

October 11, 2019

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7599801

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2019-CB-107

FEDERAL-AID PROJECT NO. FAP Nos: 405-421-991

Barrington Bridge - Underwater Repairs

Barrington Bridge

CITY/TOWN OF Barrington

COUNTY OF BRISTOL

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 3 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Contract Documents

1. Special Provisions/Construction Specific

Specifications - Job Specific

a. Pages JS-3 through JS-5

Delete pages JS-3 through JS-5 in its entirety and replace with revised pages JS-3 (R-1), JS-4 (R-1) and JS-5 (R-1) attached to this Addendum 3. Revised qualifications of quality control contractor.

Specifications - Job Specific

b. Pages JS-19 and JS-20

Delete pages JS-19 and JS-20 its entirety and replace with revised pages JS-19 (R-1) and JS-20 (R-1) attached to this Addendum 3. Added prep of existing concrete and channel bottom prior to installation of stay-in-place forms and placement of grout or concrete.

B. Drawings/Plans - Change/Addition

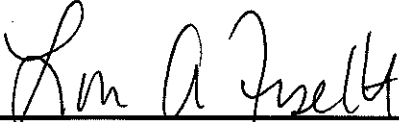
1. Contract Drawings

Delete Sheet No. 8 of 10 in its entirety and replace with Sheet No. 8 (R-1) attached to this Addendum 3. Added Note 6. to Repair R5 Notes that requires 6 feet minimum width of the flexible fabric forms.

C. Other

1. Underwater Inspection Photographs

Relevant underwater inspection photographs are attached to this Addendum 3.



RI Department of Transportation
Administrator, Division of Project Management

CODE 105.9901

QUALITY CONTROL

105.9901 QUALITY CONTROL.

a. General. Establish and maintain effective underwater quality control inspections (QC Inspections) necessary to produce a product which complies with the Contract requirements. Check work as it progresses, but failure to detect any defective work or materials must in no way prevent later rejection if defective work or materials are discovered, nor obligate the Department to accept such work.

Submit no later than 14 days before starting the work, the Contractor's Quality Control Underwater Inspection (CQC) Plan. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work.

Include, as a minimum, the following:

1. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
2. A copy of the letter to the Engineer signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC Manager, including authority to stop work which is not in compliance with the Contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC Manager. Furnish copies of these letters to the Engineer.
3. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected.
4. Reporting procedures, including proposed reporting formats.
5. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and is identified by different trades or disciplines, or it is work by the same trade in a different environment. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the

construction. The Department reserves the right to require the Contractor to make changes in the Contractor Quality Control (CQC) Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

After acceptance of the CQC Plan, notify the Engineer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

Before start of construction, and prior to acceptance by the Engineer of the CQC Plan, meet with the Engineer and discuss the Contractor's quality control system. Submit the CQC Plan a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, control activities, and administration of the system. Minutes of the meeting will be prepared by the Engineer, signed by both the Contractor and the Engineer and will become a part of the contract file. There can be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

CQC personnel cannot be employed by a supplier or subcontractor on this project and must meet the following minimum requirements:

- Five (5) years of quality control experience with underwater inspections
- Five (5) years' commercial diving experience utilizing surface supplied diving techniques.
- Comply with OSHA and local requirements for Contract diving operations
- Be thoroughly familiar with the design plans and specifications to sufficiently understand the engineering aspects of the underwater construction and to be able to recognize and document potential problem areas such as improperly constructed or defective areas.

The QC Inspection Dive Team shall be qualified and retained by the contractor and approved by the Engineer as having the competence necessary to inspect all facets of the underwater construction. The QC Inspection Dive Team must be an independent third party hired directly by Contractor.

The CQC Manager shall:

- a) Develop Contractor's internal plan for scheduling inspections
- b) Propose forms or templates to be used to document inspections.
- c) Indicate procedures for tracking nonconforming work and verification that corrective work is complete.
- d) Indicate how Contractor, QC Inspection Dive Team and Engineer will participate in regularly scheduled QC meetings.

- e) Provide detail on how the QC Inspections are to be carried out for each item so that the expectations are clear for the Contractor and the QC Inspection Dive Team performing the work.
- f) Maintain a 3-ring binder for the CQC Underwater Inspections reports. This file must be in a conspicuous place to allow review by the Engineer.
- g) Submit a copy of the QC Inspection reports to the Engineer.

Discrepancies that are observed during QC Inspections must be reported to the CQC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.

Submit each QC Inspections report until all work requiring QC Inspections is complete. A report is required for each QC Inspection, and must include the following:

- a) A brief summary of the work performed during the reporting time frame.
- b) Changes and/or discrepancies with the drawings and specifications that were observed during the reporting period.
- c) Discrepancies which were resolved or corrected, and the means and methods used.
- d) A list of nonconforming items requiring resolution.

At the completion of the project submit a comprehensive final report of CQC Underwater Inspections that documents the inspections completed for the project and corrections of all discrepancies noted in the reports. Corrections shall be completed to the satisfaction of the Engineer at no additional cost to the State. The comprehensive final report must be signed and dated by the CQC Manager.

METHOD OF MEASUREMENT: This item will not be measured for payment.

BASIS OF PAYMENT: No separate payment will be made for Item Code 105.9901 "QUALITY CONTROL". Quality control requirements shall be considered incidental to the work and there will be no separate pay item for this requirement.

CODE 601.9904

STAY-IN-PLACE FORMS

DESCRIPTION: The work under this item includes furnishing, installing and securing stay-in-place (SIP) forms to enable completing filling voids and constructing a concrete cover around the entire perimeter of tremie “A” for repair methods R1 and R3 as detailed on the contract drawings.

MATERIALS: Fiber reinforced polymers (FRP), polyvinyl chloride (PVC), vinyl, or other approved non-corrodible material. Permanent SIP materials including but not limited to forms, wales, anchors and connections must be non-corrodible and durable in an aggressive marine environment that includes high currents and brackish water and must be impact and abrasion resistant. Wood/timber is not permitted as a permanent SIP material. Provide forms AND appurtenances with the strength and rigidity to minimize movement and deflection and to accommodate handling, lifting, placing, construction, and environmental loads during all phases of the work. Use temporary or permanent supports, anchors and connections as needed.

CONSTRUCTION METHODS: Install the SIP forms in accordance with the approved Construction Plan.

Remove obstructions as needed and ensure existing contact surfaces will not damage the proposed construction or puncture sand bags. Chip or grind rough/jagged surfaces as needed. To the extent possible, remove loose material and clean marine growth from all contact surfaces, using high pressure water or mechanical methods as approved. Cleaning should be performed just prior to form installation. Ensure resulting debris is removed from the voids.

Existing geotechnical information indicated channel bottom may be weather rock overlain with dense coarse sand. Verify there are no loose or soft deposits within the repair footprint and remove as needed by jetting or other approved methods to ensure repairs are construction on a firm surface. The intent is to minimize potential scour under the repair. Notify the Engineer if loose deposits are more than two (2) feet deep.

Limit form deflection to $L/100$, where L is the total length of form measured from the top lateral support to the bottom of the form at the channel bottom.

Remove temporary supports and appurtenances at the completion of the work and only after the concrete/grout has set sufficiently to accommodate all other construction and environmental loads.

Submittals:

In accordance with the SUBMITTALS note 1.16 on the GENERAL NOTES drawing.

METHOD OF MEASUREMENT: STAY-IN-PLACE FORMS will be measured by the number of square feet complete in place, based on the contractor's approved underwater survey. The height of the SIP Form will be calculated from the channel bottom to the top elevation of tremie "A" plus 18 inches, and the width of the SIP Form will be the length around the perimeter of the SIP Form, measured at the centerline of the SIP Form in plan.

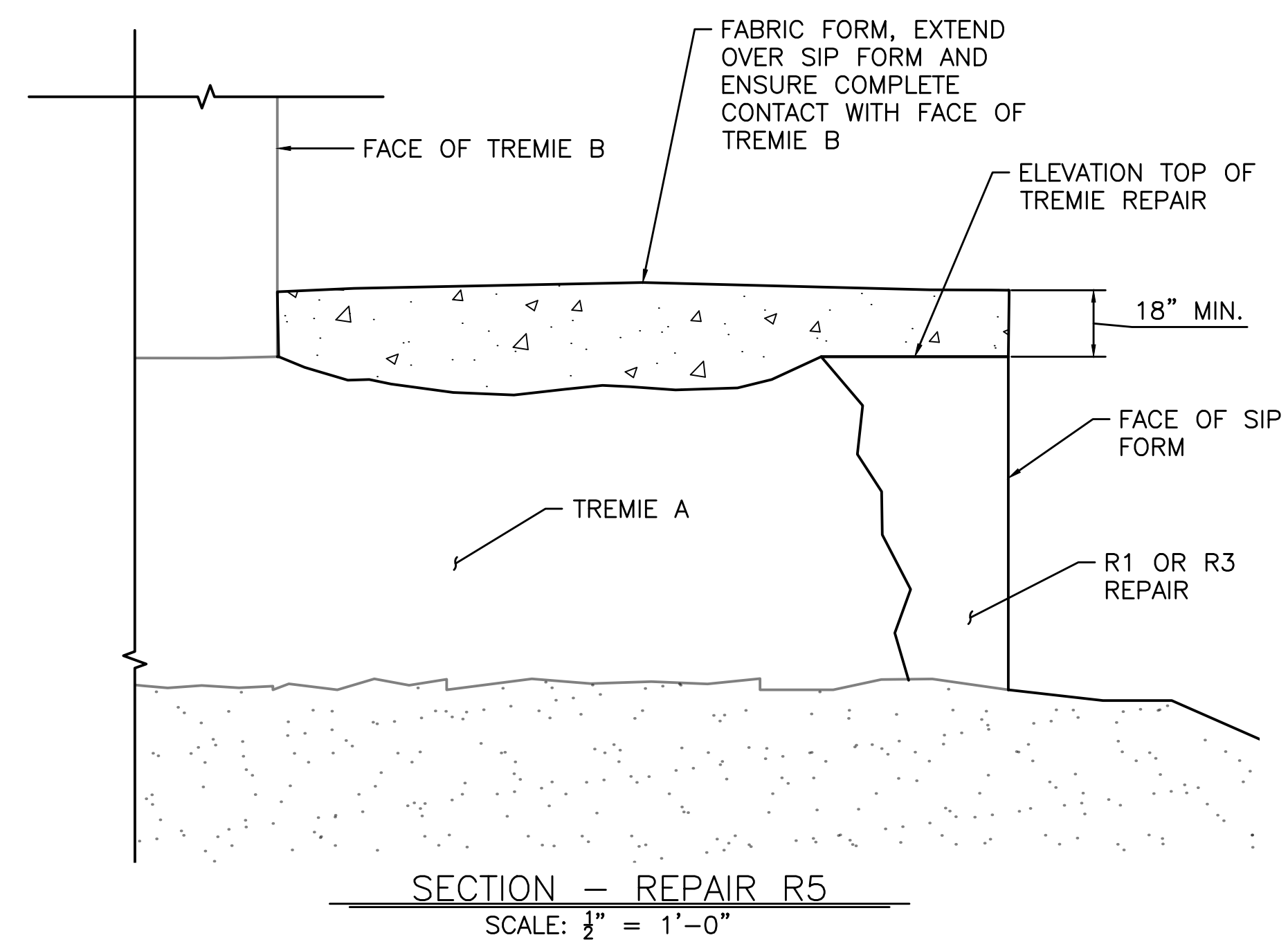
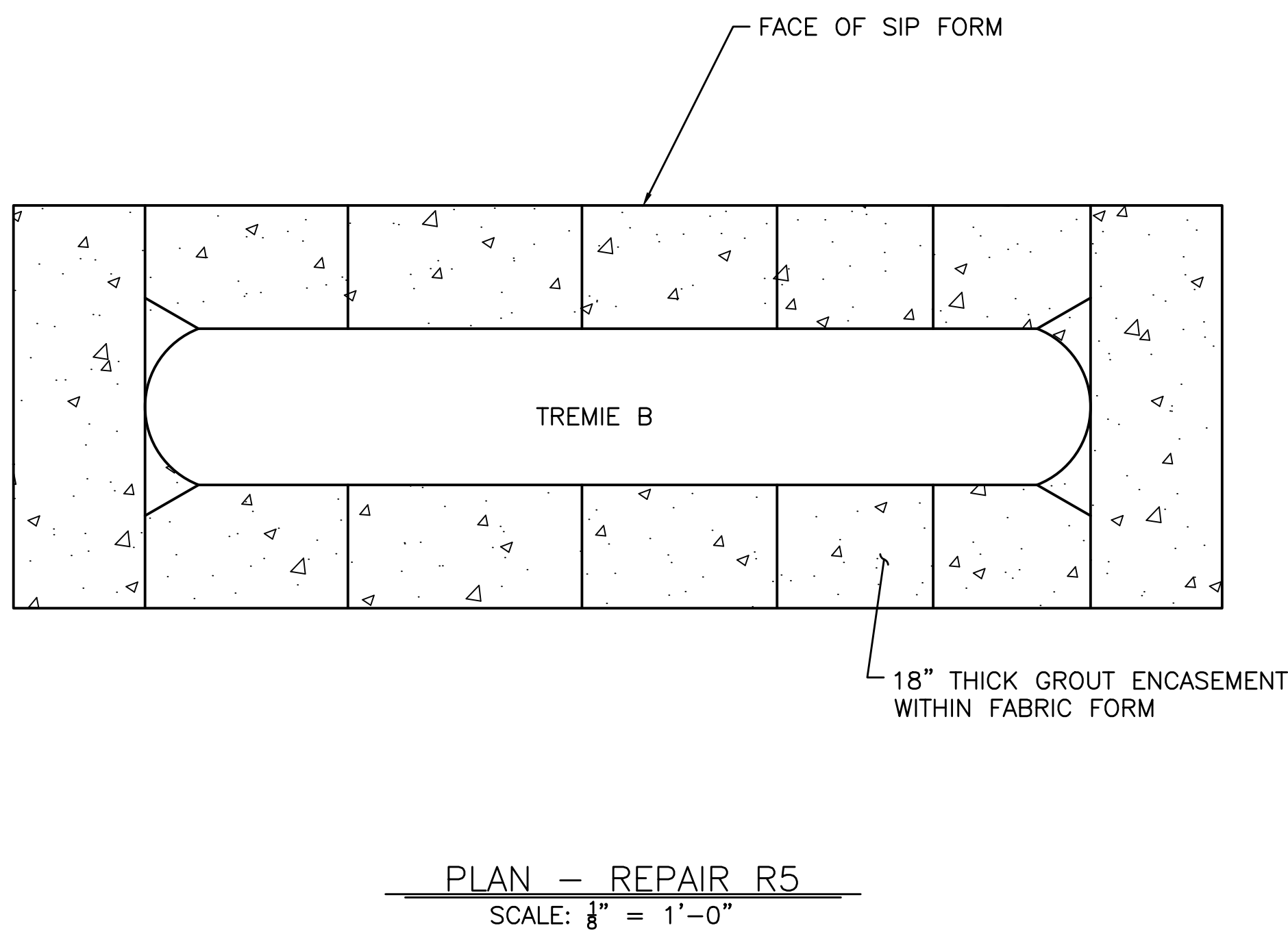
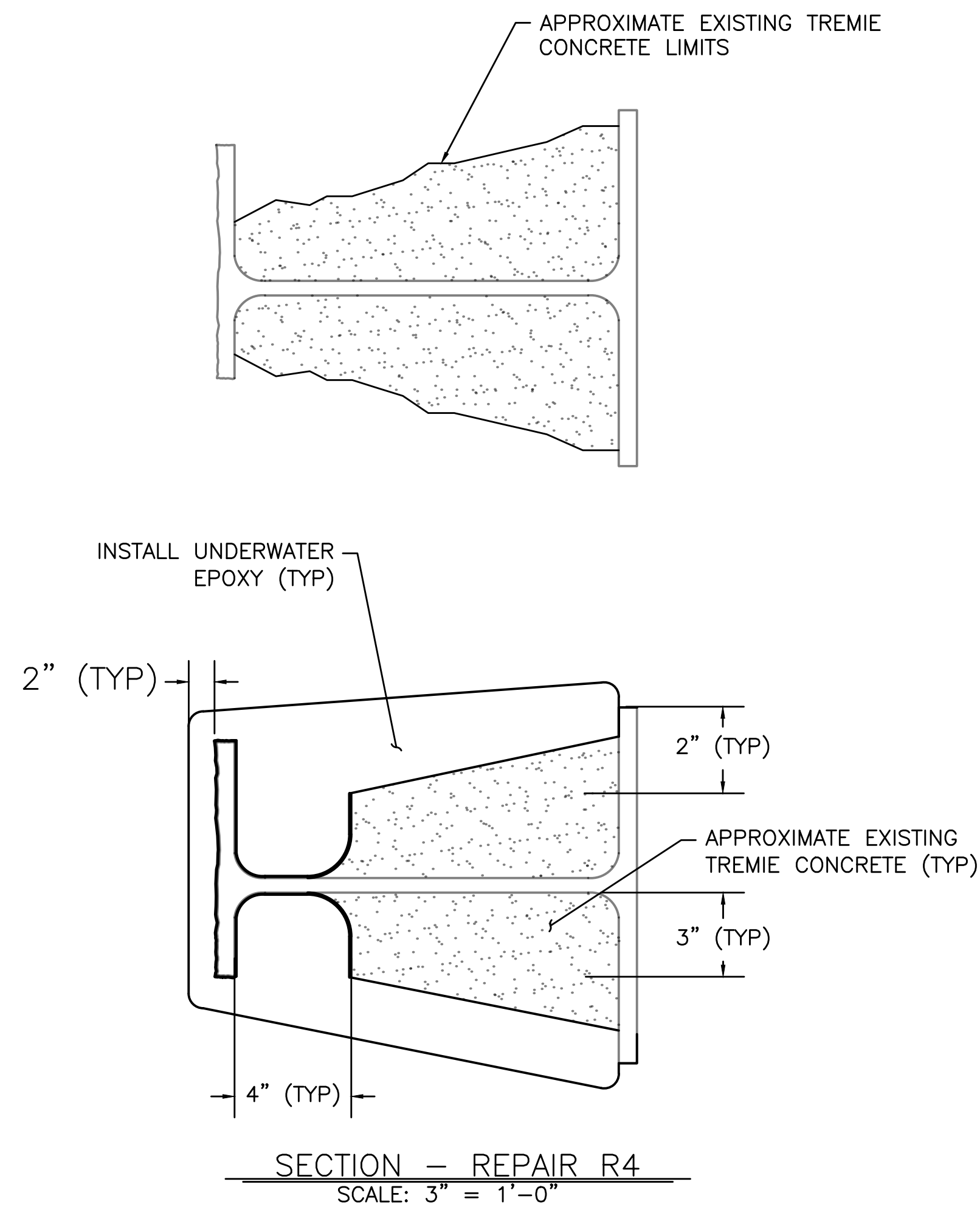
Complete an underwater survey of each pier to verify tremie A elevations, limits, void volumes and void locations. Survey may be completed by acoustic imaging or by hand. If by hand, take measurements from the face of tremie B to the face of tremie A at 5 foot intervals along tremie B and at locations with significant variations between the intervals. The measurements should accurately locate tremie A in plan with respect to tremie B. Use the information to compute the existing volume of tremie A. Accepted volumes from either method will be used as the benchmark for estimating material usage and computing the pay quantities.

It is understood that the methods used to determine the volume of tremie A are estimates and that the exact final material usage will vary. Justify material quantities used that differ from the preliminary estimate by 15% to the satisfaction of the engineer.

BASIS OF PAYMENT: The accepted quantity of "STAY-IN-PLACE FORMS" will be paid for at the contract unit price per square foot as listed in the Proposal. The price so-stated constitutes full and complete compensation for all labor, materials, equipment, surface preparation, and all incidentals required to finish the work (such as wales, anchors, temporary formwork, etc.), complete and accepted by the Engineer.

No separate payment will be made for the Contractor's underwater survey.

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
—	RI	405-421-991	2019	8	10



PILE PROTECTION R4 NOTES:

1. REMOVE MARINE GROWTH, LOOSE CONCRETE AND LOOSE/CORRODED STEEL FROM THE REPAIR AREA.
2. GRIND CONCRETE SURFACE SMOOTH WITHIN THE LIMITS SHOWN TO ENSURE REPAIR MATERIALS CAN ADEQUATELY ADHERE TO THE CONTACT SURFACE.
3. GRIND SHARP STEEL EDGES AND PROTRUSIONS SMOOTH AND CLEAN STEEL TO REMOVE SURFACE CORROSION AND CORROSION WITH PITTED/SCALLOPED SECTIONS.
4. PROVIDE EPOXY PUTTY OR APPROVED EQUIVALENT TO FILL STEEL PITS AND SCALLOPS.
5. ENSURE FULL COVERAGE TO A MINIMUM IN 2" THICKNESS OVER THE EXPOSED STEEL AND LIMITS OF CONCRETE WORK SHOWN.

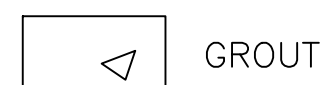
REPAIR R5 NOTES:

1. REPAIR TYPE 5 FOLLOWS REPAIRS 1-4 WITH PUMPED GROUT IN THE FABRIC FORMS.
2. REMOVE MARINE GROWTH AND DEBRIS FROM THE TOP OF TREMIE A.
3. PROVIDE FLEXIBLE FORMS SIZED AND ALIGNED IN GENERAL ACCORDANCE WITH THE PLAN. MINIMIZE THE NUMBER OF FORMS USED AND SUBSEQUENT JOINTS BETWEEN THE FORMS.
4. ALIGN AND SIZE FORMS INSTALLED NORTH AND SOUTH OF THE PIER STEM TO MINIMIZE JOINTS PARALLEL TO THE PIER'S LONGITUDINAL AXIS AND ALIGN AND SIZE FORMS INSTALLED EAST AND WEST OF THE PIER STEM TO MINIMIZE JOINTS PERPENDICULAR TO THE PIER'S LONGITUDINAL AXIS.
5. FILL EACH FLEXIBLE FORM WITH PUMPED GROUT TO DEVELOP A MINIMUM 18 INCH FILL HEIGHT AND TO DEVELOP FULL CONTACT WITH TREMIE B AND ADJACENT FORMS.
6. THE MINIMUM WIDTH OF THE FABRIC FORMS SHALL BE 6 FEET.

SHEET NOTES:

1. REPAIR NOTES PROVIDE A SUGGESTED SEQUENCE OF CONSTRUCTION. OTHER MEANS AND METHODS THAT COMPLETELY FILL THE VOIDS AND PROVIDE LONG TERM DURABLE PROTECTION OF THE ENCASED TREMIE MAY BE SUBMITTED FOR EVALUATION.
2. SEE THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION.

LEGEND:



COLLINS
ENGINEERS

**1485 SOUTH COUNTY TRAIL, SUITE 103
EAST GREENWICH, RI 02818
MAIN 401.732.7714
FAX 401.732.7760
WWW.COLLINSENGR.COM**

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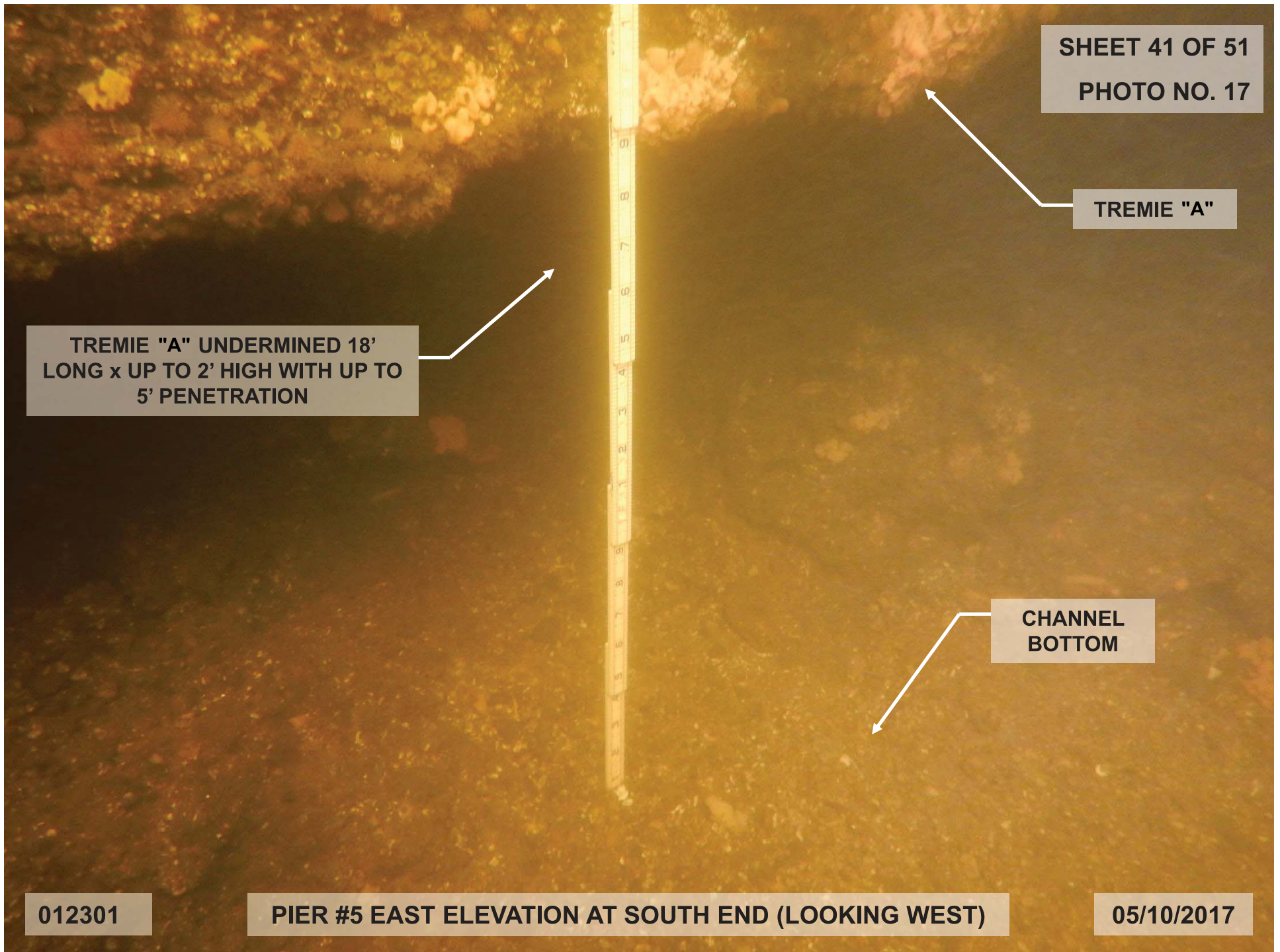
RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

BRIDGE REHABILITATION BARRINGTON BRIDGE NO. 123 BARRINGTON RHODE ISLAND

REPAIR DETAILS II

CHECKED BY JMK DATE 09/25/19 SCALE AS SHOWN

163_V1_007_008_REPAIR
DETAILS



SHEET 41 OF 51
PHOTO NO. 17

TREMIE "A"

TREMIE "A" UNDERMINED 18'
LONG x UP TO 2' HIGH WITH UP TO
5' PENETRATION

CHANNEL
BOTTOM

012301

PIER #5 EAST ELEVATION AT SOUTH END (LOOKING WEST)

05/10/2017

SHEET 42 OF 51

PHOTO NO. 18

**EXPOSED H-PILE
UP TO 2' HIGH**



**PIER #5 EAST ELEVATION AT SOUTH END
UNDER TREMIE "A" (LOOKING NORTHWEST)**

012301

05/10/2017

SHEET 44 OF 51
PHOTO NO. 20

**EXPOSED H-PILE
UP TO 2' HIGH**

**CHANNEL
BOTTOM**

012301

**PIER #6 WEST ELEVATION AT NORTHWEST CORNER UNDER
TREMIE SEAL "A" (LOOKING SOUTHEAST)**

05/10/2017

PHOTO #50

An underwater photograph showing a vertical steel H-pile. A yellow arrow points from a text box on the right to a section of the pile that shows signs of light corrosion. The background is dark and murky water.

**EXPOSED H-PILE WITH LIGHT
CORROSION**

BRIDGE NO. 012301

**PIER 5 EAST ELEVATION AT SOUTH END
UNDER TREMIE "B", LOOKING WEST**

04/04/2019

PHOTO #53

**EXPOSED H-PILE UP TO 19" HIGH
WITH SEVERE CORROSION WITH 2"
OF 5" +/- OF FLANGE REMAINING**



BRIDGE NO. 012301

**PIER 6 WEST ELEVATION AT NORTHWEST CORNER
UNDER TREMIE SEAL "A", LOOKING EAST**

04/04/2019

**EXPOSED H-PILE UP TO 19" HIGH WITH
SECTION LOSS (8" REMAINING)**

PHOTO NO. 2



Br. 012301

**2019 PIER #6 H-PILE AT NORTHWEST CORNER
UNDER TREMIE SEAL "A" (LOOKING SOUTHEAST)**

08/01/2019