

Underwater Inspection Report

Inspection Performed for:



Prepared by:



Owner: Quincy Park Authority
Structure: Quinsippi Island Bridge
Location: Quincy, Illinois
Body of Water: Mississippi River
Inspection Date: June 18, 2020

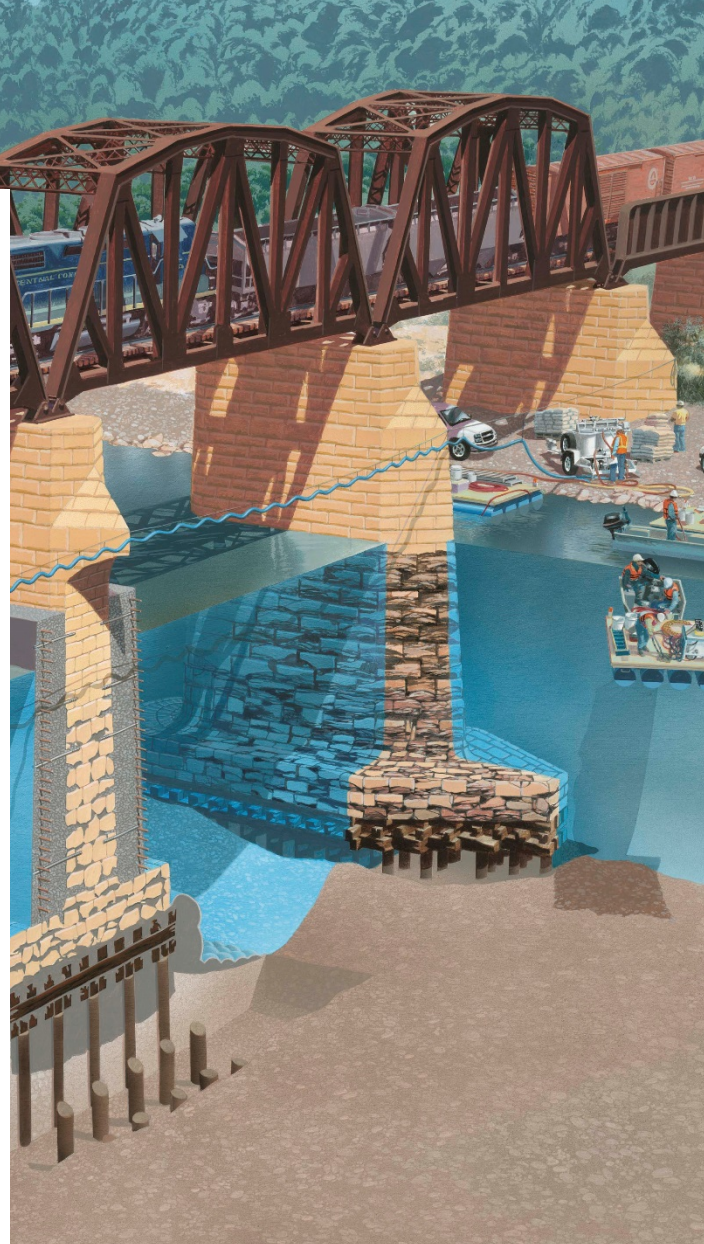




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Disclaimer: The information provided herein is for the limited administrative and operational use of Quincy Park Authority and their contractors. Other requests for this document shall be referred to J.F. Brennan Company, Inc. The accuracy of the information provided is limited by the conditions of the site during the day of the inspection.



1. Introduction/Background

J.F. Brennan Company, Inc. (Brennan) performed an inspection on the exterior surfaces of the underwater portions of the bridge substructures. The inspection was performed for its 60-month rotational inspection. Environmental conditions, such as channel bed material, biological growth, and drift/debris, were generally noted. The structures were also inspected to determine if foundational elements were exposed and/or if scour or undermining was present.

Structure Data

Owner:	Quincy Park Authority
Structure:	Quinsippi Island Bridge
Location:	Quincy, Illinois
Waterway Crossing:	Mississippi River
Bridge Orientation:	East to West
River Orientation:	Flows North to South

No inspection was performed on the following: any substructure elements out of the channel, any superstructure elements, or any other bridge or approach/surrounding elements. All referenced locations listed below are either cardinal directions, upstream/downstream, or right/left looking at the structure from the downstream looking upstream.

2. Method of Investigation

A FHWA Level I visual and tactile inspection of the structure and surrounding channel bed was used to observe signs of distress and deterioration including, but not limited to: movement, cracks, honeycombing, scaling, spalling, exposed reinforcing steel, collision damage, scour, undermining, and piping.

Date of Inspection: June 18, 2020

Brennan Dive Team:	Sean McMullen	Inspection Team Leader
	Mike Converso	Inspection Diver
	Hector Hernandez	Tender

The inspection was conducted using surface-supplied air equipment including a Kirby Morgan dive helmet with full diver-to-surface communications; and a helmet-mounted Outland Video Camera / Light combo with a video recorder providing live streaming at the dive platform.

All dives were conducted in accordance with Brennan's Safe Diving Practices Manual as well as all pertinent ADCI, OSHA, and USCG regulations. Additionally, all dives adhered to the dive schedules and decompression tables outlined in the U.S. Navy Dive Manual, Rev. 6.

Depth soundings were taken using a metal measuring staff and/or the boat mounted Hummingbird depth finder. The soundings were taken perpendicular to each in-water structure face starting at the structure and proceeding out at an interval of every five (5) feet out to 20 feet. Cross-channel soundings were taken 50 feet upstream and downstream, parallel to the bridge (See 'Appendix A, Figure A2').

All measurements referenced hereinafter were approximate and reflect the conditions on-site at the time of the inspection.

The three (3) levels of underwater inspections are described as:



Level I - A simple visual or tactile (by feel) inspection, without the extensive use of tools or measuring devices. It is usually employed to gain an overview of the structure and will precede or verify the need for a more detailed Level II or Level III inspection.

Level II - A detailed inspection which involves physically cleaning or removing growth from portions of the structure. In this way, hidden damage may be detected and assessed for severity. This level is usually performed on at least a portion of a structure, supplementing a Level I.

Level III - A highly detailed inspection of a structure which is warranted if extensive repair or replacement is being considered. This level requires extensive cleaning, detailed measurements, and testing techniques that may be either destructive or non-destructive in nature.

3. Inspection Findings

The Quinsippi Island Bridge was orientated in an East/West direction (See 'Appendix B, Figures 1 & 2'). For this report, Brennan labeled all substructures in descending order starting from the East and working West.

- The overall length of the bridge was approximately 525-feet and had six masonry stone support piers that were inspected.
- The bridge was a steel deck girder design with twin superstructures supporting vehicular traffic.

Water Elevation: 15-feet, 5½-inches from the bottom of the railroad bridge timber to the waterline.

Gage Height: 15.25 feet at the USCE 395556091245801 Mississippi River at Quincy, IL @ 12pm 06/18/20.

Water Discharge: N/A at site location. Moderate.

Underwater Visibility: Satisfactory, approximately 6-inches to 24-inches.

Pier 26 (East Abutment)

The East Abutment was constructed from Masonry Stone with mortar fill (See 'Appendix B, Figures 3 - 6').

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Right Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - This side of the Abutment was in very shallow water.
- Downstream Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - There was a minor amount of debris stacked up (See 'Appendix B, Figure 27').
- The bottom substrate consisted of small riprap and mud.

Upstream		Depths	Right Face		Depths
	0 Feet	3'		0 Feet	N/A



<i>Feet From</i>	5 Feet	3'	<i>Feet From</i>	5 Feet	N/A
<i>Pier</i>	10 Feet	3'	<i>Pier</i>	10 Feet	N/A
	15 Feet	3'		15 Feet	N/A
	20 Feet	3'		20 Feet	N/A
Downstream		<i>Depths</i>	Left Face		<i>Depths</i>
	0 Feet	4'		0 Feet	7'
<i>Feet From</i>	5 Feet	4'	<i>Feet From</i>	5 Feet	7'
<i>Pier</i>	10 Feet	6'	<i>Pier</i>	10 Feet	7'
	15 Feet	6'		15 Feet	7'
	20 Feet	7'		20 Feet	7'

Pier 25

Pier 25 was constructed from masonry stone with mortar fill (See 'Appendix A, A3' and 'Appendix B, Figures 7 - 10').

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - There was a moderate amount of debris stacked up.
- Right Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - There was a moderate amount of debris stacked up (See 'Appendix B, Figure 28').
- Downstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline (See 'Appendix B, Figure 29').
- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- The bottom substrate consisted of riprap and mud.

Upstream		<i>Depths</i>	Right Face		<i>Depths</i>
	0 Feet	8'		0 Feet	2'
<i>Feet From</i>	5 Feet	10'	<i>Feet From</i>	5 Feet	9'
<i>Pier</i>	10 Feet	9'	<i>Pier</i>	10 Feet	12'
	15 Feet	10'		15 Feet	10'
	20 Feet	10'		20 Feet	9'
Downstream		<i>Depths</i>	Left Face		<i>Depths</i>
	0 Feet	13'		0 Feet	10'
<i>Feet From</i>	5 Feet	13'	<i>Feet From</i>	5 Feet	10'
<i>Pier</i>	10 Feet	13'	<i>Pier</i>	10 Feet	12'
	15 Feet	13'		15 Feet	14'
	20 Feet	13'		20 Feet	14'

**Pier 24**

Pier 24 was constructed from masonry stone with mortar fill (See 'Appendix A, A4' and 'Appendix B, Figures 11 - 14').

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Right Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - The top of the footing was exposed and had a 1½-foot horizontal face. The vertical face was not exposed as it was flush with the riprap mud bottom (See 'Appendix B, Figure 30').
- Downstream Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - The footing was exposed and had a 2½-foot horizontal face with a vertical face of 1½-feet.
 - Undermining was found under the exposed footing and measured 1-foot wide by 10-inches high and had up to 1-foot of loss (See 'Appendix B, Figure 31').
- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- The bottom substrate consisted of riprap and mud.

Upstream		<i>Depths</i>	Right Face		<i>Depths</i>
	0 Feet	6'		0 Feet	5'
<i>Feet From</i>	5 Feet	14'	<i>Feet From</i>	5 Feet	14'
<i>Pier</i>	10 Feet	14'	<i>Pier</i>	10 Feet	16'
	15 Feet	12'		15 Feet	16'
	20 Feet	12'		20 Feet	13'
Downstream		<i>Depths</i>	Left Face		<i>Depths</i>
	0 Feet	15'		0 Feet	14'
<i>Feet From</i>	5 Feet	15'	<i>Feet From</i>	5 Feet	14'
<i>Pier</i>	10 Feet	20'	<i>Pier</i>	10 Feet	16'
	15 Feet	25'		15 Feet	19'
	20 Feet	24'		20 Feet	24'

Pier 23

Pier 23 was constructed from masonry stone with mortar fill (See 'Appendix A, A5' and 'Appendix B, Figures 15 - 18').

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Right Face:



- Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- There was a minor amount of debris stacked up (See 'Appendix B, Figure 32').
- Downstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- The bottom substrate consisted of riprap and mud.

Upstream		Depths	Right Face		Depths
	0 Feet	8'		0 Feet	4'
<i>Feet From</i>	5 Feet	8'	<i>Feet From</i>	5 Feet	10'
<i>Pier</i>	10 Feet	9'	<i>Pier</i>	10 Feet	14'
	15 Feet	10'		15 Feet	15'
	20 Feet	10'		20 Feet	15'
Downstream		Depths	Left Face		Depths
	0 Feet	5'		0 Feet	14'
<i>Feet From</i>	5 Feet	5'	<i>Feet From</i>	5 Feet	16'
<i>Pier</i>	10 Feet	5'	<i>Pier</i>	10 Feet	18'
	15 Feet	7'		15 Feet	19'
	20 Feet	11'		20 Feet	19'

Pier 22

Pier 22 was constructed from masonry stone with mortar fill (See 'Appendix A, A6' and 'Appendix B, Figures 19 - 22'). Pier 22 also had AB mats, Grout Bags, and Grout Backfill installed along the Right Face, Downstream Bullnose, and the Left Face. These AB Mats were installed to help protect the Pier as Timber Cribbing was exposed on the Downstream Bullnose.

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - There was a minor amount of debris stacked up (See 'Appendix B, Figures 33 & 34').
- Right Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - The footing was exposed and had a vertical face of 10-inches down to the AB Mat.
 - The AB Mat appeared to be secured in place and in good overall condition (See 'Appendix B, Figure 35').
- Downstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - The footing was exposed and had a 1½-foot horizontal face with a vertical face of 2-feet. Under the vertical face of the footing approximately 2-feet of the timber cribbing was exposed (See 'Appendix B, Figure 36').
 - The timber cribbing was found to be undermined. This area measured 10-feet wide at center by 3-inches high and had up to 1½-feet of loss.



- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
 - The AB Mat appeared to be secured in place and in good overall condition. There was no exposed footing (See 'Appendix B, Figure 37').
 - There was a minor amount of debris stacked up.
- The bottom substrate consisted of riprap and the installed AB Mats.
 - There was an area of heavy scour along Downstream Bullnose. Directly at the Pier was approximately 19-feet and 20-feet downstream of the pier the depth was 34-feet.

Upstream		Depths	Right Face		Depths
	0 Feet	6'		0 Feet	2'
<i>Feet From</i>	5 Feet	14'	<i>Feet From</i>	5 Feet	5'
<i>Pier</i>	10 Feet	14'	<i>Pier</i>	10 Feet	19'
	15 Feet	11'		15 Feet	20'
	20 Feet	10'		20 Feet	20'
Downstream		Depths	Left Face		Depths
	0 Feet	19'		0 Feet	12'
<i>Feet From</i>	5 Feet	19'	<i>Feet From</i>	5 Feet	12'
<i>Pier</i>	10 Feet	22'	<i>Pier</i>	10 Feet	11'
	15 Feet	30'		15 Feet	11'
	20 Feet	34'		20 Feet	11'

Pier 21

Pier 21 was constructed from masonry stone with mortar fill (See 'Appendix A, A7' and 'Appendix B, Figures 23 - 26').

- Overall, there was minor mortar loss in sporadic areas with minor deterioration along the freeze/thaw zone.
- Upstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Right Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Downstream Bullnose:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- Left Face:
 - Overall, the masonry stone and mortar were in satisfactory condition above and below the waterline.
- The bottom substrate consisted of soft mud.

Upstream		Depths	Right Face		Depths
	0 Feet	1'		0 Feet	2'
<i>Feet From</i>	5 Feet	1'	<i>Feet From</i>	5 Feet	3'
<i>Pier</i>	10 Feet	1'	<i>Pier</i>	10 Feet	3'
	15 Feet	1'		15 Feet	4'
	20 Feet	2'		20 Feet	4'



Downstream		<i>Depths</i>	Left Face		<i>Depths</i>
	0 Feet	5'		0 Feet	1'
<i>Feet From</i>	5 Feet	5'	<i>Feet From</i>	5 Feet	1'
<i>Pier</i>	10 Feet	4'	<i>Pier</i>	10 Feet	+6" (Land)
	15 Feet	4'		15 Feet	+6" (Land)
	20 Feet	6'		20 Feet	+6" (Land)

4. Channel Bottom and Scour Assessment

At the time of inspection, the Mississippi River was experiencing slightly higher than normal flow conditions. The river bottom mainly consisted of soft mud with riprap mixed in. Pier 22 also had mat and bags installed as a counter scour and undermining measure.

Scour was observed throughout the channel. Please see the tables above to see the difference in depths as you move away from the structure.

5. Evaluation and Recommendations

Based on the underwater inspection findings at the time of inspection, Quincy Park Authority's Quinsippi Island Bridge was considered to be in fair/satisfactory condition. In order to preserve adequate structural integrity and stability of the bridge it is our recommendation that this bridge be repaired with a low sense of urgency.

Pier 25 had moderate amounts of debris stacked up along the Upstream Bullnose and Left Face. It is our recommendation that these debris piles be removed from the structures.

Pier 24 had parts of its footing exposed. The horizontal face of the footing was exposed measuring 1½-feet. On the Downstream Bullnose the footing was exposed with a horizontal face of 2½-feet and a vertical face of 1½-feet. There was a portion of the footing that was undermined, this area measured 1-foot wide by 10-inches high and 1-foot deep. It is our recommendation to keep monitoring this Pier for furthering of the exposed footing and undermining.

Pier 23 had minor amounts of debris stacked up along the Right Face. It is our recommendation that this debris pile be removed.

Pier 22 had minor amounts debris stacked up along the Upstream Bullnose and the Left Face. Along the Downstream Bullnose there was a minor area of undermining under the Cribbing that measured 10-feet wide by 3-inches high and 1 ½-feet deep. We believe that once the mats settled it left a small area that could still be reached by the rushing waters. It is our recommendation that the debris be removed, along with continuously monitoring the undermined section.

In accordance with the National Bridge Inspection Standards (NBIS) and accepted standard practice, Brennan recommends the entire bridge structure should be inspected underwater within a 60-month maximum interval. Brennan also recommends flow and depths to be monitored periodically and when superstructure inspections are conducted. In the interim, if significant high water or other adverse conditions are experienced, substructure monitoring with water depth soundings and/or underwater inspections may be warranted.



An immediate post-event inspection should be conducted on the structure after any significant or unusual event, including but not limited to: flood, earthquake, storm, vessel impact, or other event that has potential to cause damage to the structure. Drift and debris material should be cleared to prevent scour and undermining of the substructure and further damage the structure.

Refer to "Routine Underwater Condition Assessment Rating Descriptions" below for explanations of above noted condition ratings.



Routine Underwater Condition Assessment Rating Descriptions

Good: No visible or only minor damage was noted. Structural elements may show very minor deterioration, but no overstressing was observed. No repairs are required.

Satisfactory: Limited minor to moderate defects or deterioration are observed, but no overstressing was observed. No repairs are required.

Fair: All primary structural elements are sound, but minor to moderate defects or deterioration was observed. Localized areas of moderate to advanced deterioration may be present but do not significantly reduce the load-bearing capacity of the structure. Repairs recommended, but the priority of the recommended repairs was low.

Poor: Advanced deterioration or overstressing was observed on the widespread portions of the structure but does not significantly reduce the load-bearing capacity of the structure. Repairs may need to be carried out with moderate urgency.

Serious: Advanced deterioration overstressing, or breakage may have significantly affected the load-bearing capacity of primary structural components. Local failures are possible and loading restriction may be necessary. Repairs may be carried out on a high-priority basis with urgency.

Critical: Very advanced deterioration, overstressing or breakage has resulted in localized failure(s) of primary structure components. More widespread failures are possible or likely to occur, and load restriction should be implemented as necessary. Repairs may need to be carried out on a very high priority basis with strong urgency.

We appreciate the opportunity to work with Quincy Park Authority on this project. If you have any questions or concerns regarding the information within this report or if Brennan can be of any further assistance, please do not hesitate to contact me directly.

Respectfully submitted,

Joe Baldoni

Dive Division

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jbbaldoni@jfbrennan.com

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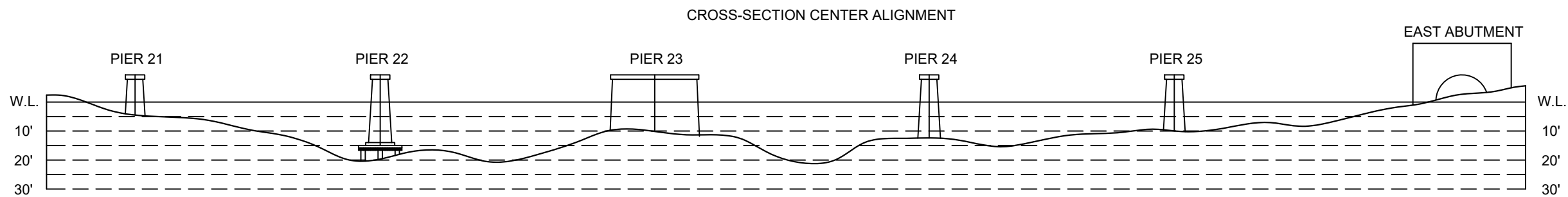
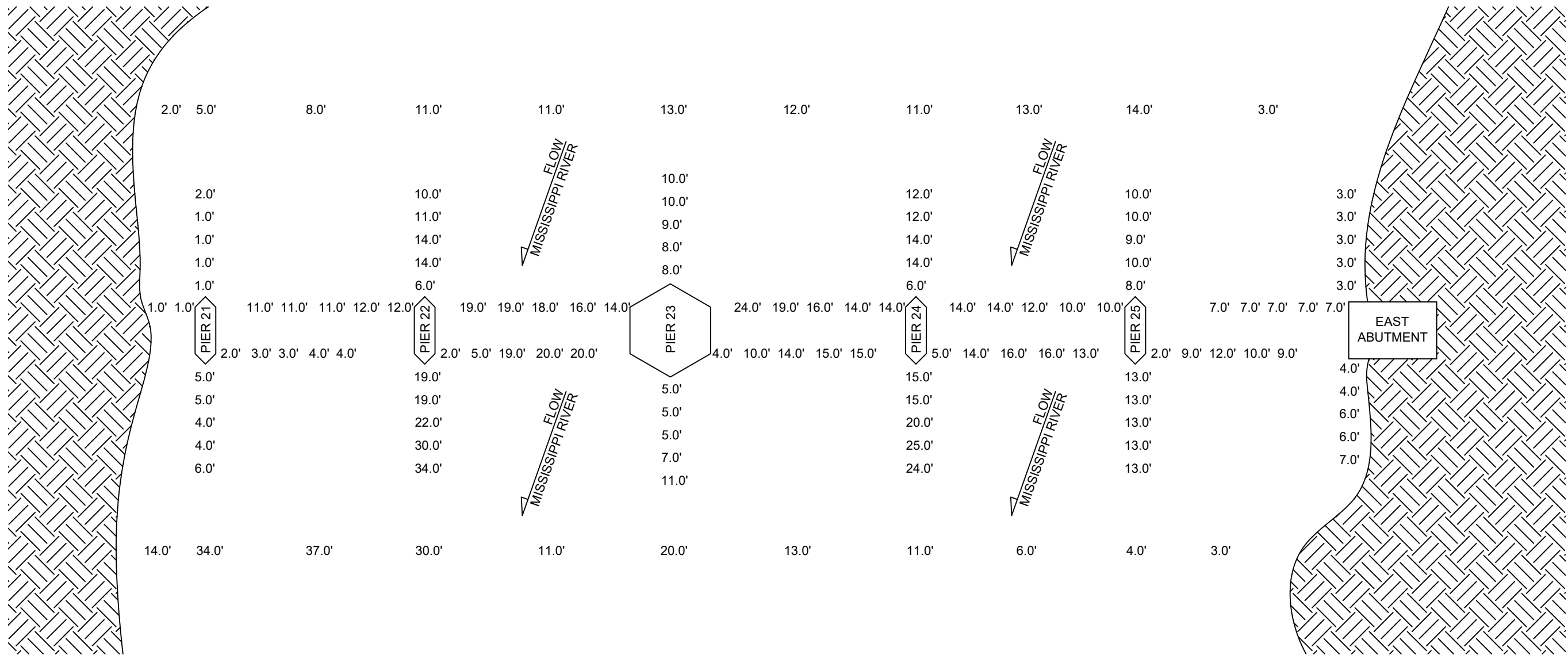




Appendix A – CAD Drawings

List of Drawings

- | | |
|---------------|-----------|
| • Drawing A-2 | PLAN VIEW |
| • Drawing A-3 | PIER 25 |
| • Drawing A-4 | PIER 24 |
| • Drawing A-5 | PIER 23 |
| • Drawing A-6 | PIER 22 |
| • Drawing A-7 | PIER 21 |



GENERAL NOTES:

- THE WATERLINE WAS MEASURED AT 15.45 FEET BELOW THE BOTTOM OF THE BRIDGE TIMBER. ADDITIONALLY, THE USCE RIVER GAUGE 'MISSISSIPPI RIVER AT QUINCY, IL' MEASURED A GAGE HEIGHT OF 15.25 FEET AT 1200 ON 06/18/2020.
- DEPTH SOUNDINGS TAKEN AT 0 FEET, 5 FEET, 10 FEET, AND 15 FEET FROM THE STRUCTURE FACE(S) AND 50 FEET UPSTREAM AND DOWNSTREAM OF THE STRUCTURE PARALLEL TO THE TRACKS. (NOTE: THE SOUNDING MEASUREMENTS ARE NOT TO SCALE WITH THE ACTUAL DISTANCE BETWEEN THE STRUCTURES.)

PLAN VIEW AND RIVER DEPTHS

N.T.S.



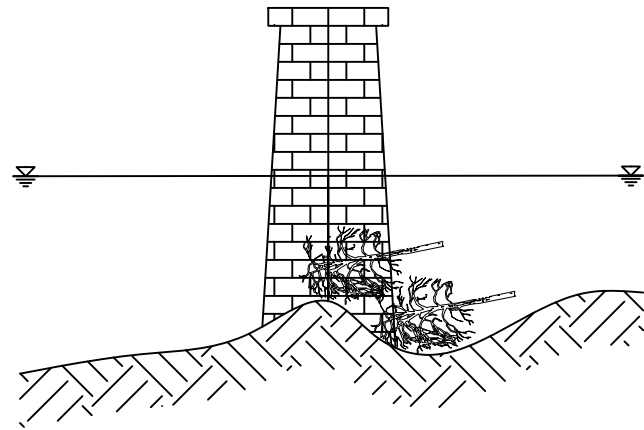
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LOCATION:	QUINCY, ILLINOIS	DRAWN BY:	SPENCER COSSALTER
BRIDGE TYPE:	VEHICULAR	REVISED DATE:	
WATERWAY:	MISSISSIPPI RIVER	REVISED BY:	JOE BALDONI
SUBSTRUCTURES:	6 (IN-WATER)		
LENGTH, FEET:	~ 525 OVER WATER		

PREPARED FOR:
KLINGER & ASSOCIATES
616 N. 24TH STREET
QUINCY, ILLINOIS 62301

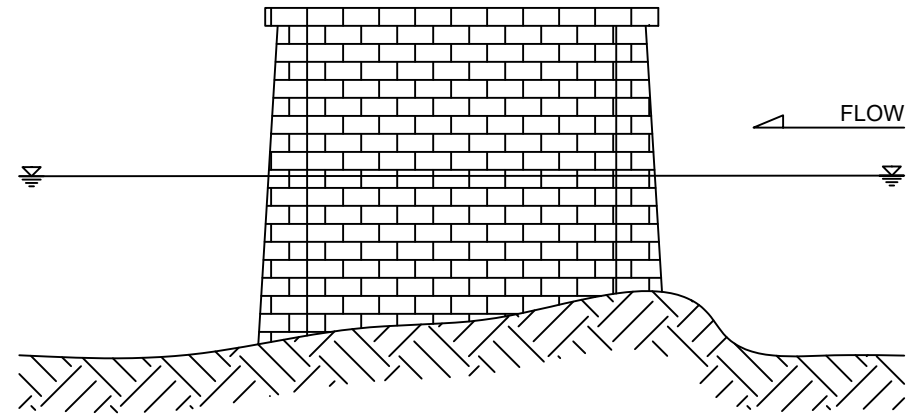
**BRENNAN**
J.F. BRENNAN CO., INC.
818 BAINBRIDGE STREET
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PHONE: (608)784-7173 www.jfbrennan.com

PROJECT:
UNDERWATER INSPECTION REPORT
QUINSHIPPI ISLAND BRIDGE
QUINCY, ILLINOIS

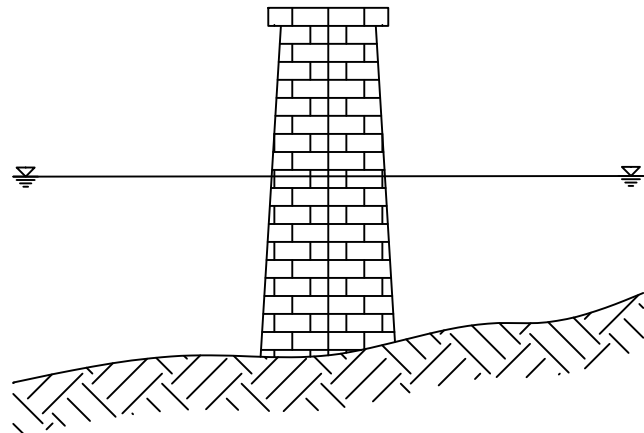
PLAN VIEW AND RIVER DEPTHS



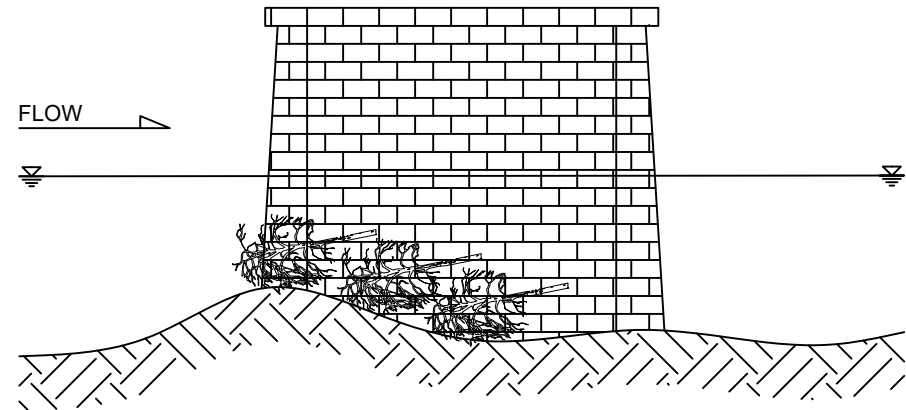
PIER 25 UPSTREAM BULLNOSE



PIER 25 RIGHT FACE



PIER 25 DOWNSTREAM BULLNOSE



PIER 25 LEFT FACE

GENERAL NOTES:

- OVERALL, THERE WAS MINOR MORTAR LOSS IN SPORADIC AREAS WITH MINOR DETERIORATION ALONG THE FREEZE/THAW ZONE.
- MODERATE AMOUNTS OF TIMBER DEBRIS WERE STACKED UP ALONG THE UPSTREAM BULLNOSE AND THE LEFT FACE.
- SOFT MUD / RIPRAP MADE UP THE MAJORITY OF THE RIVER BOTTOM SUBSTRATE.

OWNER:	QUINCY PARK AUTHORITY	INSPECTION DATE:	JUNE 18, 2020
LOCATION:	QUINCY, ILLINOIS	DRAWN BY:	SPENCER COSSALTER
BRIDGE TYPE:	VEHICULAR	REVISED DATE:	
WATERWAY:	MISSISSIPPI RIVER	REVISED BY:	JOE BALDONI
SUBSTRUCTURES:	6 (N-WATER)		
LENGTH, FEET:	~ 525 OVER WATER		

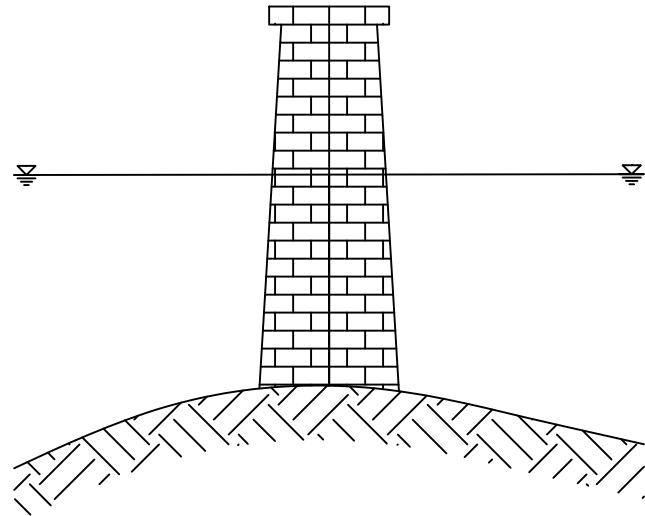
PREPARED FOR:
KLINGER & ASSOCIATES
616 N. 24TH STREET
QUINCY, ILLINOIS 62301



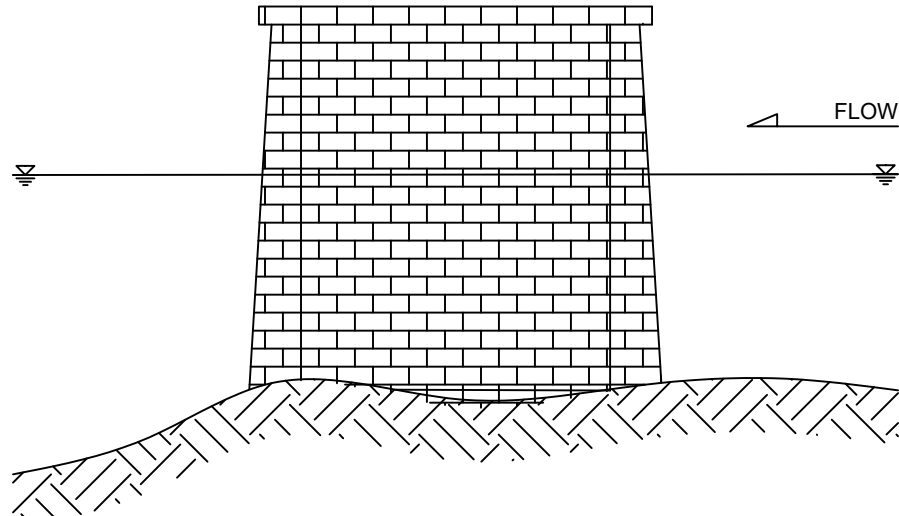
BRENNAN
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PROJECT:
UNDERWATER INSPECTION REPORT
QUINSHIPPI ISLAND BRIDGE
QUINCY, ILLINOIS

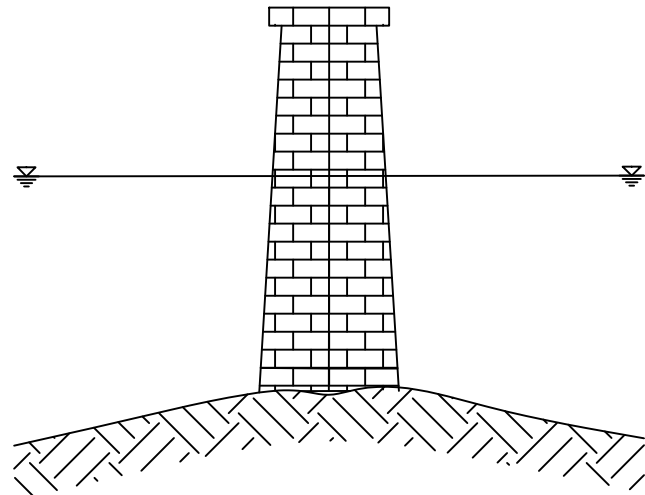
PIER 25



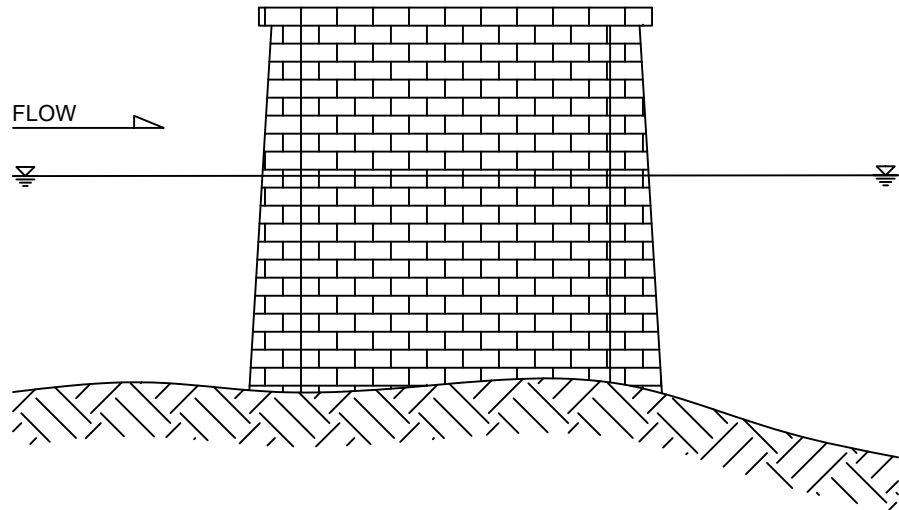
PIER 24 UPSTREAM BULLNOSE



PIER 24 RIGHT FACE



PIER 24 DOWNSTREAM BULLNOSE



PIER 24 LEFT FACE


GENERAL NOTES:

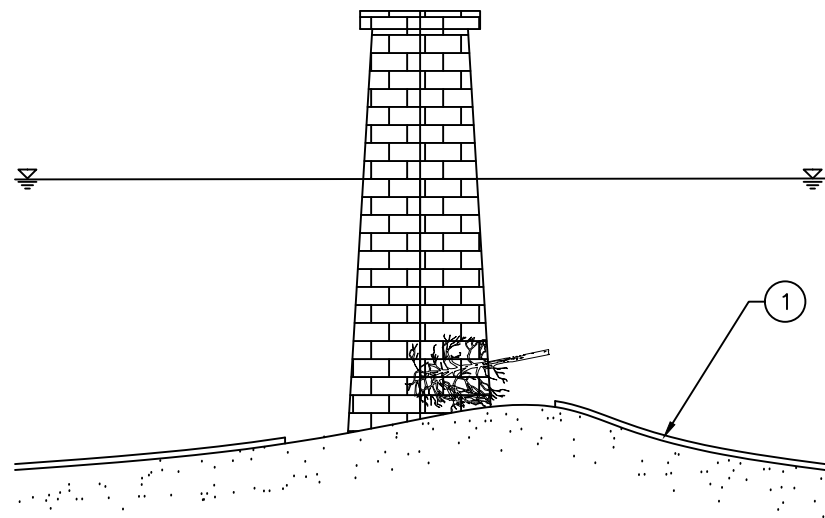
- OVERALL, THERE WAS MINOR MORTAR LOSS IN SPORADIC AREAS WITH MINOR DETERIORATION ALONG THE FREEZE/THAW ZONE.
- RIGHT FACE: THE TOP PORTION OF THE FOOTING WAS EXPOSED. THE FOOTING HAD AN EXPOSED HORIZONTAL FACE OF 1 1/2-FEET.
- DOWNSTREAM BULLNOSE: THE FOOTING WAS EXPOSED WITH A HORIZONTAL FACE OF 2 1/2-FEET AND A VERTICAL FACE OF 1 1/1-FEET. THE FOOTING WAS UNDERMINED MEASURING 1-FOOT WIDE BY 10-INCHES HIGH AND 12-INCHES DEEP.
- SOFT MUD / RIPRAP MADE UP THE MAJORITY OF THE RIVER BOTTOM SUBSTRATE.

PROJECT: UNDERWATER INSPECTION REPORT QUINSHIPPI ISLAND BRIDGE QUINCY, ILLINOIS PIER 24	PREPARED FOR: KLINGER & ASSOCIATES 616 N. 24TH STREET QUINCY, ILLINOIS 62301		INSPECTION DATE: JUNE 18, 2020	
	OWNER: QUINCY PARK AUTHORITY		DRAWN BY: SPENCER COSSALTER	
	LOCATION: QUINCY, ILLINOIS		REVISED DATE:	
	BRIDGE TYPE: VEHICULAR		REVISED BY: JOE BALDONI	
	WATERWAY: MISSISSIPPI RIVER		SUBSTRUCTURES: 6 (IN-WATER)	
LENGTH, FEET: ~ 525 OVER WATER				
FIGURE NUMBER A-4				

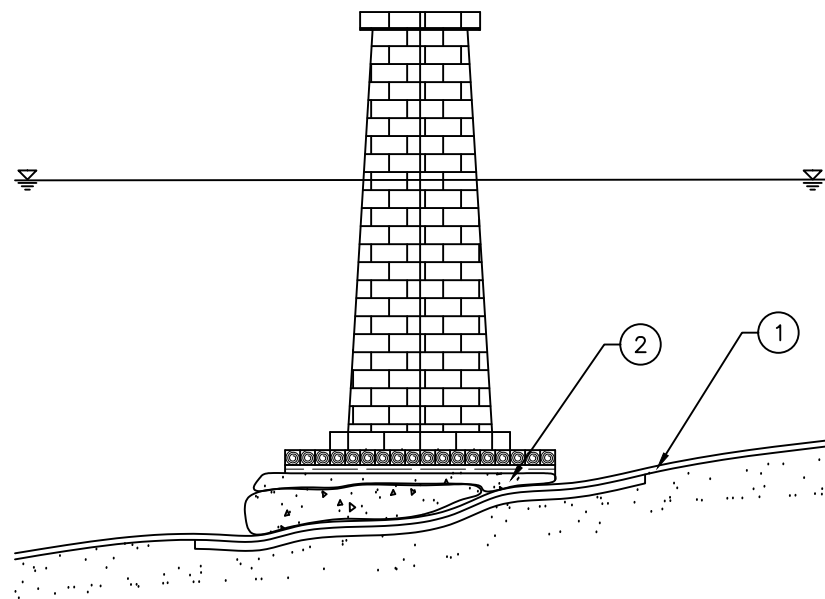


- OVERALL, THERE WAS MINOR MORTAR LOSS IN SPORADIC AREAS WITH MINOR DETERIORATION ALONG THE FREEZE/THAW ZONE.
- MINOR AMOUNTS OF TIMBER DEBRIS WERE STACKED UP ALONG THE UPSTREAM BULLNOSE AND THE LEFT FACE.
- SOFT MUD / RIPRAP MADE UP THE MAJORITY OF THE RIVER BOTTOM SUBSTRATE.

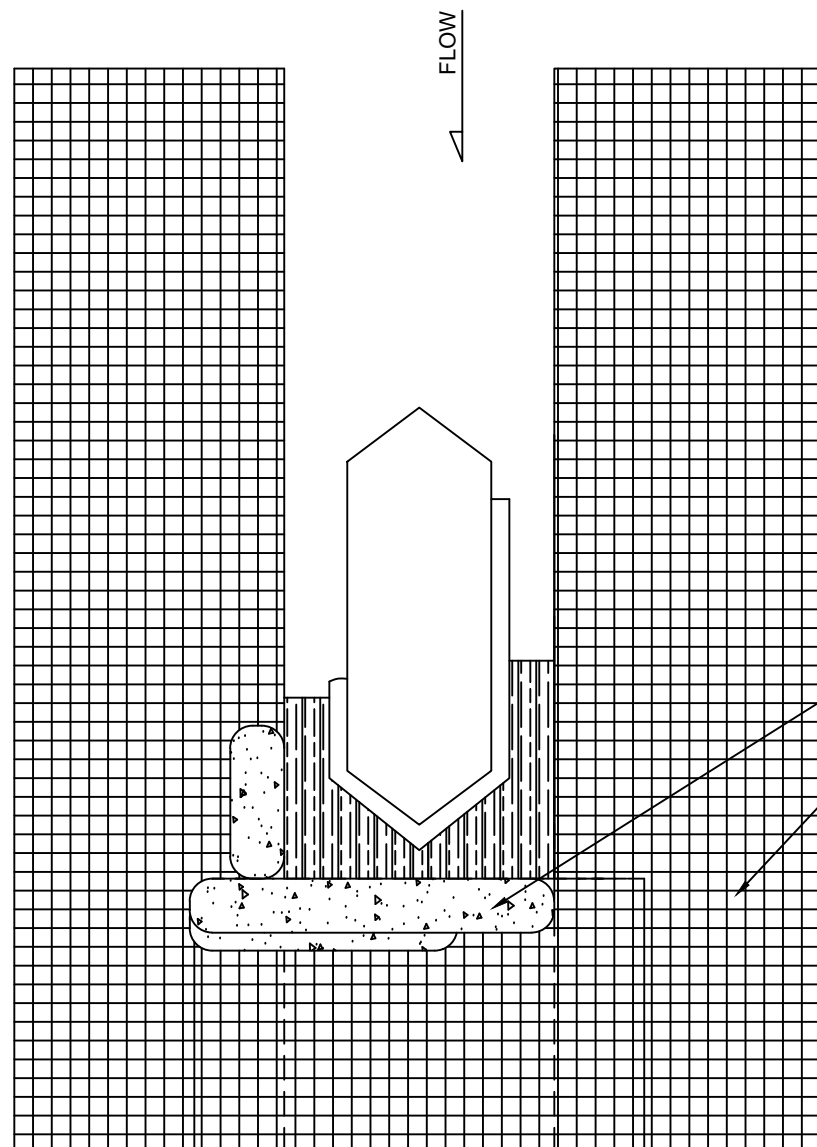
PROJECT:	UNDERWATER INSPECTION REPORT	
	QUINSIPPI ISLAND BRIDGE	
FIGURE NUMBER	A-5	
	QUINCY, ILLINOIS	
	PIER 23	
 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p>J.F. BRENNAN CO., INC. 818 BAINBRIDGE STREET LA CROSSE, WISCONSIN 54603 PHONE: (608)784-7173 www.jfbrennan.com</p> </div>		
PREPARED FOR: KLINGER & ASSOCIATES 616 N. 24TH STREET QUINCY, ILLINOIS 62301		
OWNER:	QUINCY PARK AUTHORITY	INSPECTION DATE: JUNE 18, 2020
LOCATION:	QUINCY, ILLINOIS	DRAWN BY: SPENCER COSSALTER
BRIDGE TYPE:	VEHICULAR	REVISED DATE:
WATERWAY:	MISSISSIPPI RIVER	REVISED BY: JOE BALDONI
SUBSTRUCTURES:	6 (IN-WATER)	
LENGTH, FEET:	~ 525 OVER WATER	



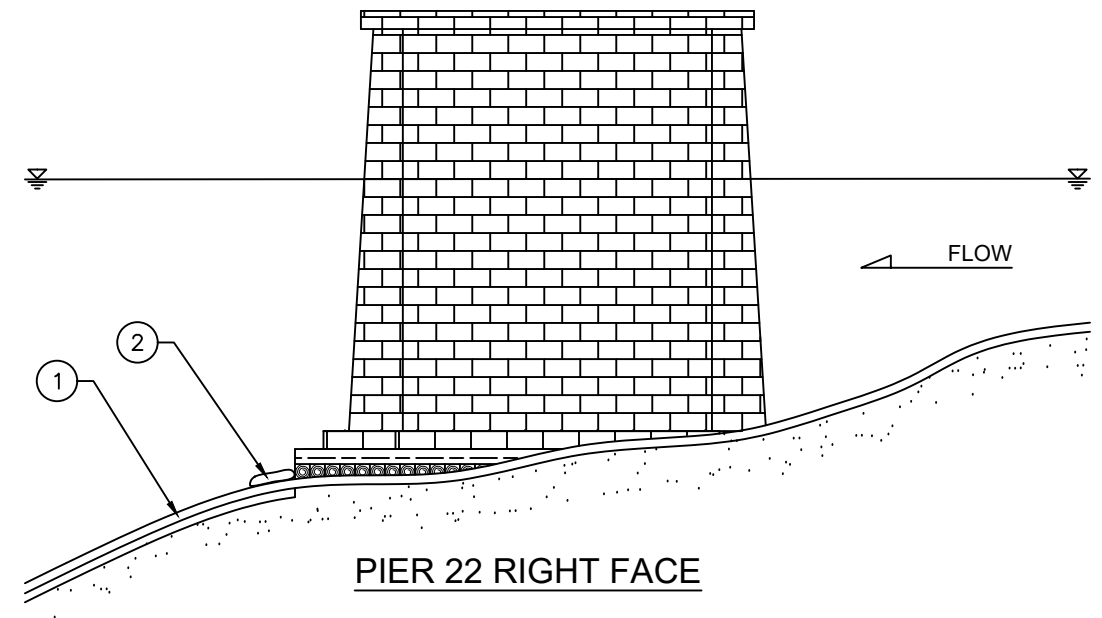
PIER 22 UPSTREAM BULLNOSE



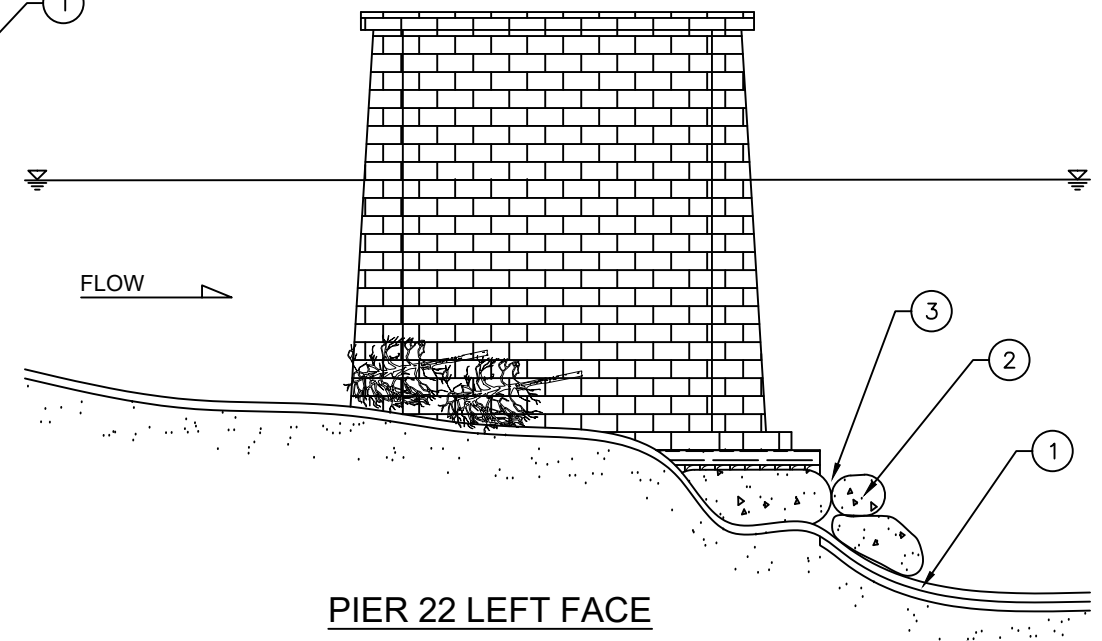
PIER 22 DOWNSTREAM BULLNOSE



PIER 22 TOP VIEW



PIER 22 RIGHT FACE



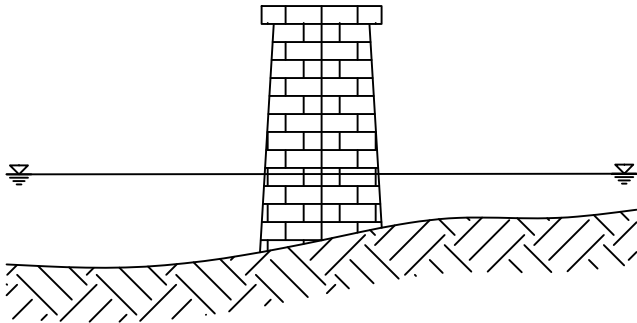
PIER 22 LEFT FACE

GENERAL NOTES:

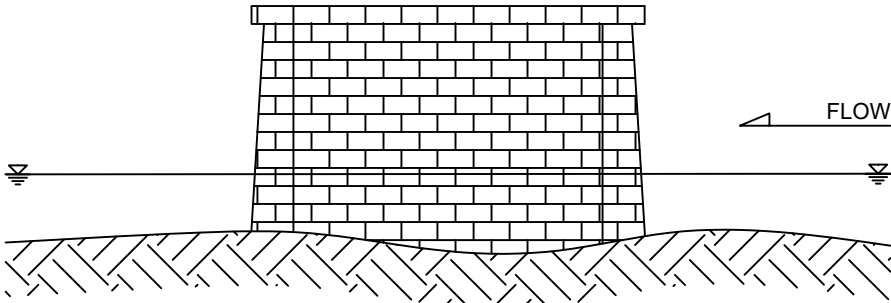
- OVERALL, THERE WAS MINOR MORTAR LOSS IN SPORADIC AREAS WITH MINOR DETERIORATION ALONG THE FREEZE/THAW ZONE.
- OVERALL, THE AB MAT APPEARED TO BE SECURED AROUND THE ENTIRE STRUCTURE.
- ON THE DOWNSTREAM BULLNOSE THERE WAS AN AREA OF MINOR UNDERMINING UNDER THE EXPOSED TIMBER CRIBBING. THIS AREA MEASURED 10-FEET WIDE BY 3-INCHES HIGH AND 1 1/2-FEET DEEP.
- MINOR AMOUNTS OF TIMBER DEBRIS WERE STACKED UP ALONG THE UPSTREAM BULLNOSE AND THE LEFT FACE.
- AB MAT / RIPRAP MADE UP THE MAJORITY OF THE RIVER BOTTOM SUBSTRATE.

- 1. AB MAT
- 2. GROUT BAGS
- 3. BACKFILL GROUT

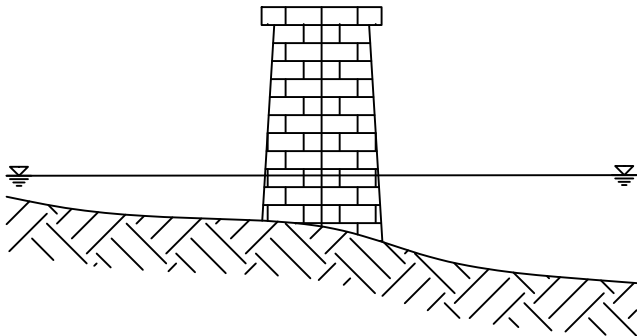
OWNER: QUINCY PARK AUTHORITY	INSPECTION DATE: JUNE 18, 2020	
	DRAWN BY: Adam Thronson	
	REVISOR DATE:	
	REVISOR BY: JOE BALDONI	
LOCATION: QUINCY, ILLINOIS	BRIDGE TYPE: VEHICULAR	
WATERWAY: MISSISSIPPI RIVER	SUBSTRUCTURES: 6 (IN-WATER)	
LENGTH, FEET: ~ 525 OVER WATER		
PREPARED FOR: KLINGER & ASSOCIATES 616 N. 24TH STREET QUINCY, ILLINOIS 62301		
 BRENNAN <small>Since 1988</small> J.F. BRENNAN CO., INC. 818 BAINBRIDGE STREET LA CROSSE, WISCONSIN 54603 PHONE: (608)784-7173 www.jfbrennan.com		
PROJECT: UNDERWATER INSPECTION REPORT QUINCY ISLAND BRIDGE QUINCY, ILLINOIS		PIER 22
FIGURE NUMBER A-6		



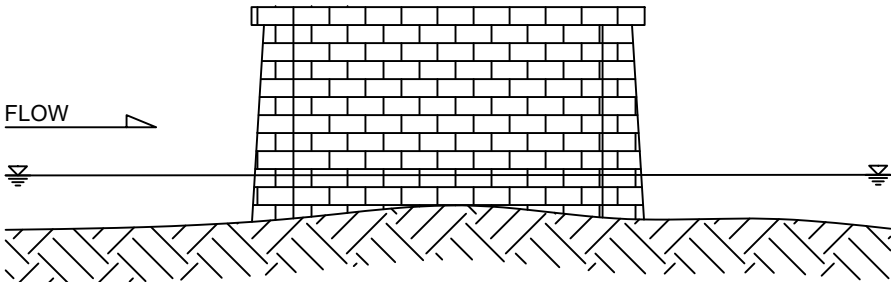
PIER 21 UPSTREAM BULLNOSE



PIER 21 RIGHT FACE



PIER 21 DOWNSTREAM BULLNOSE



PIER 21 LEFT FACE

GENERAL NOTES:

- OVERALL, THERE WAS MINOR MORTAR LOSS IN SPORADIC AREAS WITH MINOR DETERIORATION ALONG THE FREEZE/THAW ZONE.
- SOFT MUD / RIPRAP MADE UP THE MAJORITY OF THE RIVER BOTTOM SUBSTRATE.

PROJECT:	UNDERWATER INSPECTION REPORT		INSPECTION DATE: JUNE 18, 2020
	QUINSHIPPI ISLAND BRIDGE		
FIGURE NUMBER	QUINCY, ILLINOIS		OWNER: QUINCY PARK AUTHORITY
	PIER 21		
PREPARED FOR:			QUINCY, ILLINOIS
KLINGER & ASSOCIATES			DRAWN BY: SPENCER COSSALTER
616 N. 24TH STREET			REVISOR DATE:
QUINCY, ILLINOIS 62301			REVISOR BY: JOE BALDONI
J.F. BRENNAN CO., INC.			WATERWAY: MISSISSIPPI RIVER
818 BAINBRIDGE STREET			SUBSTRUCTURES: 6 (IN-WATER)
LA CROSSE, WISCONSIN 54603			LENGTH, FEET: ~ 525 OVER WATER
PHONE: (608)784-7173 www.jfbrennan.com			



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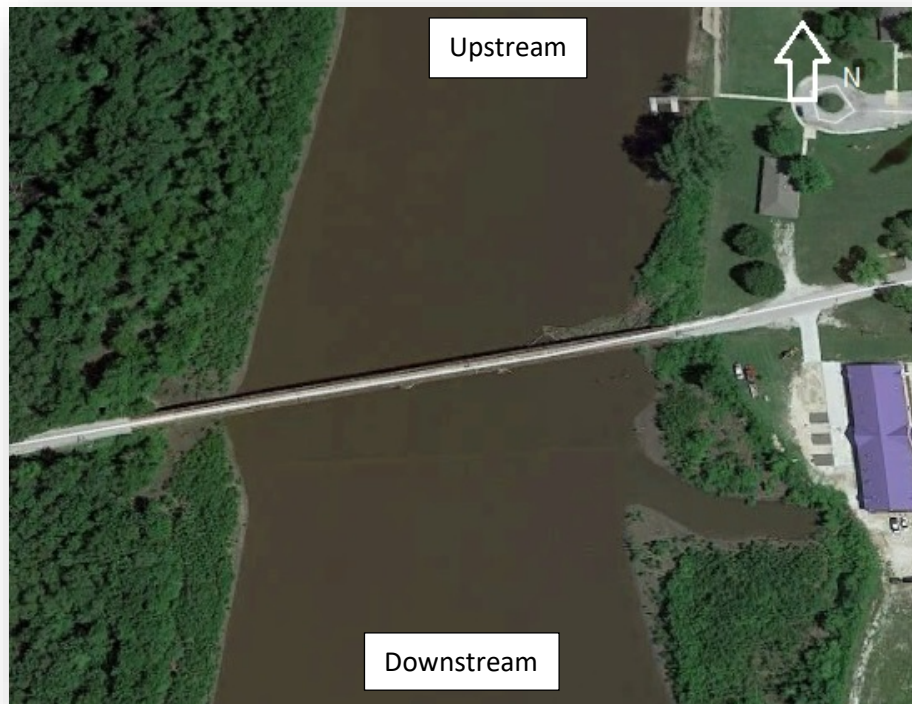


Figure 1 - Quinsippi Island Bridge, Overview

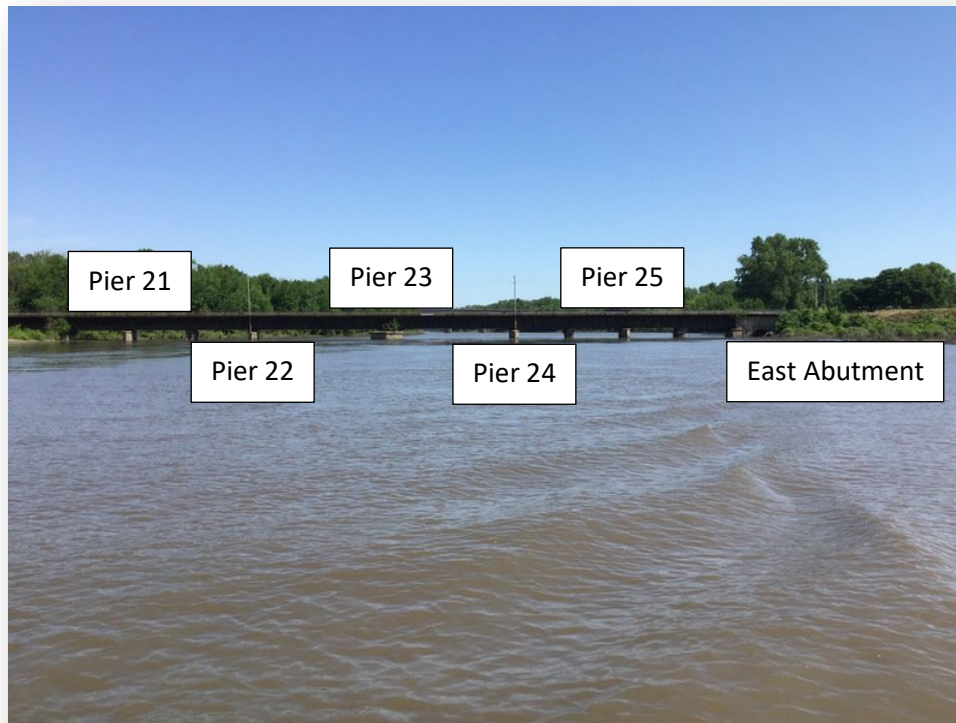


Figure 2 - Downstream Looking Upstream, Overall



Figure 3 - East Abutment, Upstream Face



Figure 4 - East Abutment, Right Face



Figure 5 - East Abutment, Downstream Face



Figure 6 – East Abutment, Left Face



Figure 7 - Pier 25, Upstream Bullnose



Figure 8 - Pier 25, Right Face



Figure 9 - Pier 25, Downstream Bullnose



Figure 10 - Pier 25, Left Face



Figure 11 - Pier 24, Upstream Bullnose



Figure 12 – Pier 24, Right Face



Figure 13 – Pier 24, Downstream Bullnose



Figure 14 – Pier 24, Left Face



Figure 15 – Pier 23, Upstream Face



Figure 16 – Pier 23, Right Face



Figure 17 - Pier 23, Downstream Face



Figure 18 - Pier 23, Left Face



Figure 19 - Pier 22, Upstream Bullnose



Figure 20 - Pier 22, Right Face



Figure 21 - Pier 22, Downstream Bullnose



Figure 22 - Pier 22, Left Face



Figure 23 - Pier 21, Upstream Bullnose



Figure 24 - Pier 21, Right Face



Figure 25 - Pier 21, Downstream Bullnose



Figure 26 - Pier 21, Left Face

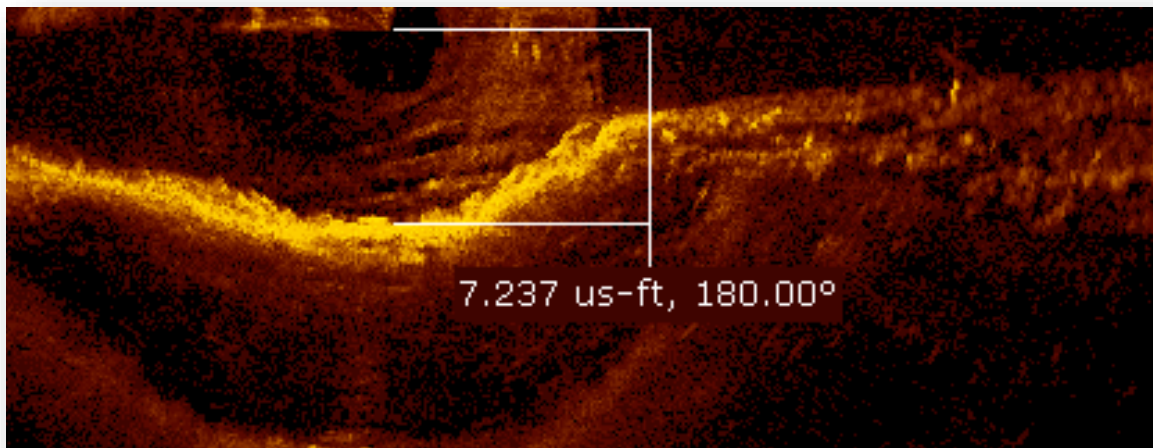


Figure 27 - East Abutment, Left Face Minor Scour Sector Scan

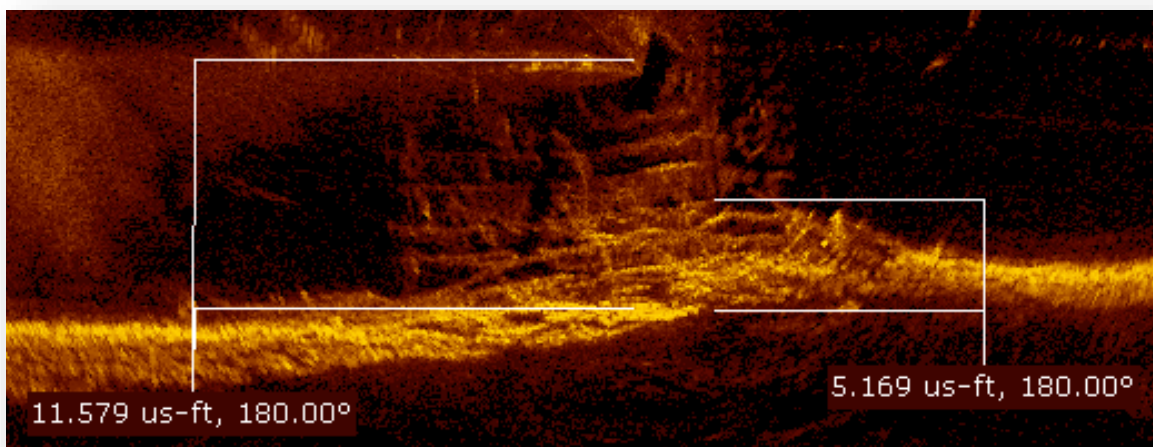


Figure 28 - Pier 25, Right Face Debris Pile Sector Scan

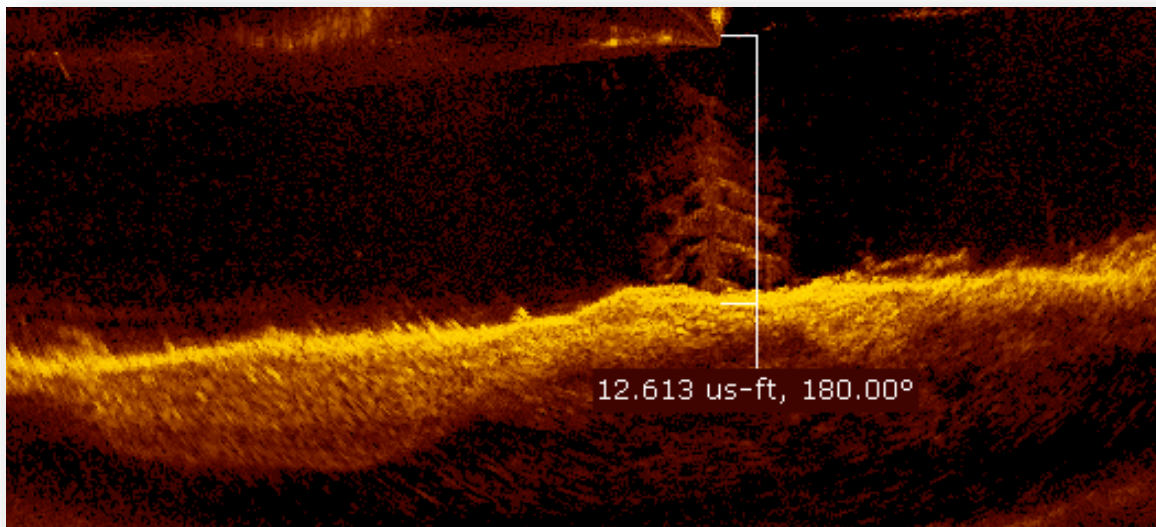


Figure 29 - Pier 25, Downstream Face Sector Scan

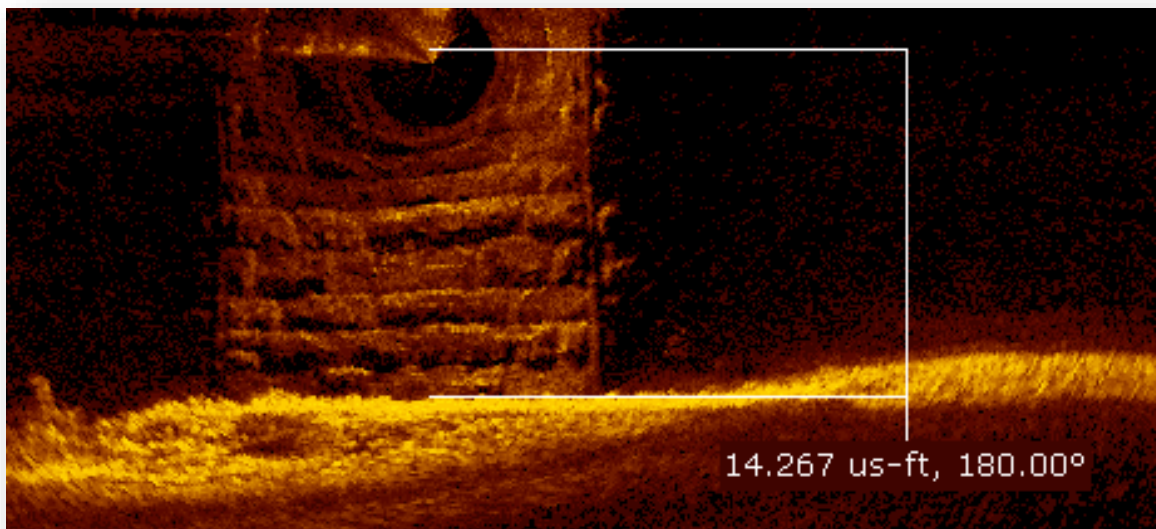


Figure 30 - Pier 24, Right Face Minor Debris Sector Scan

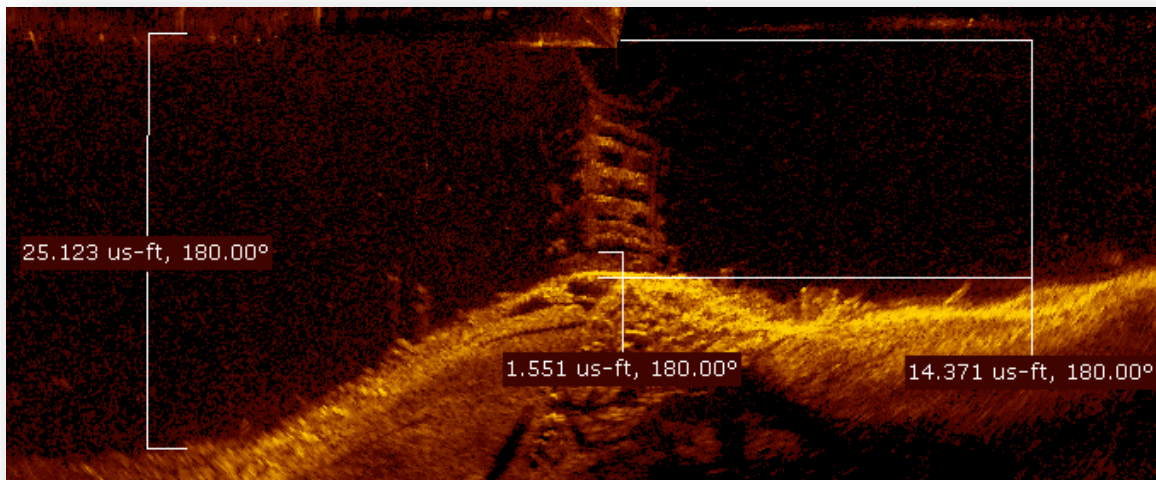


Figure 31 - Pier 24, Downstream Bullnose Debris Pile & Scour Sector Scan

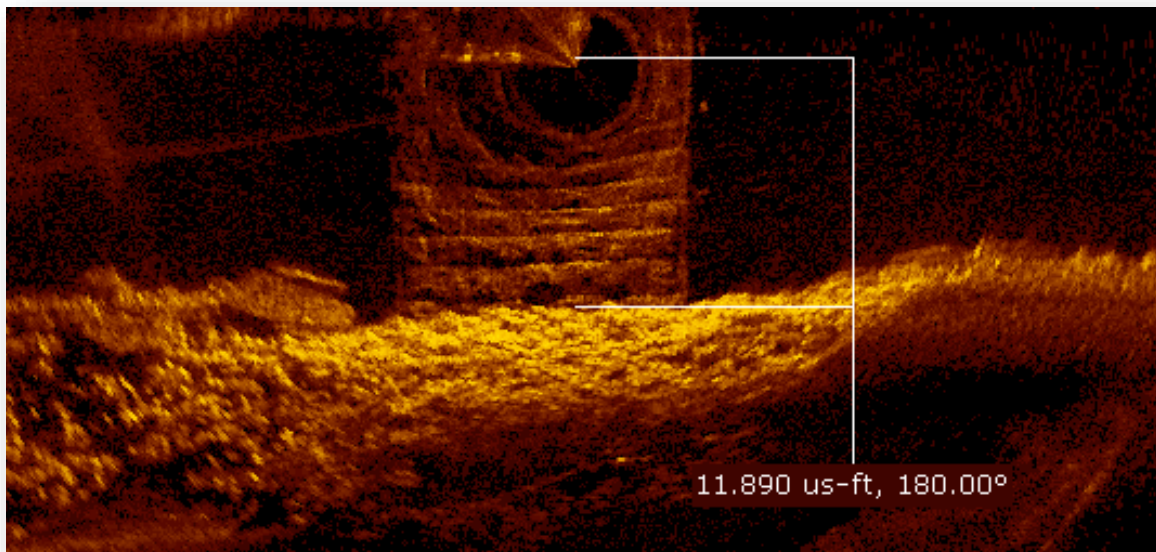


Figure 32 - Pier 23, Right Face Riprap Sector Scan

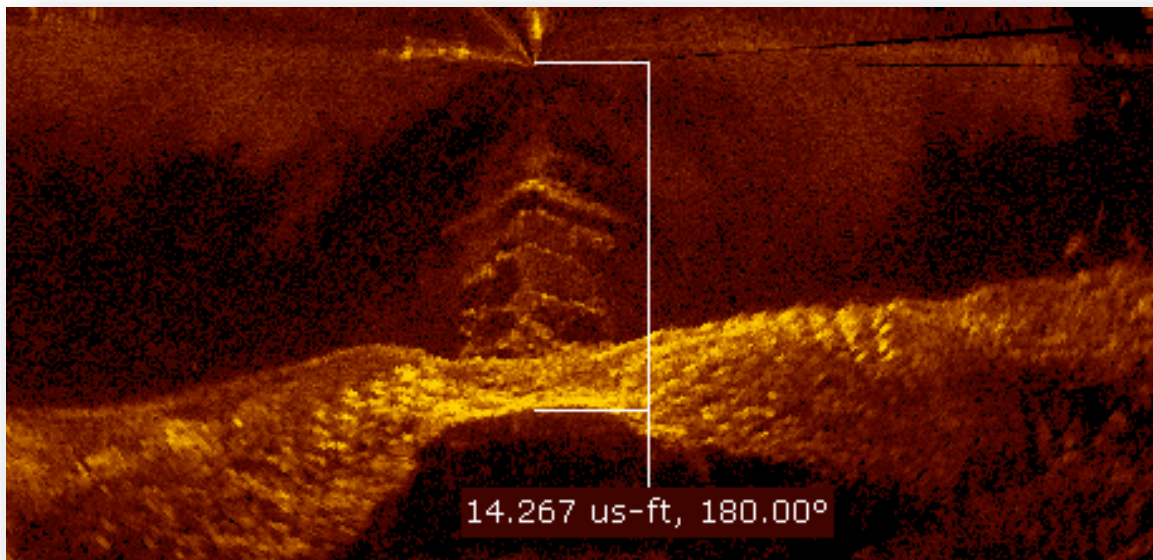


Figure 33 - Pier 22, Upstream Bullnose AB Mat Sector Scan

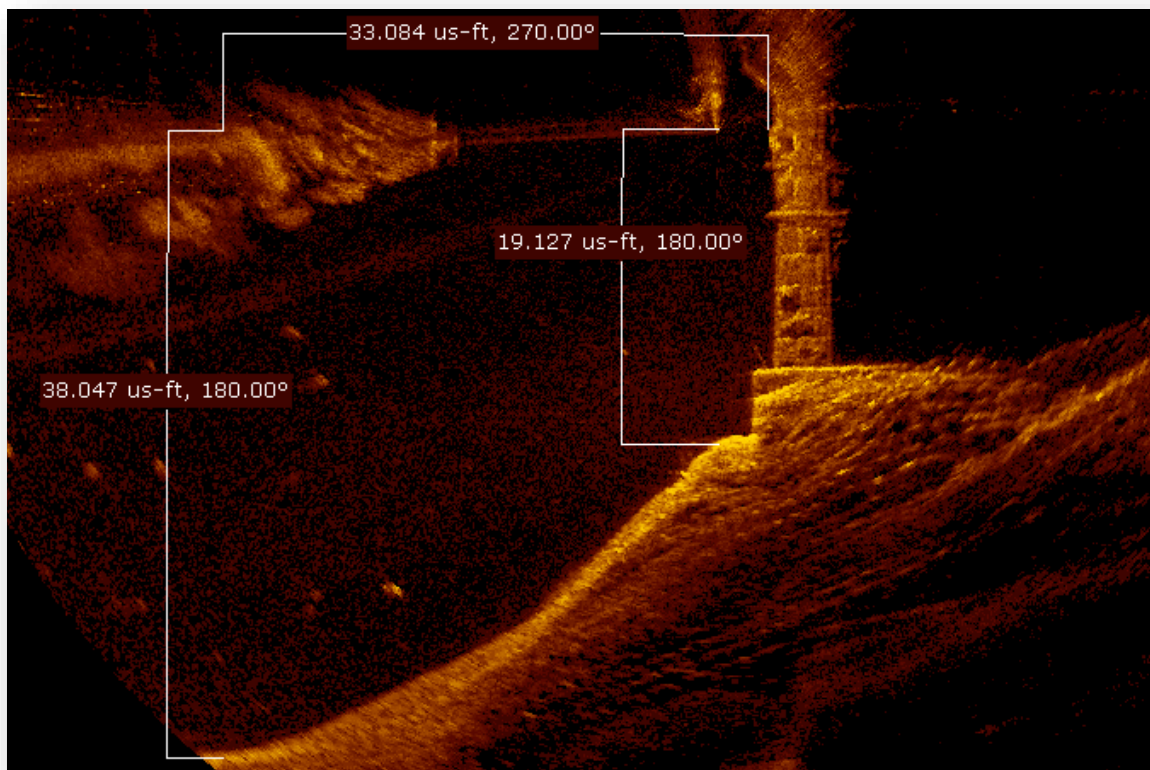


Figure 34 - Pier 22, Upstream Bullnose AB Mat & Exposed Footing/Cribbing Profile Sector Scan

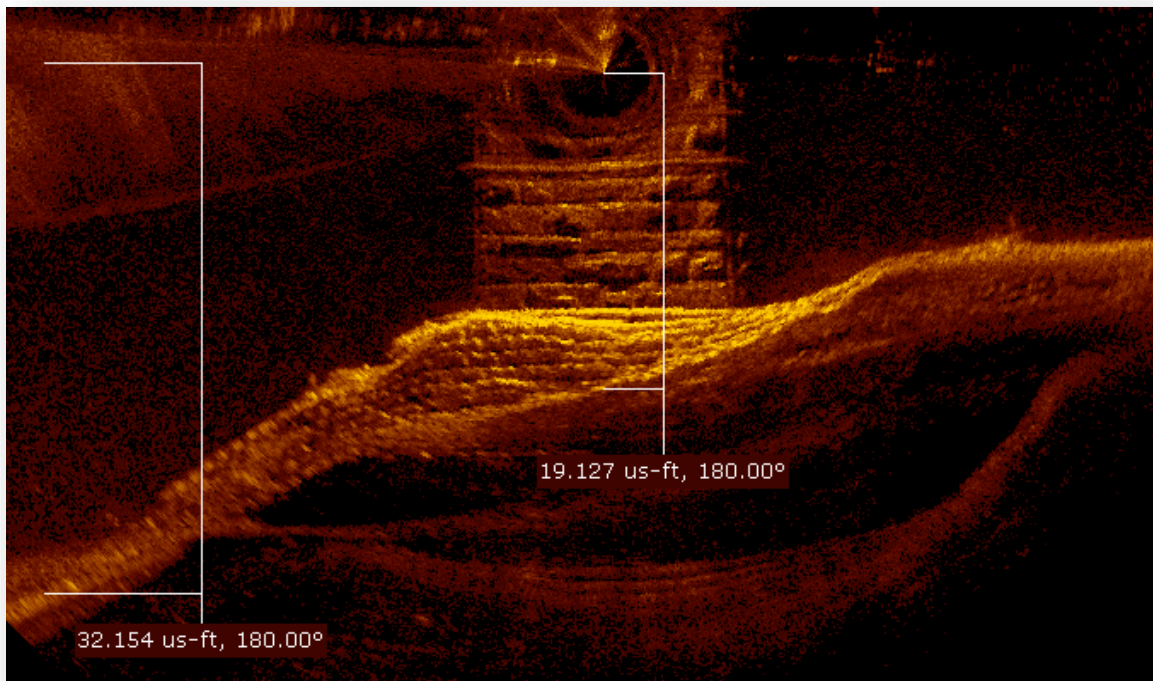


Figure 35 - Pier 22, Right Face AB Mat & Scour Sector Scan

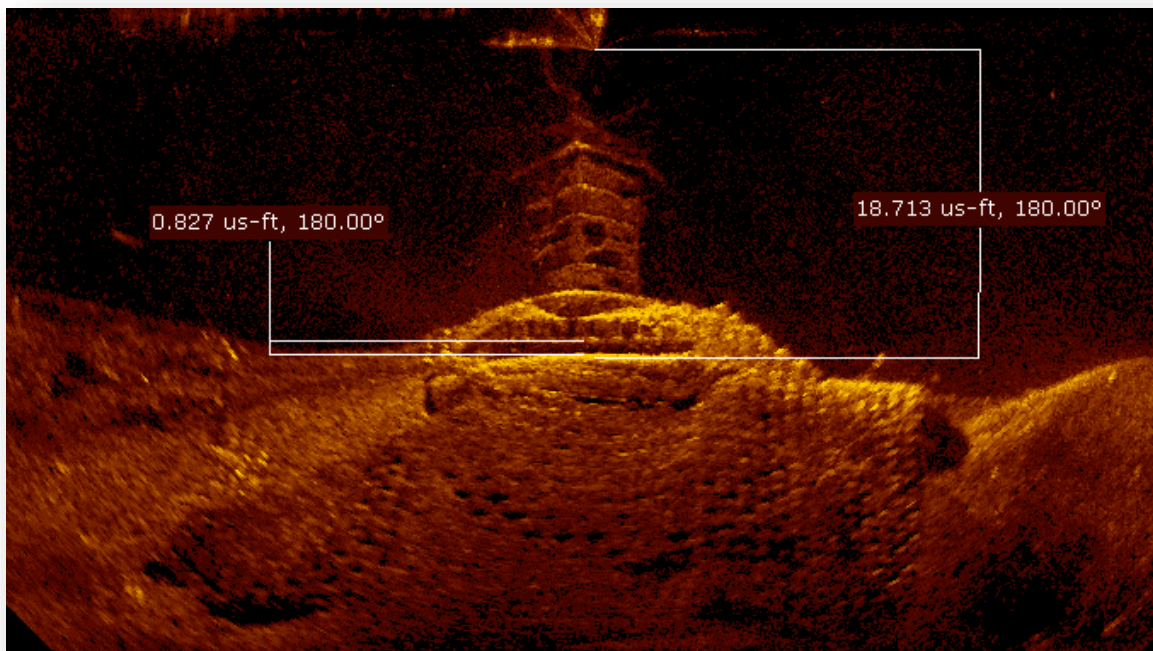


Figure 36 - Pier 22, Downstream Bullnose AB Mat Sector Scan

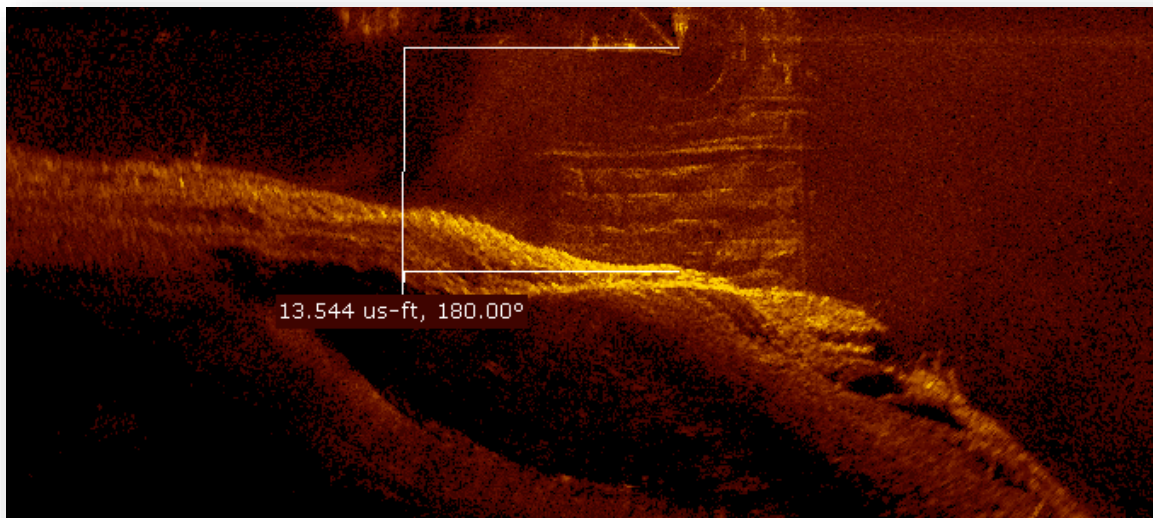


Figure 37 - Pier 22, Left Face AB Mat & Scour Sector Scan