May 5, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7550450

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2016-CB-030

FEDERAL-AID PROJECT NO. FAP Nos: BRO-0471(002)

Improvements to I-195 Superstructure Replacment of Paw. Ave. Br.471

Pawtucket Avenue Bridge No. 471

CITY/TOWN OF East Providence, Barrington

COUNTY OF PROVIDENCE, BRISTOL

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 6 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. Clarification

1. Pre-bid Meeting Question

   At the pre-bid meeting, a question was asked whether or not the 120 day time period would be extended if RIDOT did not allow the contractor to do the crossover due to a holiday or bad weather.

   After further review of Job Specific Specification 108.11 and the TMP, the answer given at the pre-bid meeting was incorrect. Weather days and holiday restrictions are included in ICD#1-120 Calendar Day Incentive/disincentive. ICD #1 will not be extended for any reason (including weather days or holiday restrictions). The bidders should also note that no lane and/or shoulder closures (including crossovers) will be allowed during the holiday restrictions as provided in the TMP.

B. General Provisions - Contract Specific

1. Page CS-11(R-1)

   Remove and replace page CS-11(R-1) in its entirety with revised page CS-11(R-2) attached to this Addendum No. 6. The Notice to Contractors has been revised.

2. Transportation Management Plan - Attachment A(R-2)

   Remove and replace Attachment A(R-2) in its entirety with revised page (R-3) attached to this Addendum No. 6. This page has been revised.

C. Specifications - Job Specific

1. Page JS-3(R-1)

   Remove and replace page JS-3(R-1) in its entirety with revised page JS-3(R-2). The index has been revised.

2. Page JS-49(R-1)

   Remove and replace page JS-49(R-1) in its entirety with revised page JS-49(R-2) attached to this Addendum No. 6. Item Code 800.9910 has been revised.

3. Pages JS-77A thru JS-77H

   Remove and replace pages JS-77A thru JS-77H in their entirety with revised pages JS-77A(R-1) thru JS-77H(R-1) attached to this Addendum No. 6. Item Code 808.9910 has been revised.

4. Page JS-96A

   Remove and replace page JS-96A in its entirety with revised page JS-96A(R-1) attached to this Addendum No. 6. Item Code 937.1000 has been revised.

5. Page JS-97

   Remove and replace page JS-97 in its entirety with revised page JS-97(R-1) attached to this Addendum No. 6. Item Code 938.1000 has been revised.

6. Page JS-112

   Insert page JS-112 attached to this Addendum No. 6. Item Code T.20 has been added.

D. Minimum Acceptable Bid Prices

1. Item Code 907.1000

   Minimum acceptable bid price of $14.50/MGAL added for Item 907.1000.

2. Item Code 943.0200

   Minimum acceptable bid price of $6.00/MHRS added for Item 943.0200.

E. Distribution of Quantities

1. Index Pages 1 thru 3

   Remove and replace index pages 1 thru 3 in their entirety with revised index pages 1(R-1) thru 3(R-1) attached to this Addendum No. 6. The index has been revised and any added or updated items are indicated in bold.

2. Page 54

   Remove and replace page 54 in its entirety with revised page 54(R-1) attached to this Addendum No. 6. Item Code 928.0800 has been added.

F. Plans

1. VOLUME 2 SHEET 5 - GENERAL BRIDGE NOTES SHEET 2 OF 3(R-1)

   Remove and replace Sheet 5(R-1) in its entirety with revised Sheet 5(R-2) attached to this Addendum No. 6. This sheet has been revised.

David W. Fish

RI Department of Transportation
Chief Engineer

The following items are hereby designated as "Specialty Items"

1. Pavement Markings
2. Guardrail
3. Structural Steel
4. Chain Link Fence
5. Signal Timing Modification
6. Electrical
7. Sign Panels
8. Sign Structure
9. Paving
10. Bridge Bearings

5. NOTICE TO CONTRACTORS

1. Due to the use of ABC method of delivery for this project, the contractor attention is directed to the following activities, among others, anticipated as being on the Critical Path for Project completion:
    - Submittal, reviewing and approval of all prefabricated Superstructure Modular Units SMUs as well as the substructure Precast Concrete Elements PCEs
    - Fabrication of the SMUs, as well as the PCEs.
    - Critical submittals are flagged as structural steel fabrication and erection shop drawings, reinforcing steel, concrete mix, as well as bearing assemblies.
    - Critical submittals will be reviewed by the Engineer and returned to the Contractor for appropriate action within Twenty Eight (28) calendar days of submission.
2. The Contractor <u>shall not be</u> permitted to close the two westerly lanes of Pawtucket Avenue to traffic or start any demolition activities prior to complete fabrication of all SMUs and PCEs, including all construction material and equipment required for the construction of the new bridge.
3. Once the Engineer's approval is granted to proceed with Stage 1, the Contractor will be permitted to close the two westerly lanes of Pawtucket Avenue in accordance with the Contract Documents to begin the Stage 1 Demolition and Construction work.
4. The Contractor shall provide a storage/laydown site for storing the prefabricated bridge elements at the Contractors own expense. The Contractor shall submit the location of the storage/laydown site for review and approval to the Department prior to the commencement of work. Compensation for out of state inspection service shall be in accordance with RI Standard Specifications Section 809.

ATTACHMENT A: LANE CLOSURE LIMITATIONS

I-195 BRIDGE 471

EAST PROVIDENCE

TABLE NO.1
MIMUMUM NUMBER OF LANES & SHOULDERS TO REMAIN OPEN TO TRAFFIC

	TIME OF DAY		DAY OF WEEK						
Location	From	To	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
I-195 EASTBOUND	0:00:00	6:00:00	2L	2L	2L	2L	2L	2L	2L
	6:00:00	9:00:00	3L	3L	3L	3L	3L	3L	3L
	9:00:00	15:00:00	3L	3L	3L	3L	3L	3L	3L
	15:00:00	19:00:00	3L	3L	3L	3L	3L	3L	3L
	19:00:00	24:00:00	2L	2L	2L	2L	2L	2L	2L
I-195 WESTBOUND	0:00:00	6:00:00	2L	2L	2L	2L	2L	2L	2L
	6:00:00	9:00:00	3L	3L	3L	3L	3L	3L	3L
	9:00:00	15:00:00	3L	3L	3L	3L	3L	3L	3L
	15:00:00	21:00:00	3L	3L	3L	3L	3L	3L	3L
	21:00:00	24:00:00	2L	2L	2L	2L	2L	2L	2L
I-195 WESTBOUND ON-RAMP (Lane F or Horton Farm)	0:00:00	6:00:00	1L	1L	1L	1L	1L	1L	1L
	6:00:00	9:00:00	1L	1L	1L	1L	1L	1L	1L
	9:00:00	15:00:00	1L	1L	1L	1L	1L	1L	1L
	15:00:00	19:00:00	1L	1L	1L	1L	1L	1L	1L
	19:00:00	24:00:00	1L	1L	1L	1L	1L	1L	1L
PAWTUCKET AVENUE	0:00:00	6:00:00	DET	DET	DET	DET	DET	DET	DET
	6:00:00	9:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE
	9:00:00	15:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE
	15:00:00	19:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE
	19:00:00	24:00:00	DET	DET	DET	DET	DET	DET	DET

TABLE NO. 2
SPECIAL EXCEPTION: MIMUMUM NUMBER OF LANES & SHOULDERS TO REMAIN OPEN TO TRAFFIC DURING THE CROSSOVER PHASES ONLY

	TIME OF DAY		DAY OF WEEK			
Location	From	To	Sunday	Monday	Friday	Saturday
I-195 EASTBOUND	0:00:00	6:00:00	1L	1L	2L	1L
	6:00:00	9:00:00	2L	3L	3L	2L
	9:00:00	15:00:00	2L	3L	3L	2L
	15:00:00	19:00:00	2L	3L	3L	2L
	19:00:00	24:00:00	2L	2L	2L	2L
I-195 WESTBOUND	0:00:00	6:00:00	1L	1L	2L	1L
	6:00:00	9:00:00	2L	3L	3L	2L
	9:00:00	15:00:00	2L	3L	3L	2L
	15:00:00	21:00:00	2L	3L	3L	2L
	21:00:00	24:00:00	2L	2L	2L	2L
PAWTUCKET AVENUE	0:00:00	6:00:00	DET	DET	DET	DET
	6:00:00	9:00:00	DET	1LE	1LE	DET
	9:00:00	15:00:00	DET	1LE	1LE	DET
	15:00:00	19:00:00	DET	1LE	1LE	DET
	19:00:00	24:00:00	DET	DET	DET	DET

TABLE NO. 3
MIMUMUM NUMBER OF LANES & SHOULDERS TO REMAIN OPEN TO TRAFFIC
PRIOR TO START OF I-195 STAGE 1A & AFTER FULL BRIDGE OPEN TO ALL TRAFFIC

	TIME OF DAY		DAY OF WEEK						
Location	From	To	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
I-195 EASTBOUND	0:00:00	6:00:00	2L	2L	2L	2L	2L	2L	2L
	6:00:00	9:00:00	4L	4L	4L	4L	4L	4L	4L
	9:00:00	15:00:00	4L	4L	4L	4L	4L	4L	4L
	15:00:00	21:00:00	4L	4L	4L	4L	4L	4L	4L
	21:00:00	24:00:00	2L	2L	2L	2L	2L	2L	2L
I-195 WESTBOUND	0:00:00	6:00:00	2L	2L	2L	2L	2L	2L	2L
	6:00:00	9:00:00	4L	4L	4L	4L	4L	4L	4L
	9:00:00	15:00:00	4L	4L	4L	4L	4L	4L	4L
	15:00:00	21:00:00	4L	4L	4L	4L	4L	4L	4L
	21:00:00	24:00:00	2L	2L	2L	2L	2L	2L	2L
I-195 WESTBOUND ON-RAMP (Lane F or Horton Farm)	0:00:00	6:00:00	1L	1L	1L	1L	1L	1L	1L
	6:00:00	9:00:00	2L	2L	2L	2L	2L	2L	2L
	9:00:00	15:00:00	2L	2L	2L	2L	2L	2L	2L
	15:00:00	21:00:00	2L	2L	2L	2L	2L	2L	2L
	21:00:00	24:00:00	1L	1L	1L	1L	1L	1L	1L
PAWTUCKET AVENUE	0:00:00	6:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE
	6:00:00	9:00:00	ALL	ALL	ALL	ALL	ALL	ALL	ALL
	9:00:00	15:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE
	15:00:00	21:00:00	ALL	ALL	ALL	ALL	ALL	ALL	ALL
	21:00:00	24:00:00	1LE	1LE	1LE	1LE	1LE	1LE	1LE

LEGEND:

ALL	All travel lanes and shoulders shall remain open to traffic
1L	A minimum of one travel lane shall remain open to traffic
1LE	A minimum of one travel lane in each direction shall remain open to traffic
2L	A minimum of two travel lane shall remain open to traffic
3L	A minimum of three travel lane shall remain open to traffic
DET	A full closure with signed detour is allowed - emregency response vehicles must be allowed access as needed

Notes

1 The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way.

2 The provisions noted herein shall not free the Contractor from his responsibility to conduct all work in such a manner that assures the least possible obstruction to traffic.

SECTION	TITLE	PAGE
803.9902	Remove and Dispose Existing Bridge Substructure Pawtucket Avenue Bridge No. 471	JS-66
803.9903	Temporary Deck Underside and Side Protection Shielding	JS-70
805.9910	Temporary Earth Retaining Systems	JS-74
808.9910	Ultra-High Performance Concrete (UHPC)	JS-77A
810	Reinforcing Steel	JS-78
812.9901	Sheet Membrane Water Stop	JS-82
820.9901	Concrete Surface Treatment (Protective Coating)	JS-85
826.9903	Management of Pigeon Guano and Mixed Debris	JS-87
828.9901	Elastomeric Bearings – Laminated	JS-89
905.1000	Sidewalks	JS-91
907.1000	Dust Control	JS-92
926.9901	Temporary Impact Attenuator	JS-93
929	Field Offices and Materials Laboratory	JS-95
937.1000	Maintenance and Movement of Traffic Protective Devices	JS-96
938.1000	Price Adjustments	JS-97
943.0200	On-The-Job Training	
T04.9901	2Awg Multiple Lighting Cable	JS-99
T04.9902	6Awg Multiple Lighting Cable	JS-99
T04.9903	6Awg Ground Wire	JS-99
T11.9999	Temporary Traffic Signal Systems Construction And Maintenance	JS-99
T12.9901	Mobile Camera Surveillance System	JS-101
T.17	Overhead Sign Panels and Supports	JS-105
T.20	Pavement Markings	JS-112

12. Placing the cast-in-place UHPC deck closure pours , the cast-in-place transverse closure pours over the pier area, the cast-in-place transverse closure pour at the end of the deck over the backwalls, the cast-in-place concrete sidewalk closure pours, and the cast-in-place concrete parapet closure pour including; steel reinforcement, dowel in bars, dowel bar splicers assembly, lifting anchors, hardware, connectors, and any and all embedded or attached components as required for completing the work.
13. Placing granite curb on non-shrink grout base, film-former protective coating, protective screen, mastic sealant, polyurethane elastomeric joint sealant (2-part), bituminous material at joint, backer rod, closed cell preformed polyethylene foam, crack sealer, stone reinforcement anchor, and any and all embedded or attached components as shown on the plans.
14. Placing the subpavement deck drain, the cold spray-applied liquid membrane waterproofing on the bridge deck, and the 3" Modified Class 9.5 wearing surface for bridges.
15. Furnishing and installing the roadway Asphaltic Expansion Joint System at the abutments, including the asphaltic joint material, steel packing plate, binder, backer rod, locating pin, preformed polyethylene foam, and any and all embedded or attached components.

The Contractor shall install Ultra-High Performance Concrete (UHPC) for the deck closure pours as stated above. This work shall be in accordance with the specification "Code 808.9910 ULTRA-HIGH PERFORMANCE CONCRETE (UHPC)" except that no separate payment will be made for this item. The costs for all work specified in Code 808.9910 shall be included for payment under Item CODE 800.9910 "PAWTUCKET AVENUE BRIDGE NO. 471 – SUPERSTRUCTURE".

All of the above work shall be complete in place and accepted in accordance with the Contract Documents except that the Method of Measurement and Basis of Payment will be in accordance with Item CODE 800.9910 "PAWTUCKET AVENUE BRIDGE NO. 471 – SUPERSTRUCTURE.

MATERIALS:
The materials used shall be in accordance with the applicable sections of the RI Standard Specifications, Special Provisions, and plans for each respective item included in the construction of the superstructure.

Fabricator Qualification.
The fabrication and pre-assembly of the SMUs shall be the sole responsibility of the Contractor.

1. If the Contractor elects to fabricate and pre-assemble the SMUs, the Contractor shall provide the fabrication and pre-assembly shop/site for doing this work. The Contractor shall submit the location of the shop/site for review and approval to the Department prior to the commencement of work.
2. If the Contractor elects to subcontract the SMUs fabrication and pre-assembly to a precast concrete plant, it shall be to a precast concrete plant listed on the latest RIDOT Approved Plant List "Approved Asphalt, Ready Mix Concrete, and Precast Concrete Plants". Precast concrete plants that are not on the list must be approved by RIDOT's material section prior to submission of shop drawings for the SMUs.

CODE 808.9910
ULTRA-HIGH PERFORMANCE CONCRETE (UHPC)

DESCRIPTION: The work under this item consist of field casting of the deck closure pour joints between the prefabricated Superstructure Modular Units (SMUs), including batching and casting on site, testing, and curing.

Ultra-High Performance Concrete (UHPC) shall conform to the applicable provisions of Sections 601, 606, 808 and 814 of the RI Standard Specifications including all applicable compilations of approved specifications. and the following:

The material, mixing, and placing equipment shall be as supplied by the UHPC Manufacturer. All testing (unless otherwise stated herein) shall be performed by the Contractor and UHPC Manufacturer using ACI Certified Technicians. The Contractor, Manufacturer's Representative(s), their Technicians required for testing, and RIDOT shall be present during the Trial Batch Testing, Mock-up Testing, Pre-Pour Meeting, and the Production Pour.

MATERIALS:

UHPC material shall meet the following criteria:

Minimum Compressive Strength (AASHTO T22):	
For typical deck closure pour between adjacent SMU units:	
4 days	≥ 14,000 psi
For common deck closure pour between Phase 1 and Phase 2 SMU units:	
12 hours	≥ 12,000 psi
Chloride Ion Permeability (AASHTO T277)	≤ 250 coulombs at 28 days*
Freeze-Thaw Resistance (AASHTO T161 Procedure A; 300 cycles)	RDM ≥ 95%*
Slump Flow (ASTM C1437)	7 – 10 inch diameter after 25 drops
	No visual segregation of steel fiber and aggregate
Shrinkage (AASHTO T160)	≤ 800 microstrains at 28 days*

*Manufacturers historical test data may be sumitted in lieu of Contractor testing. Test data must be submitted 30 days prior to the trial batch.

Submittals

- Quality Control Plan
  - A minimum of 30 calendar days prior to the Trial Batch Testing, the Contractor shall submit a Quality Control Plan.

- Trial Batch Test Results
  - A minimum of 30 calendar days prior to the Mock-up Testing, the Contractor shall submit their results for all required tests from the trial batch.

- Construction Procedures

  A minimum of 30 calendar days prior to the Mock-up Testing, and 90 calendar days prior to placing the UHPC closure pours, the Contractor shall submit construction procedures to the Engineer for approval. The Construction procedures shall include, but may not be limited to:
  - The Mock-up Testing procedures – materials, equipment, and procedures, including forming and placement details, casting, testing and storing cylinders.
  - The Production Pour – materials, equipment, and procedures for the closure pours production and the casting of the test cylinders. The submittal shall include information on the forming details, timing and sequencing of the pours, the number of crews and equipment used to mix and place the UHPC. Curing of the closure pours and the cylinders shall be included here, as well. All submittals shall be in English units.

- Regional Experience of the Manufacturer
  - The manufacturer of the Ultra-High Performance Concrete product shall demonstrate the successful completion of a minimum of four similar projects in the New England region of the United States.

QUALITY CONTROL (QC)

Testing Equipment

The testing equipment listed below will be required at the site for the Trial Batch Testing, the Mock-up Testing, and for the Production Testing.

- A mini-slump cone meeting the requirements of ASTM C1437, for on-site testing.
- Concrete thermometer meeting the requirements of AASHTO T309.
- 3 inch diameter by 6 inch tall cylinder molds for making samples for compressive testing in accordance with AASHTO T22.
- Only for Trial Batch Testing, all equipment and molds necessary to fabricate samples for AASHTO T160, T161, and T277 tests (if historical test data is not available).

Use a Maturity Meter and thermocouples that can:

- Provide a maturity value based on the Equivalent Age or Temperature Time Method as detailed in ASTM C 1074-11.
- Continuously log and store maturity data.
- Provide accuracy to within +/- 1° F when the meter is calibrated as per the manufacturer's instructions.
- Take readings every half hour for the first 15 hours.
- Print data and/or download it into a spreadsheet.

A minimum of three theromocouples per each UHPC joint shall be installed, one at each end, and one at midway with additional thermoouples as recommended by the manufacturer.

RIDOT will retain ownership of said equipment upon project completion.

Sampling and Testing

Trial Batch Testing, Mock-up Testing, and Acceptance of Production Pour Testing shall be in accordance with the following sampling and testing proceedures.

The Quality Control sampling and testing shall be performed by the Contractor/Manufacturer using ACI Certified Technicians for Field Testing Technician Grade 1. All materials, testing equipment, mixers, etc. shall be supplied by the Contractor/Manufacturer. In addition, compression strength testing of hardened UHPC shall be performed by the Contractor/Manufacturer, at an AASHTO accredited laboratory in accordance with these Special Provisions and the Manufacturer's recommendations. Chloride ion permeability, freeze-thaw, and shrinkage shall also be performed if historical data is not avalilable. The Contractor shall provide a copy of the test results to the Engineer.

UHPC 4 days ≥ 14,000 psi:

- The test days shall be at 2 days, 4 days, 14 days, and 28 days. Four (4) - 3 inch diameter by 6 inch cylinders shall be used for each test day for a total of 16 cylinders (a total of 48 cylinders for all tests).

- The trial batch test cylinders shall be standard cured in accordance with RIDOT Standard Specifications.

- The mock-up test cylinders and the acceptance of production pour test cylinders used for the 2 and 4 day tests shall be field cured in the same environment as the closure pour material they represent. The cylinders for the remaining 14 day, and 28 day tests shall be standard cured in accordance with RIDOT Standard Specifications.

- For the trial batch and mock-up tests, four (4) additional concrete cylinders for each test shall be fabricated and maintained at 50°F in a controled testing laboratory (a total of 8 cylinders for all tests). One (1) cylinder will be tested each test day. Compresive testing shall be performed at 2, 4, 14, and 28 days. Acceptance cylinders shall be tested by the Engineer. Quality Control cylinders shall be tested by the Contractor/Manufacturer, at an AASHTO accredited laboratory. Cylinder test preparations shall be in accordance with these Special Provisions.

UHPC 12 hours ≥ 12,000 psi:

- The test shall occur at 10 hours, 12 hours, 14 hours, 24 hours, and at 28 days. Four (4) - 3 inch diameter by 6 inch cylinders shall be used for each test for a total of 20 cylinders (a total of 60 cylinders for all tests). The cylinders shall be standard cured in accordance with RIDOT Standard Specifications.

- The trial batch test cylinders shall be standard cured in accordance with RIDOT Standard Specifications.

- The mock-up test cylinders and the acceptance of production pour test cylinders shall utilize the maturity testing method by taking periodic temperature readings of the in-place UHPC up to 10 hours or as recommended by the Manufacturer and then test at 10, 12, 14, and 24 hours, and at 28 days. The 10, 12, and 14 hours tests shall be field cured in the same environment as the closure pour material they represent. The cylinders for the remaining 24 hour, and 28 day tests shall be standard cured in accordance with RIDOT Standard Specifications.

- For the trial batch and mock-up tests, five (5) additional concrete cylinders shall be fabricated and maintained at 50°F in a controled testing laboratory (a total of 10 cylinders for all tests). One (1) cylinder will be tested each test hour/day. Compresive testing shall be performed at 10, 12, 14, and 24 hours, and at 28 days. Acceptance cylinders shall be tested by the Engineer. Quality Control cylinders shall be tested by the Contractor/Manufacturer, at an AASHTO accredited laboratory. Cylinder test preparations shall be in accordance with these Special Provisions.

Methodology For Maturity Testing:
The procedure for utilizing the maturity method to determine in-place UHPC strengths includes three steps: obtain Manufacturers' strength-maturity relationship, monitoring the maturity of the placement by taking periodic temperature readings as recommended by the Manufacturer, and regular validation of the strength maturity relationship. Any changes in the mix design, its components, or proportions will require that a new strength-maturity relationship be developed.

The strength-maturity relationship shall be developed one month minimum prior to construction. Continue data collection for the strength-maturity relationship after acceptance of the maturity value until the strength reaches 21 ksi.

A procedure to develop the strength-maturity relationship shall be submitted to the Engineer for review and approval along with the shop drawings. The submitted procedure shall include all necessary information for the development of the strength maturity relationship. All necessary testing included in the procedure shall be conducted by an AASHTO accredited testing laboratory.

Trial Batch Testing

Sixty (60) calendar days prior to the Mock-up test, Trial Batch Testing shall be performed. The Trial Batch shall take place at a RIDOT approved location and be performed in the presence of RIDOT personnel. Trial batch samples will be tested to meet all UHPC criteria as per Materials above. The quantity of materials batched shall be that quantity sufficient to perform all tests required. All required review submittals prior to performing the Trial Batch Testing shall be as per Submittals above.

UHPC batch temperatures shall be recommended by the Manufacturer and shall be representative of the proposed batch temperatures required for the production pours. The temperature shall be recorded.

The Trial Batch shall be representative of the production pour and shall consist of the same materials, equipment, methods of mixing, cylinder preparation, and curing methods.

The basis for approving the UHPC project mix based on the Trial Batch Testing shall be that the test results meet the criteria listed above under Materials. Trial Batch Testing shall continue at the Contractor's expense until all test results meet the requirements herein or as otherwise approved by the Engineer. The basis for acceptance of the Trial Batch test results will be that the concrete compressive strength at 4 days is equal to or greater than 14,000 psi. The 2 day, 14 day, and 28 day test results shall be recorded for information only. All test results, including those for information only, shall be submitted no later than 30 calendar days prior to the Mock-up test. The Mock-up testing shall not begin until the UHPC project mix is approved by the Engineer. Delays in achieving an approved mix shall not be considered cause for changes to the contract schedule or justification for claims by the Contractor.

Mock-Up Testing

A minimum of 60 calendar days prior to the proposed use of UHPC for the production closure pours the Contractor shall perform a Mock-up test. The Mock-up shall take place at a RIDOT approved location and be performed in the presence of the Engineer or his representatives. Batching, mixing, placement and curing shall be in accordance with the Manufacturer's recommendations. The Manufacturer's representative shall be present during the Mock-up to assist the Contractor and approve the mixing and placement procedures. The quantity of materials shall be sufficient to perform the Mock-up related tests required herein. The required review submittals prior to performing the Mock-up shall be as per Submittals above.

The Mock-up shall be a simulation of the production closure pour and shall consist of the same UHPC materials, equipment, mixing, batching, forming, surface preparations, placement, making of test cylinders, quality control by the Manufacturer's representative, and curing as for the production closure pours joining the SMUs. It shall consist of linking two concrete panels together with a clousure pour of exactly the same width as shown on the Plans. Uncoated reinforcement may be used for the Mock-up. Each of the panels will be a minimum of 3 feet wide, 20 feet long, and of the same thickness as what is shown on the Plans. The Contractor may utilize the same 3'x20'concrete panels for both UHPC types as specified in this section, each UHPC pour shall be 10' long separated by a bulkhead.

As with the proposed production closure pours, the Mock-up joints shall be over-poured with the UHPC material by 1/4 inch to 3/8 inch above the tops of the joining precast concrete edges to account for settlement. Curing of the joint shall be as specified in these Special Provisions. After curing is completed, the Contractor shall diamond grind the closure pour to demonstrate to the Engineer the outcome and effective use of the equipment proposed to be used for the production closure pours.

A minimum of one slump flow test for each batch of UHPC during the Mock-up shall be performed and recorded by the Contractor for Quality Control. The slump flow test shall be within the 7 to 10 inch acceptable range. The slump test shall be performed and accepted prior to placing the mix in the Mock-up joint.

UHPC batch temperatures shall be as recommended by the Manufacturer. The temperature shall be recorded. The UHPC shall be fully placed within 30 minutes after mixing and its temperature, as determined by AASHTO T309, shall not be in excess of 80°F prior to being placed into the closure pour.

The basis for accepting the Mock-up shall include the Engineer's approval of the Mock-up testing based on its successful outcome in meeting the criteria set forth in these Special Provisions. The results of the test shall also prove, that the forms, placement, workability procedures, and curing methods can reliably be used in construction of UHPC closure pours.

Approval to Proceed to Production Pour

No work for the UHPC closure pour shall commence until the results of the Trial Batch and the Mock-up and all required submittals have been approved in writing by the Engineer.

The Contractor shall measure and record the mixing time, mixture temperature, and the slump flow of each batch of UHPC as part of a daily report. The mixture temperature, as determined by AASHTO T309, shall not be in excess of 80°F prior to being placed into the closure pour. Concrete mixing operations during cold weather shall conform to Subsection 601.03.5; Cold Weather Concrete and per the manufacturer's recommendations. If there is a conflict, the more stringent requirement shall apply. Insulation blankets, and/or sufficient heating devices if required, of a type approved by the Engineer shall be installed under an enclosure or covering, capable of maintaining at all times and under all weather conditions during the protection period, a uniform concrete temperature of not less than 50°F throughout the entire surface of the UHPC. The slump flow shall be conducted in accordance with ASTM C1437. The flow for each batch shall be between 7 inches and 10 inches prior to being placed in the closure pour. If the slump is not within this range, the Manufacturer's Representative shall be consulted and a new batch shall be mixed, if required. Water shall not be added to increase the slump. If required to adjust the slump, additives shall only be added as directed by the Manufacturer's Representative. The Contractor shall provide a copy of the daily report to the Engineer within 24 hours after completion of that day's work.

Acceptance of Production Pour Testing

UHPC 4 days ≥ 14,000 psi:

- The basis for acceptance of the production test results will be that the concrete compressive strength at 4 days is equal to or greater than 14,000 psi. The 2 day, 14 day, and 28 day test results shall be recorded for information only.

UHPC 12 hours ≥ 12,000 psi:

- The basis for acceptance of the production test results will be that the concrete compressive strength at 10 to 24 hours is equal to or greater than 14,000 psi. The 28 day test results shall be recorded for information only.

Curing boxes shall be supplied by the Contractor to store standard cured cylinders in a humidity and temperature control environment as recommended by the Manufacturer prior to testing.

Manufacturer's Representative

The Manufacturer shall provide Quality Control on site for the UHPC using the Manufacturer's on site Representative(s). The Representative(s) on site shall use English units and measuring devices in English units, for consistency. The Manufacturer's Representative shall be present during the casting of the cylinders to ensure they are cast correctly and will be present to evaluate the closure pour in terms of consistency, composition, flow and placement, environmental conditions, and concrete temperature.

CONSTRUCTION METHODS:

Pre-Placement Meeting

Prior to the placement of the UHPC, the Contractor shall arrange for an on-site meeting. The UHPC Manufacturer's representative, the Contractor's staff, the RIDOT Engineer, and the Bridge Design Engineer and his representatives shall attend the site meeting. The objective of the meeting is to clearly outline the procedures for batching, mixing, moving, pouring, finishing, and curing of the UHPC material. No work shall proceed until the manufacturer and the Engineer approves the procedures.

Form Work, Batching, Mixing, and Curing

The Contractor shall arrange for a technical representative of the Manufacturer to be on site during the placement of the UHPC closure pours and shall provide sign-off on the quality of the UHPC being placed. The technical representative shall be knowledgeable in the supply, mixing, movement, placement, and curing of the UHPC material.

The design and fabrication of forms shall follow approved submittal drawings and the recommendations of the Manufacturer. The forms shall be coated to prevent absorption of water as per the Manufacturer's recommendations. Due to the highly flowable nature of UHPC, leakproof formwork is essential and thus, the Contractor shall ensure that the formwork is water tight and that the UHPC components will not leak out.

Prior to placement, the Contractor shall ensure that the precast surface is roughed to provide an exposed aggregate surface. Precast surface shall be kept wet for at least one hour prior to placing the UHPC and allowed to dry to a saturated surface dry condition just prior to placing the UHPC.

The Contractor shall follow the mixing and batching procedures as recommended by the Manufacturer. The UHPC closure pours shall be filled and over-poured by 1/4 inch to 3/8 inch above the top flanges of abutting precast SMUs to allow for settlement in accordance with the

Manufacturer's recommendations. The UHPC shall be fully placed within 30 minutes after mixing.

UHPC shall be placed from the lower to the higher elevation of each closure pour without the use of vibration. Rodding may be used in situations where two successive pours meet.

The UHPC placed in the form shall be cured according to the Manufacturer's recommendations to attain the required strength specified herein. This shall include, but may not be limited to, sealing the area of the closure pour with a sheet of plastic to protect it from the weather and debris, and regulate the hydration process. UHPC shall be cured at the range of temperatures as specified by the Manufacturer in order to achieve required strengths at the specifed timeframes. A minimum curing period prior to any subsequent work on the bridge superstructure shall be four (4) days and until the Engineer receives the satisfactory results of the 4-day compressive strength test, in writing, as per these Special Provisions. The Engineer will then notify the Contractor in writing that he/she may resume work on the deck if the test result is equal to or greater than 14,000 psi or as otherwise approved by the Engineer.

If anticipated weather conditions do not forecast the mininum curing temperatures for the pours, provisions shall be made by the Contractor for heating and insulating, and approved by the Engineer, to make any adjustments necessary to ensure compliant curing conditions. The UHPC shall not be subjected to freezing temperatures until it has cured for at least 4 days and has attained 14,000 psi compressive strength. Heat sources that use forced air shall not be applied to the exposed surface of the UHPC.

Formwork may be stripped after a compressive strength of 14,000 psi is reached.

The Spray Applied membrane waterproofing for bridge decks shall not be applied for a minimum of 7 calendar days after UHPC placement, unless otherwise recommended by the Spray Applied membrane waterproofing Manufacturer.

Storage

The Contractor shall provide for the proper storage of premix, fibers and additives as required by the Manufacturer's specifications in order to protect materials against loss of physical and mechanical properties.

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

BASIS OF PAYMENT: No separate payment will be made for this item. Costs for this item shall be included in the lump sum bid prices of the appropriate items as listed in the Proposal.

All I-195 Lanes Open to Traffic (Prior to Start of I-195 Stage 1A):
For each hour prior to the start of I-195 Stage 1A demolition work where 4 travel lanes (including shoulders) in both directions on I-195 is not provided as specified herein, a negative assessment equal to the sum of **$10,000.00** per hour per travel lane will be deducted from any monies due the Contractor. These travel lane restrictions shall be in accordance with TMP Attachment "A" Table No. 3 Minimum Number of Lanes and Shoulders Prior to Start of I-195 Stage 1A. This negative assessment will be calculated from 6:00 AM up to the actual time that 4 travel lanes in both directions is provided on I-195. The work required for demolishing the existing I-195 median barriers, removing the existing highway lighting, and Pawtucket Avenue pre-demolition activities may be completed during the time periods in accordance with the TMP.

All I-195 Lanes Open to Traffic (After Full Bridge Open to all Traffic):
For each hour after the Full Bridge Open to all Traffic (as defined in Code 108.1000 Prosecution and Progress) where 4 travel lanes (including shoulders) in both directions on I-195 is not provided as specified herein, a negative assessment equal to the sum of **$10,000.00** per hour per travel lane will be deducted from any monies due the Contractor. These travel lane restrictions shall be in accordance with TMP Attachment "A" Table No. 3 Minimum Number of Lanes and Shoulders to Remain Open to Traffic After Full Bridge Open to All Traffic. This negative assessment will be calculated from 6:00 AM up to the actual time that 4 travel lanes in both directions is provided on I-195. The remaining work required for substantial completion may be completed during the time periods in accordance with the TMP.

All Pawtucket Avenue Lanes Open to Traffic (After Full Bridge Open to all Traffic):
For each hour after the Full Bridge Open to all Traffic (as defined in Code 108.1000 Prosecution and Progress) where 2 travel lanes (including shoulders) in both directions on Pawtucket Avenue is not provided, a negative assessment equal to the sum of **$500.00** per hour per travel lane will be deducted from any monies due the Contractor. These travel lane restrictions shall be in accordance with TMP Attachment "A" Table No. 3 Minimum Number of Lanes and Shoulders to Remain Open to Traffic After Full Bridge Open to All Traffic. This negative assessment will be calculated from 6:00 AM up to the actual time that 2 travel lanes in both directions is provided on Pawtucket Avenue. The remaining work required for substantial completion may be completed during the overnight time periods in accordance with the TMP.

CODE 938.1000

PRICE ADJUSTMENTS

DESCRIPTION:

a. **Liquid Asphalt Cement.** The Base Price of Liquid Asphalt Cement as required to implement **Subsection 938.03.1** of the Standard Specifications is **$382.50** per ton.

b. **Diesel Fuel.** The Base Price of Diesel Fuel as required to implement **Subsection 938.03.2** of the Standard Specifications is **$1.3265** per gallon.

CODE T.20

PAVEMENT MARKINGS

The respective subsections of Section T.20 of the Standard Specifications for Road and Bridge Construction are amended as follows:

T.20.03.4 Temporary Waterborne Pavement Markings [Add to end of section]

The Contractor shall provide temporary waterborne pavement markings on Pawtucket Avenue during Stages 1 and 2 and on I-195 during Stages 1C, 1D, 1G, 2C and 2D. All existing conflicting pavement markings shall be fully removed prior to application in accordance with **Section T.20.03.6; Grinding**.

T.20.03.9 Temporary Pavement Markings (Tape) [Insert new section]

The Contractor shall provide temporary pavement markings (tape) on I-195 during Stages 1A, 1B, 1E, 1F, 2A, 2B, 2E and 2F. All existing conflicting pavement markings shall be fully covered using black temporary pavement marking (tape) prior to application. All temporary pavement markings (tape) shall be full removed at the end of each stage.

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201.0415	REMOVE AND DISPOSE GUARDRAIL AND POST ALL TYPES	4
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201.0420	REMOVE AND DISPOSE CONCRETE SLAB	4
201.0430	REMOVE AND DISPOSE CONCRETE MEDIAN BARRIER	4
201.0610	REMOVE AND DISPOSE DIRECTIONAL, WARNING, REGULATORY, SERVICE, AND STREET SIGNS	5
201.0613	REMOVE AND STOCKPILE LIGHT STANDARDS	5
201.0616	REMOVE AND DISPOSE LIGHT STANDARD FOUNDATIONS	5
201.0622	REMOVE AND DISPOSE OVERHEAD SIGN PANEL	6
201.0623	REMOVE AND DISPOSE OVERHEAD SIGN STRUCTURE	6
201.9901	REMOVE AND DISPOSE HANDHOLE AND RETURN FRAME AND COVER TO RIDOT	6
201.9902	REMOVE AND RESET LIGHT STANDARDS	6
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202.0600	LOAM EXCAVATION	7
203.0100	STRUCTURAL EXCAVATION EARTH	8
203.0210	STRUCTURAL EXCAVATION ROCK	8
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203.0400	STRUCTURAL EXCAVATION UNCLASSIFIED	8
203.0700	PERVIOUS FILL	8
203.9901	CRUSHED STONE FILL UNDER STRUCTURES	8
204.0100	TRIMMING AND FINE GRADING	9
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702.0610	PRECAST CATCH BASIN 5' DIAMETER STANDARD 4.4.0	16
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707.2000	ADJUST FRAME AND GRATE TO GRADE	18
708.9040	CLEANING AND FLUSHING PIPE ALL SIZES	18
708.9041	CLEANING CATCH BASINS ALL TYPES AND SIZES	19
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713.8300	ADJUST GAS GATE BOXES TO GRADE	21
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130	**T20.2020 Cont.**	**Item T20.2020 Total:**		**13.00**		
131	**T20.2022**	**EPOXY RESIN PAVEMENT MARKING WORD "ONLY" STANDARD 20.1.0**	**EACH**			
		PAWTUCKET AVE, STAGE 1 NB, JUST SOUTH OF WARREN AVE				
		PAWTUCKET AVE, STAGE 1 NB, JUST SOUTH OF WARREN AVE		2.00	0011	01
		Item T20.2022 Total:		**2.00**		
132	**T20.2116**	**6 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW**	**HLF**			
		RAMP DR-6				
		RAMP DR-6		180.00	0011	01
		ROUNDING				
		PROJECT WIDE		20.00	0011	01
		Item T20.2116 Total:		**200.00**		
133	**928.0800**	**TRUCK MOUNTED ATTENUATOR WITH TRUCK MOUNTED FLASHING ARROW BOARD**	**PDAY**			
		I-195				
		PROJECT WIDE		60.00	0011	01
		Item 928.0800 Total:		**60.00**		

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI	BRO–0471(002)	2016	5	42

MATERIALS

STRUCTURAL STEEL:

- AASHTO DESIGNATION M 270, GRADE 50

REINFORCING STEEL:

- AASHTO DESIGNATION M 31, GRADE 60

CONCRETE STRENGTHS:

- CLASS HP ¾" f'c = 5,000 PSI (28 DAYS)

  PREFABRICATED DECK, PRECAST SIDEWALK ON DECK, PRECAST PARAPET ON BRIDGE, PRECAST PARAPET ON WINGWALL, PRECAST END POST, PRECAST BACKWALL, PRECAST WINGWALL, PRECAST PIER CAP, PRECAST COLUMN, PRECAST ABUTMENT CAP

- CLASS HP HIGH EARLY STRENGTH ¾" f'c = 3,000 PSI (48 HOURS) AND 5,000 PSI (28 DAYS)

  PIER FOOTING CLOSURE POUR, PIER CAP CLOSURE POUR, END OF DECK CLOSURE POUR, APPROACH SLAB CLOSURE POUR, SIDEWALK CLOSURE POUR, PARAPET CLOSURE POUR, C.I.P. RETURN WALLS, AND CLOSURE POUR AT PIER (606)

- ULTRA HIGH PERFORMANCE CONCRETE (UHPC) f'c = 14,000 PSI (4 DAYS)

  TYPICAL LONGITUDINAL DECK CLOSURE POUR BETWEEN ADJACENT SMU UNITS (606)

- ULTRA HIGH PERFORMANCE CONCRETE (UHPC) f'c = 12,000 PSI (12 HOURS)

  COMMON LONGITUDINAL DECK CLOSURE POUR BETWEEN PHASE 1 AND PHASE 2 SMU UNITS (606)

- CLASS XX ¾" f'c = 4,000 PSI (28 DAYS)

  PRECAST APPROACH SLAB AND PRECAST WINGWALL FOOTING

- CLASS HP (AE) ⅜" f'c = 4,000 PSI

  REHABILITATION / REPAIR CONCRETE

- CLASS MC ¾" f'c = 3,500 PSI (28 DAYS), f'c = 5,000 PSI (56 DAYS)

  CAST-IN-PLACE PIER CAP, CAST-IN-PLACE PIER COLUMN, CAST-IN-PLACE ABUTMENT CAP, CAST-IN-PLACE PIER FOOTING

- CONTROLLED LOW STRENGTH MATERIAL (CLSM) TYPE IV HIGH EARLY STRENGTH f'c = 100 PSI (12 HOURS AND 1,200 PSI (28 DAYS)

  VERY FLOWABLE FOR: PRECAST APPROACH SLAB

GROUT STRENGTHS:

- HIGH STRENGTH NON-SHRINK GROUT f'c = 3,000 PSI (24 HOURS AND 8,000 PSI (28 DAYS)

  GROUT BED FOR PRECAST PIER FOOTING, PRECAST ABUTMENT CAP, PRECAST ABUTMENT BACKWALL, PRECAST COLUMN, PRECAST PIER CAP, PRECAST WINGWALL FOOTING

- HIGH STRENGTH NON-SHRINK GROUT ⅜" f'c = 3,000 PSI (24 HOURS AND 8,000 PSI (28 DAYS)

  DOWEL SLEEVES, ANCHOR BOLT SLEEVES AND SHEAR KEYS

- CONTROLLED LOW STRENGTH MATERIAL (CLSM) TYPE I f'c = 1,200 PSI (28 DAYS)

  FLOWABLE FILL FOR: BENEATH APPROACH SIDEWALKS ADJACENT TO PRECAST WINGWALLS AND PRECAST ENDPOSTS

GROUT SPLICE COUPLERS STRENGTHS:

- PER REQUIREMENTS OF GROUTED SPLICE COUPLER MANUFACTURER

FOUNDATIONS

1. BORINGS SHOWN ON GENERAL PLAN ARE SHOWN AT APPROXIMATE LOCATIONS DEVELOPED FROM "PAWTUCKET AVENUE - BRIDGE - LOCATION PLAN" DEVELOPED BY CE MAQUIRE, INC., DATED AUGUST 17, 1989.
2. BORINGS BH-81 THROUGH BH-88 WERE COMPLETED IN 1958.
3. BORING B-1 WAS COMPLETED BY GUILD DRILLING CO. INC., OF EAST PROVIDENCE, RI ON JUNE 6, 1979.
4. BORINGS ARE SHOWN FOR THE PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.

CONCRETE NOTES

1. CLASSES OF CONCRETE SHALL BE HIGH PERFORMANCE CLASS HP AND CLASS XX , AS DESCRIBED IN THE RI STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS OF THE SPECIFICATIONS. REFER TO THE "MATERIAL" NOTES FOR CLASSES OF CONCRETE SPECIFIED FOR VARIOUS COMPONENTS.
2. THE CONTRACTOR MAY, AT THE APPROVAL OF THE ENGINEER, PROPOSE THE USE OF SELF-CONSOLIDATING CONCRETE FOR ANY CLASS OF CONCRETE ON THIS PROJECT. SECTION 606 "SELF CONSOLIDATING CONCRETE (SCC)", CONTAINS THE REQUIREMENTS FOR MODIFYING ALL CLASSES OF CONCRETE MIX DESIGN FOR SELF-CONSOLIDATING APPLICATIONS.
3. ALL PORTLAND CEMENT CONCRETE SHALL BE AIR-ENTRAINED.
4. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE GALVANIZED. ALL WIRE TIES AND MISCELLANEOUS HARDWARE USED FOR PLACEMENT OF GALVANIZED REINFORCEMENT SHALL BE NON-METALLIC. REINFORCING STEEL SHALL BE GALVANIZED PER ASTM A767 CLASS I (GALVANIZED STEEL).
5. ALL CRITICAL LAP SPLICES SHALL BE AS SHOWN ON THE PLANS. ALL SPLICES NOT SHOWN ON THE PLANS SHALL BE LAPPED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR CLASS C LAP SPLICES.
6. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL MAIN REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVER:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH (FOOTING CLOSURE POURS)		3 INCHES
PRECAST ELEMENTS PERMANENTLY EXPOSED TO EARTH (FOOTINGS, ABUTMENT AND WALL FACES, BACKWALLS)		2 INCHES
DECK SLABS (WITH WEARING SURFACE)	TOP	2 INCHES (+1/4", -0")
	BOTTOM	1 1/2 INCHES (+1/8", -0")
ALL OTHER BARS		2 INCHES

COVER TO TIES AND STIRRUPS MAY BE 0.5 INCH LESS THAN THE ABOVE VALUES SPECIFIED FOR MAIN REINFORCING, BUT IN NO CASE LESS THAN 1.5 INCHES.

7. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 55. ANCHOR RODS, NUTS, AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M232.
8. ALL ANCHOR RODS SHALL BE GROUTED IN PRE-FORM SLEEVES.
9. HORIZONTAL CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON PLANS WILL NOT BE PERMITTED WITHOUT A WRITTEN REQUEST BY THE CONTRACTOR AND PRIOR AUTHORIZATION BY THE ENGINEER.
10. UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CONCRETE SURFACES VISIBLE IN ELEVATION TO ONE FOOT BELOW FINAL GROUND LINE (AND THE UNDERSIDE OF ALL CONCRETE DECK SLABS OUTSIDE OF THE FASCIA BEAMS), SHALL RECEIVE A CONCRETE SURFACE RUBBED FINISH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
11. THE ENTIRE TOPSIDE SURFACES OF ABUTMENT BEAM SEATS, AS WELL AS VERTICAL FACES OF BACKWALLS, SHALL BE PROVIDED WITH A FILM-FORMING SEALER (M12.03.1) CONCRETE SURFACE TREATMENT-PROTECTIVE COATING IN ACCORDANCE WITH SECTION 820 OF THE RI STANDARD SPECIFICATIONS.
12. ALL EXPOSED EDGES AND REENTRANT CORNERS NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM ¾" CHAMFER.
13. ALL JOINT SEALANT SHALL BE POLYURETHANE, POLYURETHANE ELASTOMERIC, OR SILICONE SEALANT AS DESIGNATED ON THE PLANS. THE COLOR OF THE JOINT SEALANT, WHERE EXPOSED, SHALL BE NEUTRAL (LIGHT GRAY OR TAN). THE COLOR OF THE SEALANT, WHERE NOT EXPOSED, WILL BE AT THE DISCRETION OF THE CONTRACTOR.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME WHEN THE SURFACES ARE APPROVED AND ACCEPTED. ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
15. UNLESS OTHERWISE NOTED ON THE PLANS, JOINT FILLER IS TO BE A PREFORMED, NON-EXPANSIVE, NON-EXTRUDING TYPE IN ACCORDANCE WITH SECTION M.02.11.1 OF THE RI STANDARD SPECIFICATIONS.
16. PLACEMENT, FINISHING AND CURING OF BRIDGE DECK CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 814 OF THE RI STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH THE SEQUENCE AND DIRECTION OF POURS AS SHOWN ON THE PLANS.
17. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL DECK FORMS SHALL BE OF THE REMOVABLE TYPE THAT WILL PRODUCE THE DIMENSIONS SHOWN ON THE PLANS.
18. IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS, ALL METAL TIES OR ANCHORAGES WHICH ARE REQUIRED FOR CONCRETE FORMWORK SHALL BE SO CONSTRUCTED THAT THEY CAN BE REMOVED TO AT LEAST TWO INCHES BELOW THE EXPOSED SURFACE OF THE CONCRETE WITHOUT CAUSING DAMAGE TO THE CONCRETE SURFACE. SNAP TIES MAY BE USED ONLY IF APPROVED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO USE THEM, A CATALOG CUT AND OTHER NECESSARY INFORMATION MUST BE SUBMITTED TO THE ENGINEER TO DEMONSTRATE THAT THE TIES WILL SNAP-OFF FAR ENOUGH INTO THE CONCRETE TO ALLOW FOR PROPER PATCHING. SNAP TIES MUST PROVIDE ADEQUATE STRENGTH TO SUPPORT THE FORMS. ALL CAVITIES SHALL BE FILLED WITH AN APPROVED CEMENT MORTAR MEETING THE REQUIREMENTS OF ASTM C 928.
19. WATER STOPS ARE REQUIRED FOR HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ABUTMENTS AND WALLS WHEN EXPOSED TO BACKFILL EARTH MATERIAL. WATER STOPS SHALL BE INSTALLED AT THE LOCATIONS DETAILED ON THE PLANS, AT THE LOCATIONS AS SPECIFIED ABOVE AND AT ALL LOCATIONS AS DIRECTED BY THE ENGINEER, ALL IN ACCORDANCE WITH SECTION 812 OF THE RI STANDARD SPECIFICATIONS.
20. EMBEDMENT LENGTHS FOR DRILLED AND GROUTED DOWELS SHALL BE IN ACCORDANCE WITH SECTION 819 OF THE R.I. STANDARD SPECIFICATION, UNLESS OTHERWISE INDICATED ON THE PLANS.

REINFORCEMENT NOTE

THE CONTRACTOR'S BAR FABRICATOR SHALL VERIFY THE CORRECTNESS IN PREPARING HIS ORDER LISTS AND BENDING DIAGRAMS. ANY EXPENSE INCIDENT TO REVISIONS OF MATERIAL AS SHOWN ON THE ORDER LISTS AND BENDING DIAGRAMS IN ORDER TO MAKE IT COMPLY WITH THE DESIGN DRAWINGS SHALL BE BORNE BY THE CONTRACTOR. SHOP DRAWINGS FOR ALL REINFORCEMENT DETAILS AND SCHEDULE SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.

PREFABRICATED BRIDGE ELEMENTS AND SYSTEMS

1. THE FABRICATION OF ALL PRECAST ELEMENTS SHALL BE IN ACCORDANCE WITH SECTION 809 "PRECAST/PRESTRESSED CONCRETE MASONRY" OF THE RI STANDARD SPECIFICATIONS AND AS MODIFIED BY THE SPECIAL PROVISIONS ACCOMPANYING THESE PLANS.

SHOP DRAWING SUBMITTAL

1. BRIDGE DEMOLITION
2. REMOVE AND DISPOSE EXISTING SUPERSTRUCTURE
3. REMOVE AND DISPOSE EXISTING SUBSTRUCTURE
4. CRANE SUBMITTALS
5. TEMPORARY PROTECTIVE SHIELDING
6. CONCRETE: MIX DESIGNS, PLACING AND METHODS AND EQUIPMENT, CURING PLAN AND METHODS, PERSONNEL RESOURCES
7. REINFORCING STEEL, SPLICES AND INSERTS
8. CONCRETE FORMS
9. STRUCTURAL STEEL
10. DRILL AND GROUT REINFORCING
11. BRIDGE BEARING ASSEMBLIES
12. BEAM ERECTION PROCEDURES
13. BRIDGE NAME/SEAL TABLETS
14. CONTROLLED LOW STRENGTH MATERIAL
15. CONCRETE SURFACE REPAIR
16. ACCELERATED BRIDGE CONSTRUCTION SCHEDULE
17. TEMPORARY EARTH SUPPORT SYSTEM DESIGN
18. TEMPORARY SHORING
19. WATER STOPS/NEOPRENE SEALS
20. UTILITY SUPPORTS
21. MISCELLANEOUS METALS
22. GROUTED SPLICE COUPLER SYSTEM
23. LEVELING DEVICES
24. ASPHALTIC EXPANSION JOINT ASSEMBLIES
25. GRANITE CURB FOR BRIDGES
26. STRUCTURAL STEEL PAINT SYSTEMS
27. WELDING PROCEDURES
28. QUALITY CONTROL PLAN FOR BRIDGE SUPERSTRUCTURE
29. FABRICATOR QUALIFICATION FOR BRIDGE SUPERSTRUCTURE
30. SHOP DRAWINGS FOR PREFABRICATED SMU
31. ERECTION PLAN FOR PREFABRICATED SMU
32. QUALITY CONTROL PLAN FOR BRIDGE SUBSTRUCTURE
33. PRECAST FABRICATOR QUALIFICATION FOR BRIDGE SUBSTRUCTURE
34. SHOP DRAWINGS FOR PRECAST CONCRETE ELEMENTS
35. ERECTION PLAN FOR BRIDGE SUBSTRUCTURE
36. DECK WATERPROOFING MEMBRANE
37. CONCRETE SURFACE TREATMENT (PROTECTIVE COATING)
38. SHEAR CONNECTORS
39. BRIDGE IDENTIFICATION AND MINIMUM CLEARANCE SIGNS
40. TYPE I PROTECTIVE SCREEN

NECESSARY SUBMITTALS MAY NOT BE LIMITED TO THE ABOVE LIST AND MAY REQUIRE OTHER SUBMITTALS AT THE RESIDENT ENGINEER'S REQUEST FOR: SHOP DRAWINGS, CERTIFICATE OF COMPLIANCE, PRODUCT INFORMATION, CATALOG CUTS, TEST DATA OR OTHER.

ADDENDUM NO. 6

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REVISIONS		
NO.	DATE	BY
1	4/27/16	LBG

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

IMPROVEMENTS TO I-195
ABC BRIDGE NO. 471 OVER I-195
SUPERSTRUCTURE REPLACEMENT
EAST PROVIDENCE, RHODE ISLAND

GENERAL BRIDGE NOTES
SHEET 2 OF 3

CHECKED BY PNF DATE 9/23/15 SCALE NONE