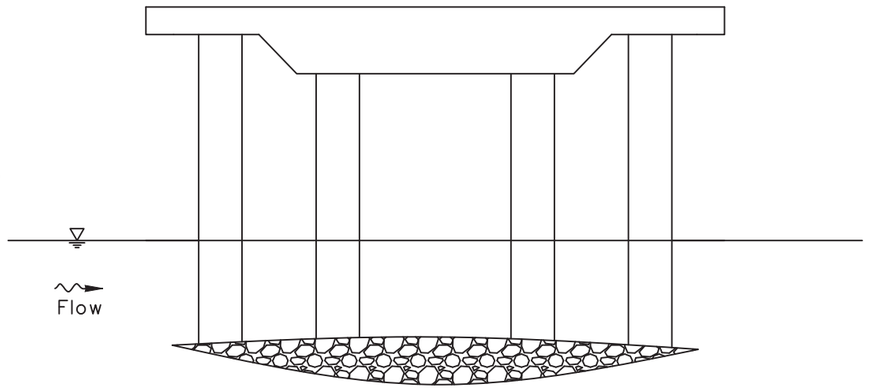
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 16
OTTAWA COUNTY, OHIO

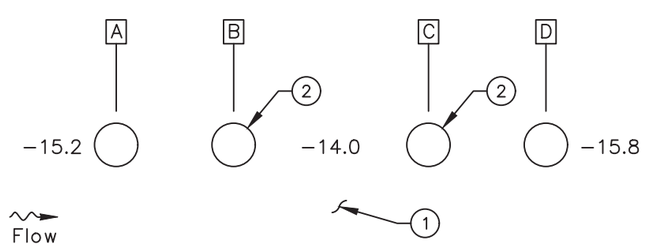
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	35



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

(3) A 2 ft vertical concrete jacket was observed around Columns B and C beginning at 10.5 ft below waterline and was observed to be in good condition.

LEGEND

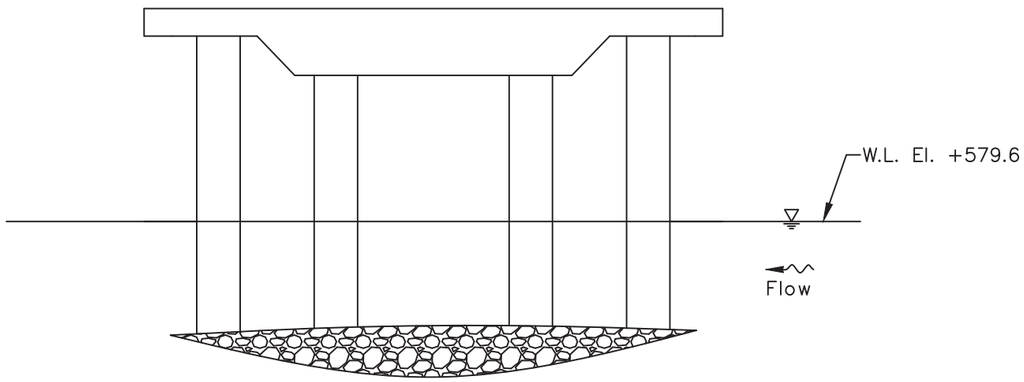
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

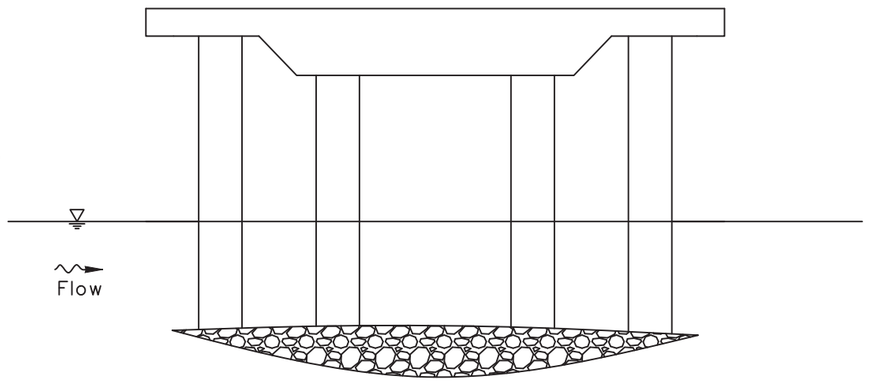
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 17
OTTAWA COUNTY, OHIO

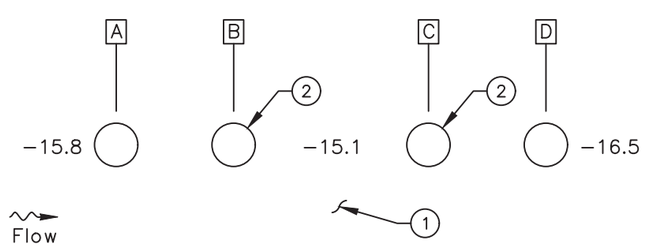
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	36



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

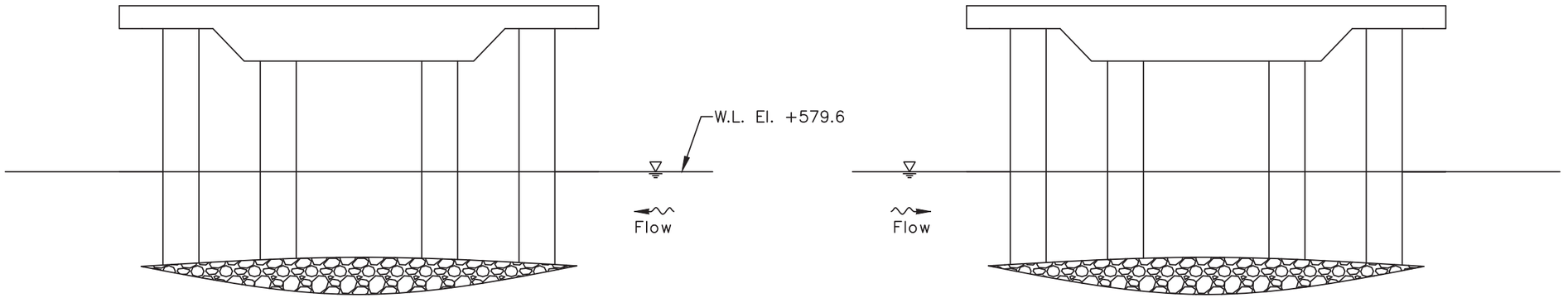
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

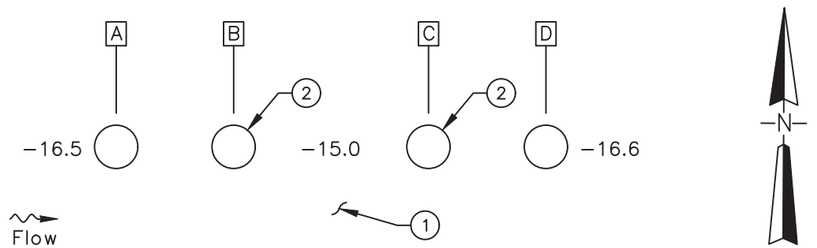
SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 18
OTTAWA COUNTY, OHIO

CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	37



NORTH ELEVATION
(LOOKING SOUTH)

SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

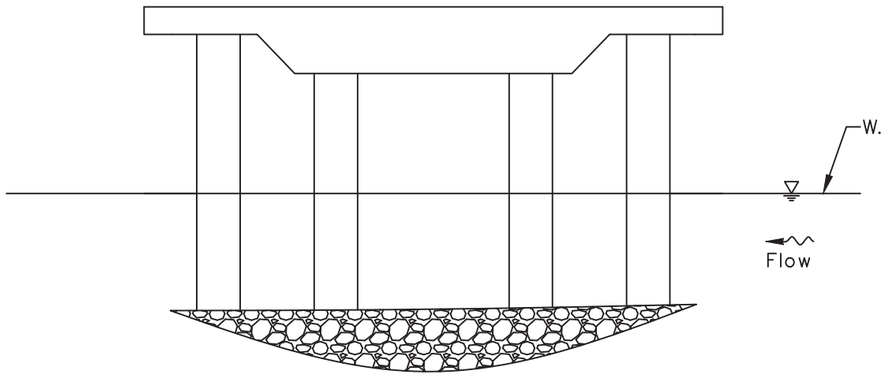
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

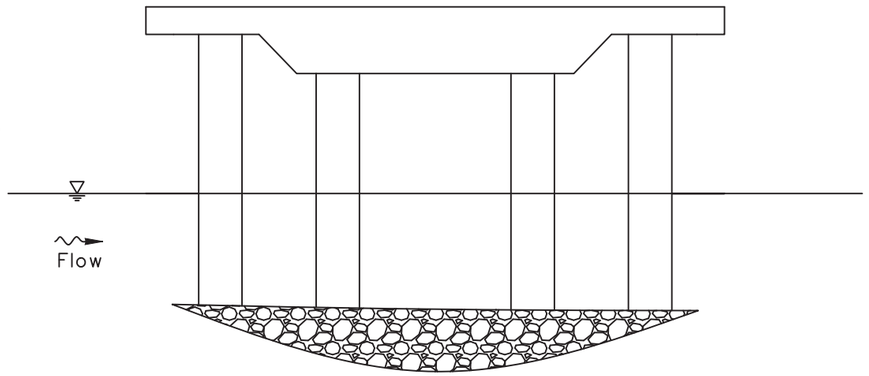
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 19
OTTAWA COUNTY, OHIO

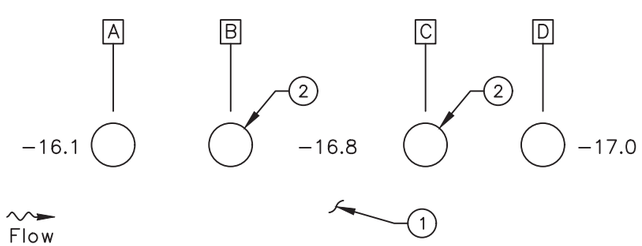
CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	38



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

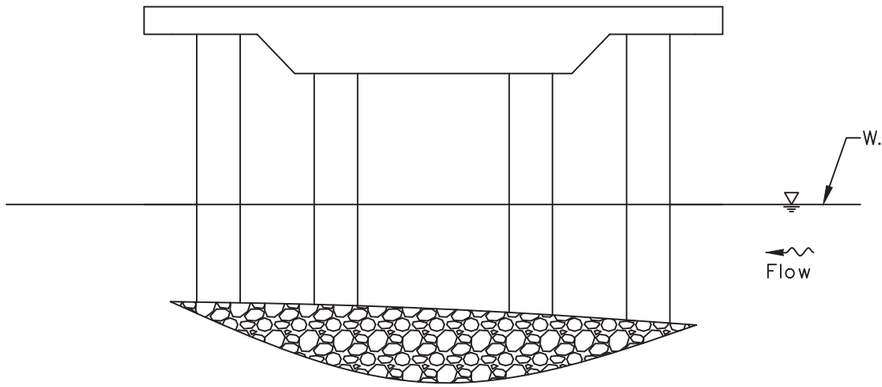
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

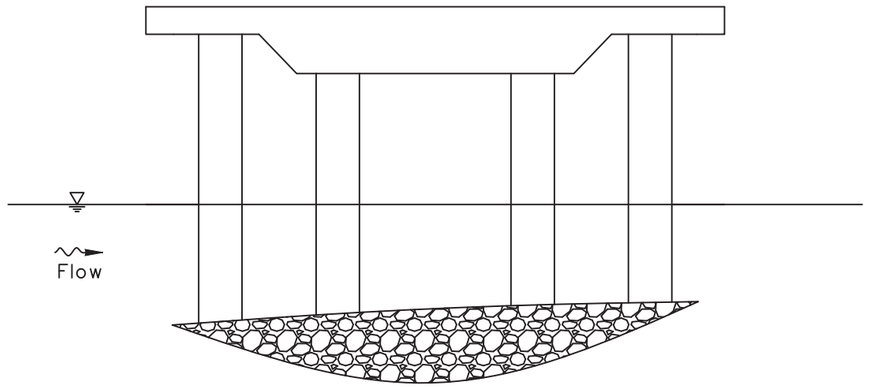
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 20
OTTAWA COUNTY, OHIO

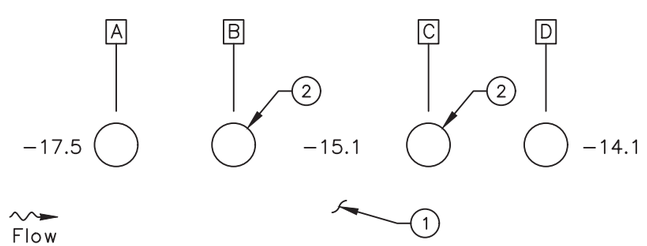
CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	39



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

1. The channel bottom material consisted of riprap and sand infill with no probe rod penetration.
2. Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

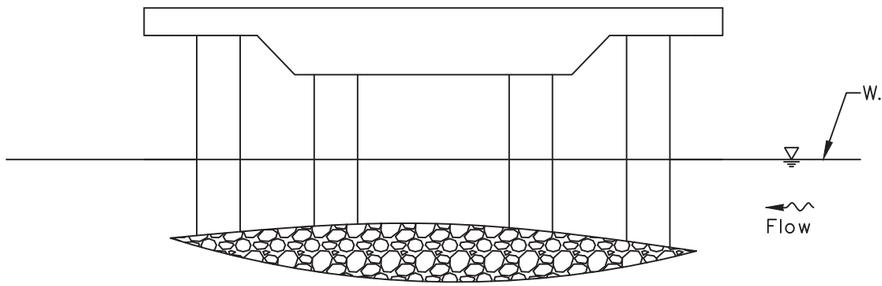
−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

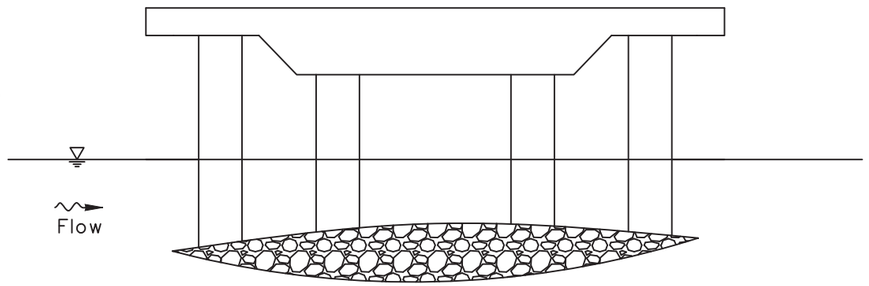
Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 21
OTTAWA COUNTY, OHIO

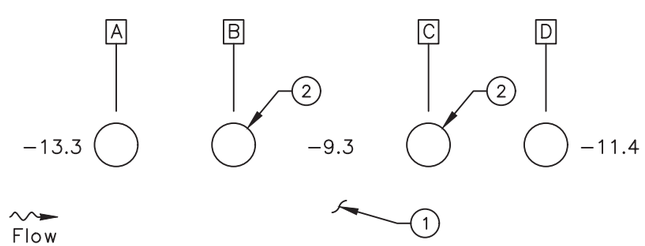
CEI PROJECT	55–12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	40



NORTH ELEVATION
(LOOKING SOUTH)



SOUTH ELEVATION
(LOOKING NORTH)



PLAN

INSPECTION NOTES:

(1) The channel bottom material consisted of riprap and sand infill with no probe rod penetration.

(2) Columns B and C typically exhibited moderate corrosion and rust nodules up to 1 in diameter with pitting up to $\frac{1}{8}$ in.

LEGEND

−2.7	Sounding Depth from Waterline (ft)
———	Approximate Channel Bottom – May 2020
	Timber Debris
	Water Surface

COLLINS ENGINEERS
124 Venture Court, Ste 10
Lexington, KY 40511
Phone: 859-367-0097
Fax: 859-367-0140

Ohio Department of Transportation, District 2
317 East Poe Rd.
Bowling Green, OH 45601
Phone: 419-353-8131

SR-2 OVER SANDUSKY BAY
STRUCTURE NO. 6200788 (OTT-2-2839)
BENT 22
OTTAWA COUNTY, OHIO

CEI PROJECT	55−12239.00
INSPECTED BY:	MOR
DRAWN BY:	BLV
CHECKED BY:	JMJ
DATE:	MAY 2020
SHEET NO:	41

EXHIBIT 2 – INSPECTION PHOTOGRAPHS

Photograph No. 1: Overall View of Structure No. 6200788 (OTT-2-2839), Looking West.

Photograph No. 2: Overall View of Structure No. 6200788 (OTT-2-2839), Looking East.

Photograph No. 3: View of the North Embankment Upstream of the Structure, Looking Northeast.

Photograph No. 4: View of the North Embankment at the Structure, Looking Northeast.

Photograph No. 5: View of the North Embankment Downstream of the Structure, Looking Northwest.

Photograph No. 6: View of the South Embankment Upstream of the Structure, Looking Southeast.

Photograph No. 7: View of the South Embankment at the Structure, Looking Southwest.

Photograph No. 8: View of the South Embankment Downstream of the Structure, Looking Southwest.

Photograph No. 9: View of the North Face of Bent 1, Looking Southwest.

Photograph No. 10: View of the South Face of Bent 1, Looking Northeast.

Photograph No. 11: View of the North Face of Bent 2, Looking Southwest.

Photograph No. 12: View of the South Face of Bent 2, Looking Northeast.

Photograph No. 13: View of the North Face of Bent 3, Looking Southwest.

Photograph No. 14: View of the South Face of Bent 3, Looking Northeast.

Photograph No. 15: View of the North Face of Bent 4, Looking Southwest.

Photograph No. 16: View of the South Face of Bent 4, Looking Northeast.

Photograph No. 17: View of the North Face of Bent 5, Looking Southwest.

Photograph No. 18: View of the South Face of Bent 5, Looking Northeast.

Photograph No. 19: View of the North Face of Bent 6, Looking Southwest.

Photograph No. 20: View of the South Face of Bent 6, Looking Northeast.

Photograph No. 21: View of the North Face of Bent 7, Looking Southwest.

Photograph No. 22: View of the South Face of Bent 7, Looking Northeast.

Photograph No. 23: View of the North Face of Bent 8, Looking Southwest.

Photograph No. 24: View of the South Face of Bent 8, Looking Northeast.

Photograph No. 25: View of the North Face of Bent 9, Looking Southwest.

Photograph No. 26: View of the South Face of Bent 9, Looking Northeast.

Photograph No. 27: View of the North Face of Bent 10, Looking Southwest.

Photograph No. 28: View of the South Face of Bent 10, Looking Northeast.

Photograph No. 29: View of the North Face of Bent 11, Looking Southwest.

Photograph No. 30: View of the South Face of Bent 11, Looking Northeast.

Photograph No. 31: View of the North Face of Bent 12, Looking Southwest.

Photograph No. 32: View of the South Face of Bent 12, Looking Northeast.

Photograph No. 33: View of the North Face of Bent 13, Looking Southwest.

Photograph No. 34: View of the South Face of Bent 13, Looking Northeast.

Photograph No. 35: View of the North Face of Bent 14, Looking Southwest.

Photograph No. 36: View of the South Face of Bent 14, Looking Northeast.

Photograph No. 37: View of the North Face of Bent 15, Looking Southwest.

Photograph No. 38: View of the South Face of Bent 15, Looking Northeast.

Photograph No. 39: View of the North Face of Bent 16, Looking Southwest.

Photograph No. 40: View of the South Face of Bent 16, Looking Northeast.

Photograph No. 41: View of the North Face of Bent 17, Looking Southwest.

Photograph No. 42: View of the South Face of Bent 17, Looking Northeast.

Photograph No. 43: View of the North Face of Bent 18, Looking Southwest.

Photograph No. 44: View of the South Face of Bent 18, Looking Northeast.

Photograph No. 45: View of the North Face of Bent 19, Looking Southwest.

Photograph No. 46: View of the South Face of Bent 19, Looking Northeast.

Photograph No. 47: View of the North Face of Bent 20, Looking Southwest.

Photograph No. 48: View of the South Face of Bent 20, Looking Northeast.

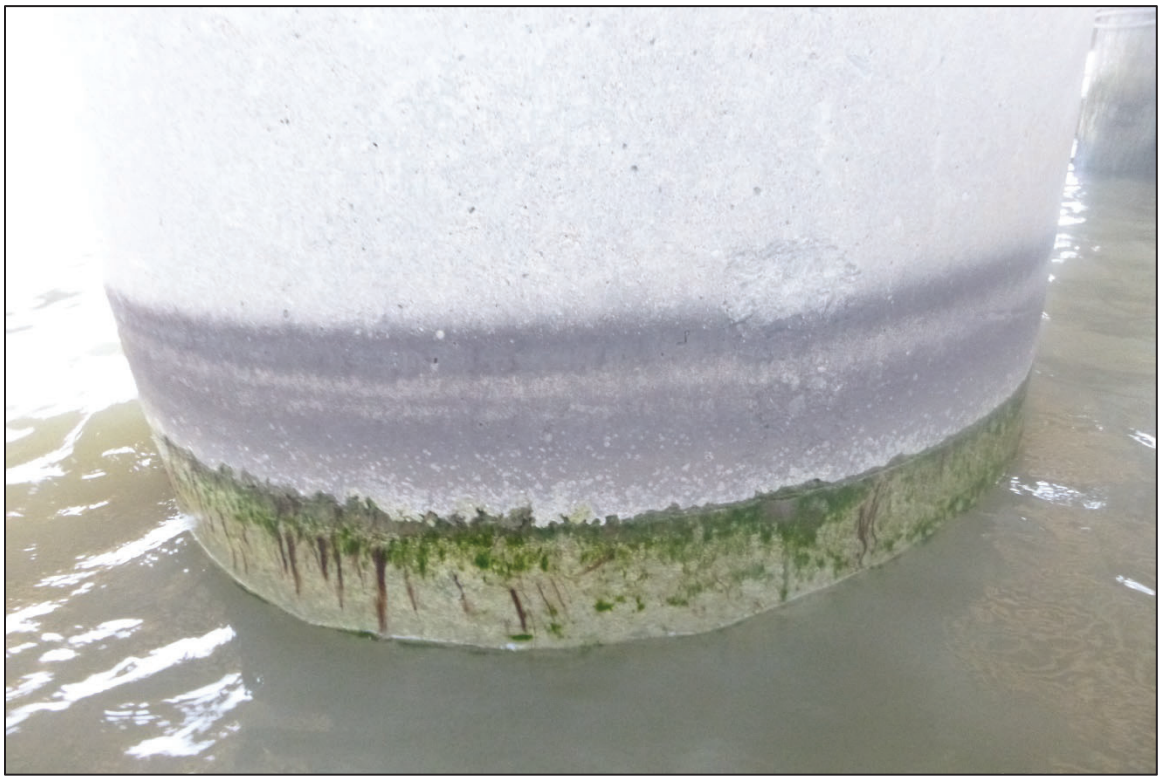
Photograph No. 49: View of the North Face of Bent 21, Looking Southwest.

Photograph No. 50: View of the South Face of Bent 21, Looking Northeast.

Photograph No. 51: View of the North Face of Bent 22, Looking Southwest.

Photograph No. 52: View of the South Face of Bent 22, Looking Northeast.

Photograph No. 53: View of the Typical Concrete and Steel Condition at the Waterline of a New Column design on the North Face of Bent 1, Looking South.



Photograph No. 54: View of the Typical Concrete Condition at the Waterline of an Original Column design on the North Face of Bent 1, Looking South.

Photograph No. 55: View of the Steel Upstream Fender System, Looking Southwest.

Photograph No. 56: View of the Timber Downstream Fender System, Looking Southeast.

Photograph No. 57: View of the Typical Timber Pile of the Fender System, Looking Southeast.

Photograph No. 58: View of the Typical Fender of the Fender System, Looking Northeast.

EXHIBIT 3 – UNDERWATER DIVE INSPECTION PROCEDURE CHECKLIST

Underwater Dive Inspection Procedure Checklist

Acceptable written procedures communicate to the next dive team what is necessary to ensure a safe and successful inspection. Each bridge requiring underwater dive techniques must have a unique written inspection procedure. The prior inspection report does not suffice for the required procedures. It is valuable to review the last inspection notes, but they do not serve the same purpose as a stand-alone inspection procedure.

This document shall be completed for all underwater dive inspections. This document shall be reviewed prior to performing the field work and it shall be updated when necessary.

I. Bridge Identification

a. Agency with Inspection Responsibility: ODOT DISTRICT 2

Dive Frequency: 60 months

SFN: 6200788 Bridge Number (County-Route-SLM-SD): OTT-2-2839

Superstructure Type Main Span Type: COMPOSITE REINFORCED CONCRETE

Approach Span: REINFORCED CONCRETE

Substructure Type Abutment Type: REINFORCED CONCRETE

Pier Type: REINFORCED CONCRETE

Total Pier Count: 22

Total Pier Count in water: 22

Foundations: UNKNOWN

Feature Intersected SANDUSKY BAY

b. Photographs

Endview

Elevation

Underside

II. Office and Field Assessment

Prior to the inspection, obtain and review copies of the previous underwater inspection reports, routine inspection reports, scour and hydraulic information, and design plans in preparation of the inspection. Divers should pay particular attention given to any observed areas of deterioration, the channel conditions and factors that may accelerate material deterioration. Changes shall be noted in the inspection procedure. Site conditions should be reviewed prior to diving.

a. Channel Conditions

____Waterway features

____Rapid stream flows,

____Significant debris accumulation

____Constricted waterway openings

____Soft or unstable streambeds

____Meandering channels

____Other which may promote scour and undermining of substructure elements

____Navigable Waterway

____Flow Controls

b. Anticipated Water conditions which may affect the inspection

____Cold Water (Apprx. Temp____)

____Black water

____Rapid stream flows

____Near military facility

____Tribal fishing

____Water quality

____History of Log jams

c. Identify factors that may accelerate the deterioration of the bridge elements:

____Highly corrosive water

____Unprotected steel members

____Other

Risk Factor Narrative:

III. **Contacts Prior to Work**

District 2 Bridge Engineer: David Geckle, P.E.

Email: david.geckle@dot.ohio.gov – Phone: 419-373-4377

Point of contact for immediate action such as closing the bridge due to findings

Contact Bridge Owner ____14_____ (number) days before the proposed underwater inspection.

Special contracting and scheduling procedures prior to inspection, include recommended lead time

Entity	Contact Name and Title	Contact Phone	Lead Time
Coast Guard			
Property Owner			
Access Equipment			
Lake or River draw-down			
Canal dry time			
Tree removal			
Other:			
Other:			

IV. **Dive Team Shall Include the Following:**

Dive Team Narrative:

The dive team consisted of one Team Leader (NBIS, P.E., ADCI) and two Team Members (NBIS, UW, ADCI)

Example: The Bridge shall be investigated using a three-member dive team: one supervisor to monitor rack box and take notes, one diver, and one tender/standby diver. There shall be one NBIS Team Leader onsite at all times.

V. Site Information

Navigable waterway:	Y / N	Anticipated current	__<1__ ft
If Yes, waterway river point	__N/A__	Scour Critical (item 113):	___5____
Anticipated water visibility depth	__1___ ft	POA in place:	Y/N
Anticipated Dive depth	__21.5__ ft	Scour Monitoring devices present:	Y/N

Verify the Scope of Services when work is contracted for the procedure for underwater elements that are not in water during an inspection.

Site Information Narrative:

The underwater inspection consists of a visual and tactile examination of the accessible surfaces of the substructure items in water. Additional items should reference the scope of services in the contract. For reference the following items are in water:

Item	Number of Units	Level of Inspection (1, 2 or 3) with Commentary
Piers and Number of Columns	22	100% LEVEL I 10% LEVEL II
Abutment	N/A	
Culvert	N/A	
Scour Countermeasures	N/A	
Fenders or Dolphins	N/A	

Photographs should be taken, if water clarity permits, for typical conditions, conditions that have changed since last inspection and significant or noteworthy deficiencies. The type of channel bottom material, the presence or extent of scour, the presence or extent of riprap, the presence or extent of drift and debris, and the location of any foundation exposure or undermining shall be quantified. Include depth, length, height and location of deficiencies.

VI. **Equipment and Field Logistics**

a. The inspection should be conducted using:

____Chest waders

____Hip waders

_X__Diving equipment

____SCUBA (Note that ADCI Consensus Standards require communication systems be employed for both SCUBA and Surface-Supplied (whether air or mixed-gas) dive modes)

____SCUBA with communication

_X__Surface Supplied with communication

b. The channel bottom should be sounded utilizing

__X__Digital fathometer

__X__Telescoping survey rod

____ acoustic imaging

c. During the inspection, the divers should work from

____Shore

__X__Boat

____Either

The note taker should work alongside the dive team.

d. Access to the waterway should be obtained from the shore (north bank, southwest quadrant, driveway 30 yards north etc.)

__Clemons Boats Private Boat Ramp_____

e. The maximum depth of the channel is typically measured__20__ feet from DOWNSTREAM NOSE OF BENT 4_____

_____

Reference Datum: Bottom of Cap at the Downstream Nose of Bent 1

Soundings should be dictated by the scope of work. When not detailed in the scope they should be repeated from the previous soundings. If neither exist then they need to be taken in a grid pattern between substructure units 100' upstream and 100' downstream.

VII. Inspection Procedure History

Created: COLLINS ENGINEERS, INC. Date: 9/25/2020

Updated By: Date:

Updated By: Date:

Updated By: Date:

Updated By: Date:

Updated By: Date:

VIII. Other Narrative Not Included In Previous Sections