



**SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC NON-POTABLE WATER SYSTEM UPGRADES  
SAWS Job No. 13-6509  
SAWS Solicitation No. B-13-072-RA**

**ADDENDUM No. 4  
December 3, 2013**

**To Proposer of Record:**

This addendum, applicable to work referenced above, is an amendment to the Proposal documents and as such will be made a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the space provided in submitted copies of the proposal.

**REVISIONS TO TECHNICAL SPECIFICATIONS**

1. Section 15020, Ductile Iron Pipe, Clarification:

- “ All bolts and nuts for exposed piping including flanged joints shall be A307 Grade B.  
All bolts and nuts for buried restrained joints shall be 316 SS.”

2. Section 13125, Precast Concrete Building, REPLACE 1.1.D.E.F. with the following:

- “D. The building shall have finished interior minimum dimensions of 10-ft wide by 17-ft long with an interior minimum height of 10-ft-6-in.
- “E. The following minimum thicknesses shall apply. Concrete walls and roof shall be 4-in minimum thickness. Precast walls shall be insulated sandwich panel construction with smooth, form finish concrete interior. Solid precast walls will be accepted with an insulated interior consisting of wood studs, rigid foil backed foam, plywood and FRP paneling.
- “F. The precast walls and roof shall be supported by a cast-in-place slab.”

3. Section 13125, Precast Concrete Building, REPLACE 1.6.D. with the following:

- “D. The precast wall and roof components may be assembled at the factory or at the site.”

4. Section 13125, Precast Concrete Building, REPLACE 2.1.E.F.G.H.I. with the following:

- “E. Walls shall be analyzed by accepted engineering principles. The openings shall be completely framed as required to carry the full design loads to the supporting wall or slab. Additional reinforcing shall be provided around all openings.
- “F. Roof insulation shall be R22 Thermax insulation with ½” FRP paneling, or approved equal, surface mounted on the interior of the shelter.
- “G. Interior walls shall be provided with R11 Thermax insulation with ½” FRP paneling, or approved equal, with a fire protective barrier over, meeting building code requirements and providing an approved interior finish. Precast sandwich panel walls will also be accepted.
- “H. Roof and walls shall be cast separately and welded together.
- “I. Caulking: All joints between panels shall be caulked on the exterior and interior surface of the joints. Caulking shall be SIKAFLEX-IA elastic sealant or equal. Exterior caulk joint to be 3/8” x 3/8” square so that sides of joint are parallel for correct caulk adhesion. Back of joint to be taped with bond breaking tape to ensure adhesion of caulk to parallel sides of joint and not the back.”

5. Section 13125, Precast Concrete Building, ADD 2.2.B.:

- “B. The slab perimeter shall include a wall recess, except at the doorway, 7 ½-inches wide and 1 ½ -inches below the slab elevation to reduce moisture infiltration into the building.”

6. Section 13125, Precast Concrete Building, REPLACE 2.3.A. with the following:

- “A. The exterior finish shall be a 1/2-in architectural fluted fin finish. The roof shall have a minimum 2” overhang. The exterior shall be painted with a standard 10 year warranty masonry paint. The color shall be selected by the Owner from the manufacturers standard color cards at time of shop drawing approval.”

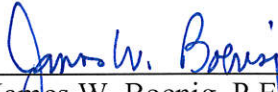
7. Section 13125, Precast Concrete Building, ADD 2.4.B. as 2<sup>nd</sup> sentence:

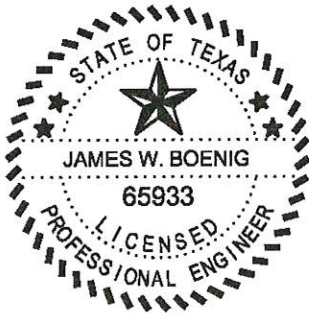
- “B. Door frames shall be cast in the wall rather than surface mounted.”

8. Section 13125, Precast Concrete Building, REPLACE 3.1.A. with the following:

- “A. The building shall be placed level and located as shown on the Drawings.”

The remainder of the bid documents remains unchanged.

  
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James W. Boenig, P.E.  
S&GE, LLC  
(f/k/a Sherfey Engineering SA, LLC)



**ACKNOWLEDGEMENT BY PROPOSER**

Each proposer is requested to acknowledge receipt of this Addendum No. 4 on the Price Proposal and by his/her signature affixed hereto and to file same as an attachment to his/her proposal.

The undersigned acknowledges receipt of this Addendum No. 4 and the proposal submitted herewith is in accordance with the information and stipulation set forth.

\_\_\_\_\_  
**Signature of Proposer**

\_\_\_\_\_  
**Date**

END OF ADDENDUM No. 4

**SECTION 13125**  
**PRECAST CONCRETE BUILDING**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment, and incidentals necessary and install the precast concrete building and appurtenances as shown on the Drawings and specified herein.
- B. All openings, sleeves, sealing elements, door, louver, and appurtenances in the precast building shall be part of the work of this Section. Provide smooth and textured ribbed exterior.
- C. The building shall be a prefabricated, reinforced, modular concrete building.
- D. The building shall have finished interior minimum dimensions of 10-ft wide by 17-ft long with an interior minimum height of 10-ft-6-in.
- E. The following minimum thicknesses shall apply. Concrete walls and roof shall be 4-in minimum thickness. Precast walls shall be insulated sandwich panel construction with smooth, form finish concrete interior. Solid precast walls will be accepted with an insulated interior consisting of wood studs, rigid foil backed foam, plywood and FRP paneling.
- F. The precast walls and roof shall be supported by a cast-in-place slab.

**1.2 RELATED WORK**

- A. Electrical work is included in Division 16.
- B. HVAC System as specified in Section 13126.

**1.3 SUBMITTALS**

- A. Submit, in accordance with Section 01330, complete sets of shop drawings showing details of fabrication and installation of all materials and equipment furnished.
- B. Shop drawings for the precast reinforced concrete building shall include dimensioning, details of construction, reinforcing, joints, opening and door location and detail, louver location and details, dampers, fans and other heating and ventilating equipment details. No materials shall be fabricated or shipped prior to approval of the shop drawings by the Engineer.
- C. Submit shop drawings and product data for all appurtenances including door and hardware, louver, fan, and HVAC equipment.
- D. Submit structural design calculations and drawings for the precast reinforced concrete building. The structural drawings and calculations shall be prepared and stamped by a professional engineer registered in the State of Texas.

**1.4 REFERENCE STANDARDS**

- A. American Concrete Institute (ACI).
  - 1. ACI 318 - Building Code Requirements for Structural Concrete.
  - 2. ACI 350 Environmental Engineering Concrete Structures
- B. American Society for Testing and Materials (ASTM).
  - 1. ASTM A526 - Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
- C. International Building Code (IBC) 2009 Edition as adopted by the City of San Antonio.

- D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

## **1.5 QUALITY ASSURANCE**

- A. The building covered by this Section is intended to be the product of a well established firm with experience in the manufacture of the particular structure specified.
- B. If required by the Engineer, the manufacturer shall provide satisfactory evidence of installations of similar structures which have been in service for a minimum of five years.
- C. The quality of all materials, the process of manufacture, and the finished structure shall be subject to inspection and approval by the Engineer, or other representative of the Owner. Such inspection may be made at the place of manufacture or after delivery, or at both places, and the materials shall be subject to rejection at any time on account of failure to meet any of the specified requirements even though samples may have been accepted as satisfactory at the place of manufacture. All materials which have been damaged after delivery will be rejected, and if already installed, shall be acceptably repaired, if permitted by the Engineer or removed and replaced, entirely at the Contractor's expense.

## **1.6 DELIVERY, SHIPPING, AND HANDLING**

- A. All handling, loading, shipping, lifting and installation of the building shall be performed in strict accordance with the manufacturer's written instructions, which shall accompany the building.
- B. The Contractor shall require the manufacturer to assume responsibility for packing to prevent transit and handling damage to the concrete.
- C. The building shall be provided with lifting lugs for moving the building.
- D. The precast wall and roof components may be assembled at the factory or at the site.

## **PART 2 - PRODUCTS**

### **2.1 PRECAST REINFORCED CONCRETE BUILDING**

- A. The building shall be of reinforced precast concrete building as manufactured by Old Castle Precast or CXT Precast Products. The minimum inside dimensions, headroom requirements and minimum thickness of concrete shall be as indicated in this Section.
- B. All precast concrete shall have a minimum compressive strength of 5000 psi at 28 days. Water shall be kept to a minimum to obtain concrete which is dense and watertight as possible. The maximum water content shall be 6 gallons per 94-lb sack and the minimum cement factor shall be 6.0 sacks per cubic yard.
- C. All reinforcement shall be as specified in Section 03200 except that for precast concrete the minimum cover shall be 3/4-in for walls and 1-1/2-in for slabs.
- D. Design Criteria
  - 1. The precast concrete building shall conform to ACI 318.
  - 2. The calculated flexural stress in reinforcement  $f_s$  shall be calculated as specified for normal environmental exposure areas.
  - 3. The precast reinforced concrete building elements shall be designed to support their own weight and an 80-lb/sq ft roof load plus a 10-lb/sq ft roof live load.
  - 4. Walls shall be designed for a wind pressure of 20-lb/sq ft.
  - 5. Seismic forces shall be determined in accordance with the latest edition of the State of Texas State Building Code.
  - 6. All members and connections providing resistance to lateral wind and/or seismic forces shall be designed and detailed. Metal connecting members, if used, shall be of stainless steel construction.

- E. Walls shall be analyzed by accepted engineering principles. The openings shall be completely framed as required to carry the full design loads to the supporting wall or slab. Additional reinforcing shall be provided around all openings.
- F. Roof insulation shall be R22 Thermax insulation with ½" FRP paneling, or approved equal, surface mounted on the interior of the shelter.
- G. Interior walls shall be provided with R11 Thermax insulation with ½" FRP paneling, or approved equal, with a fire protective barrier over, meeting building code requirements and providing an approved interior finish. Precast sandwich panel walls will also be accepted.
- H. Roof and walls shall be cast separately and welded together.
- I. Caulking: All joints between panels shall be caulked on the exterior and interior surface of the joints. Caulking shall be SIKAFLEX-IA elastic sealant or equal. Exterior caulk joint to be 3/8" x 3/8" square so that sides of joint are parallel for correct caulk adhesion. Back of joint to be taped with bond breaking tape to ensure adhesion of caulk to parallel sides of joint and not the back.

## **2.2 BUILDING FOUNDATION**

- A. Building concrete foundation shall be poured on-site as specified in the plans and technical specifications.
- B. The slab perimeter shall include a wall recess, except at the doorway, 7 ½-inches wide and 1 ½ - inches below the slab elevation to reduce moisture infiltration into the building.

## **2.3 BUILDING EXTERIOR**

- A. The exterior finish shall be a 1/2-in architectural fluted fin finish. The roof shall have a minimum 2" overhang. The exterior shall be painted with a standard 10 year warranty masonry paint. The color shall be selected by the Owner from the manufacturers standard color cards at time of shop drawing approval.

## **2.4 METAL DOOR AND FINISH HARDWARE**

- A. Hollow metal door shall be a 6-ft-0-in x 7-ft-0-in double door and shall be 1-3/4-in full flush as shown and as manufactured by Steelcraft Manufacturing Company; Eagle; Republic Steel; Ceco Steel or equal. Door may have visible edge seam. Steel for door material and appurtenances shall be formed of 16 gauge, cold-rolled leveled sheet steel conforming to ASTM A526, mill galvanized and heat treated to aid paint adhesion with residual zinc coating of 0.60 oz per sq. ft. Door shall be fabricated to receive all hardware specified. Hinge reinforcement shall be 3/16-in with closer and other hardware reinforcement 12 gauge, all galvanized. Door shall be reinforced, stiffened, sound deadened and insulated as approved to provide a "U" factor of 0.24 maximum. Invert bottom channel of door and fabricate to receive weatherstripping specified. Provide galvanized steel lock washers and nuts inside with bolts protruding through nut 1/8-in. Provide weather cap on door covering top edge of plate. Door shall swing out.
- B. Pressed Metal Frame for hollow metal door shall be 14 gauge cold-rolled steel, galvanized as for door, formed with integral stops and rabbets, and shall be made by the same manufacturer as the door. Door frames shall be cast in the wall rather than surface mounted. Frame shall be furnished as set up assembly with arc welded and ground smooth miters. The jambs shall be constructed to set on the finished slab. Provide concrete anchors where required, at both jambs. Provide an anchor at each jamb for each 2-ft-6-in of overall frame height, or fraction thereof. The frame shall be mortised, reinforced, drilled and tapped for hinged and strip plates, and other hardware specified, all of gauges as specified for doors. Frame shall be provided with a steel spreader temporarily attached to the feet of both jambs to serve as a brace during shipping, handling and installation.
- C. Anchors and fastening devices shall be galvanized steel.

- D. After fabrication repair all breaks caused on galvanized surfaces by cuts, welds, drilling, or scratches. Power-wire-brush damaged areas to bright metal. Remove weld flux, spatter and slag. Paint all areas so prepared with one coat of a zinc rich galvanize coating containing 95 percent metallic zinc by weight of dried film, with a total dry film thickness of 3 mils, using manufacturer's re-coat directions. Coating shall be applied within two hours after breaking the hot-dip film to prevent under oxidation. Extend re-coat work beyond the prepared areas.
- E. All steel components shall be cleaned and phosphated as required after fabrication to obtain paint bond and shall be primed with one coat of zinc rich primer, as specified above, compatible with finish paint system specified in Division 9.
- F. All hardware shall be best grade, entirely free from imperfections in manufacture and finish. Qualities, weights, and sizes specified herein are the minimum that will be accepted.
- G. Hardware Items:
  - 1. Hinges - Stanley, Stainless Steel, FBB199 6 x 4-1/2. Equals - Hager; McKinney or equal.
  - 2. Deadlock - Sargent as scheduled. 6 pin cylinder. Equals - Corbin; Yale or equal. Interior parts to have zinc-dichromate plating for corrosion resistance.
  - 3. Door Closer - Reading 6600 Series, primed compatibly to receive finish paints. Plastic covers - no prime or paint. Provide with cushion stop arm and holder. Head mount on frame. Equals - LCN4000 Series; Yale 40 Series or equal.
  - 4. Kick Plates - Stainless Steel, 8-in high x 0.050-in thick x 2-in less than width of single door.
  - 5. Weatherstripping - Zero No. 360 Mortised Door Bottom, with Zero 3000 Series head and jambs. Equals - Pemko; Reese or equal.
  - 6. Threshold - Zero No. 654 in aluminum. Equals - Pemko; Reese, or equal.
- H. Closer shall be sized as recommended by manufacturer and as approved for size and location of door served.
- I. Provide hinges with pins not removable when door is closed. Provide door with 1/2 pair hinges for each 2-ft-6-in or part thereof of door height.
- J. Hardware items 1, 2 and 4, shall be stainless steel and US32D finish.
- K. Furnish:
  - 1. Three Change Keys.
  - 2. Three Construction Keys.

## **2.5 LIGHTING**

- A. Electrical outlets and lighting fixtures shall be provided by the precast building manufacturer as shown on the plans.

## **2.6 HVAC SYSTEM**

- A. The HVAC System shall be provided by the precast building manufacturer as specified in Section 13126.

# **PART 3 - EXECUTION**

## **3.1 INSTALLATION**

- A. The building shall be placed level and located as shown on the Drawings.
- B. All steel surfaces to come in contact with concrete shall receive a protective coating of an approved heavy bitumastic troweling mastic applied in accordance with the manufacturer's instructions prior to installation.

**END OF SECTION**