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**ADDENDUM #3**

**RFQ# 7596669**

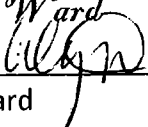
**TITLE: PORTSMOUTH SALT STORAGE FACILITY**

**SUBMISSION DEADLINE: 10/05/2018 at 01:00 PM**

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The following items are included in this addendum:

1. Responses to submitted questions
2. Clarifications regarding dimensions
3. Updated specification

*Alyssa Ward*  
  
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Alyssa Ward  
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September 25, 2018

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF PURCHASES BID NO. 7596669  
RHODE ISLAND CONTRACT NO. 2018-CM-070  
FEDERAL AID PROJECT NO.: SLT-STRG(011)

PORTSMOUTH SALT STORAGE

CITY OF PORTSMOUTH

COUNTY OF NEWPORT

**NOTICE TO PROSPECTIVE BIDDERS**

**ADDENDUM NO.3:**

Prospective Bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

**A. Revision / Clarifications**

- a. Clarifications to section 131210 regarding dimensions has been attached.
- b. Updated spec section has been attached



RI Department of Transportation  
Administrator, Project Management

## SECTION 131210 - FRAME SUPPORTED MEMBRANE STRUCTURE

## PART 1 – GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of Contract, including General and Supplementary Conditions and other Divisions-1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

This Section specifies the furnishing and installation of a structural frame supported membrane fabric covered roof and wall structure of the type described herein.

This system includes the installation of new structural framing and new fabric membrane at roof and at walls to the extent shown on the project drawings.

## 1.3 REFERENCES AND STANDARDS

- A. The following publications are for the standards listed below but referred to thereafter by basic letter designation only. They form a part of this specification to the extent referenced thereto use latest editions.

## 1. American Institute of Steel Construction (AISC):

- |         |  |
|---------|--|
| a. M016 | Manual of Steel Construction                                   |
| b. S326 | Design, Fabrication and Erection of Structural Steel Buildings |
| c. S329 | Structural Joints Using ASTM A325 or A490                      |

## 2. American Iron and Steel Institute (AISI):

- |           |   |
|-----------|---|
| a. SG 503 | Manual of Steel Construction, Ninth Edition |
|-----------|---|

## 3. American Society for Testing and Materials (ASTM):

- |          |  |
|----------|--|
| a. A36   | Structural Steel   |
| b. A 123 | Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products |
| c. A 307 | Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength                                |
| d. A325  | High-Strength Bolts for Structural Steel Joints  |

## 1.3 REFERENCES AND STANDARDS (Cont'd)

- e. A 500 Standard Specifications for Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- f. A 563 Rev Carbon and Alloy Steel Nuts
- g. A 687 High-Strength Non-Headed Steel Bolts and Studs

## 4. American Society of Civil Engineers (ASCE):

- a. ASCE 7 Minimum Design Loads for Building and Other Structures

## 5. American Welding Society (AWS):

- a. D1.1 Structural Welding Code – Steel

## 6. National Fire Protection Association (NFPA):

- a. 701 Standard Methods of Fire Tests for Flame Resistant Textiles and Films

## 1.4 GENERAL REQUIREMENTS

## A. Scope:

1. This specification covers the design, manufacture, shipping and handling and erection of a relocatable, prefabricated tension membrane structure.
2. The structure membrane shall be tensioned over new framework. The structure shall be rectangular in shape. The side and gable walls of the structure shall be vertical. The interior of the structure below the main arch shall be clear and free of any structural members and shall provide unobstructed floor space.
3. The structure shall also include accessories and items required and necessary for the scope and intended use and as herein specified.  
These may include:
  - a. Personnel access, industrial roll up and aircraft hangar doors.
  - b. Electrical systems including interior lighting.
  - c. Ventilation Systems.

## DESIGN AND DIMENSION

## A. Design Requirements – PVC Coated Membrane Cladding System

1. Continuous, Weather Tight Membrane: The structure membrane shall form a continuous, uninterrupted weather tight shell over the framework. In order to provide for a good finished appearance and to insure weather tightness, the gable wall PVC

cladding shall be manufactured so as to be connected in one piece to the adjacent side wall and roof cladding without the use of catenary cables.

2. Cladding Section Joints: Adjacent PVC cladding sections shall either lace together with a minimum ¼" white polyester rope or be provided with a mechanical tensioning system so as to maintain PVC tension along the length of the building. Proper gaps shall be maintained between sections so as to allow sufficient distance to enable full tensioning of the material.
3. Overlap Seams: The membrane system shall be designed such that the PVC cladding panels can be supplied with optional overlap joints to allow adjacent panels to be field heat sealed together.
4. Base Tensioning System: The PVC cladding will be provided with a mechanical tensioning system that allows the PVC to be fully tensioned around the structure perimeter. The system will be designed such that the membrane can be tightly and neatly secured over the structural frame and such that the system has remaining range of adjustment.
5. Membrane Seal at Openings and Base: The structure supplier will provide all materials and methods necessary to fully tension and seal the membrane material around all door, ventilation and other openings as well as around the structure perimeter below the main tensioning system. This seal shall provide a neat finished appearance and eliminate any loose PVC cladding that could otherwise be damaged by flapping or abrasion. When a PVC base skirt is required, this shall be supplied separately from the main PVC cladding and attached at the base perimeter so as to allow a reasonable seal against air and water intrusion.
6. Design Safety Factor: The PVC membrane shall be designed to allow a factor of safety at design loads of at least three (3) times the theoretical design strength of the PVC material.
7. The structure membrane shall not be designed to function as a structural member such that, should any damage to or penetrations of the membrane occur, the integrity of the structural framework shall not be affected.

#### 1.6 OPERATION AND USE

- A. The structure shall be designed to provide a minimum of 15 year operational use period, which shall include, if necessary, one installation/disassembly cycle per year with appropriate inspection and maintenance.
- B. The structure shall be capable of being assembled, operated and dismantled in all ambient temperatures between -20°F and 120°F.
- C. The fabric material shall be designed to withstand a maximum temperature of 150°F when stored in packing containers.
- D. The structure shall be designed such that a crew of five persons working with a trained supervisor can unpack and assemble the basic structure at a rate of at least 2,000 square feet of surface area per day (35 square feet of structure surface area per person hour) on a prepared

surface. Disassembly shall be accomplished at a rate of at least 2,500 square feet of surface area per day by a similar crew.

E. The structure shall be capable of being erected upon various surfaces such as natural ground, asphalt or concrete and shall also be capable of accepting differential settlement up to 2-1/2% between truss positions.

#### 1.7 ENGINEERING DESIGN CRITERIA

A. The structure shall be designed in accordance with appropriate building code standards using methodology from ASCE 7-05. Primary and secondary framing shall comply with current issues of AISC, AISI, NEMA and ASTM specifications, as applicable. Structural members shall be designed using Allowable Stress Design (ASD) or Load Resistance Factored Design (LRFD) for the design loads given below. Appropriate safety factors to yield and ultimate shall be maintained. Wind load factors and coefficients used in design of structural members must be in accordance with ASCE 7-05 guidelines.

#### PART 2 - PRODUCTS

##### 2.1 BASIS OF DESIGN MANUFACTURER:

Iron Horse Structures 171 Kearsarge Rd. North Conway, NH. 03860

A. Architect approved equal complying with design intent and all performance and material requirements.

END OF SECTION 131210

TO ALL BIDDERS OF RECORD:

September 25, 2018

This Addendum forms a part of the Contract Documents and modifies the Drawings and Project Manual as hereinafter indicated.

**Specifications –**

1. Section 131210-1.4-A Exterior Dimension Table lists only "+/- 3"" for Width, Length, Wall Ht. and Peak Ht. values. Please confirm that the following is accurate:

Width: 80'-0" (+/- 3")  
Length: 100'-0" (+/- 3")  
Wall Ht.: 23'-1 11/32" (+/- 3")  
Peak Ht.: 53'-6" (+/- 3")

**Response:** This section does not apply. The specification section refers to the Frame Supported Membrane Structure. Tolerance for the frame and membrane will be within construction tolerances. Foundation and walls will be constructed within acceptable construction tolerances. Overall size of frame supported membrane structure will be confirmed during the shop drawing process.

2. Section 131210-1.4-B Clear Interior Volume does not provide the widths, heights or length that it is asking to be verified.

**Response:** This section does not apply. The frame supported membrane structure is new. There are no existing components. Section has been updated

3. Section 131210-1.4-C Design and Dimension speaks to an existing structural frame that's to be dismantled and relocated to a new site for reuse with installation of a new fabric cover. Are there any drawings or further details to accompany this section? This item cannot be priced or included due to lack of information.

**Response:** This section does not apply. The frame supported membrane structure is new. There are no existing components. Section has been updated

4. Section 131210-1.7 speaks to roof loads but the ground snow load value has been left blank. Please advise.

**Response:** Any applicable loads required for the membrane structure will be included during the shop drawing process. Section has been updated

**ATTACHMENT:** Updated Specification section 13 12 10.

Solicitation #7596669

DOT Contract 2018-CM-070 Portsmouth Salt Storage Facility

Section 0150000 Temporary Facilities and Controls

Para. 2.2.A Field Offices...Is it necessary to include a trailer furnished as described in these paragraphs (1 thru 5) with furniture and furnished conference room?

**RESPONSE: yes- please include all facilities and controls called out in the contract documents.**

Para. 3.2.L Electronic Communication Service...Is it necessary to include computer equipment as described in these paragraphs (1 thru 8)?

**RESPONSE: yes- please include all facilities and controls called out in the contract documents.**