



ADDENDUM NO. 3

Issue Date: January 18, 2019

Project Name: North County RO Plant Roof Replacement (IRC-1802)

Bid Number: 2019031

Bid Opening Date: January 23, 2019

This addendum is being released to revise the specifications and answer questions received to date. **The information and documents contained in this addendum are hereby incorporated in the invitation to bid.** This addendum must be acknowledged where indicated on the bid form, or the bid will be declared non-responsive.

Attachment:
Revised Specifications – Addendum 3

Questions and Answers

1. ROOFS A, B, & C ARE TO GET A BASE LAYER OF 1.5" ISO AND ½" DENS DECK PRIME CORRECT?
This is a correct interpretation of the specification. Please reference the specification for listed material grades and classes included with the original bid documents.
2. ROOF AREAS D & E ARE TO GET ¼"/FT. TAPERED ISO WITH AN MINIMUM STARTING THICKNESS OF 4" INCLUDING THE TAPERED ISO AND THEN A ½" DENS DECK PRIME CORRECT?
Please reference the attached Revised Specifications – Addendum 3 from REI Engineers, Inc. which clarifies insulation requirements.
3. ROOF AREA F IS TO GET 1.5" ¼"/FT. TAPERED ISO WITH A MINIMUM STARTING THICKNESS OF 1.5" INCLUDING THE TAPERED ISO AND A THEN A ½" DENS DECK PRIME CORRECT? THE SPEC SECTIONS SAYS 1.5" MAXIMUM THICKNESS FOR ROOF AREA F BUT IT ALSO STATES ¼"/FT. TAPERED ISO.
Please reference the attached Revised Specifications – Addendum 3 from REI Engineers, Inc. which clarifies insulation requirements.
4. WE ARE TO USE A FLEECE BACK MEMBRANE FULLY ADHERED CORRECT? THE SPEC SECTION SAYS FELT BACK MEMBRANE.
Both membrane backings are acceptable. Membrane backing terminology is manufacturer dependent.
5. We would like to submit Duro-last, for your consideration to be used as an equal or better per

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project specifications.

Alternate products will not be considered until after award. Submitted bids must use specifications provided in the bid documents.



ENGINEERS

DATE: January 17, 2019
FROM: REI Engineers
TO: Bidders of Record
REFERENCE: **Specification Update for Addendum No. 3**
Indian River County
Indian River County North RO Plant Roof Replacement
REI Project No. 018TPA-011

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated December 18, 2018 as noted below.

This addendum consists of one (1) page and the attached revised Specification Sections:

- Technical Section “01 11 00 Summary of Work”.
- Technical Section “07 22 16 Roof Insulation”.

CHANGES TO SPECIFICATIONS:

1. Replace Specification Section ““01 11 00 Summary of Work” with attached “01 11 00 Summary of Work (Revision No. 1)”. Specification section has been updated to remove references to tapered insulation.
2. Replace Specification Section ““07 22 16 Roof Insulation” with attached “07 22 16 Roof Insulation (Revision No. 1)”. Specification section has been updated to remove references to tapered insulation and clarify R-20 insulation requirements.

ALL OTHER REQUIREMENTS AND PROVISIONS OF THE BIDDING DOCUMENTS REMAIN UNCHANGED. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ON THE BID FORM. FAILURE TO DO SO MAY BE CAUSE FOR REJECTION OF THE BID.

END OF ADDENDUM

SECTION 01 11 00 (Revision No. 1)

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Name: Indian River County North RO Plant Roof Replacement
- B. Project Address: 7751 58th Street, Vero Beach, Florida, 32967
- C. Owner: Indian River County
- D. Engineer: The Contract Documents, dated December 18, 2018, were prepared by REI Engineers, Inc.
- E. This work includes the provision of all labor, material, equipment, supervision and administration to integrate the work outlined in this project manual into the total building system such that no leakage into the system occurs. In general, the scope of work in the **Base Bid** will include:
 - 1. **Roof Sections A, B & C:** (Approximately 11,713 square feet): Remove and dispose of the existing roof system including flashings and sheet metal down to the existing structural deck; resecure the existing edge nailers and gutters to remain in place; adhere polyisocyanurate insulation system, provide adhere gypsum coverboard, fully adhere felt-back thermoplastic single ply membrane along with flashings and accessories and accessories and provide sheet metal flashings and trim to provide a complete, watertight, 20-year warrantable roof assembly.
 - 2. **Roof Sections D & E:** (Approximately 6,785 square feet): Remove and dispose of the existing roof system including flashings and sheet metal down to the existing structural deck; resecure the existing edge nailers to remain in place; install wall scupper drains, repair wall at abandoned scupper locations; install new counter flashing; adhere polyisocyanurate insulation system, provide adhere gypsum coverboard, fully adhere felt-back thermoplastic single ply membrane along with flashings and accessories and accessories and provide sheet metal flashings and trim to provide a complete, watertight, 20-year warrantable roof assembly.
 - 3. **Roof Sections F:** (Approximately 1,465 square feet): Remove and dispose of the existing roof system including flashings and sheet metal down to the existing structural deck; resecure the existing edge nailers to remain in place; install wall scupper drains; repair wall at abandoned scupper locations; install new counter flashing; adhere polyisocyanurate insulation system, provide adhere gypsum coverboard, fully adhere felt-back thermoplastic single ply membrane along with flashings and accessories and provide sheet metal flashings and trim to provide a complete, watertight, 20-year warrantable roof assembly.
 - 4. Remove the existing lightning protection/grounding system prior to commencement of roof replacement work. Upon completion of flashing and sheet metal installation, all new or existing parts, components or materials will be reinstalled or installed to meet UL requirements at the time of initial installation.
- F. Asbestos Containing Roofing Materials (ACRM):
 - 1. It is the intention of these specifications that no asbestos bearing materials be incorporated into the work. In the event the contractor should determine

unanticipated asbestos bearing materials to be present in the existing building components, Contractor is to stop all work in the affected area, notify the Engineer and Owner, and provide temporary protection as required. Costs incurred, if any, due to the presence of hidden and/or unanticipated asbestos bearing materials will be authorized by Change Order to this contract.

- G. The contractor is responsible for all electrical, plumbing, mechanical, and other related trade work necessary to facilitate project operations. Contractor is responsible for re-locating any and all conduit, HVAC equipment, curbs, and/or plumbing necessary to comply with the requirements of these documents. All work shall conform to the requirements of the current Building Code approved in the State of the project location.
- H. General requirements and specific recommendations of the material manufacturers are included as part of these specifications. The manufacturers' specifications are the minimum standards required for the completed systems. Specific items listed herein may improve the standards required by the manufacturers and will take precedence where their compliance will not affect the manufacturers' guarantee or warranty provisions.

1.02 CONTRACT

- A. Project will be constructed under a single prime general construction contract.

1.03 SITE INVESTIGATION

- A. The Contractor acknowledges that he has satisfied himself as to the nature and location of the Work, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, ground water table or similar physical conditions at the site, the conformation and condition of the ground, the character, quality and quantity of surface and subsurface materials to be encountered, the character of equipment and facilities needed prior to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint himself with all the available information concerning these conditions will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. Field measurements shall be taken at the site by the Contractor to verify all data and conditions affected by the Work.

1.04 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: The Specifications use section numbers and titles to cross-reference Contract Documents. Sections in the Project Manual are in numeric sequence.; however, the sequence is incomplete. Consult the Table of Contents at the beginning of the Project Manual.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires.

Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

- a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01 11 00 (Revision No. 1)

SECTION 07 22 16 – Revision 1

ROOF INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Roof Sections A, B & C: Prepare existing concrete deck and adhere base layer insulation system. Then adhere attach gypsum overlayment.
- B. Roof Section D & E: Prepare existing concrete deck and adhere R-20 tapered insulation system. Then adhere attach gypsum overlayment.
- C. Roof Section F: Prepare existing concrete deck and adhere base layer insulation system. Then adhere attach gypsum overlayment.

1.02 RELATED DOCUMENTS

- | | | |
|----|----------------------------------|------------------|
| 1. | Rough Carpentry | Section 06 10 00 |
| 2. | Preparation for Reroofing | Section 07 01 50 |
| 3. | Thermoplastic Single Ply Roofing | Section 07 54 00 |

1.03 REFERENCES

- A. Refer to the following references for specification compliance:
 - 1. FBC Building Code
 - 2. National Roofing Contractors Association – NRCA
 - 3. FM Global
 - 4. Underwriters Laboratories, Inc. – UL
 - 5. ASHRAE Standard 90.1

1.04 DESCRIPTION

- A. R Value (Roof Sections D & E Only)
 - 1. The minimum continuous “R-value” for the above deck insulation system shall be 20 and in accordance with the current Energy Conservation Code and ASHRAE 90.1.
 - 2. R value to be based on Long-Term Thermal Resistance (LTTR) for polyisocyanurate insulation and manufacturer’s published data for all other insulation components, as tested in accordance with ASTM C177, C236, C518 or C976.

1.05 SUBMITTALS

- A. Refer to Section 01 33 00-Submittal Procedures for requirements.
- B. Manufacturer’s Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- C. Roof insulation plan from material supplier with minimum R-value for roof sections D & E.

- D. Latest edition of the Manufacturer's current material specifications and installation instructions.

1.06 QUALITY ASSURANCE

- A. Insulation to be installed in accordance with their respective manufacturer's requirements.
- B. Insulation(s) not bearing UL label at point of delivery shall be rejected.
- C. Insulation damaged or wetted before, during, or after installation shall be removed from the job site no later than the next working day from the day such damage or moisture contamination is noted.
- D. Wind Design: Install insulation system to meet the required wind uplift pressures as specified on contract drawings.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Material shall be delivered in the manufacturer's original sealed and labeled shrouds and in quantities to allow continuity application.
- B. Storage: Materials shall be stored out of direct exposure to the elements on pallets or dunnage at least 4 inches above ground level at site location acceptable to Owner.
 - 1. Utilize tarps that will completely cover materials to prevent moisture contamination. Remove or slit factory shrouds and/or visqueen; do not use these materials as tarps.
 - 2. Install vapor retarders under material storage areas located on the ground.
 - 3. Remove damaged or deteriorated materials from the job site.
- C. Handling: Material shall be handled in such a manner to preclude damage and contamination with moisture or foreign matter.

1.08 PROJECT CONDITIONS

- A. Insulation shall not be applied during precipitation. Contractor assumes all responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Contractor will take necessary action to restrict dust, asphalt, and debris from entering the structure.
- C. No more roofing will be removed than can be replaced with insulation, membrane and base flashings in the same day to create a watertight installation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Insulation Boards:
 - 1. Roof Insulation System (Roof Sections A, B & C):
 - a. Shall be rigid polyisocyanurate roof insulation board with factory applied

coated polymer bonded glass fiber mat facers on the top and bottom. Boards to comply with ASTM C1289 Type II, Class 2, Grade 2 and meet the following requirements:

- b. Curing time shall be 24 hours minimum, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
- c. Dimensional stability shall be 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
- d. Maximum permissible insulation board size for mechanical attachment is 4' x 8' and for foam adhesive and hot asphalt attachment is 4' x 4'. Field cutting of larger boards is not acceptable.
- e. Thickness shall be a minimum of 1.5 inches.

2. Roof Insulation System (Roof Sections D & E):

- a. Shall be rigid polyisocyanurate roof insulation board with factory applied coated polymer bonded glass fiber mat facers on the top and bottom. Boards to comply with ASTM C1289 Type II, Class 2, Grade 2 and meet the following requirements:
- b. Curing time shall be 24 hours minimum, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
- c. Dimensional stability shall be 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
- d. Board size shall be 4 foot by 4 foot.
- e. Minimum thickness shall be two layers of 2" insulation
- f. Fill Insulation: Shall be rigid polyisocyanurate meeting the above requirements with board size of 4 foot by 4 foot and thickness of 2".
- g. Crickets and Saddles: Shall be rigid polyisocyanurate meeting the above requirements with a board size of 4 foot by 4 foot and 1/2" per foot slope.

3. Roof Insulation System (Roof Section F):

- a. Shall be rigid polyisocyanurate roof insulation board with factory applied coated polymer bonded glass fiber mat facers on the top and bottom. Boards to comply with ASTM C1289 Type II, Class 2, Grade 2 and meet the following requirements:
- b. Curing time shall be 24 hours minimum, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
- c. Dimensional stability shall be 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
- d. Board size shall be 4 foot by 4 foot.
- e. Insulation thickness shall be 1.5 inches.
- f. Crickets and Saddles: Shall be rigid polyisocyanurate meeting the above requirements with a board size of 4 foot by 4 foot and 1/2" per foot slope.

4. Cover Board: Shall be cover board approved by roof system manufacturer. Board Size shall be 4' by 8' and minimum thickness shall be as listed below or as required by roof system manufacturer. Acceptable products include:

- a. Georgia Pacific 1/2" DensDeck Prime Roof Board
- 5. Tapered Edge Strip: Shall be a closed-cell polyisocyanurate foam core integrally bonded to non-asphaltic, fiber-reinforced organic felt or inorganic coated-glass facers. Fabricated with "zero edge" to provide transitions as required by field conditions:
 - a. Shall be installed at edges to make transitions as detailed in Contract Drawings.
 - b. Use 2" by 24" tapered edge strips to form crickets in front of curbs wider than 12" and to provide slope transition at the outside of drainage sumps.
 - c. Use 1.5" x 12".
- B. Insulation Attachment Materials:
 - 1. Foam Adhesive: Shall be a one or two part, VOC compliant, moisture-cured polyurethane foamable adhesive designed as roof insulation adhesive and approved by insulation manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Contractor to inspect substrate for soundness and notify Engineer in writing of any deficiencies.
- B. Commencement of work signifies Contractor's acceptance of substrate. Any defects in roofing work resulting from such accepted substrates shall be corrected to Owner's satisfaction at no additional expense.

3.02 PREPARATION

- A. General
 - 1. Roof deck to be dry and broomed clean of debris and foreign matter prior to installation of insulation system.

3.03 APPLICATION

- A. General
 - 1. Application shall be in accordance with the insulation/membrane manufacturer's instructions and these specifications.
 - 2. All insulation to be in full sheets, carefully fitted and pushed against adjoining sheets to form tight joints. Gaps exceeding 1/4 inch will not be accepted.
 - 3. Insulation and overlayment boards that must be cut to fit shall be saw cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation. Uneven or broken edges are not acceptable.
 - 4. Remove insulation dust and debris that develops during insulation cutting operations.
 - 5. Joints between successive and adjacent layers of insulation to be offset a minimum of six (6") inches.

6. Stagger joints of gypsum overlayment/overlayment insulation one (1') foot (vertically and laterally) to ensure that joints do not coincide with joints from the previous or adjacent layer.
7. Crickets, saddles and tapered edge strips shall be installed before the overlayment insulation.
8. Adhere cant strips and tapered edge strips at transitions, terminations and/or penetrations as detailed or required in ribbons of foam adhesive or a full mopping of hot asphalt to ensure smooth transitions are provided for the roof membrane and flashings.
9. Provide necessary modifications to insulation system or nailers at roof edges as required to ensure a flush and smooth transition is provided for the roof membrane and flashing.
10. Field modifications of insulation, tapered edge strips and cants shall be made by the Contractor where required to accommodate roof and flashing conditions, prevent water dams and ponding water. Ponding water at scuppers and cricket valleys shall not be accepted.
11. Provide necessary modifications to prevent standing water which is defined as 1/4" of water in a 4-square foot or larger area 24 hours or more after precipitation.

B. Self-Adhered Vapor Retarder

1. Install in accordance with manufacturer's recommendations.
2. Primer Application: The substrate must be clean, dry and free of dust, grease or other contaminants. Shake well before using. Apply to clean and dry surfaces with a paint brush, roller or sprayer. Application rates will vary depending on substrate. Vapor retarder must be installed on the same day as the primer application. Acceptable substrates for primer application include wood, concrete, gypsum boards and decks. Allow primer to dry completely.
3. Vapor Retarder Application Over Steel, Wood or Concrete Deck: Install over a clean and dry substrate. In concrete applications allow concrete to cure for at least 7 days. Do not install when it is raining, snowing, or on wet/humid surfaces. Install in temperatures 32-degree F (0 degree C) and above. The use of a primer is required on the following substrates: wood, concrete, lightweight concrete, gypsum boards and decks. On metal decks use a metal plate (6 x 42 inches - 15 x 106 cm) to support the membrane end lap between metal flutes ensuring a complete end lap seal.
 - a. Begin application at the bottom of the slope. Unroll vapor retarder onto the substrate without adhering for alignment. Overlap each preceding sheet by 3 inches (75 mm) lengthwise following the reference line and by 6 inches (150 mm) at each end. Stagger end laps by at least 12 inches (300 mm). Do not immediately remove the silicone release sheet.
 - b. Once aligned, peel back a portion of the silicone release sheet and press the membrane onto the substrate for initial adherence. Hold tight and peel back the release sheet by pulling diagonally.
 - c. Use a 75 lb. (34 kg) roller to press sheet down into the substrate including the laps. Finish by aligning the edge of the roller with the lower end of the side laps and rolling up the membrane. Do not cut the membrane to remove air bubbles trapped under the laps. Squeeze out air bubbles by pushing the roller to the edge of the laps.

C. Roof Crickets:

1. Install tapered insulation system to provide positive slope for complete roof drainage.
2. Crickets shall be sized as shown in the Contract Drawings. Modifications shall be provided to ensure positive slope and prevent standing water along the cricket valley.
 - a. Minimum length to width ratio shall be 2:1. Fabricate partial crickets with dimensions which would result in a minimum length to width ratio of 2:1 if they were extended to full size.
 - b. Unless otherwise noted, fabricate all crickets from tapered stock as required to provide the specified minimum slope. For example, when roof slope is indicated as 1/4" per foot minimum, fabricate crickets with slope of 1/2" per foot minimum.
 - c. Construct crickets on up slope side of all curbs to ensure positive drainage.
 - d. Install tapered edge strips at cricket edges to provide a smooth transition between the cricket and insulation system below.
3. Insulation boards may require mechanical fasteners and stress plates at slope transition of crickets to minimize bridging.

D. Roof Drainage:

1. Drainage sumps shall be installed as detailed.
2. The Contractor shall be responsible for carefully laying out the tapered insulation, sumps, drain bowls and scuppers to ensure the finished roof provides complete drainage with no standing water.
3. Contractor shall fabricate miter-cut sumps at scuppers to provide smooth transitions between the insulation system and the drains/scuppers.
4. Sumps shall ensure complete roof drainage and prevent water dams.
5. Contractor shall adjust insulation, drains and scuppers to ensure complete roof drainage and satisfactory substrates for membrane and flashings.
6. Drain sump components shall be fastened to the deck using specified insulation fasteners or adhesives.
7. Circular sumps and sumps that do not provide smooth transition or that create standing water at the drains shall be rejected and shall require removal and replacement.

E. Foam Adhesive Application

1. Adhesive beads shall be positioned and spaced at a minimum as indicated in the Contract Drawings. Comply with the requirements of the membrane manufacturer's tested assembly for adhesive spacing and positioning.
2. Adhesive beads shall be sized in accordance with the adhesive manufacturer's guidelines.
3. Insulation boards shall be placed onto the beads and immediately "walked" and/or "weighted" into place. Insulation boards must be placed into the adhesive in strict accordance with the adhesive manufacturer's guidelines.
4. Ensure full adhesion of all layers of insulation and take whatever steps necessary to achieve full adhesion, including but not limited to temporary ballasting of insulation until adhesive sets.

END OF SECTION 07 22 16 Revision 1