State of Rhode Island
Department of Transportation

Underwater Inspection of

Bridge Nos. 020001 & 020021

Washington Bridge South & Washington Bridge South Pedestrian

Interstate 195 Eastbound & Bike Path/Pedestrian Bridge

Over

Seekonk River

In

East Providence, Rhode Island

July 23, 2021

Prepared by:

Jacobs

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.:	020001 & 020021	Inspection Date:	7/23/2021
Bridge Names:	Washington Bridge South & Washington Bridge South Pedestrian		
Facility Carried:	Interstate 195 Eastbound & Bike Path/Pedestrian		
Feature Intersected:	Seekonk River		
City/Town:	East Providence		

Table of Contents

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.:	020001 & 020021	Inspection Date:	7/23/2021
Bridge Names:	Washington Bridge South & Washington Bridge South Pedestrian		
Facility Carried:	Interstate 195 Eastbound & Bike Path/Pedestrian		
Feature Intersected:	Seekonk River		
City/Town:	East Providence		

Bridge Inventory Information

Bridge Types:	Steel multi-girder (Interstate 195 Eastbound) and reinforced concrete open spandrel arch (bikepath / pedestrian bridge)
Year Built / Rebuilt:	1930 / 2008
Bridge Orientation:	Bridge is logged from west to east which is consistent with the previous NBIS inspection report and the structure plans.
Structure Length:	1670.4 feet
Width Out-to-Out:	71.5 feet
No. of Span(s):	14
No. of Pier(s):	13
No. of Abutment(s) in Water:	0
No. of Pier(s) in Water:	6
Abutment / Pier Type:	The pier walls are reinforced concrete with stone facing.
Foundation Type:	The pier walls are founded on reinforced concrete pile caps with timber piles.

Waterway Information

Type of Water:	Brackish (Tidal)
Current Strength:	Approximately 1.5 feet/second
Underwater Visibility:	Approximately 4 feet
Max. Water Depth:	31.4 feet
Max. Depth at substructure:	30.5 feet (south nose of Pier 5)
Bottom Composition:	The channel bottom consists of silt, sand, and shells with scattered construction debris throughout. The maximum penetration into the channel bottom is 12”.
Marine Growth:	There is marine growth up to 1/2" thick on the piers, most notably beneath the tidal zone.

Inspection / Diving Operations

Inspection Team Leader:	Ryan Breen, P.E.
Inspection Team Members / Divers:	Matthew Dwyer, P.E. and Benjamin Sheppard (Dive Sup.)
Inspection Date Started:	6/21/2021
Inspection Date Completed:	7/23/2021
Bridge Access:	Boat (launched from Bold Point Park, southeast of the bridge)
Boat Size:	20 foot
Dive Mode:	Surface-Supplied Air Diving with Dive Helmets & Hardwire Communications
Equipment Comments:	Standard hand tools were used for this inspection.
General Remarks:	Soundings performed on 6/22/2021.

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.:	020001 & 020021	Inspection Date:	7/23/2021
Bridge Names:	Washington Bridge South & Washington Bridge South Pedestrian		
Facility Carried:	Interstate 195 Eastbound & Bike Path/Pedestrian		
Feature Intersected:	Seekonk River		
City/Town:	East Providence		

Summary of Findings

Item 60 - Substructure **Overall Rating:** 6 - Satisfactory

At Piers #4 through #9, the steel encased reinforced concrete caisson pile at the north (upstream) end of the piers exhibits minor corrosion below the fiberglass jackets. At Piers #4 through #7 and #9, the stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones and isolated full-height cracked stones. Pier #8 has 15% deteriorated mortar with up to 6" of penetration between stones. The reinforced concrete stem below the stone masonry facade has abrasion 1/2" deep. Piers #4, #7 and #9 have cracks up to full height and open 1/4" to 1/2" wide. At Piers #4, #5 and #8, the steps / pile caps have been exposed up to 4.5' vertically and the seal has become exposed at the south end of Pier 8 with up to 15” of vertical exposure.

Item 61 - Channel & Channel Protection **Overall Rating:** 6 - Satisfactory

The channel bottom consists of silt, sand, and shells with scattered construction debris throughout. The maximum penetration into the channel bottom is 12”. There has been no apparent change to the channel orientation as compared to the 2017 Underwater Inspection Report. No erosion was observed along the channel embankments. There is construction debris consisting of concrete rubble and cut-off timber piles at the channel bottom adjacent to the piers. There is no significant obstructions or debris accumulation which would affect the hydraulic opening at the bridge.

The timber fender system members exhibit minor splits and checking. The newer navigational lighting system in did not have lights on at the time of the inspection.

Item 113 - Scour Critical **Overall Rating:** 3 - Unstable

As compared to the 2017 Underwater Inspection Report, there is full height pile cap exposure with up to 15” of vertical seal exposure at the south end of Pier 8, pile cap at Pier 9 has become exposed with up to 4.5’ of vertical exposure, and the pile caps at Piers #4, #5 remain exposed. A scour analysis was performed to evaluate the scour potential at the bridge site. Based on this scour analysis, the structure has been rated a "3" or "Unstable".

General Condition Rating for Evaluating the Condition of Substructure & Channel Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021
Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Abutment No.: 1 **Overall Rating:** NA

Component	Rating	Description
STEM	7	The abutment is located out of the water and therefore was not inspected as part of this underwater inspection. Rating is based on the 2021 NBIS Inspection Report.
FOOTING	N	
EROSION	N	Erosion was not evaluated along the abutment.
SETTLEMENT	N	The abutment is located out of the water and therefore was not inspected as part of this underwater inspection.
SCOUR	N	
WINGWALLS	7	The return walls are located out of the water and therefore were not inspected as part of this underwater inspection. Rating shall be based on the 2021 NBIS Inspection Report.

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021
Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Abutment No.: 2 **Overall Rating:** NA

Component	Rating	Description
STEM	7	The abutment is located out of the water and therefore was not inspected as part of this underwater inspection. Rating is based on the 2021 NBIS Inspection Report.
FOOTING	N	
EROSION	N	Erosion was not evaluated along the abutment.
SETTLEMENT	N	The abutment is located out of the water and therefore was not inspected as part of this underwater inspection.
SCOUR	N	
WINGWALLS	7	The return walls are located out of the water and therefore was not inspected as part of this underwater inspection. Rating is based on the 2021 NBIS Inspection Report.

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021
Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent Nos.: 1 - 3 & 10 - 13 **Overall Rating:** NA

Component	Rating	Description
PILES	7	The caisson piles at the north (upstream) ends of the piers are located out of the water and therefore were not inspected as part of this underwater inspection. Rating shall be based on the 2021 NBIS Inspection Report.
STEM	7	The piers are located out of the water and therefore were not inspected as part of this underwater inspection. Rating shall be based on the 2021 NBIS Inspection Report.
FOOTING	N	
SCOUR	N	
SETTLEMENT	N	The piers are located out of the water and therefore were not inspected as part of this underwater inspection.

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 4 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	7	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 8’ down from the underside of the concrete cap section which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16” deep.
STEM	7	The pier consists of a reinforced concrete pier wall with a granite stone masonry facade that extends from the top of the wall (bottom of pier cope) to the sloped step / pile cap. The stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones. There are vertical cracks up to 1/4" wide in the stones.
FOOTING	7	The sloped concrete step / pile cap (steps out 18" from the pier face then slopes off at the 45˚ angle towards the channel bottom). The step / pile cap is exposed up to 2' vertically at the southeast shoulder and extends along the full-length of the east face of the pier and terminates at the northeast shoulder. The exposed surfaces of the step / pile cap exhibit abrasion up to 1/2" deep.
SCOUR	6	Since the 2017 Underwater Inspection Report, the reinforced concrete pile cap remains exposed up to 2' vertically at the southeast shoulder and extends along the full length of the east face of the pier and terminates at the northeast shoulder.
SETTLEMENT	8	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 5 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	6	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 9' down from the underside of the concrete cap section, which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16” deep.
STEM	6	The pier consists of a reinforced concrete pier wall with a granite stone masonry facade that extends 16-1/2' below the top of the wall (bottom of pier cope) to the pile cap. The stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones. The reinforced concrete step has abrasion up to 1/2" deep throughout, and an isolated band of scaling, full width x 3' high x up to 3/4" deep at the north (upstream) nose of the pier near the channel bottom.
FOOTING	7	The reinforced concrete pile cap (steps out 2' from the pier face) is exposed up to 6” vertically along the south (downstream) nose of the pier and over a length of 4' along the west face of the pier at the southwest corner, which is slightly less than the 1’ of vertical exposure noted in the 2017 Underwater Inspection Report. The exposed surfaces of the pile cap exhibit abrasion up to 1/2" deep throughout.
SCOUR	6	Since the 2017 Underwater Inspection Report, the channel bottom around the pier has similar depths and the footing/pile cap is exposed along the south nose and 4’ along the west face.
SETTLEMENT	8	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 6 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	7	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 10’ down from the underside of the concrete cap section which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16” deep.
STEM	6	The pier consists of a reinforced concrete pier wall with a stone masonry facade that extends 16-1/2' below the top of the wall (bottom of pier cope). The stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones and isolated full-height cracked stones. There is also a missing stone 2' long x 2-1/2' high on the east face. There are intermittent voids up to 3' long x 6" high x 6" deep along the interface of the facade and the concrete pier stem on the south and west pier faces. The reinforced concrete portion of the stem below the stone masonry facade has areas of poor consolidation/section loss up to 1" deep.
FOOTING	N	There is no observed exposure of the pier pile cap.
SCOUR	6	The soundings around Pier 6 are similar to the soundings recorded during the 2017 underwater inspection and there is no footing/pile cap exposure at Pier 6.
SETTLEMENT	8	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 7 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	7	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 13'-6" down from the underside of the concrete cap section which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16" deep.
STEM	6	The pier consists of a reinforced concrete pier wall with a stone masonry facade that extends 16-1/2' below the top of the wall (bottom of pier cope), as noted in the 2017 Underwater Inspection Report. The stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones and isolated full-height cracked stones. On both the west and east faces of the pier, there are vertical cracks open between 1/8" and 1/2" wide that extend from the top of the wall down to the channel bottom near the midpoint of the pier wall. There is also a missing stone 3-1/2' long x 5' high on the west face. The reinforced concrete portion of the stem below the stone masonry facade has abrasion up to 1/2" deep. There are various areas of concrete scaling/section loss on all four faces of the pier near the channel bottom that typically measure 2.5 to 3.5" deep and up to 5" deep along the southwest corner.
FOOTING	N	There is no observed exposure of the pier pile cap.
SCOUR	6	As compared to the 2017 Underwater Inspection Report, the channel bottom remains relatively unchanged. There is no observed exposure of the pier foundation.
SETTLEMENT	6	On both the west and east faces of the pier, there are vertical cracks open to 1/4" wide that extend from the top of the wall down to the channel bottom, near the midpoint of the pier stem, that may indicate slight settlement of the pier.

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 8 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	7	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 9' down from the underside of the concrete cap section which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16" deep.
STEM	6	The pier consists of a reinforced concrete pier wall with a stone masonry facade that extends from the top of the wall (bottom of pier cope) to the sloped step / pile cap. The stone masonry facade exhibits 15% deteriorated mortar with up to 6" of penetration between stones. There is 50% mortar loss in the joint at the masonry/concrete interface. There are two stones with vertical cracks up to 1/2" wide on both faces of the pier at the north fascia of the pedestrian bridge.
FOOTING	6	The reinforced concrete pile cap (steps out 18" from the pier face then slopes off at the 45˚ angle towards the channel bottom) is exposed around the pier noses and intermittently along the pier faces with up to 4.5' of vertical exposure at the northeast corner. The pile cap is fully exposed at the south nose with vertical seal exposure of 15". There are two timber piles protruding up through the pile cap/footing at the southeast corner. There is an isolated area of section loss 2' long x 8" high x 5" deep at the south end on the east face.
SCOUR	5	Since the 2017 Underwater Inspection Report, the exposure of the pile cap has increased 1.5' vertically and there is seal exposure at the south nose 15" vertically.
SETTLEMENT	8	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 60 - Substructure

Pier/Bent No.: 9 **Overall Rating:** 6 - Satisfactory

Component	Rating	Description
PILES	7	There is a steel encased reinforced concrete caisson pile at the north (upstream) end of the pier. The caisson pile has a fiberglass jacket in place that extends 8’ down from the underside of the concrete cap section which has no significant deficiencies. The exposed steel casing exhibits minor corrosion with light pitting up to 1/16” deep.
STEM	6	The pier consists of a reinforced concrete pier wall with a stone masonry facade that extends from the top of the wall (bottom of pier cope) to the channel bottom. Note: The east face of the pier is located out of the water and was therefore was not included in this Underwater Inspection. The stone masonry facade exhibits less than 5% deteriorated mortar with 3" to 6" of penetration between stones and isolated full-height cracked stones. There is also a vertical crack 1/2" wide that extends through the top three courses of the stone facade on the west face, located mid-length of the pier.
FOOTING	6	The pile cap is exposed along the west face with up to 4.5’ of vertical exposure and areas of poor consolidation/section loss up to 2” deep.
SCOUR	6	Since the 2017 Underwater Inspection Report, the pile cap/footing has become exposed along the west side of the pier.
SETTLEMENT	8	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021

Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 61 - Channel & Channel Protection

Overall Rating: 6 - Satisfactory

Component	Rating	Description
CHANNEL SCOUR	6	Since the 2017 Underwater Inspection Report, there is evidence of scour at Piers 8 and 9 where there is now 15" of vertical seal exposure at Pier 8 and up to 4.5' of pile cap exposure at Pier 9.
EMBANKMENT EROSION	8	There is no significant erosion along the channel embankments adjacent to the bridge. Erosion up to 70' long x 5' high was observed on the southwest channel embankment south of the Brown University Boat House, which is approximately 400' to the south of the bridge.
CHANNEL CHANGE	7	There has been no apparent change to the channel orientation as compared to the 2017 Underwater Inspection Report.
ADEQUACY OF OPENING	7	There are no significant obstructions or debris accumulation which would affect the hydraulic opening at the bridge.
DEBRIS	6	There is construction debris consisting of concrete rubble and cut-off timber piles at the channel bottom adjacent to the piers. There are no significant obstructions or debris accumulation which would affect the hydraulic opening at the bridge.
VEGETATION	8	
RIP RAP	N	There is evidence of scattered rip-rap along the east side of Pier #5 and a stone revetment along the east side of Pier 7 from the northeast corner to the midpoint of the pier. The southwest channel embankment has a stone revetment.

General Condition Rating for Evaluating the Condition of Channel Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

Underwater Inspection Report

Bridge Nos.: 020001 & 020021 Inspection Date: 7/23/2021
Bridge Names: Washington Bridge South & Washington Bridge South Pedestrian
Facility Carried: Interstate 195 Eastbound & Bike Path/Pedestrian
Feature Intersected: Seekonk River
City/Town: East Providence

Item 61 - Channel & Channel Protection (Cont'd)

Rating: 6 - Satisfactory

Component	Rating	Description
FENDER SYSTEM	6	This item shall be used to rate the condition of the fender system and navigational lighting in place along the east side of Pier #6 and the west side of Pier #7. Fender System: The timber fender system members exhibit minor splits and checking along with two areas of damaged or missing handrails. The dolphin pile groups at the south (downstream) end of the fenders appear to have been recently replaced and have no significant defects. Navigational Lighting: There is a newer navigational lighting system in place, however the lights were not on at the time of the inspection.
SPUR DIKES & JETTIES	N	

Water Velocities

Channel/Span No.	Max. Depth (ft)	20% (fps)	60% (fps)	80% (fps)	
4	12.3	Tidal	Tidal	Tidal	
5	30.5	Tidal	Tidal	Tidal	
6	26.0	Tidal	Tidal	Tidal	
7	24.9	Tidal	Tidal	Tidal	
8	16.6	Tidal	Tidal	Tidal	
9	7.7	Tidal	Tidal	Tidal	

General Condition Rating for Evaluating the Condition of Substructure Components

NOTE: Condition ratings are assigned in accordance with the National Bridge Inspection Standards (NBIS) coding information, as presented in the Federal Highway Administration Report No. FHWA-PD-96-001 “Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges,” dated December 1995 (revised March 11, 2004).

State of Rhode Island
Department of Transportation

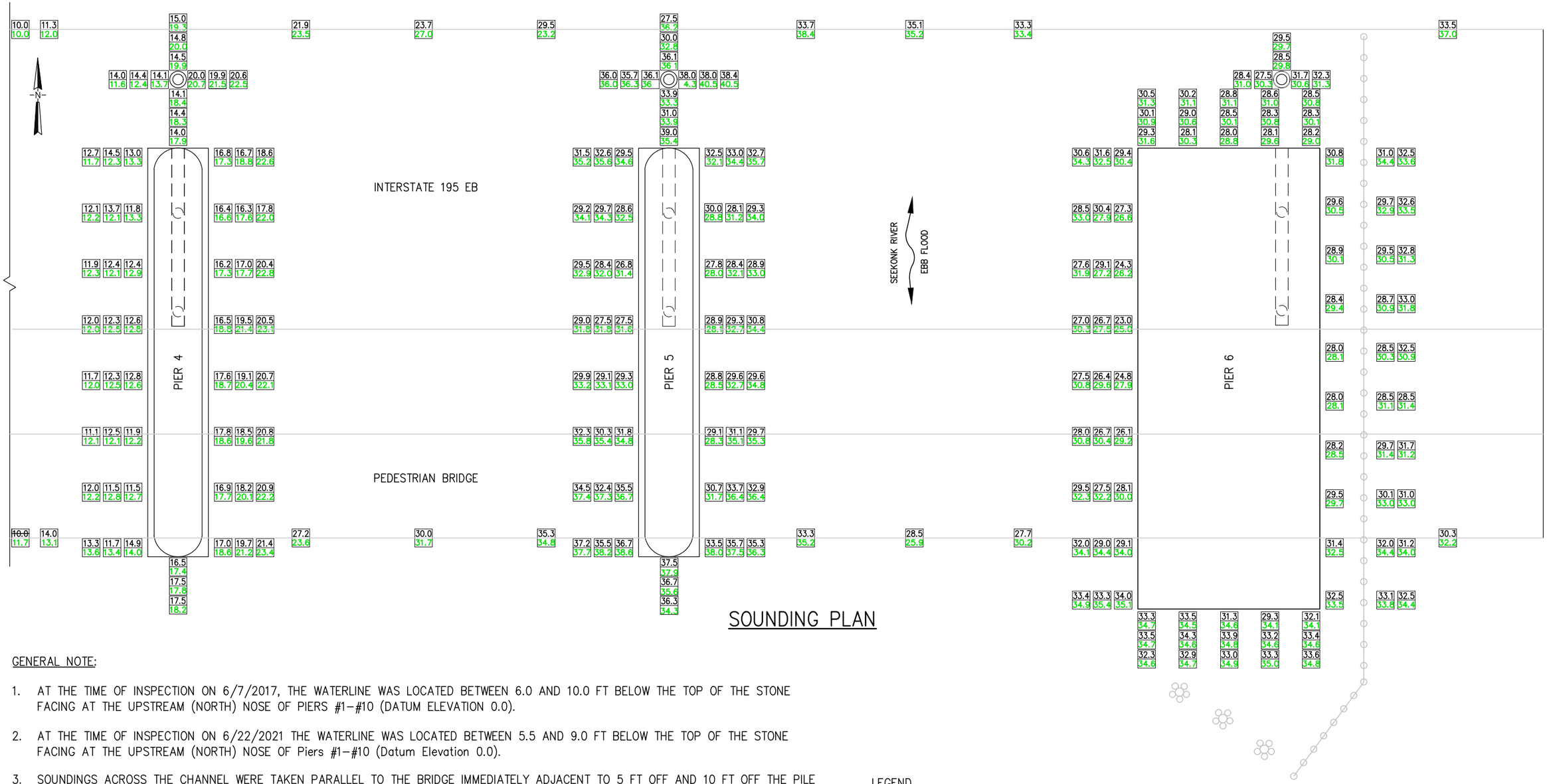
Bridge Nos. 020001 & 020021

Washington Bridge South & Bike Path / Pedestrian Bridge

Drawings / Sketches

Prepared by:

Jacobs



SOUNDING PLAN

GENERAL NOTE:

1. AT THE TIME OF INSPECTION ON 6/7/2017, THE WATERLINE WAS LOCATED BETWEEN 6.0 AND 10.0 FT BELOW THE TOP OF THE STONE FACING AT THE UPSTREAM (NORTH) NOSE OF PIERS #1–#10 (DATUM ELEVATION 0.0).
2. AT THE TIME OF INSPECTION ON 6/22/2021 THE WATERLINE WAS LOCATED BETWEEN 5.5 AND 9.0 FT BELOW THE TOP OF THE STONE FACING AT THE UPSTREAM (NORTH) NOSE OF Piers #1–#10 (Datum Elevation 0.0).
3. SOUNDINGS ACROSS THE CHANNEL WERE TAKEN PARALLEL TO THE BRIDGE IMMEDIATELY ADJACENT TO 5 FT OFF AND 10 FT OFF THE PILE CAP AND TREMIE SEAL AT THE PIERS AS WELL AS AT THE QUARTER POINTS AND MIDPOINT OF EACH SPAN AT THE BRIDGE FASCIAS, AND ARE ACTUAL DISTANCES FROM THE ASSIGNED DATUM IN FEET.
4. SOUNDINGS PARALLEL TO THE SUBSTRUCTURE WERE TAKEN AT 5 FT INTERVALS IMMEDIATELY ADJACENT TO 5 FT OFF AND 10 FT OFF THE PILE CAP AND TREMIE SEAL AT THE PIERS AS WELL AS BOTH PIER NOSES AND ARE ACTUAL DISTANCES FROM THE ASSIGNED DATUM IN FEET.
5. VARIATIONS BETWEEN THE 2017 AND 2013 CHANNEL BOTTOM PROFILES ARE LIKELY DUE TO THE SOFT COMPOSITION OF THE CHANNEL BOTTOM AT CERTAIN LOCATIONS.
6. THIS FIGURE WAS DEVELOPED FROM FIELD NOTES, SKETCHES AND STRUCTURE PLANS.

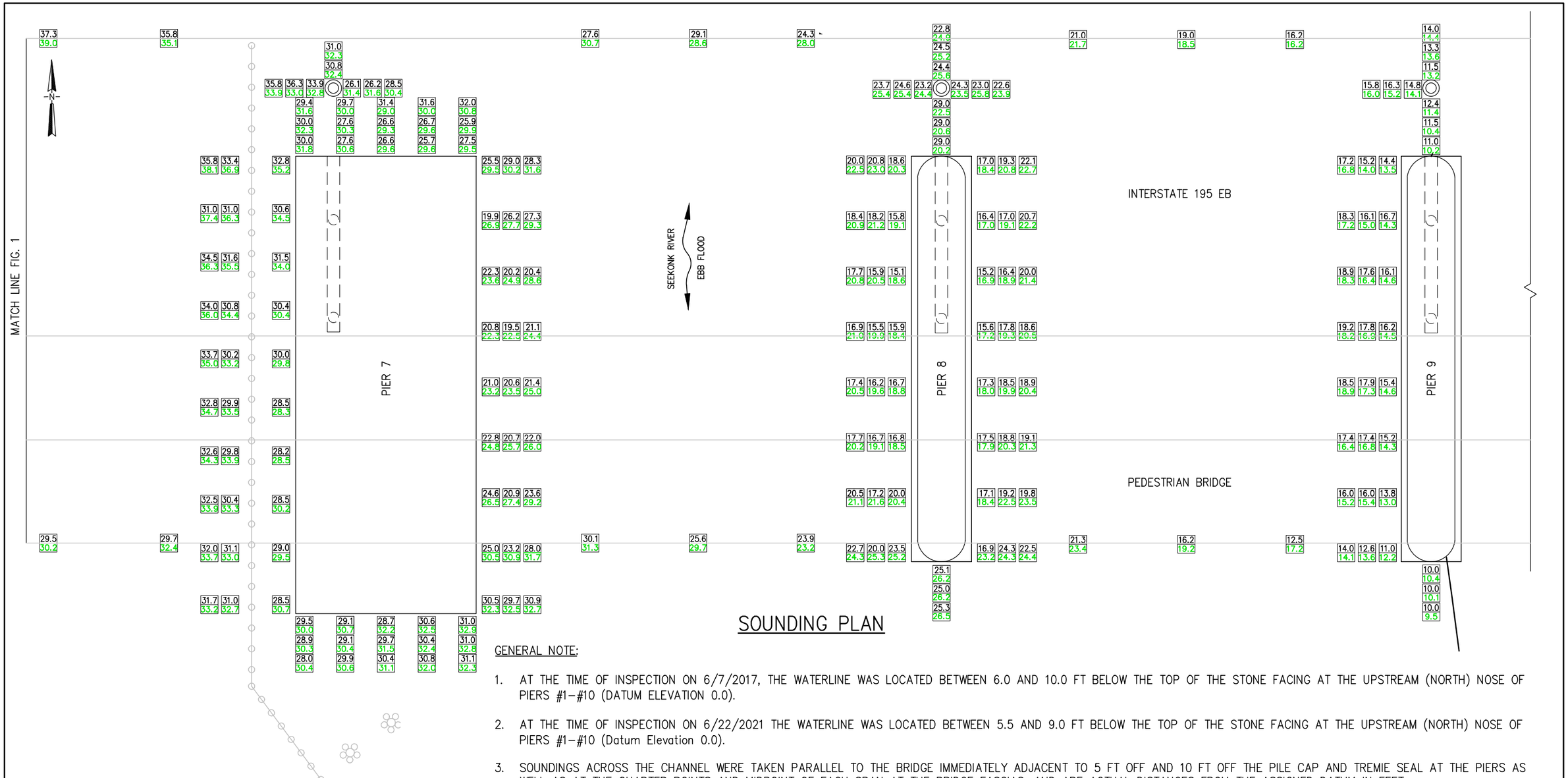
LEGEND

2021
2017

CHANNEL BOTTOM DEPTHS FROM DATUM PARALLEL TO STRUCTURE ALONG THE UPSTREAM AND DOWNSTREAM FASCIAS AND ALONG PIER FASCIA

JACOBS

DESIGNED BY	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	SCALE N.T.S.	REVISION
DRAWN BY CAM		DATE 8/20/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021	DRAWING NO.	
PROJECT ENGR	SOUNDING PLAN	FIG. 1	



SOUNDING PLAN

GENERAL NOTE:

1. AT THE TIME OF INSPECTION ON 6/7/2017, THE WATERLINE WAS LOCATED BETWEEN 6.0 AND 10.0 FT BELOW THE TOP OF THE STONE FACING AT THE UPSTREAM (NORTH) NOSE OF PIERS #1–#10 (DATUM ELEVATION 0.0).
2. AT THE TIME OF INSPECTION ON 6/22/2021 THE WATERLINE WAS LOCATED BETWEEN 5.5 AND 9.0 FT BELOW THE TOP OF THE STONE FACING AT THE UPSTREAM (NORTH) NOSE OF PIERS #1–#10 (Datum Elevation 0.0).
3. SOUNDINGS ACROSS THE CHANNEL WERE TAKEN PARALLEL TO THE BRIDGE IMMEDIATELY ADJACENT TO 5 FT OFF AND 10 FT OFF THE PILE CAP AND TREMIE SEAL AT THE PIERS AS WELL AS AT THE QUARTER POINTS AND MIDPOINT OF EACH SPAN AT THE BRIDGE FASCIAS, AND ARE ACTUAL DISTANCES FROM THE ASSIGNED DATUM IN FEET.
4. SOUNDINGS PARALLEL TO THE SUBSTRUCTURE WERE TAKEN AT 10 FT INTERVALS IMMEDIATELY ADJACENT TO 5 FT OFF AND 10 FT OFF THE PILE CAP AND TREMIE SEAL AT THE PIERS AS WELL AS BOTH PIER NOSES AND ARE ACTUAL DISTANCES FROM THE ASSIGNED DATUM IN FEET.
5. VARIATIONS BETWEEN THE 2017 AND 2021 CHANNEL BOTTOM PROFILES ARE LIKELY DUE TO THE SOFT COMPOSITION OF THE CHANNEL BOTTOM AT CERTAIN LOCATIONS.
6. THIS FIGURE WAS DEVELOPED FROM FIELD NOTES, SKETCHES AND STRUCTURE PLANS.

LEGEND

2021
2017

CHANNEL BOTTOM DEPTHS FROM DATUM PARALLEL TO STRUCTURE ALONG THE UPSTREAM AND DOWNSTREAM FASCIAS AND ALONG PIER FASCIA

JACOBS

DESIGNED BY	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	SCALE N.T.S.	REVISION
DRAWN BY CAM		DATE 06/07/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021 SOUNDING PLAN	DRAWING NO.	
PROJECT ENGR		FIG. 2	

INSPECTION NOTE:

① AT PIERS 4, 5, & 6 THE CAISSON PILE AT THE NORTH (UPSTREAM) END OF THE PIER EXHIBITS MINOR CORROSION WITH LIGHT PITTING UP TO 1/16" DEEP ON THE EXPOSED PORTIONS OF THE STEEL CASING. THE FIBERGLASS WRAP EXTENDS 8 TO 10 FEET DOWN FROM THE UNDERSIDE OF THE CONCRETE CAP.

② AT PIERS 4, 5, & 6 THE STONE MASONRY EXHIBITS LESS THAN 5% DETERIORATED MORTAR WITH 3" TO 6" OF PENETRATION BETWEEN STONES.

③ THE EXPOSED SURFACES OF THE REINFORCED CONCRETE STEP/PILE CAP EXHIBIT ABRASION UP TO 1/2" DEEP.

④ THE CHANNEL BOTTOM CONSISTS OF SILT, SAND, SHELLS, AND SCATTERED CONSTRUCTION DEBRIS WITH UP TO 12" OF PROBE ROD PENETRATION.

⑤ AT PIER 4, THERE IS A FULL HEIGHT CRACK UP TO 1/4" WIDE THAT EXTENDS TO CHANNEL BOTTOM NEAR THE MIDPOINT ON THE WEST FACE.

⑥ AT PIER 4, THERE IS A CRACKED STONE BELOW WATER, 1/4" WIDE x FULL HEIGHT, IN THE FOURTH STONE COURSE NEAR THE SOUTH END ON THE EAST FACE OF THE PIER.

⑦ AT PIER 4, THE REINFORCED CONCRETE STEP/PILE CAP IS EXPOSED UP TO 2' VERTICALLY FROM THE NORTHEAST SHOULDER AND ALONG THE ENTIRE EAST FACE WITH MAXIMUM EXPOSURE AT THE SOUTHEAST SHOULDER.

⑧ AT PIERS 5 & 6, THERE IS ABRASION UP TO 1/2" DEEP ON THE REINFORCED CONCRETE PIER SHAFT BELOW THE STONE MASONRY.

⑨ AT PIER 5, THERE IS A BAND OF SCALING ON THE SOUTH NOSE NEAR THE CHANNEL BOTTOM THAT MEASURES FULL WIDTH x 3' HIGH x UP TO 3/4" PENETRATION.

⑩ AT PIER 5, THE REINFORCED CONCRETE STEP/PILE CAP IS EXPOSED UP TO 6" VERTICALLY ALONG THE SOUTH NOSE AND 4' ALONG THE WEST FACE.

⑪ AT PIER 5, THERE IS INTERMITTENT CONCRETE RUBBLE UP TO 2' IN DIAMETER ALONG THE FULL LENGTH OF THE EAST FACE OF THE PIER.

⑫ AT PIER 6, THERE IS MISSING MASONRY STONE AT THE MIDPOINT OF THE EAST FACE 2' LONG x 2.5' HIGH.

⑬ AT PIER 6, THERE ARE VOIDS AT THE CONCRETE/GRANITE INTERFACE MEASURING UP TO 3' LONG x 6" HIGH x 6" DEEP ALONG THE SOUTH AND WEST FACES OF THE PIER.

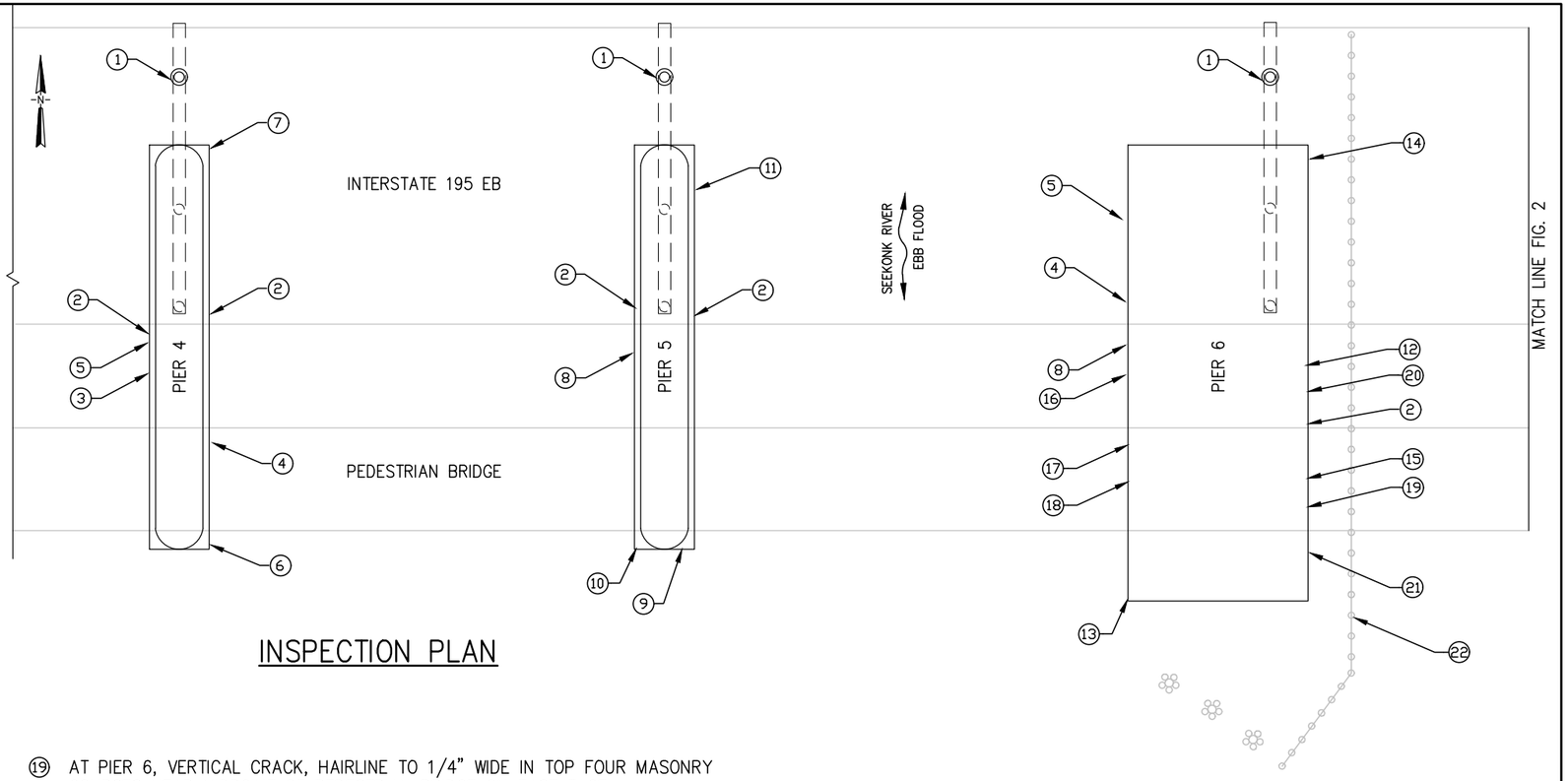
⑭ AT PIER 6, THERE IS A TIMBER PILE CUT OFF AT 10 FEET ABOVE CHANNEL BOTTOM AT THE NORTHEAST SHOULDER AND THREE TIMBER PILES LYING ON THE CHANNEL BOTTOM AT THE SOUTHEAST SHOULDER.

⑮ AT PIER 6, AT 15' NORTH OF THE SOUTHEAST CORNER THERE IS A 1/16" TO 1/8" WIDE VERTICAL CRACK ON THE EAST FACE THAT EXTENDS FROM THE 6TH MASONRY COURSE TO THE CHANNEL BOTTOM.

⑯ AT PIER 6, THE FIRST, THIRD, AND FOURTH MASONRY COURSES AT THE MIDPOINT ON THE WEST FACE EXHIBIT VERTICAL CRACKS UP TO 1/4" WIDE AND EXTENDING INTO THE CONCRETE FOOTING STEP 1/2" WIDE AT CHANNEL BOTTOM.

⑰ AT PIER 6, VERTICAL CRACK 1/16" WIDE IN 2nd MASONRY COURSE NEAR NORTH 1/4 POINT ON WEST FACE.

⑱ AT PIER 6, VERTICAL CRACK 1/8" WIDE IN 4th MASONRY COURSE NEAR THE MIDPOINT OF THE PEDESTRIAN BRIDGE ON WEST FACE.



INSPECTION PLAN

⑲ AT PIER 6, VERTICAL CRACK, HAIRLINE TO 1/4" WIDE IN TOP FOUR MASONRY COURSES NEAR MIDPOINT OF PEDESTRIAN BRIDGE ON EAST FACE.

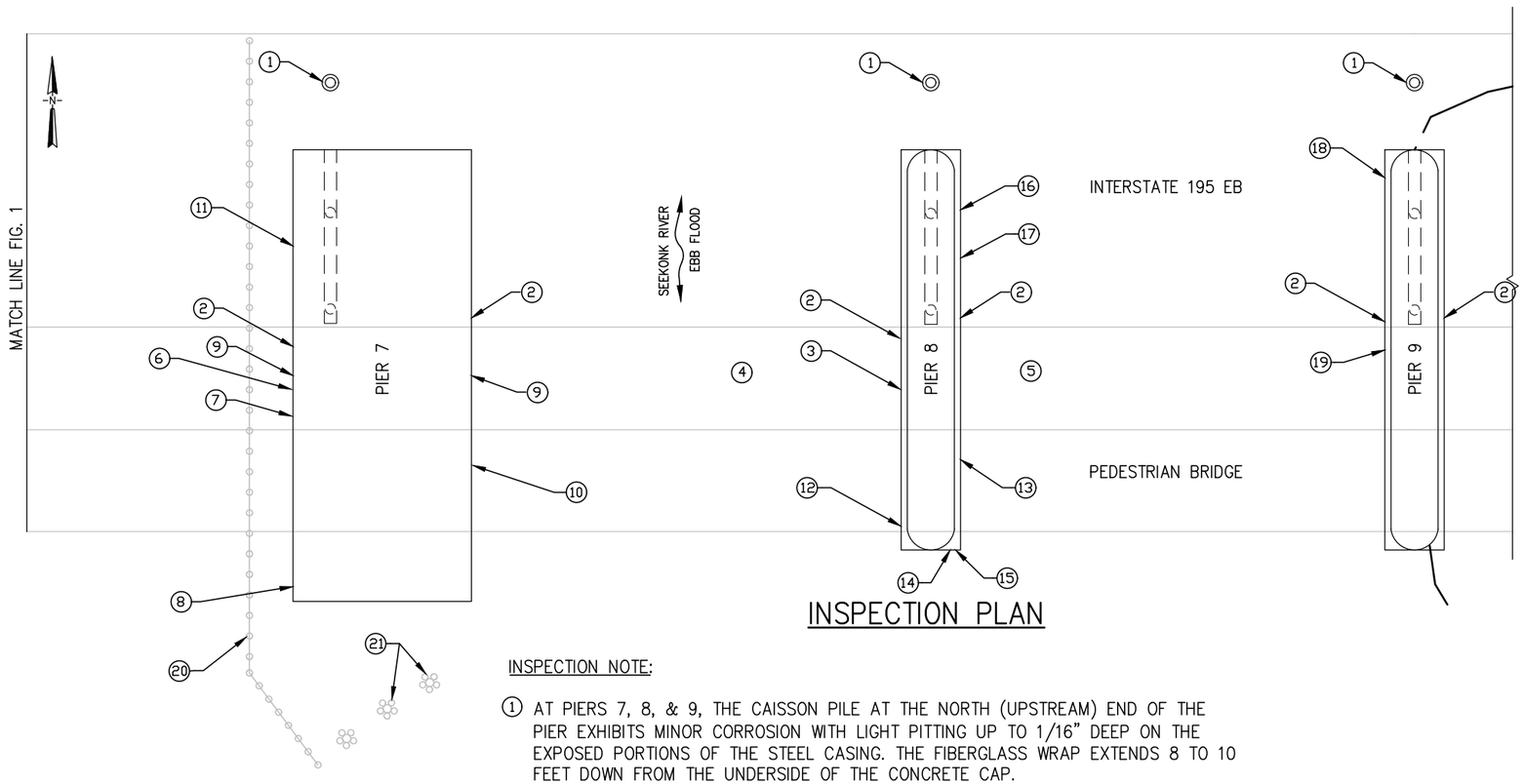
⑳ AT PIER 6, VERTICAL CRACK IN TOP FOUR MASONRY COURSES BETWEEN PEDESTRIAN AND EASTBOUND BRIDGES ON EAST FACE THAT MEASURES 1/16" WIDE IN TOP MASONRY COURSE AND 1/4" WIDE IN 4th MASONRY COURSE.

㉑ AT PIER 6, INTERMITTENT BANDS OF POOR CONCRETE CONSOLIDATION ON ALL FACES OF CONCRETE PIER SHAFT BELOW MASONRY THAT MEASURE 6–12" HIGH AND 1/2" TO 1" DEEP.

㉒ THE TIMBER FENDER SYSTEM TOP WALE ALONG THE EAST SIDE OF THE PIER 6 EXHIBITS MINOR CHECKS AND SPLITS IN THE TIDAL ZONE AND THERE IS A FRACTURED HANDRAIL IN TWO LOCATIONS WITH ONE BROKEN POST.

JACOBS

DESIGNED BY		SCALE N.T.S.	REVISION
DRAWN BY CAM	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	DATE 06/07/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021	DRAWING NO.	
PROJECT ENGR	INSPECTION PLAN	FIG. 3	



INSPECTION PLAN

INSPECTION NOTE:

① AT PIERS 7, 8, & 9, THE CAISSON PILE AT THE NORTH (UPSTREAM) END OF THE PIER EXHIBITS MINOR CORROSION WITH LIGHT PITTING UP TO 1/16" DEEP ON THE EXPOSED PORTIONS OF THE STEEL CASING. THE FIBERGLASS WRAP EXTENDS 8 TO 10 FEET DOWN FROM THE UNDERSIDE OF THE CONCRETE CAP.

② AT PIERS 7, & 9, THE STONE MASONRY EXHIBITS LESS THAN 5% DETERIORATED MORTAR WITH 3" TO 6" OF PENETRATION BETWEEN STONES.

③ AT PIER 8, THE STONE MASONRY EXHIBITS LESS THAN 15% DETERIORATED MORTAR WITH UP TO 6" OF PENETRATION BETWEEN STONES.

④ THE EXPOSED SURFACES OF THE REINFORCED CONCRETE STEP/PILE CAP EXHIBIT ABRASION UP TO 2" DEEP.

⑤ THE CHANNEL BOTTOM CONSISTS OF SILT, SAND, SHELLS, AND SCATTERED CONSTRUCTION DEBRIS WITH UP TO 12" OF PROBE ROD PENETRATION.

⑥ AT PIER 7, THERE IS 2" DEEP SCALING ON THE WEST FACE OF THE REINFORCED CONCRETE PIER SHAFT BELOW THE STONE MASONRY.

⑦ AT PIER 7, ISOLATED AREAS OF CONCRETE SCALING/SECTION LOSS NEAR THE CHANNEL BOTTOM:
- a. 2' HIGH x 3" DEEP ON WEST FACE FROM NORTHWEST CORNER TO 25' SOUTH
- b. 1' HIGH x 3.5" DEEP ON NORTH FACE FROM NORTHWEST CORNER TO MIDPOINT
- c. ALONG NORTHEAST CORNER 13' HIGH x 5' WIDE x 2" DEEP
- d. 6' HIGH x 2.5" DEEP ON EAST FACE NEAR SOUTH QUARTER-POINT
- e. 4" HIGH x 3' LONG x 3" DEEP ON EAST FACE NEAR SOUTHEAST CORNER
- f. 4' HIGH x 2.5" DEEP ALONG SOUTH FACE AT CHANNEL BOTTOM
- g. ALONG SOUTHWEST CORNER 16.5' HIGH x 2' WIDE x UP TO 5" DEEP AT CHANNEL BOTTOM

⑧ AT PIER 7, SPALL IN TOP OF REINFORCED CONCRETE AT CABLE LOCATION ON EAST FACE AT 3' FROM SOUTHEAST CORNER THAT MEASURES 4" HIGH x 20" WIDE x 3" DEEP.

⑨ AT PIER 7, VERTICAL CRACKS 1/8" TO 1/4" WIDE THAT EXTEND FROM THE TOP DOWN TO THE CHANNEL BOTTOM NEAR THE MIDPOINTS ON THE EAST AND WEST FACES. ON THE EAST FACE THE CRACK IS UP TO 1/2" WIDE AT THE 4th MASONRY COURSE AND THERE IS SECTION LOSS WITH SOFT CONCRETE IN THE AREA OF THE CRACK 14" WIDE x 24" HIGH x 2.5" DEEP. WEST FACE EXHIBITS SECTION LOSS ALONG CRACK FROM CHANNEL BOTTOM UP 8.5' x 5" WIDE x 3" DEEP.

⑩ AT PIER 7, THE STONES IN THE FIRST AND SECOND MASONRY COURSES ARE BROKEN WITH 3.5' LONG x 5' HIGH SECTIONS OF STONE MISSING ON THE WEST FACE OF THE PIER.

⑪ AT PIER 7, THERE IS A STONE REVETMENT ALONG THE EAST FACE FROM THE NORTHEAST CORNER TO THE MIDPOINT OF THE PIER.

⑫ AT PIER 8, THERE IS A VOID IN THE CONCRETE STEP/PILE CAP 2' LONG x 8" HIGH x 5" DEEP AT THE SOUTH END OF THE EAST FACE OF THE PIER.

⑬ AT PIER 8, THE CONCRETE STEP/PILE CAP IS EXPOSED AROUND THE PIER NOSES AND INTERMITTENTLY ALONG THE PIER FACES WITH UP TO 4.5' VERTICAL EXPOSURE AT THE NORTHEAST CORNER. AT THE SOUTH NOSE THE CONCRETE STEP/PILE CAP IS FULLY EXPOSED, AND THE SEAL IS ALSO EXPOSED WHICH EXTENDS 2' WIDER WITH UP TO 15" OF VERTICAL EXPOSURE AND SOFT LATENT CONCRETE.

⑭ AT PIER 8, THERE ARE TWO TIMBER PILES PROTRUDING UP THROUGH THE CONCRETE PILE CAP WITH 12" EXPOSED ON THE SOUTH FACE AT 10' AND 15' FROM THE SOUTHEAST CORNER. THE TIMBER PILES AT ARE 60% AND 25% NON-BEARING AND EXHIBIT 15% AND 20% SECTION LOSS, RESPECTIVELY.

⑮ AT PIER 8, AREA OF SECTION LOSS ON THE CONCRETE STEP/PILE CAP AT THE SOUTHEAST CORNER THAT MEASURES 2' LONG x 8" HIGH x 5" DEEP.

⑯ AT PIER 8, THERE IS A VERTICAL CRACK IN THE TOP TWO STONE COURSES BELOW THE CAP UP TO 1/2" WIDE. THE CRACK ALSO EXTENDS THROUGH THE CONCRETE STEP/PILE CAP ON BOTH FACES UP TO 1/4" WIDE.

⑰ AT PIER 8, THERE IS 50% MORTAR LOSS IN THE JOINT AT THE MASONRY/CONCRETE INTERFACE.

⑱ AT PIER 9, THE CONCRETE STEP/PILE CAP IS EXPOSED ALONG THE WEST FACE FROM 6' SOUTH OF THE NORTHWEST CORNER TO 18' NORTH OF THE SOUTHWEST CORNER WITH UP TO 4.5' OF VERTICAL EXPOSURE AND AREAS OF POOR CONSOLIDATION/SECTION LOSS UP TO 2" DEEP.

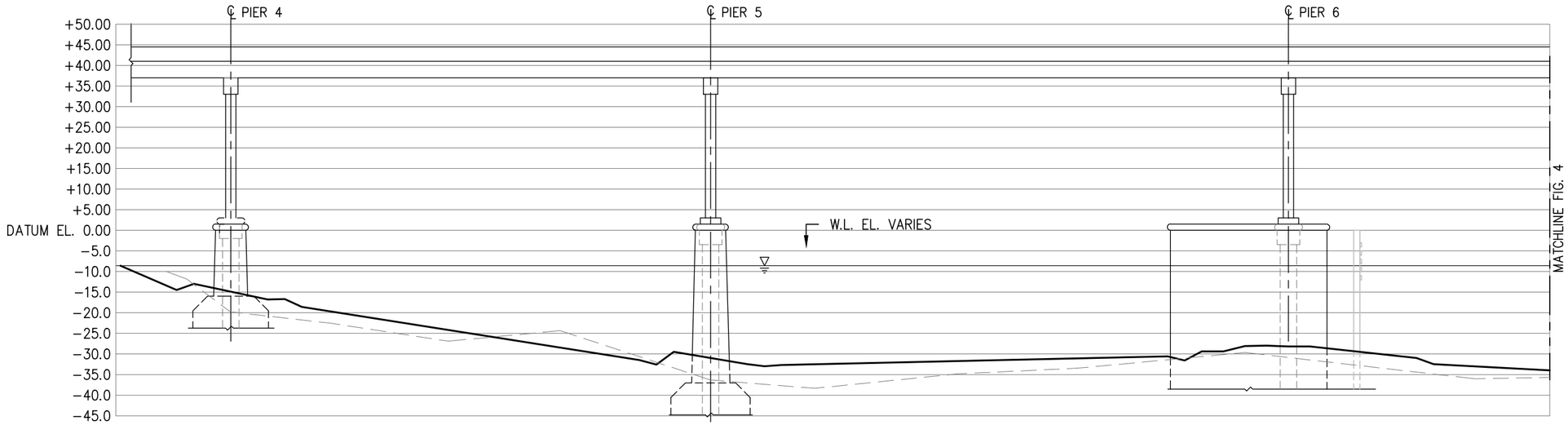
⑲ AT PIER 9, THERE IS A 1/2" WIDE CRACK THROUGH THE FIRST THREE STONE COURSES NEAR THE MIDPOINT ON THE WEST FACE OF THE PIER. THE CRACK ALSO EXTENDS THROUGH THE CONCRETE STEP/PILE CAP TO THE CHANNEL BOTTOM.

⑳ THE FENDER SYSTEM MEMBERS ALONG THE WEST SIDE OF PIER 7 EXHIBIT MINOR CHECKS AND SPLITS IN THE TIDAL ZONE AND A MISSING SECTION OF HANDRAIL NEAR THE NORTH END OF THE PEDESTRIAN BRIDGE.

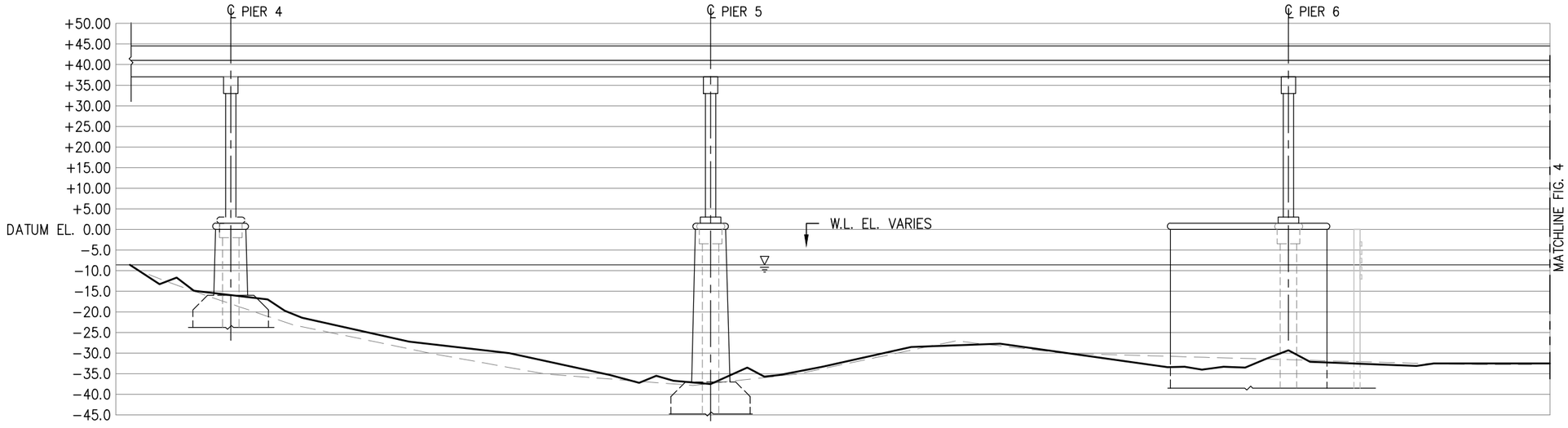
㉑ THERE ARE TWO ABANDONED TIMBER DOLPHINS IN SEVERE CONDITION ON THE SOUTH SIDE OF PIER 7. NEW TIMBER DOLPHINS HAVE BEEN CONSTRUCTED TO REPLACE THEM.

JACOBS

DESIGNED BY		SCALE N.T.S.	REVISION
DRAWN BY CAM	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	DATE 06/07/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021	DRAWING NO.	
PROJECT ENGR	INSPECTION PLAN	FIG. 4	



UPSTREAM FASCIA SOUNDING PLAN



DOWNSTREAM FASCIA SOUNDING PLAN

GENERAL NOTE:

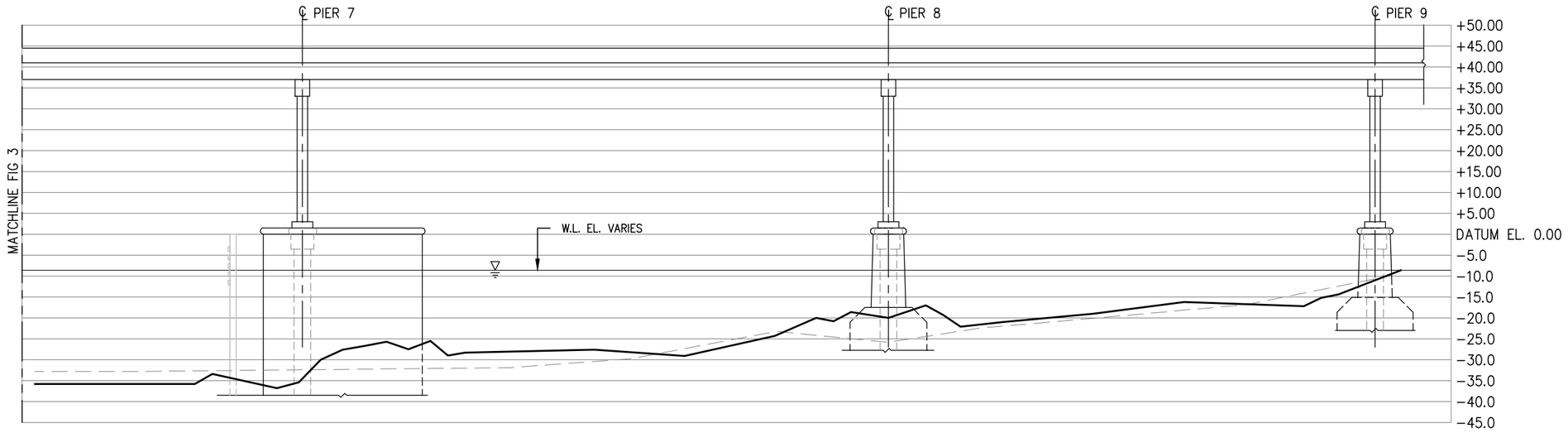
1. AT THE TIME OF INSPECTION ON 4/21/2020, THE WATERLINE WAS MEASURED AS 15.3 FT. BELOW THE TOP OF THE PIER 6 CAP AT THE NORTH END. BASED ON THE TOP OF PIER CAP ELEVATIONS OF 862.9 FT., THE WATERLINE ELEVATION WAS 847.6 FT.
2. SOUNDING INDICATE THE CHANNEL BOTTOM DEPTHS AT THE TIME OF INSPECTION AND ARE MEASURED IN FEET.
3. THESE FIGURES WERE DEVELOPED FROM FIELD OBSERVATION AND BRIDGE PLANS DATED 2001.

LEGEND

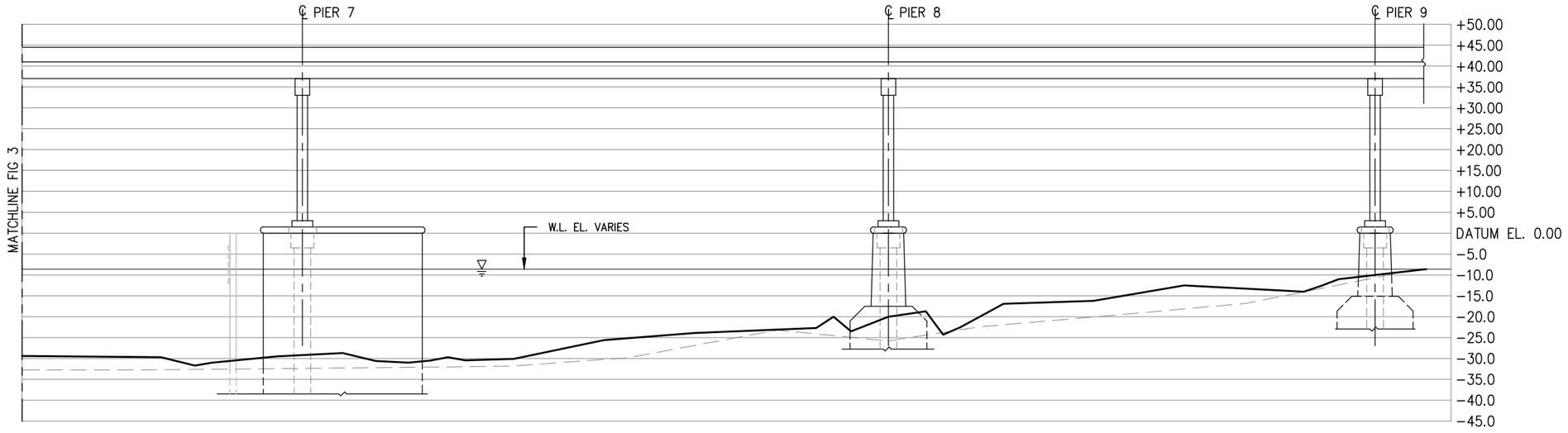
- – – – – – CHANNEL BOTTOM PROFILE ON 6/7/2017
- ——— CHANNEL BOTTOM PROFILE ON 2021

JACOBS

DESIGNED BY	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	SCALE N.T.S.	REVISION
DRAWN BY CAM		DATE 8/20/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021	DRAWING NO.	
PROJECT ENGR	UPSTREAM AND DOWNSTREAM FASCIA PROFILE	FIG. 5	



UPSTREAM FASCIA SOUNDING PLAN



DOWNSTREAM FASCIA SOUNDING PLAN

GENERAL NOTE:

1. AT THE TIME OF INSPECTION ON 4/21/2020, THE WATERLINE WAS MEASURED AS 15.3 FT. BELOW THE TOP OF THE PIER 6 CAP AT THE NORTH END. BASED ON THE TOP OF PIER CAP ELEVATIONS OF 862.9 FT., THE WATERLINE ELEVATION WAS 847.6 FT.
2. SOUNDING INDICATE THE CHANNEL BOTTOM DEPTHS AT THE TIME OF INSPECTION AND ARE MEASURED IN FEET.
3. THESE FIGURES WERE DEVELOPED FROM FIELD OBSERVATION AND BRIDGE PLANS DATED 2001.

LEGEND

- – – – – CHANNEL BOTTOM PROFILE ON 6/7/2017
- ——— CHANNEL BOTTOM PROFILE ON 2021

JACOBS

DESIGNED BY	EAST PROVIDENCE, RHODE ISLAND INTERSTATE 195 EASTBOUND & BIKE PATH/PEDESTRIAN BRIDGE OVER SEEKONK RIVER	SCALE N.T.S.	REVISION
DRAWN BY CAM		DATE 8/20/2021	
CHECKED BY RPB	BRIDGE NO. 020001 & 020021	DRAWING NO.	
PROJECT ENGR	UPSTREAM AND DOWNSTREAM FASCIA PROFILE	FIG. 6	

State of Rhode Island
Department of Transportation

Bridge Nos. 020001 & 020021

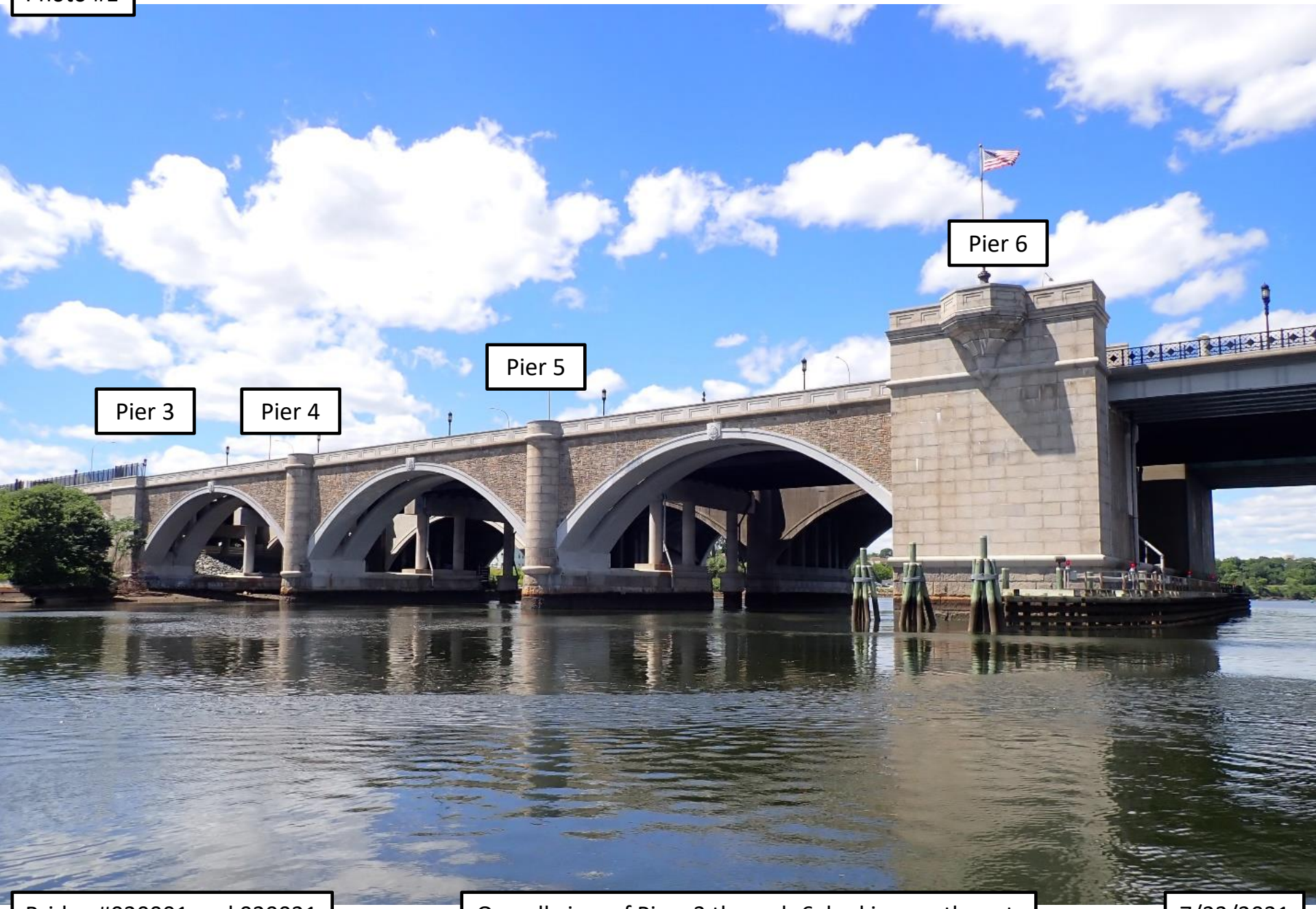
Washington Bridge South & Bike Path / Pedestrian Bridge

Photos

Prepared by:

Jacobs

Photo #1

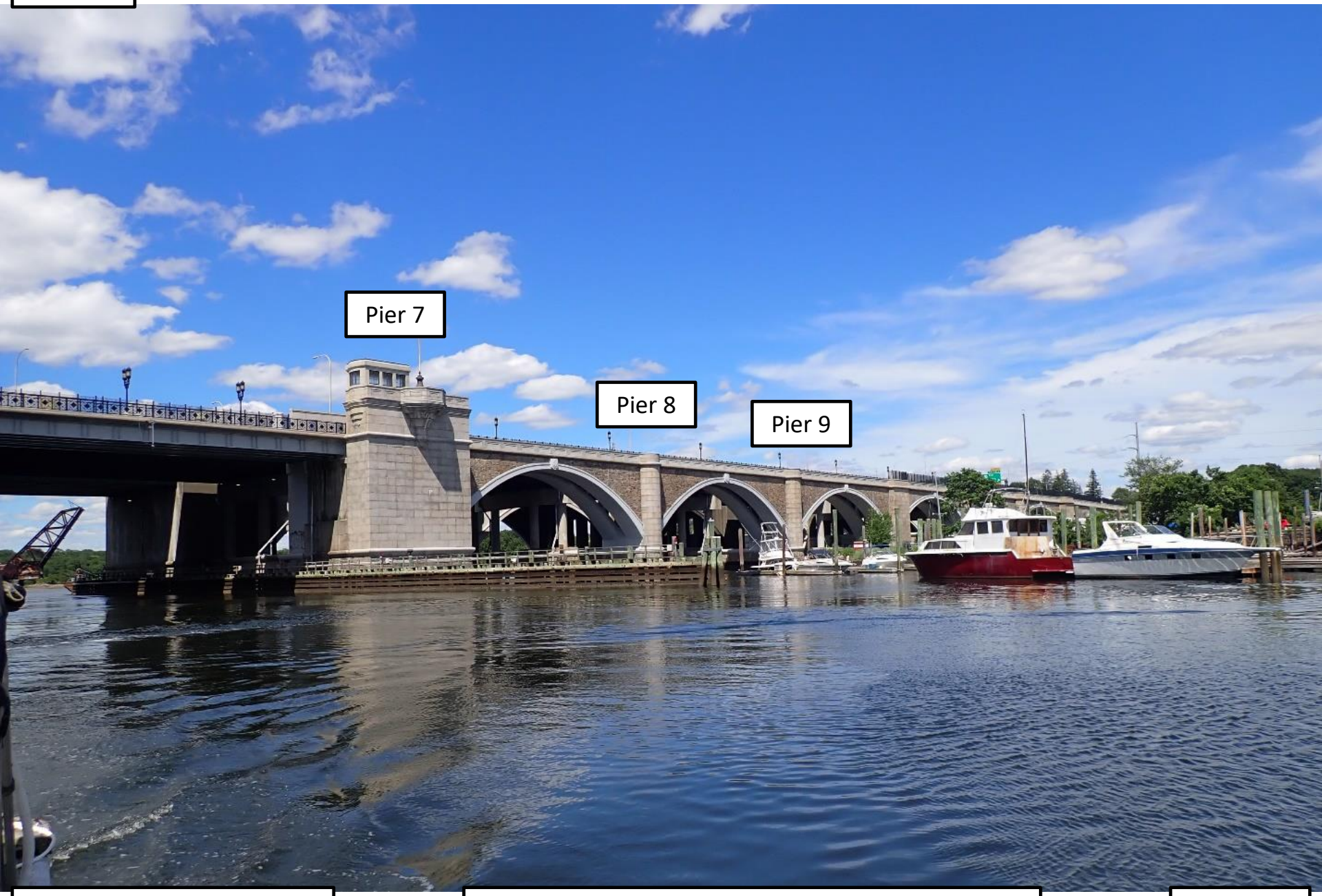


Bridge #020001 and 020021

Overall view of Piers 3 through 6, looking northwest.

7/23/2021

Photo #2



Bridge #020001 and 020021

Overall view of Piers 7 through 9, looking northeast.

7/23/2021

Photo #3

Bridge #020001 and 020021

West shoreline and Pier 3, Looking northwest.

7/23/2021

Photo #4

Bridge #020001 and 020021

West shoreline south of bridges, looking west.

7/23/2021

Photo #5

Bridge #020001 and 020021

East face of Pier 4, looking southwest.

7/23/2021

Photo #6

Bridge #020001 and 020021

View of Pier 4 Caisson, looking northwest.

7/23/2021

Photo #7

Bridge #020001 and 020021

View of west face of Pier 4, looking northeast.

7/23/2021

Photo #8

Bridge #020001 and 020021

View of northeast corner of Pier 4.

7/23/2021

Photo #9

Bridge #020001 and 020021

East face of Pier 5, looking southwest.

7/23/2021

Photo #10

Bridge #020001 and 020021

View of Pier 5 Caisson, looking east.

7/23/2021

Photo #11

Bridge #020001 and 020021

West face of Pier 6, looking northeast.

7/23/2021

Photo #12

Bridge #020001 and 020021

View of Pier 6 Caisson and north face, looking east.

7/23/2021

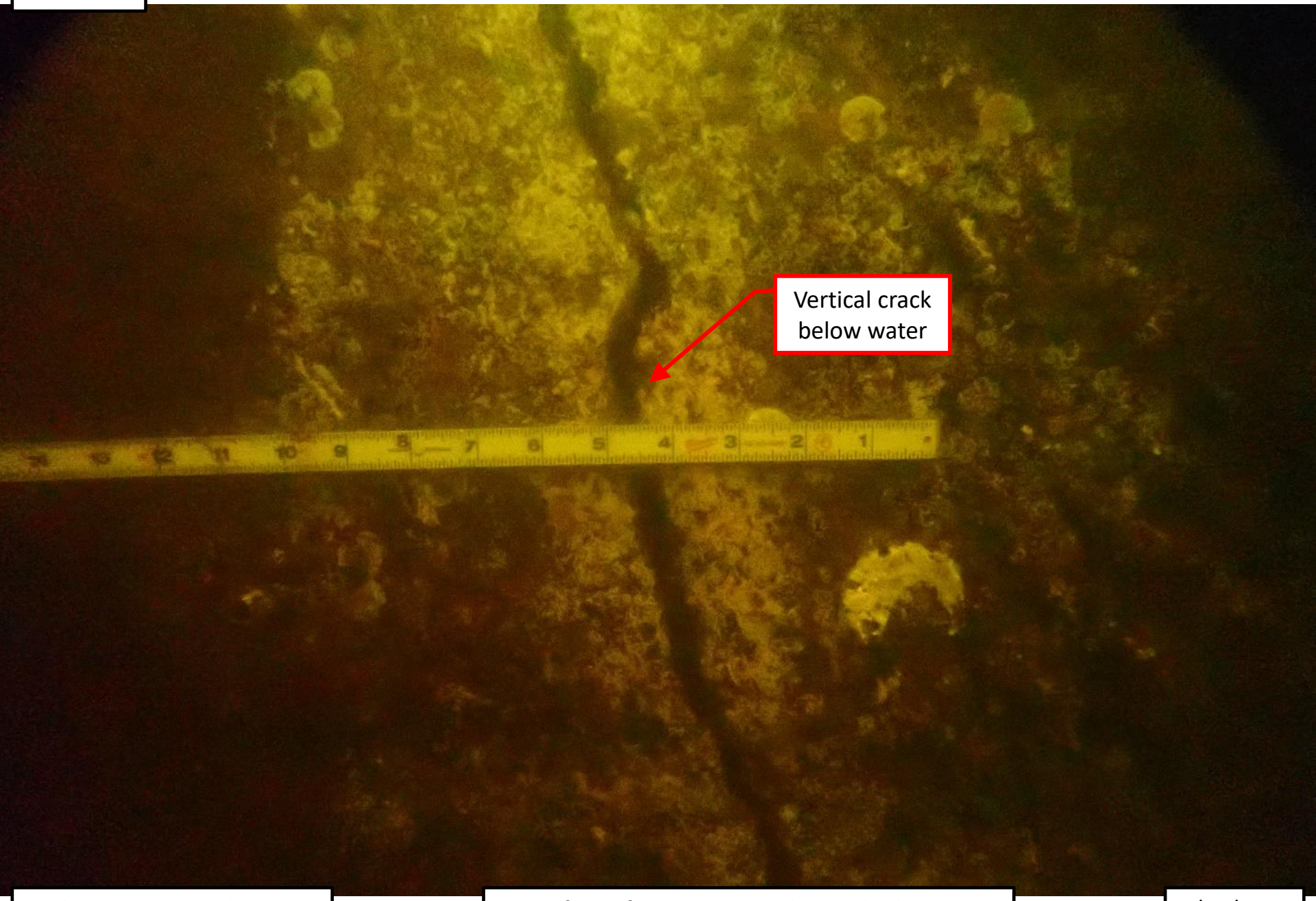
Photo #13

Bridge #020001 and 020021

West face of Pier 6 near midpoint, looking east.

7/23/2021

Photo #14



Bridge #020001 and 020021

West face of Pier 6 near midpoint, looking east.

7/23/2021

Photo #15

Bridge #020001 and 020021

South portion of Pier 7, looking southwest.

7/23/2021

Photo #16

Bridge #020001 and 020021

North portion of Pier 7and Caisson, looking west.

7/23/2021

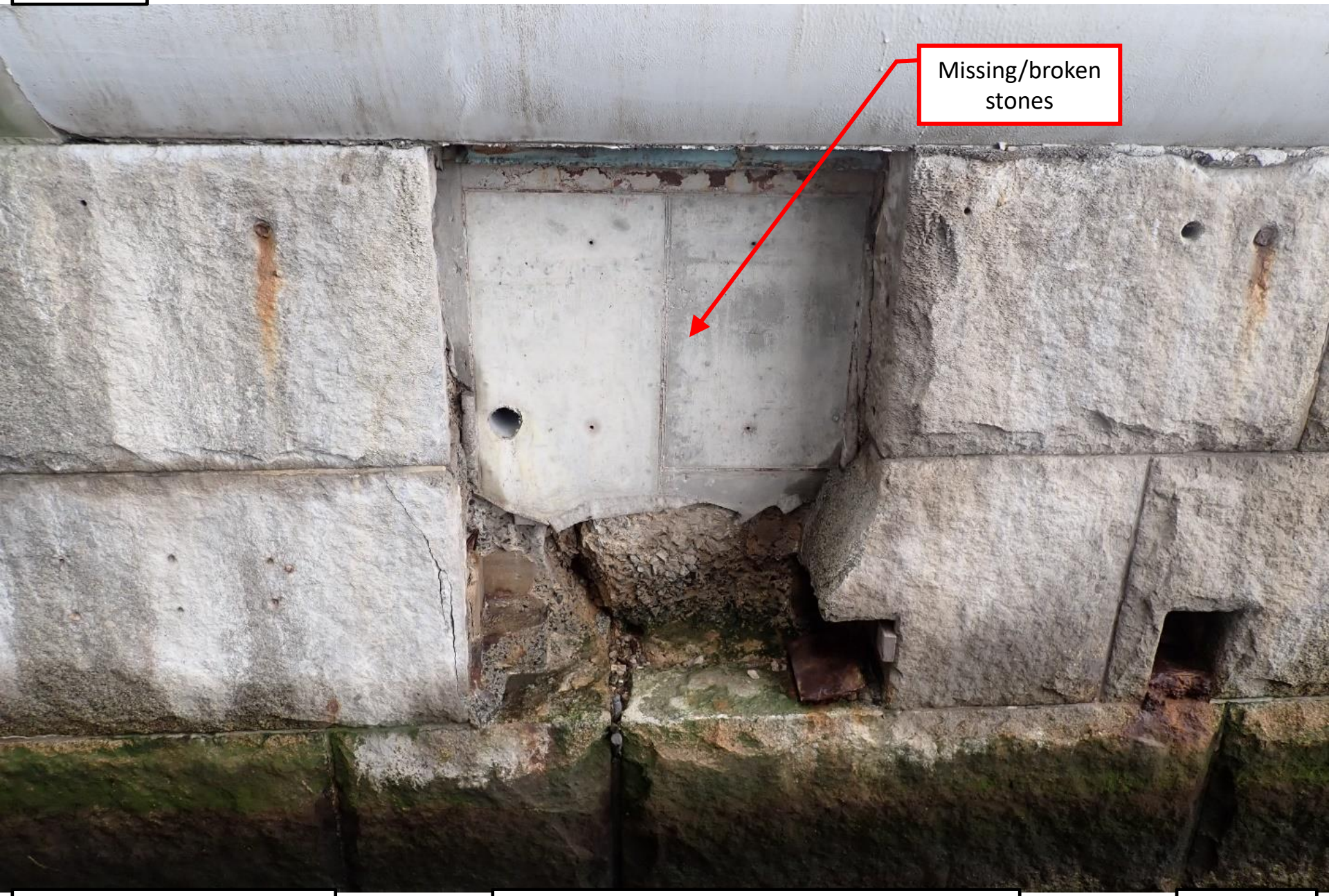
Photo #17

Bridge #020001 and 020021

East face of Pier 7 near midpoint, looking northwest.

7/23/2021

Photo #18



Bridge #020001 and 020021

West face of Pier 7 near midpoint, looking east.

7/23/2021

Photo #19

Bridge #020001 and 020021

South portion of Pier 8, looking east.

7/23/2021

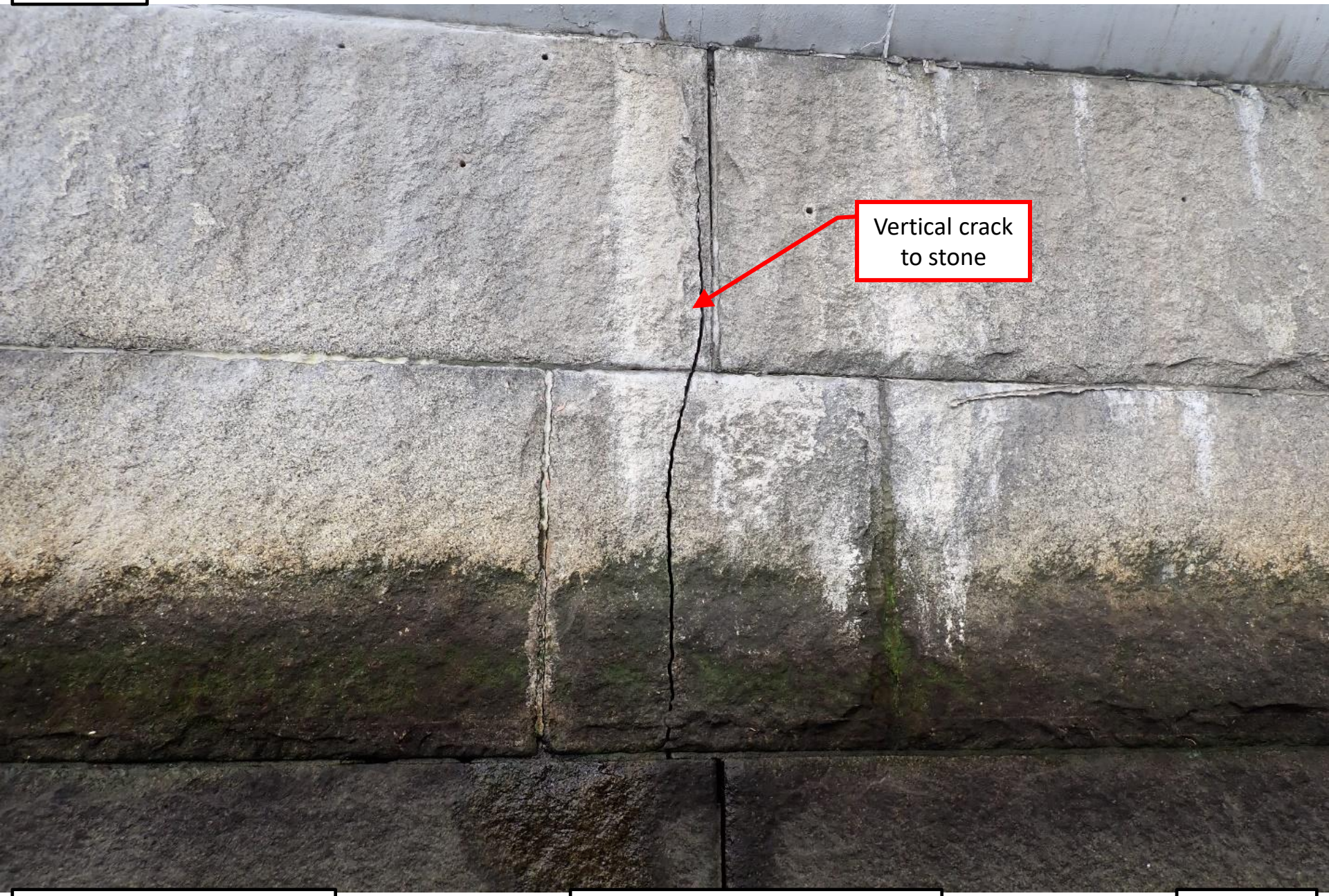
Photo #20

Bridge #020001 and 020021

North portion of Pier 8 and Caisson, looking northeast.

7/23/2021

Photo #21



Bridge #020001 and 020021

East face of Pier 8, looking west.

7/23/2021

Photo #22

Bridge #020001 and 020021

South portion of Pier 9, looking east.

7/23/2021

Photo #23

Bridge #020001 and 020021

North portion of Pier 9, looking northeast.

7/23/2021

Photo #24

Bridge #020001 and 020021

West face of Pier 9, looking east.

7/23/2021

Photo #25

Bridge #020001 and 020021

South portion of Pier 9, looking west.

7/23/2021

Photo #26

Bridge #020001 and 020021

North portion of Pier 9, looking west.

7/23/2021