April 1, 2026

STATE OF RHODE ISLAND

DEPARTMENT OF ADMINISTRATION

SOLICITATION NO. TCB26006407

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO. 2025-CB-033

FEDERAL-AID PROJECT NO. FAP Nos: BHO-015F(001)

BRIDGE GROUP 15F - BARRINGTON BRIDGE NO. 012301

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 1 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, and Estimate for this contract. These changes shall be incorporated in the Plans, Specifications and Estimate and shall become an integral part of the Contract Documents.

A. Document Attachments

1. Sheet No. 06 has been revised to include information about Debris to be Removed and Disposed.

2. Sheet No. 08 has been revised to show the correct depth of grout bags.

3. Specifications – Delete PDF "2025-CB-033 JS PAGES" attached to the original advertisement submission in its entirety and replace it with "2025-CB-033 JS PAGES_Addendum 1" attached to this addendum No. 1.

   Specifications for Item Nos. 601.9901, 800.9901, 808.9901, 821.9901, 837.9901 and 920.9901 have been revised for Method of Measurement. Also, Item Nos. 201.9901 and 833.901 have been added.

B. Item Specs

Units and quantities for Item no. 808.9901, 817.2142, 821.9901, 837.9901 have been revised. Item no. 201.9901 and 833.9901 have been added to the list.

RHODE ISLAND CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2025-CB-033	2026	6	30

BRIDGE NOTES

1. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH:
   - THE AUGUST 2025 EDITION OF AND SUPPLEMENTS TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (RI STANDARD SPECIFICATIONS).
   - THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, FOURTH EDITION, INCLUDING THE LATEST INTERIM REVISIONS.
2. DIMENSIONS, STATIONS ELEVATIONS AND ANGLES OF THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE ORIGINAL CONSTRUCTION AND LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS REQUIRED FOR PROPER PERFORMANCE OF THE WORK. FIELD CONDITIONS MAY EXIST WHICH DEVIATE FROM THE DIMENSIONS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FABRICATION AND FIT OF HIS HIS WORK.
3. THE BASE OF LEVELS, TO WHICH THE PLAN ELEVATIONS ARE REFERENCED, ARE BASED ON THE ORIGINAL (2003) RECORD DRAWINGS. NORTH ARROWS ARE NAD83 GRID NORTH.
4. ANY DAMAGE TO EXISTING STATE OR PRIVATE PROPERTY CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
5. THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND MATERIALS AS FAR AWAY AS POSSIBLE FROM THE EDGE OF THE TRAVEL LANE SO AS NOT CAUSE A SAFETY HAZARD, IN ACCORDANCE WITH SECTION 106.05 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROADWAY FREE OF DEBRIS RESULTING FROM THEIR CONSTRUCTION OPERATIONS. ALL DEBRIS SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
7. THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTION TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS DURING CONSTRUCTION UNTIL ALL REPAIRS ARE COMPLETE.

DESIGN DATA

1. DESIGN SPECIFICATIONS
   - THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, TENTH EDITION, 2024, INCLUDING ALL INTERIM REVISIONS TO DATE.
   - THE RHODE ISLAND LRFD BRIDGE MANUAL, 2007 EDITION INCLUDING ALL REVISIONS TO DATE.
   - ALL OTHER APPLICABLE DESIGN SPECIFICATIONS ARE REFERENCED IN SECTION 1 OF THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL DATED 2007.
   - IN CASE OF CONFLICT, THE RHODE ISLAND LRFD BRIDGE MANUAL SHALL GOVERN.

EXISTING CONDITIONS

1. WORK MUST BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS INCLUDING THE SPECIFICATIONS, SPECIAL PROVISIONS, DRAWINGS AND THE ASSOCIATED REFERENCES. KEEP AT LEAST ONE COPY OF THE CONTRACT DOCUMENTS ON SITE FOR THE DURATION OF WORK.

MATERIALS:

TREMIE CONCRETE:

CLASS F IN ACCORDANCE WITH SPECIFICATION SECTION 601.9901, $\frac{3}{4}$" AS SPECIFIED IN JOB SPECIFIC SPECIFICATION

CONCRETE STRENGTHS:

CONCRETE SHALL COMPLY WITH IN ACCORDANCE WITH SPECIFICATION SECTION 600.

CLASS	F
MINIMUM CEMENTITIOUS CONTENT, lb/yd^3	400
MAXIMUM CEMENTITIOUS CONTENT, lb/yd^3	700
MAXIMUM W/CM	0.45
ACCEPTANCE CRITERIA	
CONSISTENCY RANGE^3, ASTM C1611 SPREAD, IN.	2 - 4
AASHTO T23 MINIMUM COMPRESSIVE STRENGTH, PSI 28 DAYS	3000
AIR CONTENT RANGE, AASHTO T152, %	5 - 9

GROUT:

AS SPECIFIED IN JOB SPECIFIC SPECIFICATION 817.9901

TYPE II PORTLAND CEMENT, FINE AGGREGATES, ADMIXTURES, FLY ASH, HIGH REACTIVITY POZZOLAN; F'C=3000 PSI

DOWEL BARS:

#5 LONGITUDINAL BARS TO BE USED

EPOXY GEL INJECTION:

AS SPECIFIED IN JOB SPECIFIC SPECIFICATION 837.9901

EPOXY WITH COMPRESSIVE STRENGTH OF 10,000 PSI, COLOR GRAY

REMOVE AND DISPOSAL OF UNDERWATER DEBRIS TABLE:

R&D SUMMARY	
PIER	APPROX. DIMENSIONS
1	2' DIA. X 6' L DEBRIS
	5' L DEBRIS
	3' L DEBRIS
	20" DIA. ROCK
2	1.5' DIA. X 2' L DEBRIS
	10'L X 3'W X 1'H LADDER AND TIMBER DEBRIS
	2'L STEEL H-PILE DEBRIS
	30'L STEEL H-PILE DEBRIS
	4' DIA. X 4' L STEEL & CONCRETE DEBRIS
3	5'L STEEL H-PILE DEBRIS
	15'L STEEL H-PILE AND RANDOM STEEL DEBRIS
	COLLAPSED TREMIE A
	4' DIA. STONE AGAINST PIER WITH STEEL DEBRIS
	20'L STEEL LADDER AND TIMBER DEBRIS
4	6'L X 3'H X 1.5'W LADDER AND TIMBER DEBRIS
	10" DIA. X 15'L TIMBER PILE
	10'L X 3'W X 3'H STONE
	4' DIA., BOULDER
	5'L STEEL ROAD SIGN
	7' DIA., STONES
	15'L X 10" DIA. TIMBER PILES
	16.5' STEEL H-PILE PROTRUDING FROM TREMIE A

1

ADDENDUM 01

AI Engineers

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

DESIGNED BY:	SS
CHECKED BY:	MG
DATE:	04/01/26
SHEET:	6
OF:	30

SCALE: NOT TO SCALE

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	04/01/26	SS			

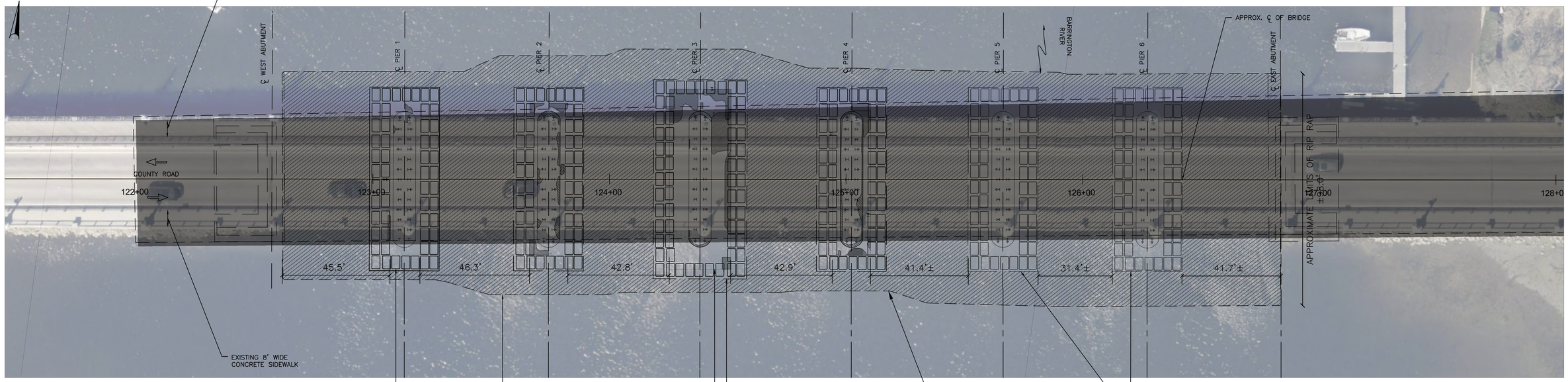
REHABILITATION OF BARRINGTON BRIDGE (NO. 012301)

RHODE ISLAND

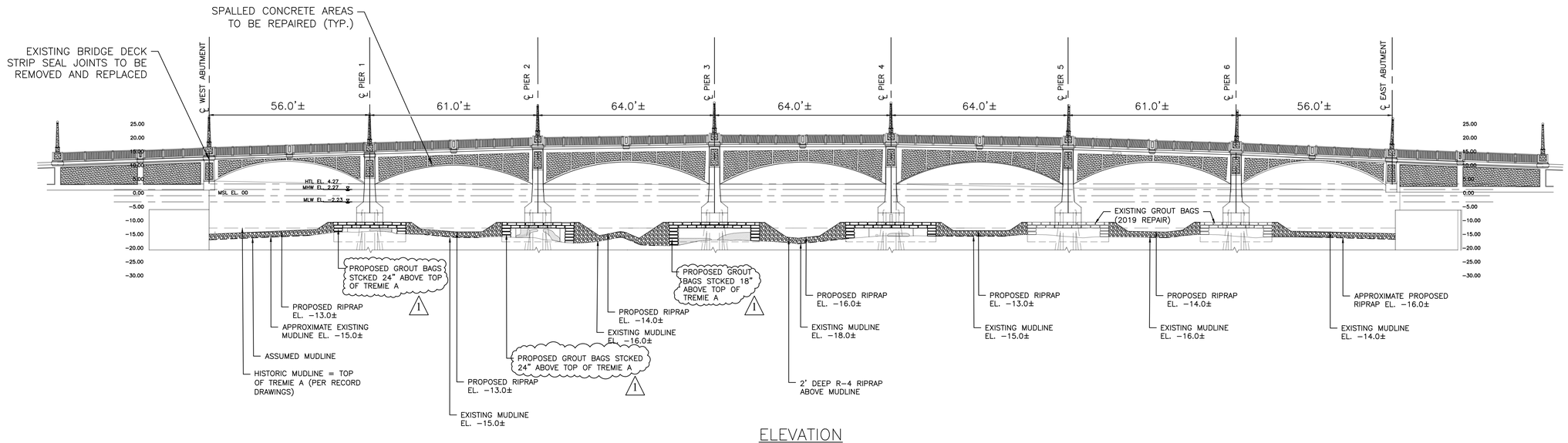
BRIDGE GENERAL NOTES

W:\ACTIVE PROJECT YEARS\2024\38330C-2 BRIDGE GROUP 15F ? BARRINGTON BRIDGE ROUTE 114 OVER BARRINGTON RIVER\DRAWINGS\CIVIL\SHEET\FINAL PLANS\100% SUBMISSION PLANS\SHEET SET\06 BRIDGE GENERAL NOTES.DWG PER DPM 450.06

RHODE ISLAND CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2025-CB-033	2026	8	30



PLAN
SCALE: 1" = 20'



ELEVATION
SCALE: 1" = 20'

ADDENDUM 01

AI Engineers

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

DESIGNED BY:	SS
CHECKED BY:	MG
DATE:	01/28/26
SHEET:	8
OF:	30

SCALE: 1" = 20'

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY
1	04/01/26	SS			

REHABILITATION OF BARRINGTON BRIDGE (NO. 012301)

BARRINGTON — RHODE ISLAND

GENERAL BRIDGE PLAN AND ELEVATION

W:\ACTIVE PROJECT YEARS\2024\38330C-2 BRIDGE GROUP 15F ? BARRINGTON BRIDGE ROUTE 114 OVER BARRINGTON RIVER\DRAWINGS\CIVIL\SHEET\FINAL PLANS\100% SUBMISSION PLANS\SHEET SET\08 GENERAL BRIDGE PLAN AND ELEVATION.DWG PER DPM 450.06

STATE OF RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO. 2025-CB-033
FEDERAL-AID PROJECT NUMBER. BHO-0159(001)

REHABILITATION OF BRIDGE GROUP 15F BARRINGTON BRIDGE NO. 012301 BARRINGTON, RHODE ISLAND

SPECIFICATIONS – JOB SPECIFIC

ADDENDUM 01

APRIL 2026

AI Engineers

INDEX
SPECIFICATIONS – JOB SPECIFIC

CODE 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 shall 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 shall not be permitted to begin until the 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 shall 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 feature under a particular section. This list shall 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 shall 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 shall be prepared by the Engineer, signed by both the Contractor and the Engineer and shall become a part of the contract file. There can be occasions when subsequent conferences shall 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 have a minimum of 5 years of quality control experience.

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 shall 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 106.01.1
BUY AMERICA JOB SPECIFICATION (BABA)

INTRODUCTION: While existing Buy America requirements previously applied to iron, steel, and certain manufactured goods, the Infrastructure Investment and Jobs Act (IIJA) expands requirements to include all manufactured products and construction materials in construction contracts that include Federal Aid funding in the construction phase. Additional information available in 23 CFR 635.410 Buy America and it's Q&A at FHWA's Buy America Q and A for Federal-aid Program - Buy America - Contract Administration - Construction - Federal Highway Administration (dot.gov) [fhwa.dot.gov]

PURPOSE: Provide materials from domestic sources when products are permanently incorporated into the work.

Ensure all manufacturing processes, including applications of coatings, occur in the United States. A coating includes all processes required to apply the coating to a product to protect or enhance the value of the product. The requirements of this JS are not applicable to equipment, tools, and temporary items, including materials left in place at the Contractor's convenience.

CERTIFICATIONS: All certifications are submitted by the prime Contractor. When submitting certifications for materials that are subject to the requirements of this specification, the certification shall be on Form provided by the Department.

DETERMINATION OF MATERIAL CATEGORY:

- Foreign or Uncertified Products.
  Buy America does not apply to minimal use of steel/iron materials provided that the total cost of all foreign source items used in the contract, as delivered to the project site, is less than $2500 or one-tenth-of-one percent of the total contract amount, whichever is greater.

  The total value is that shown to be the cost of the steel and iron products as delivered to the project site. Contractor to keep a log of foreign source items to ensure that the minimal use threshold is not exceeded during the life of the contract

- Manufactured Products

  Provide manufactured products produced in the United States.
  A manufactured product is acceptable under this provision if:
  The manufactured product was manufactured in the United States; and
  The cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

- Construction Materials

  The category of construction materials excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

  Construction materials are materials that consist primarily of:

- Non-ferrous metals.
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

WAIVERS: The Contractor may submit a waiver request to the department using RIDOT procedures and form provided in the PMP document management folder. The form must reflect a detailed justification for the use of goods, products, or materials mined, produced, or manufactured outside the United States and including copies of all documentation verifying the unavailability of the material or product.

The Department will submit approved waiver requests to FHWA for review. The Contractor shall investigate and respond to any public comments made to the FHWA Office of Program Administration, indicating that a domestic supplier cannot provide the material for which a waiver has been requested. Final approval of the Buy America Waiver request will be made by the Administrator, Federal Highway Administration. The waiver will be effective the date following publication in the Federal Register.

CONTRACTOR FULLY UNDERSTANDS THERE IS NO GUARANTEE A WAIVER REQUEST WILL BE APPROVED. ANY CONTRACT DELAYS CAUSED BY THIS WAIVER PROCESS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

The contractor shall be responsible for all cost associated with any of the construction materials that are permanently incorporated into the project that does not meet the requirements of this Special Provision without prior written approval from the Department, up to and including removal and replacement.

The Contractor may submit a waiver request to the department during construction:

1. Determine which type of the three waivers applies.
    - Public Interest Waiver: applying the domestic content procurement preference would be inconsistent with the public interest. A waiver in the public interest may be appropriate where the approving federal agency determines that other important policy goals cannot be achieved consistent with the IIJA requirements, and the proposed waiver would not meet the requirements for a nonavailability or unreasonable cost waiver.
    - Nonavailability Waiver: for types of iron, steel, manufactured products, or construction materials that are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.
    - Unreasonable cost waiver: the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent. Provide documentation that no domestic

alternatives are available within this cost parameter. Document in the waiver a comparison of the cost of the domestic product to the cost of the foreign product or a comparison of the overall cost of the project with domestic products to the overall cost of the project with foreign-origin products.

2. Contractor shall prepare waiver documentation including waiver form provided by RIDOT; located in the PMP portal and submit to the Department's Project Manager with a cc: to the Construction Manager (RE)

3. RIDOT/Project Manager to Submit waiver to Federal Highway Division.

4. Federal Highway Division submits the waiver to the Made in America Office. All waivers have to be submitted by Federal agencies to the Made in America Office. Project specific waivers require a minimum of 15 calendar day public comment period. General applicability waivers are subject to a minimum 30 calendar day public comment period. Federal agencies are responsible for performing due diligence and approving or rejecting waivers.

CODE 108.03
PROSECUTION AND PROGRESS

In accordance with **Section 108.03, PROSECUTION AND PROGRESS, Para. a., General Requirements, 1 Project Schedule Program**, the Schedule Level for this contract is Schedule Level B.

CODE 108.1000
PROSECUTION AND PROGRESS

In accordance with **Subsection 108.08, Failure to Complete on Time**, the following defines the Substantial Completion Date and associated monetary fines/charges:

Substantial Completion: The following liquidated damages for not completing the contract work according to Section 101.89 by January 6th, 2028 is $2350.00 per calendar day.

This substantial completion date was determined based on an assumed six-day workweek.

CODE 109.07
PARTIAL PAYMENT OF LUMPSUM

The Contractor shall submit a breakdown of the cost of Lump Sum items to enable the Engineer to make partial payments as the Work is performed. The breakdown shall detail both standard and job specific Specification codes associated with the Lump Sum item and estimated quantities for the Department's use for materials testing and compliance. Lump sum item breakdowns shall be submitted on Department approved forms within 70 days of the Apparent Low Bidder letter so that it can be incorporated into the Step 6 Baseline Schedule – Bid Item Loaded submission. The Engineer reserves the right to reject the Contractor's Lump Sum item breakdown if the breakdown does not fairly represent the Work to be performed and the materials included. The Engineer may make progress payments based on quantities and/or prices determined by the Engineer

CODE 201.9901
REMOVAL AND DISPOSAL OF UNDERWATER DEBRIS

DESCRIPTION: This work shall consist of locating, removing, handling, and properly disposing of underwater debris from within the project limits, in accordance with the Contract Plans and as directed by the Engineer.

Underwater debris may include, but is not limited to, timber, concrete, steel, riprap, abandoned utilities, and miscellaneous obstructions.

MATERIALS: No materials are specified for this work. All equipment used shall be suitable for underwater operations and approved by the Engineer.

CONSTRUCTION METHODS:

a.) 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.

b.) The Contractor shall provide all necessary inspections, access, labor and equipment, including barges, boats, temporary platforms, diving systems, etc. All diving operations shall comply with applicable OSHA regulations and USACE/EM standards. Proper safety procedures shall be implemented for divers, equipment operators, and marine traffic.

c.) Debris shall be carefully removed to avoid damage to existing structures, utilities, or environmentally sensitive areas. Removal methods may include diver-assisted lifting, crane and clamshell operations, and hydraulic or mechanical cutting tools. Large debris shall be cut into manageable sections if required. All loose and partially embedded debris shall be removed to the extent practicable, as determined by the Engineer.

d.) The Contractor shall minimize turbidity and disturbance to the waterway. Any hazardous materials encountered shall be handled and disposed of in accordance with all applicable local, state, and federal regulations.

e.) All removed debris shall be transported and disposed of off-site at an approved facility. Disposal shall comply with all applicable environmental regulations. No debris shall be disposed of within the waterway or project site.

f.) The Contractor shall provide pre-removal and post-removal underwater video documentation, along with logs identifying debris type, estimated quantity, and disposal location. All documentation shall be submitted to the Engineer for review and acceptance.

BASIS OF PAYMENT: "201.9901 REMOVAL AND DISPOSAL OF UNDERWATER DEBRIS" will be paid as Lumpsum. The price shall include full compensation for furnishing all labor, tools, equipment,

and incidentals; providing diving operations and access provisions; removing, handling, cutting, and lifting debris; transporting and legally disposing of materials; and implementing all required environmental protection measures.

CODE 601.9901
PORTLAND CEMENT CONCRETE FOR UNDERWATER REPAIRS

DESCRIPTION: The work under this item includes furnishing and placing concrete suitable for underwater tremie placement in a marine environment without segregation within the proposed limits as shown on the contract drawings.

MATERIALS: Materials must conform to the Standard Specifications and sourced from suppliers list on the Department's Approved Material List, unless otherwise specified approved.

Concrete: Shall comply with the applicable subsections of Section 600 and 800 for Class A (SCC) concrete, with the additional specifications:

Class[1]	**A**
Minimum Cementitious Content, lb/yd^3	400
Maximum Cementitious Content, lb/yd^3	700
Maximum w/cm	0.45
Acceptance Criteria	
Consistency Range[3], ASTM C1611 Spread, in.	2 - 4
AASHTO T23 Minimum Compressive Strength, psi 28 days	3000
Air Content Range, AASHTO T152, %	5 - 9

All concrete material components shall conform to the requirements of SECTION 601, PORTLAND CEMENT CONCRETE of these Specifications with the following additional provisions.

Chemical Admixture for SCC: SCC admixture shall be a viscosity modifying admixture and shall conform to the requirements of Subsection 601.02.2, ASTM C494 Type A and be on the RIDOT Approved Materials List or approved by the Engineer.

Concrete shall consist of a mixture of Portland cement, fine aggregate and water, so proportioned and mixed as to provide a pumpable concrete. Pozzolan, grout fluidifier or pumping aid may be used at the option of the Contractor.

The material shall be capable of being placed or cured underwater without dilution, segregation or washout.

CONSTRUCTION METHODS: Provide underwater video equipment to afford the Engineer a clear visual inspection of the work at the end of each workday or completed phase of work.

Gravity tremie pipes shall have a minimum internal diameter of 6 inches, however closed tremie systems (pump lines) may be smaller. Tremie pipes shall be steel. Segmental pipes shall be connected by a fully watertight structural connection. The hopper must have a sufficient volume to allow for a continuous concrete supply to the tremie, and the pipes will be smooth clean and straight so that the frictional resistance to the concrete flow is minimized.

Tremie spacing shall not exceed 7 feet unless there is justification for increased spacing, which must be approved by the Engineer. Position tremie pipes as symmetrically as possible to avoid uneven rises in concrete level, i.e. central for a single tremie pipe and approximately 1/4 of distance between construction joints from each construction joint if two tremie pipes are used.

Pay special attention to the initiation of the concrete placement to ensure the first load of concrete is separated from the water.

If a dry initial placement method is used, provide a steel or plywood plate with a sealing ring placed on the bottom of the tremie pipe to keep water out of the pipe during lowering to the bottom of the channel. The concrete can be discharged into the dry tremie pipe and be lifted four to eight inches to allow the concrete to flow.

If a wet initial placement method is used, provide a suitable plug including but not limited to vermiculite granules (possibly bundled in a sack), inflatable rubber balls, sponges and foam balls. The plug will prevent the initial charge of concrete from mixing with the water and segregating. Lower the tremie pipe to the channel bottom and then raise a short distance no greater than the diameter of the tremie pipe to initiate concrete flow and allow the plug to exit from the base of the tremie.

Concrete shall flow freely from the tremie without surging (rapid raising and lowering of the tremie), which indicates loss of workability. This can affect the concrete flow pattern and may risk mixing water and contaminated material located on top of the concrete, leading to debris entrapment. With proper mix composition and minimizing embedment, tremie surging should not be necessary.

Ensure continuous pumping operations until the final elevation is reached and measure the depth to the concrete at tremie positions after each load of concrete has been placed.

Prepare daily, records of all concrete operations. These records shall include: day, date, duration of operations, weather, void identification, sequence of construction, rate of pumping, and concrete volumes.

SUBMITTALS FOR EACH PIER:

1. Submit at least 45 days prior to starting the work verification that equipment meets these Submit an underwater video at least 30 days before the start of the work to the Engineer for review. The video shall have clear images showing the diver's visual inspection. At a minimum, a full HD in a

standard video format and codec (MPEG-2, MP4, etc.) stored in a flash drive shall be used.

2. specifications to the satisfaction of the Engineer.
3. Submit at least 45 days prior to starting the work in writing to the Engineer a mix design showing the mix proportions, and results of two test breaks (AASHTO C109), performed by an independent, accredited, RIDOT approved testing lab.
4. Submit at least 45 days prior to starting the construction plan providing sequence of construction and detailed information including method, materials and equipment.
5. Submit an underwater video of the completed repairs to the Engineer for review. The video shall have clear images showing the diver's visual inspection. At a minimum, a full HD in a standard video format and codec (MPEG-2, MP4, etc.) stored in a flash drive shall be used.
6. 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.
7. Submit daily records as directed by the Engineer.
8. A final report documenting the complete repairs with any images, sketches, as-builts, etc. should be submitted upon completion.

METHOD OF MEASUREMENT: PORTLAND CEMENT CONCRETE FOR UNDERWATER REPAIRS will be measured by the number of cubic feet complete in place, based on the contractor's approved underwater survey.

BASIS OF PAYMENT: The accepted quantity of "PORTLAND CEMENT CONCRETE FOR UNDERWATER REPAIRS" will be paid for at the contract unit price per cubic 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, complete and accepted by the Engineer.

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

CODE 704.9901
RECONSTRUCT CATCH BASIN / VERTICAL WALLS

DESCRIPTION: The work under this item includes reconstructing existing catch basins, including removal and reconstruction of deteriorated or damaged vertical walls, at the locations, dimensions, and elevations shown on the Contract Drawings and/or as directed by the Engineer.

CONSTRUCTION METHODS:

The Contractor shall carefully excavate around the existing catch basin as required to perform the work. Existing deteriorated concrete or masonry walls shall be demolished and disposed of off-site in accordance with applicable regulations. Vertical walls shall be reconstructed using cast-in-place concrete or concrete masonry units, as specified on the Plans, and constructed true to line, grade, and plumb.

Connections to existing drainage pipes shall be made watertight. Existing frames, grates, or covers shall be reset or replaced as shown on the Contract Drawings. All work shall be performed in a manner that protects adjacent structures, utilities, and pavements. Excavated areas shall be backfilled and compacted, and all disturbed surfaces shall be restored to match existing conditions.

Submittals:

1. Submit at least 45 days prior to starting the work a reconstruction procedure to the Engineer for review and approval prior to the start of work.
2. The submittal shall include, but not necessarily be limited to, a description of construction methods, materials to be used, sequence of work, and traffic control measures, if applicable.
3. No work shall commence until the submittal is approved by the Engineer. Submit manufacturer's certification of grout shelf life and batch information.

METHOD OF MEASUREMENT: RECONSTRUCT CATCH BASIN / VERTICAL WALLS will be measured by vertical LF, in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT: The accepted quantity of "RECONSTRUCT CATCH BASIN / VERTICAL WALLS" will be paid for at the contract unit price per location 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, complete and accepted by the Engineer.

CODE 800.9901
SCOUR REMEDIATION WITH GROUT BAGS

DESCRIPTION. This work consists of furnishing and placing geotextile fabric, grout bags, grout pipes and Portland cement grout fill around areas of substructures with proposed tremie concrete repairs as shown on the Plans and/or as directed by the Engineer.

MATERIALS: All the materials shall be capable of underwater placement in a marine environment and conform to the following requirements:

a.) Grout – Grout shall be a pumpable, fine aggregate Portland Cement based material with a minimum strength 28-day compressive strength of 3,500 psi. It should be specially formulated for underwater placement with anti-washout admixtures.

Prior to the start of work, the Contractor shall submit in writing to the Engineer for review and approval, a mix design and results of testing performed by an independent testing lab that the grout meets these requirements.

b.) Fabric Bags – Fabric bags shall be made of high strength water permeable fabric of nylon or cordura. Each bag shall be provided with a self-closing inlet valve to accommodate insertion of the concrete hose. A minimum of two valves shall be provided for bags more than 20 feet long. Seams shall be folded and double stitched.

c.) Geotextile – The geotextile filter fabric beneath the grout bags shall exhibit the following properties in both the machine and cross-machine directions.

Properties	Test Method	Value
NON-WOVEN		
Grab Strength	ASTM D 4632	200 lbs
Puncture Strength	ASTM D 6241	80 lbs
Permittivity	ASTM D 4491	0.20 sec^{-1}
Apparent Opening Size, max	ASTM D 4751	0.30 mm
Trapezoid Tear Strength	ASTM D 4533	80 lbs
WOVEN		
Grab Strength	ASTM D 4632	250 lbs
Puncture Strength	ASTM D 6241	90 lbs
Permittivity	ASTM D 4491	0.20 sec^{-1}

Apparent Opening Size, max	ASTM D 4751	0.30 mm
Trapezoid Tear Strength	ASTM D 4533	90 lbs

CONSTRUCTION METHODS:

a.) **Preparation:** Areas specified for grout bag installation shall be cleared of any debris, loose rocks or boulders and sharp objects. Dewatering the installation area is not required; Grout bags and grout fill shall be placed under standing water or low flow conditions. Unless allowed by the Engineer, grout fill and grout bags shall be placed in accordance with the requirements of manufacturer.

b.) **Installation:** The Contractor shall submit fabric grout bag material specifications to the Engineer for review and approval at least 45 days prior to starting the work. The Contractor shall follow the manufacturer's recommendations for the specific fabric grout bag material approved. If material specifications and installation requirements differ between the manufacturer and the Contract Documents, they shall be brought to the attention of the Engineer for review and approval prior to installation.

After preparation of the repair area and prior to placement of the grout bags, geotextile filter fabric shall be installed over the designated repair area to the limits shown on the plans or as directed by the Engineer. The grout bags shall be hand-placed over the geotextile filter fabric in the locations and orientation shown on the plans. Place one grout bag at a time and pump-fill with concrete grout prior to placement of the next bag. The bags shall be positioned and filled so that they abut tightly to each other. The top bag layer and end closures shall be placed tightly against the existing substructure in order to contain the grout fill. Joints between bags in successive tiers shall be staggered and rows shall be anchored together with galvanized reinforcing dowel bars. Dowel bars shall be pushed through the filled bags and shall be spaced no more than 3 feet on-center.

Grout injection ports shall be installed facing upward. The grout pump shall be capable of delivering grout at a rate of 10 gal/min. The Contractor shall conduct filling operations such that no concrete is released into the river. Care shall be taken not to exceed the bag's bursting strength when filling with grout. Broken bags shall be immediately removed and replaced.

SUBMITTALS FOR EACH PIER:

1. Submit at least 45 days prior to starting the work verification that equipment meets these specifications to the satisfaction of the Engineer.
2. Submit at least 45 days prior to starting the work in writing to the Engineer a mix design showing the mix proportions, and results of two test breaks (AASHTO C109), performed by an independent, accredited, RIDOT and Engineer approved testing lab.
3. Submit at least 45 days prior to starting the construction plan providing sequence of construction and detailed information including method, materials and equipment.

4. Submit daily records as directed by the Engineer.
5. A final report documenting the complete repairs with any images, sketches, as-builts, etc. should be submitted upon completion.

METHOD OF MEASUREMENT: "800.9901 SCOUR REMEDIATION WITH GROUT BAGS" will be measured in-place for payment per "Cubic Yard" of grout placed into the grout bags installed and accepted in accordance with the Plans and / or as directed by the Engineer.

BASIS OF PAYMENT: "800.9901 SCOUR REMEDIATION WITH GROUT BAGS" will be paid for at the contract unit bid price per "Cubic Yard" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools and equipment, and all incidentals required to finish the work as described in this special provision and elsewhere in the Contract Documents, complete and accepted by the Engineer.

CODE 803.9901
REMOVE AND DISPOSE EXISTING DECK JOINTS

DESCRIPTION: This work shall consist of the removal and disposal of the existing strip seal deck joints at both abutments as shown on the Contract Drawings, these Specifications, Section 803 of the RI Standard Specifications and as directed by the Engineer.

CONSTRUCTION METHODS: Limits and sequence of removal shall be in accordance with the Contract Drawings. All work shall be done in a cautious and professional manner. Care shall be taken to prevent damage to vehicles, utilities and adjacent bridge components. If any damage does ensue due to the Contractor's or his Subcontractor's operations it shall be repaired to the satisfaction of the Engineer at the expense of the Contractor.

Traffic on the bridge must be maintained during removal operations at all times.

The Contractor shall also install temporary deck underside and side protective shielding in accordance with Section 803.050 of the RI Standard Specifications except that no separate payment will be made for this item. The costs for this item shall be included in the items for removing and disposing the existing deck joints.

The Contractor shall ensure that no debris or any other foreign material falls into the river below the bridge. Should any debris inadvertently fall into the river the debris shall be removed immediately to the satisfaction of the Engineer.

The contractor shall submit to the Engineer, in writing, this proposed method of removal. Removal operations shall not begin until his method has been approved by the Engineer. This submission shall include, but not be limited to, the following:

The equipment and method he proposes to use, in detail.
The location where he intends to stockpile during removal.
The location where he intends to dispose of the removed materials.

A registered Professional Engineer, licensed in the state of Rhode Islan, will be required to stamp the contractor's removal shop drawing plans and procedures. Approval of the removal plans, procedures, etc. shall in no way relieve the Contractor of sole liability for damages resulting from the removal and disposal operations.

METHOD OF MEASUREMENT:

"Remove and Dispose Existing Deck Joints" shall be measured in-place for payment per "Linear foot" of existing deck joint removed in accordance with the Plans and / or as directed by the Engineer.

BASIS OF PAYMENT:

"Remove and Dispose Existing Deck Joints" will be paid for at the contract unit bid price per "Linear Foot" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools and equipment, and all incidentals required to finish the work as described in this special provision and elsewhere in the Contract Documents, complete and accepted by the Engineer.

CODE 808.9901
BEARING PEDESTAL GROUT

DESCRIPTION: The work under this item includes furnishing and placing non-shrink, high-strength grout via pressure grouting to fill voids between the top of concrete pier caps and the bottom of bridge bearings, as shown on the contract drawings and as directed by the Engineer. The purpose of the grouting is to ensure full and uniform bearing contact and structural load transfer.

MATERIALS: Grout shall be a prepackaged, non-shrink, high-strength cementitious grout specifically formulated for structural bearing applications, such as Master Flow 928, Sika Grout 328, or approved equal.
Grout shall meet the following requirements:

Property	Requirement
Compressive Strength (ASTM C109)	5,000 psi minimum 28 days
Flow (ASTM C939)	10–30 seconds
Expansion (ASTM C827)	Positive expansion only
Bleeding	0%
Shrinkage	Non-shrink per ASTM C1090
Working Time	≥ 30 minutes
Pumpability	Suitable for pressure grouting

All materials used (grout, water, additives) must conform to RIDOT Standard Specifications and be from the Department's Approved Materials List.

All concrete material components shall conform to the requirements of SECTION 808, CAST-IN-PLACE STRUCTURE CONCRETE MASONRY of these Specifications with the following additional provisions.

CONSTRUCTION METHODS:

All grout contact surface must be cleaned thoroughly to remove any dust, oil, debris or laitance present around the bearing. All the required surfaces shall be saturated with water for at least 4 hours prior to grouting process. All the standing water must be removed before the start of grouting process.

A leak-tight form shall be provided around the perimeter of the bearing pedestal to contain the grout under pressure. Proper vents and ports shall be provided for controlled pressure injections and air release.

Grout shall be prepared in accordance with the manufacturer's recommendations. Grouts shall be injected by pressure grouting method to ensure complete void filling and to eliminate air pockets that may be produced during the process. Continuous flow shall be maintained during grouting and pressure shall be continuously monitored to avoid overloading of forms. Grout shall flow into the gap and fill the gaps without segregation or bleeding.

Curing should begin immediately after the initial set using wet burlap or curing compound conforming to ASTM C309. Curing shall be continued for a minimum of 7 days after the process of pressure grouting.

Prepare daily records of all concrete operations. These records include day, date, duration of operations, weather, void identification, sequence of construction, rate of pumping, and concrete volumes.

Submittals:

1. Submit at least 45 days prior to starting the work verification that equipment meets these specifications to the satisfaction of the Engineer.
2. Submit at least 45 days prior to starting the work in writing to the Engineer a mix design showing the mix proportions, and results of two tests showing compliance with required properties, performed by an independent, accredited, RIDOT approved testing lab.
3. Submit at least 45 days prior to starting the construction plan providing a sequence of construction and detailed information including method, materials and equipment.
4. Submit manufacturer's certification of grout shelf life and batch information.
5. Submit daily records as directed by the Engineer.
6. A final report documenting the complete repairs with any images, sketches, as-builts, etc. should be submitted upon completion.

METHOD OF MEASUREMENT: PORTLAND CEMENT CONCRETE FOR UNDERWATER REPAIRS will be measured by the Cubic yard of Grout required to be filled, based on the contractor's approved underwater survey.

BASIS OF PAYMENT: The accepted quantity of "BEARING PEDESTAL GROUT" will be paid for at the contract "CY" 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, complete and accepted by the Engineer.

CODE 817.9901
CEMENTIOUS GROUT FOR UNDERWATER REPAIRS

DESCRIPTION: The work under this item includes furnishing grout suitable for pumping underwater without segregation for repairs to the deteriorations on the existing tremie as detailed on the contract drawings. This section describes the equipment, materials, and procedures to perform grouting work; grouting mixes, pressures, pumping rates, and sequencing to be included in the Construction Plan.

Work under this item shall conform to the provisions of Section 817 of the Standard Specifications, amended 2025 with all supplements, unless noted otherwise within this job specific specification.

MATERIALS: Materials must conform to the Standard Specifications and sourced from suppliers list on the Department's Approved Material List, unless otherwise specified approved.

Grout: Shall comply with the relevant subsections of Section 601 and Section M of the Standard Specifications:

Portland Cement: Type II in accordance with M.02.01.1.

Fine Aggregate: In accordance with M.02.02, gradation and volume shall develop a grout consistency that enables continuous pumping for placement underwater without segregation.

Admixtures: In accordance with M.02.05 and M.02.06.

Water: In accordance with M.02.07

Grout shall consist of a mixture of Portland cement, fine aggregate and water, so proportioned and mixed as to provide a pumpable grout. Pozzolan, grout fluidifier or pumping aid may be used at the option of the Contractor. The hardened concrete grout shall exhibit a minimum compressive strength of 3,000 psi at 28 days in accordance with ACI 214.

The material shall be capable of being placed or cured underwater without dilution, segregation or washout.

CONSTRUCTION METHODS: Provide underwater video equipment to afford the Engineer a clear visual inspection of the work at the end of each workday or completed phase of work.

Perform all grouting work under the direct field supervision of a qualified grouting specialist or grouting foreman whose qualifications have been provided to the State. The foreman or specialist shall supervise the performance of the work in compliance with these specifications. Submit evidence that the grouting specialist or grouting foreman has had at least 3 years of experience within the past 5 years on similar grouting type projects to the engineer at least 45 days prior to starting the work

Conduct the grout filling in a manner to prevent discharging grout into the water, to prevent rupturing fabric bags or SIP forms, and to prevent the formation of cold joints, in which pumping is discontinued or interrupted, and the new grout is not mixed in with the installed grout. Submit a description of proposed

methods and equipment to the Engineer for approval at least 45 days prior to starting the work.

Grouting equipment shall be of a type, capacity, and mechanical condition suitable for the work, as approved by the Engineer. Power, compressed air, all other equipment, and the layout thereof shall meet the requirements of local, State, and Federal regulations and codes, both with respect to safety and otherwise.

The grout plant shall be capable of supplying, mixing, stirring, and pumping the grout as needed to ensure continuous operation without interruption. The plant shall always be maintained in first- class operating condition. Grouting equipment to be furnished shall include the following:

Grout Pump

Air or electrically powered grout pump of the progressive cavity (helical screw) type that is free of surging, capable of pumping the proposed grout consistency, provide close control of pumping pressures and variable rates of injection, and can be easily and quickly serviced during grouting operations. A minimum of one spare grout pump and spare pump parts will be required by the Engineer during all grouting operations.

Grout Mixer

Grout mixers shall be either mechanically driven, high-speed, shear-type tub mixers with either vertical or horizontal drum, or high-speed colloidal mixers. Mixers shall be capable of effectively mixing and stirring a capacity of at least 4 cubic feet of grout with the specified water to cement ratio and achieve mixing by constant rapid circulation of grout. The mixer shall be equipped with a suitable volume-measuring water metering device for batching water for the grout mix. The water meter shall be calibrated to read in cubic feet and tenths and designed in a manner that after each delivery can be set back to zero. The water meter shall have a certificate of calibration from an independent laboratory. Prior to each use, the water meter shall be checked for accuracy and, if necessary, recalibrated.

Holding Tank or Sump

Holding tank(s) or sump(s) of the mechanically agitated type must be able to provide a high volume and continuous injection of grout. The sump shall be capable of holding the solids of the mix in suspension and have a capacity of at least 12 cubic feet of grout or three times the capacity of the mixing system. The volume of grout used from the agitator holding tank(s) or sump(s) shall be measured by a vertical graduated stick or marks at different levels in the tank(s)/sump(s).

Supply and Pressure Control

Valves, pressure gauges, grout lines, header arrangements, and accessories as necessary must be able to provide a continuous supply of grout and accurate pressure control. Grout shall be conveyed between the pump and the hole using a single-line system consisting of a pipe or hose or combination of both extending from the pump discharge to the grout pipe with grout injection rate controlled by the pump speed. Grout lines shall consist of either black steel pipe or reinforced rubber or plastic hose or a combination of both. The grout injection rate shall be controlled by the pump speed so that settlement of solids within the lines will not occur when pumping at or above the minimum discharge capacity of

the pump. The distance between the hole and the pump or holding tanks shall be as short as possible to minimize the accumulation of solids and possible clogging. Pressure gauges shall be high precision, graduated with divisions not greater than 2 psi on the dial face, calibrated and certified correct prior to use. Gauges shall be tested for accuracy [on a daily basis] during work by cross comparison with a standard set of oil-filled gauges. The moving parts of all gauges shall be protected from dust, grit, and direct contact with the grout.

Flow Cone

Flow cone(s) are required to ascertain the fluidity of grout mixtures. The flow cone and method of test shall be in accordance with ASTM C939/C939M.

Communications

Hard wire communication between the grout plant and the diver is required.

Perform grouting in such a manner as to ensure that voids will be filled with grout. Vent pipes, for the release of water during grouting, shall be provided at a maximum 4 foot spacing. Grouting shall be done at the highest safe pressure and shall be initiated from the lowest elevation in the void such that the grout is displaced both laterally and vertically without intermixing with the water. Grouting shall be continuously employed until the void is filled; cold joints and start/stops are not permitted.

Submit an underwater video of the completed repairs to the Engineer for review. The video shall have clear images showing the diver's visual inspection. At a minimum, a full HD in a standard video format and codec (MPEG-2, MP4, etc.) stored in a flash drive shall be used.

Prepare daily records of all grout operations. These records shall include: day, date, duration of operations, weather, void identification, sequence of construction, rate of pumping, grouting pressures, and grout volumes.

SUBMITTALS FOR EACH PIER:

1. Submit an underwater video at least 30 days before the start of the work to the Engineer for review. The video shall have clear images showing the diver's visual inspection. At a minimum, a full HD in a standard video format and codec (MPEG-2, MP4, etc.) stored in a flash drive shall be used.
2. Submit at least 45 days prior to starting the work verification that equipment meets these specifications to the satisfaction of the Engineer.
3. Submit at least 45 days prior to starting the work to the Engineer a mix design showing the mix proportions, and results of two test breaks (AASHTO C109), performed by an independent, accredited, RIDOT and Engineer approved testing lab.
4. Submit at least 45 days prior to starting the construction plan providing a sequence of construction and detailed information including method, materials and equipment.
5. Submit an underwater video of the completed repairs to the Engineer for review. The video shall have clear images showing the diver's visual inspection. At a minimum, a full HD in a standard video format and codec (MPEG-2, MP4, etc.) stored in a flash drive shall be used.

6. Submit daily records as directed by the Engineer.
7. A final report documenting the complete repairs with any images, sketches, as-builts, etc. should be submitted upon completion.

METHOD OF MEASUREMENT: CEMENTITIOUS GROUT FOR UNDERWATER REPAIRS will be measured by the number of cubic feet complete in place, based on the contractor's approved underwater survey.

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 "CEMENTITIOUS GROUT FOR UNDERWATER REPAIRS" will be paid for at the contract unit price per cubic yard 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, including but not limited to grout pipe and temporary forms, complete and accepted by the Engineer.

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

CODE 821.9901
PENETRATING SEALER

DESCRIPTION: Furnish and apply a penetrating sealer to the indicated areas on the plans, all in accordance with these specifications. Perform this work in accordance with the RI Standard Specifications, as defined in the plans, this special provision and as directed by the Engineer

Work under this item shall conform to the provisions of Section 821 of the Standard Specifications, amended 2025 with all supplements, unless noted otherwise within this job specific specification.

MATERIALS: The following are on RIDOT's approved list for this work:

- Protectosil BHN, Evonik Industries
- TK-590-100, TK Products
- Sikagard-705L

A product not on the above list may be submitted, following the attached submission procedure. The product must be a 100% silane penetrant sealer, appropriate for use on surfaces carrying high speed traffic and meet the attached qualifications procedure. Submissions must be received by the Department within specified time as shown on page 2, prior to the start of any work. The Department bears no responsibility for any delays resulting from review or rejection of the product submitted.

CONSTRUCTION METHODS:

A. Surface Preparation: The Contractor shall high-pressure water clean the exposed concrete area prior to beginning of the work. Clean all areas to be sealed by removing dirt, dust, oil, grease, curing compounds, laitance, or other contaminants that would impede the penetration of the sealant. Use the manufacturer's recommended methods for preparing the surfaces. Collect all debris and other material removed from the surface and cracks, and dispose of it in accordance with applicable federal, state, and local regulations. Immediately before applying the sealer, use dry, oil-free compressed air to remove all dust and debris paying special attention to carefully clean all cracks. Use acceptable to engineer oil traps between the air supply and nozzle. Use ASTM D 4285 "Standard Test Method for Indicating Oil or Water in Compressed Air" to ensure the compressed air is oil and moisture free. Direct the pattern so that the dust is blown away from other areas to be sealed. Provide shielding as necessary to prevent dust or debris from striking vehicular traffic and pedestrians. Have the Engineer approve the prepared surface prior to applying the sealer.

B. Weather Limitations: Do not apply sealer materials during wet weather conditions, if adverse weather conditions are anticipated within 12 hours of the completion of sealer application, or if rainfall occurred within the past 24 hours. Do not mix or apply any of these products at temperatures lower or higher than those specified in their product literature. Apply the sealant at the coolest time of the day within these limitations. Application by spray methods will not be permitted during windy conditions.

C. Sealer Application: Follow the manufacturer's literature for the maximum acceptable moisture content of the concrete surfaces to be treated. If the technical data sheets do not contain the information, consult the manufacturer, and obtain the value in writing. This value is not to be exceeded when the sealer is being applied. Test the surfaces to be treated with a moisture content meter approved by the Engineer.

Do not thin or alter the sealer unless specifically required in the Manufacturer's instructions. Mix the sealer before and during its use as recommended by the Manufacturer. Apply the sealant using equipment and methods as recommended by the manufacturer, so the coverage rates are reasonably uniform and to the satisfaction of the Engineer. Do not allow running or puddling of the sealer to occur. The number of coats shall be described in the manufacturer's recommendations.

Allow the sealant to dry according to the Manufacturer's instructions.

Submittals:

1. Submit at least 45 days prior to starting the work in writing to the Engineer a mix design showing the mix proportions.
2. Submit at least 45 days prior to starting the construction plan providing a sequence of construction and detailed information including method, materials and equipment.
3. Submit daily records as directed by the Engineer.

METHOD OF MEASUREMENT: "PENETRATING SEALER" will be measured by Linear Foot of Crack Injected and sealed, complete, and in place.

BASIS OF PAYMENT: The accepted quantity of **"**PENETRATING SEALER" will be paid for at the contract by "LF", which price shall include surface preparation, furnishing all materials, mixing, placing, labor, equipment, tools, cleanup, and incidentals necessary to complete the work.

CODE 833.9901
REPAIR OF GRANITE FAÇADE – PIER NOSE CAP RESET

DESCRIPTION: This work shall consist of removal, preparation, and resetting of existing granite façade stone at the pier nose cap, including repair of underlying voids and installation of anchorage, complete and in place, as directed by the Engineer.

The work specifically addresses areas where the nose cap stone is loose and voids exist behind the top course, as identified in inspection reports.

MATERIALS:
Stone: Existing stone shall be reused.

Mortar**:** Mortar shall be Sika Monotop 615 as manufactured by the Sika Corporation or approved equal.

Anchors and Dowels: Anchors and Dowels shall be as called for on the plan sheet and shall conform to the applicable requirements of SECTION M.05 of these Specifications.

CONSTRUCTION METHODS:

a.) Removal of Existing Stone: Carefully remove loose and surrounding stone at the pier nose cap without causing damage to adjacent masonry. The Stone shall be handled with care and shall not be dropped or subjected to impact at any time. All salvaged stone shall be thoroughly cleaned of existing mortar prior to reuse.

b.) Expose and thoroughly inspect the underlying substrate to assess its condition. All loose, deteriorated, or otherwise unsuitable material shall be carefully removed to ensure a sound base for repair. The extent of existing voids shall be identified and documented, with void depths observed to be up to approximately 2 feet.

c.) Voids behind the façade shall be cleaned of all debris and pre-wetted to a saturated surface-dry (SSD) condition prior to placement. The voids shall then be filled using non-shrink grout or other approved backing material. Grout placement shall be performed in a manner that ensures full contact with surrounding surfaces, eliminates air pockets, and achieves adequate consolidation throughout the repaired area.

d.) Install new anchors or dowels, as required, to securely fasten the nose cap stone. Anchors shall be properly embedded into the substrate, aligned to prevent movement, and installed in accordance with the manufacturer's recommendations and RIDOT requirements.

e.) Stone shall be saturated with water prior to placement and set on full beds of fresh mortar. Placement shall ensure there are no voids beneath the stone, that full bearing is achieved on the bed, and that proper alignment and elevation are maintained. Stone should be installed to match the existing coursing and preserve a random ashlar appearance.

f.) Joint width shall not exceed ½ inch. All joints shall be fully filled, properly tooled, and finished flush with the surrounding surface to ensure a uniform appearance. Existing joints shall be raked and repointed as required to achieve a sound and durable finish.

g.) Maintain moisture for a minimum of three days after placement, and protect the work from direct sunlight, rapid drying, and freezing conditions to ensure proper curing and durability.

Mixing of Mortar and Grout. Surface preparation, mixing, handling and curing of mortar shall be performed in accordance with the manufacturer's recommendations.

BASIS OF PAYMENT: "833.9901 REPAIR OF GRANITE FAÇADE – PIER NOSE CAP RESET" will be paid as Lumpsum. The price so stated shall constitute full and complete compensation for removal and disposal of existing materials, cleaning and preparation of the substrate, void filling and grouting, installation of anchors and dowels, resetting of stones, and all mortar, labor, tools, equipment, and incidentals required to finish the work as described in this special provision and elsewhere in the Contract Documents, complete and accepted by the Engineer.

CODE 837.9901
REPAIRS TO CRACK USING EPOXY

DESCRIPTION: The work under this item includes furnishing and injecting Epoxy Gel into hairline cracks located below the pier walls of the bridge structure, as shown on the contract drawings or as directed by the Engineer. The purpose of this work is to restore structural integrity, prevent moisture infiltration, and seal the cracks in the concrete surface.

Work under this item shall conform to the provisions of Section 837 of the Standard Specifications, amended 2025 with all supplements, unless noted otherwise within this job specific specification.

MATERIALS: Materials must conform to the Standard Specifications and sourced from suppliers list on the Department's Approved Material List, unless otherwise specified approved.

Epoxy: The following are on RIDOT's approved list for this work approved material list includes:

1. Sikadur Injection Gel
2. Sikagrout 212
3. Sikagrout 500 aqua

Minimum Material Properties:

Property	Value
Compressive Strength (28 days)	10,000 psi (ASTM D695)
Flexural Strength	6,700 psi (ASTM D790)
Tensile Strength	4,300 psi (ASTM D638)
Bond Strength to Concrete (Dry Cure, 2 days)	3,000 psi (ASTM C882)
Bond Strength to Concrete (Moist Cure, 14 days)	2,600 psi (ASTM C882)
Mix Ratio	1:1 by volume (A:B)
Pot Life	Approx. 30 minutes
Color	Gray

CONSTRUCTION METHODS:

Surface Preparation: All crack surfaces shall be clean and sound. Surfaces may be dry or damp but must be free of standing water. Remove all dust, laitance, grease, and contaminants using blast cleaning or equivalent mechanical means.

Mixing: Mix Components A and B at a 1:1 ratio by volume using a low-speed drill (400–600 rpm) and mixing paddle. Mix until uniform in color for at least 3 minutes. Do not mix more than can be applied within the pot life.

Application: Use automated pressure-injection equipment or manual tools as appropriate for hairline crack width. Install injection ports at regular intervals along the crack, seal the surface with Epoxy Gel, and allow adequate cure time before injection. Inject epoxy starting from the lowest port, progressing upward. Maintain constant pressure to ensure full penetration.

Curing: Allow the epoxy to cure per manufacturer's recommendations. Do not disturb the area until the full cure is achieved.

Submittals:

1. Submit at least 45 days prior to starting the work in writing to the Engineer a mix design showing the mix proportions.
2. Submit at least 45 days prior to starting the construction plan providing a sequence of construction and detailed information including method, materials and equipment.
3. Submit daily records as directed by the Engineer.

METHOD OF MEASUREMENT: Repairs to crack using epoxy will be measured by Linear Foot of Cracks Injected and sealed, complete, and in place.

BASIS OF PAYMENT: The accepted quantity of "REPAIRS TO CRACK USING EPOXY" will be paid for at the contract "LF", which price shall include surface preparation, furnishing all materials, mixing, placing, labor, equipment, tools, cleanup, and incidentals necessary to complete the work.

CODE 920.9901
PLACED STONE RIPRAP R-4

DESCRIPTION: This work shall conform to the relevant provisions of the Section 920 of the RI Standard Specifications and shall consist of providing placed riprap of the size indicated, for scour protection of the existing substructure and proposed tremie repairs at the dimensions and locations shown on the Contract Drawings and/or as directed by the Engineer.

CONSTRUCTION METHODS: Riprap shall be placed in accordance with Section 920.03. Dumping of riprap into the water is strictly prohibited. Placement of riprap shall be done in a controlled and contained manner so as to keep the riprap within the limits as proposed on the Contract Drawings.

SUBMITTALS: The contractor shall submit a complete riprap placement plan to the Engineer for approval prior to the start of work. This submittal shall be signed and stamped by a Professional Engineer registered in the State of Rhode Island. No work shall commence on this item until the submittal is approved by the Engineer. The submittal shall include, but not necessarily be limited to, a work area plan, details of all equipment types and locations, detailed sequence of construction and any necessary design calculations.

Once the work is completed for the entire bridge, submit an underwater survey of the completed underwater work to the Engineer for review and acceptance. Inspection methods may include diver investigation, sonar scanning, or underwater video, subject to approval of the Engineer.

METHOD OF MEASUREMENT: "Placed Stone Riprap R-4" shall be measured by the number of cubic yard actually placed in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT: The accepted quantity of "Placed Stone Riprap R-4" will be paid for at the contract unit bid price per "Cubic Yard" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools and equipment, and all incidentals required to finish the work as described in this special provision and elsewhere in the Contract Documents, complete and accepted by the Engineer.