

ADDENDUM NO. 2

August 30, 2023

Owner: City of Midwest City
Project Name: North Side Utilities Sanitary Sewer Project
Plummer Project No. 3435-003-01

This Addendum is a part of Contract and clarifies, corrects or modifies original Bid Documents, dated August 11, 2023. Acknowledge receipt of this addendum in the space provided on this form and include with your Bid Documents; failure to do so may subject bidder to disqualification.

A. Clarifications and Questions:

1. QUESTION: I noticed in the Prebid Notes it asks for references but does not include a form of any kind. Please specify what is needed and how you would like it formatted.
 - a. ANSWER: Please provide the following information for project references:
 - i. Project Name and Location
 - ii. Year Completed
 - iii. Short Description of the Project
 - iv. Initial Bid Cost and Final Project Cost
 - v. Contact Information for the Owner
 - vi. Project Schedule and whether or not the project was completed on schedule
2. QUESTION: Please provide information on the HVAC Unit in the Electrical Building
 - a. ANSWER: Specification 13 34 23.33 "PRECAST CONCRETE BUILDINGS" has been included in this addendum.
3. QUESTION: Plans Show PVC Coated Aluminum Conduit, in the past there has been delays on this. Would PVC Coated Rigid Steel be an acceptable Substitute?
 - a. ANSWER: PVC coated steel will not be allowed as a substitute for PVC coated aluminum conduit.
4. QUESTION: Can we use 4" posts for the 14' cantilever gate as per the manufacturer's recommendation?
 - a. ANSWER: 4" posts will be allowed. See the changes to Specification Section 32 31 19 "CHAIN-LINK FENCES AND GATES" below.

B. Specifications Revisions:

1. Section 13 34 23.33 "PRECAST CONCRETE BUILDINGS":
 - a. Add the Specification 13 34 23.33 "PRECAST CONCRETE BUILDINGS" in its entirety to the Project Specifications. It is labeled as Attachment #1 to this addendum.
2. Section 32 31 19 "CHAIN-LINK FENCES AND GATES":
 - a. Refer to Page 2, PART 2, Section 2.2.A.5.d Gate Posts. Delete "d" in its entirety and replace with the following:
 - "d. Gate Posts:
 - 1.) Gate Leaf Width, 14 feet or less: 4.000 inches
 - 2.) Gate Leaf Width, over 14-feet to 18-feet: 6.625 inches
 - 3.) Gate Leaf Width, over 18 feet to 24-feet: 8.625 inches"

C. Plan Revisions:

1. Sheet C-201, Lift Station Civil Site Work, Site and Yard Piping Plan:
 - a. Remove text in callout saying "28' SLIDING GATE" and replace with text saying "14' SLIDING GATE."
2. Sheet C-905, Civil Standard Details III:
 - a. Refer to Detail 242: Remove both references to a "28' Cantilever Rolling Gate" and replace with "14' Cantilever Rolling Gate".
 - b. Refer to Detail 243: Remove reference to "28'-0" Galvanized Chain Link Fence Gate Panel" and replace with "14'-0" Galvanized Chain Link Fence Gate Panel".

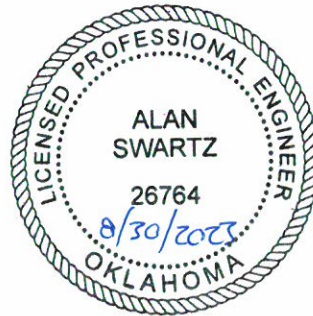
Attachments:

- Attachment #1: Section 13 34 23.33, PRECAST CONCRETE BUILDINGS

This addendum consists of 12 page(s)/sheet(s).



Approved by ENGINEER/ARCHITECT



Acknowledged by BIDDER

END OF SECTION

SECTION 13 34 23.33
PRECAST CONCRETE BUILDINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Factory built precast concrete building or pre-cast reinforced, concrete building to be field-assembled on-site. As designated pre-cast concrete building may be placed or erected on CONTRACTOR's poured in placed foundation or on pre-cast floor panels.
2. Heating, ventilation, and air conditioning.
3. Installation, startup, testing, and placing in service assistance.

1.2 REFERENCES

A. References: Following is a list of standards, which might be referenced in this Section:

1. American Concrete Institute (ACI): ACI 318 - Building Code Requirements for Structural Concrete
2. American Society of Civil Engineers: ASCE 7 – Building Code Requirement for Minimum Design Loads in Buildings and Other Structures
3. ASTM International, Inc. (ASTM):
 - a. A36 - Specification for Carbon Structural Steel
 - b. A496 - Standard Specification for Steel Wire, Deformed for Concrete Reinforcement
 - c. A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
 - d. A615 - Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement
 - e. A706 - Specification for Low Alloy Steel Deformed Bars for Concrete Reinforcement.
 - f. C150 - Portland Cement
 - g. C260 - Air-Entraining Admixtures for Concrete
 - h. C494 - Chemical Admixtures for Concrete
4. American Welding Society (AWS):
 - a. D1.1/D1.1M, "Structural Welding Code - Steel
 - b. D1.4, "Structural Welding Code - Reinforcing Steel
5. International Building Code (IBC):
6. National Fire Protection Association (NFPA): NFPA 70, National Electric Code.
7. Uniform Building Code (UBC):

1.3 DESIGN REQUIREMENTS AND CRITERIA

A. Fabrication Requirement: Provide one of the following types of buildings:

1. Factory-built pre-cast reinforced, concrete building in accordance with Drawings and Specifications, delivered to the Project site for installation by the CONTRACTOR.

Manufacturer shall provide all lifting cables and hardware required for the off-loading and installation of the building.

2. Pre-cast reinforced, concrete building to be field-assembled by manufacturer on-site.
- B. Design Criteria:
1. Structural:
 - a. Structural design calculations for the building shall be prepared and sealed by a registered Professional Engineer in the state where project is located.
 - b. Conform to following building codes: UBC, IBC, ACI-318, ASCE-7, and local and state design standards.
 2. Design Loads:
 - a. Floor Load: 250 PSF (If provided by manufacturer)
 - b. Roof Live Load: 65 PSF
 - c. Wind Load: 110 MPH, Exp "C"
 - d. Seismic Zone: Zone 4, Seismic Design Category C
 3. Dimensions:
 - a. Dimensions shown on Drawings are maximum outside dimensions. Wall thickness and interior dimensions shall be adjusted for structural/manufacturing requirements and to provide R-12 insulation rating.

1.4 SUBMITTALS

- A. Product Data: Provide construction details, material descriptions, dimensions of individual components and profiles, rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: Provide plans, elevations, sections, details, and attachments to other work.
 1. Detail building components; indicating dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 2. Specific design parameters for this project as specified herein.
 3. Layout, sizes, types and materials for anchor bolts to be furnished.
 4. Wiring Diagrams: For power, signal, and control wiring diagrams, including terminals and numbers.
 5. Building weights and lifting points.
- C. Operation and Maintenance Data: Provide in accordance with Division 1 Section 01 78 23 "Operation and Maintenance Data."
- D. Information Submittals:
 1. Manufacturer's Certification of Compliance.
 2. Special shipping, storage and protection, and handling instructions.
 3. Manufacturer's instructions for installation.
 4. Qualification Data: For manufacturer and manufacturer's representative, if applicable.
 5. Welding certificates.
 6. Factory tests.

7. Warranties and service agreements.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Precast concrete building shall be the product of a manufacturer having at least ten (10) U.S. installations of the building type being proposed, each with a minimum of 5 years of satisfactory service.
2. A list of similar installations shall be furnished with the shop drawing submittal, including names and telephone numbers of contacts.
3. Fabricated building manufactured in a PCI certified plant. Manufacturer shall have "Certification in Good Standing" for product groups B & C, under the PCI plant certification program.

B. Source Limitations: Precast building units of each type specified in this section shall be supplied by a single manufacturer. This does not require that all equipment be manufactured by a single manufacturer but does require that the manufacturer of the system shall be responsible for the complete system.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel" and D1.4, "Structural Welding Code - Reinforcing Steel."

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle and store equipment components in accordance with shop drawings and manufacturer's written instructions.

B. Additional Requirements:

1. Store building on dunnage placed at proper locations to prevent cracking, distortion, or any other physical damage.
2. Building provided with lifting fixtures for lifting and setting without incurring damage to walls or roof.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components that fail(s) in materials or workmanship within specified warranty period.

1. Warranty Period:

- a. Precast Building: Five (5) years from date of Substantial Completion.
- b. All Other Components: Two (2) years from date of Substantial Completion.

2. Cost for the removal, shipment, repair and installation by CONTRACTOR shall be included in warranty, as well as correction of defective work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AES Precast Company, Inc.
 - 2. EASI-SET™/EASI-SPAN™, Manufactured by Smith-Midland™ Corporation or Smith-Carolina™ Corporation.
 - 3. Lonestar Prestress Mfg., Inc.
 - 4. Oldcastle Precast, Inc.

2.2 MANUFACTURING

- A. Forms: Forms shall be of steel construction and designed for the fabrication of the specified unit. Tolerances of form construction shall be such that no leakage of concrete mixture occurs, and specified product dimensions are achieved. Forms shall be clean and free of excessive buildup, rust, tape, polystyrene, and other items.
- B. Reinforcement Steel:
 - 1. Reinforcing steel shall be placed conforming to the design requirements relative to the size, spacing, and location. All reinforcing bars shall be adequately tied at crossover points and lap joints to assure rigidity during handling of the cage and placing of the concrete.
 - 2. Reinforcing shall be supported properly and adequately chaired to provide the proper concrete cover and prevent maintained during concrete placement and consolidation.
- C. Embedded Items: Positioned at locations specified on the Drawings and as required by manufacturer. Inserts, weld plates, lifting devices, and other items to be cast in concrete shall be held rigidly in place so that they do not move during pouring operations.
- D. Concrete Placement:
 - 1. Deposited into the forms as near to its final location as practical; keeping free fall of the concrete to a minimum; and placed uniformly around the form.
 - 2. Concrete pouring operation should be continuous, making sure to avoid letting the previous placed concrete begin hardening.
 - 3. Concrete shall be consolidated in such a manner that segregation of the concrete is minimized.
 - 4. Concrete shall be consolidated by vibration, working the concrete completely around reinforcement, embedment, and into corners eliminating all air and stone pockets.
- E. Openings:
 - 1. Wall block-outs determined by equipment locations and as shown on Drawings but cannot exceed the structure's design limitations.
- F. Product Handling: Precast concrete building shall only be handled from the designed lifting locations. Care must be taken when stripping a product from its form to prevent damage.

2.3 CONCRETE

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type II or I/II. Supplement with the following:

2. Aggregates: Furnished from one source complying with ASTM C33.
 - a. Coarse Aggregate: ASTM C33, Class 3S, coarse aggregate or better, graded.
 - 1) Clean, uncoated, processed aggregate containing no clay, mud, loam, or other deleterious substances.
 - 2) Crushed stone, processed from natural rock or stone.
 - 3) Wash gravel, either natural or crushed. Use of slag and pit or bank run gravel is not permitted.
 - 4) Coarse Aggregate Size: Size to be ASTM C33, No. 8, 1/2" maximum well graded crushed stone.
 - b. Fine Aggregates: ASTM C33, fine aggregate, free of materials with deleterious reactivity to alkali in cement.
 - 1) Clean, sharp, natural sand free from loan, clay, lumps, or other deleterious substances. Dune sand, bank run sand and manufactured sand are not acceptable.
 3. Water: Clean and portable containing less than 500 ppm of chlorides.
- B. Admixtures:
1. General: Furnish from one manufacturer having characteristics compatible with each other and free of chlorides or other corrosive materials.
 2. Air-Entraining Admixture: ASTM C 260.
 3. Retarding Admixture: ASTM C 494, Type B
 4. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
 5. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
 6. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
 7. Plasticizing and Retarding Admixture: ASTM C1017, Type II.
 8. Superplasticizer: ASTM C494 type F or G. Concrete shall be placed at a slump of between 5 and 8 inches.
- C. Steel Reinforcement and Inserts:
1. Steel Reinforcement:
 - a. Welded Wire Fabric: ASTM A496 and A497.
 - b. Reinforcing Steel: ASTM A615 or A706 (for welded).
 2. Inserts and Embedded Metal:
 - a. Structural steel plates, angles, and related metal fabrications shall conform to ASTM A36.
 - b. Provide lifting inserts.
 3. Provide supports for reinforcement including chairs, bolster bars, and other devices for spacing and securing reinforcing in accordance with CRSI requirements. Legs of all supports in contact with exposed-to-view surfaces shall be plastic coated in accordance with CRSI, class I.
- D. Mix Designs:
1. Concrete mixes shall be developed in accordance with ACI 211.1; designed by a Professional Engineer or Certified Testing Lab to meet the specified strength

requirements. Maximum allowable water/cement ratio shall be 0.50.

2. Compressive Strength: 5000 psi at 28 days.
3. Air Content: Total air content percent by volume shall be 4% to 6%.

2.4 PANEL CONNECTIONS

A. Precast Concrete Building Assembled On-Site:

1. Panels shall be securely fastened together with 3/8-inch thick steel brackets. Steel shall be structural quality, hot-rolled carbon complying with ASTM A283, Grade C, hot dip galvanized after fabrication.
2. Fasteners: 1/2-inch diameter bolts, ASTM A307.
3. Cast-Place Anchors: Dayton-Superior No. F-63. Inserts for corner connections shall be bolted directly to form before casting panels.
4. Wall panels shall be connected to floor foundation with 4-inch expansion anchors.

2.5 ACCESSORIES

A. Doors, Frames and Door Hardware

1. Doors and Frames: Shall comply with Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames" (SDI-100), Level 4, 1 3/4" thickness, maximum duty and as herein scheduled and specified.
2. Doors shall be insulated with an inorganic, noncombustible material
3. Doors and frame shall be painted with one coat of rust inhibitor primer and an electrostatically applied, oven-cured urethane enamel, and shall conform to ANSI A250.3, dark brown, if no other color is selected during submittal review.
4. Door Hardware:
 - a. Door hardware shall include the following:
 - 1) Hydraulic heavy-duty door closer
 - 2) High frequency service, heavy duty full mortise ball bearing hinges, 316 stainless steel
 - 3) Escutcheon level design mortise lock, key retracts latch bolt, otherwise always locked
 - 4) Interchangeable core and key cylinder, Keying shall be as directed by the OWNER
 - 5) Emergency panic bar mortise lock exit device
 - 6) Latch Protector
 - 7) Door bottom shoe
 - 8) Door sweep, aluminum alloy channel with a type 6 soft brush insert.
 - 9) Aluminum drip cap with stainless steel screws
 - 10) Stainless steel kickplate
5. Schedule

Door Schedule

Building ID	Door ID	SDI Door Nomenclature	Door Size	Window Size
Electrical BLDG	D1	F	3'-0"w x 8'-0"	NA

B. Heating, Ventilation and Air Conditioning (HVAC)

1. Packaged Vertical, Wall-Mount Air-Conditioning Unit(s):

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1) Specific Systems
- 2) Industrial Climate Engineering - Custom Air Products & Services

b. Manufactured Units

- 1) Description: Factory-assembled and tested, self-contained, packaged wall-mount air conditioning units with electric refrigeration system and temperature controls; fully charged with refrigerant and filled with oil.
- 2) Cabinet: 0.052-inch (1.32-mm) thick, stainless steel.
 - a) Mounting: Wall with wall brackets.
 - b) Finish: Epoxy coating.
 - c) Access Door: Hinged door in cabinet for access to controls.
 - d) Wall Sleeves: Factory-furnished double-wall galvanized steel with integral insulation.
- 3) Refrigeration System: Direct-expansion coils with capillary restrictor, hermetically sealed scroll compressor with internal spring isolation, external isolation, permanent-split-capacitor motor, and overload protection. Provide corrosion-protection coating to both coils.
- 4) Indoor Fan: Centrifugal, with two-speed permanent-split-capacitor motor and positive-pressure ventilation damper with concealed manual operator.
- 5) Filters: MERV-8 Pleated
- 6) Condensate Drain: Drain pan and piping to direct condensate to a gravel pocket enclosed in precast handhole.
- 7) Outdoor Fan: Propeller type with separate permanent-split-capacitor motor.

c. Controls

- 1) Control Module: Factory controller in control cabinet
- 2) Control Panel Door: Lockable with key.
- 3) Low Ambient Control: Allows cooling-cycle operation to 20°F, outdoor-air temperature.
- 4) Fan-Cycle Switch: Allows fan operating mode to be either continuous or cycled on and off by thermostat.
- 5) Compressor Override: Manual switch prevents compressor operation.
- 6) Remote Temperature Monitoring: Remote-mounted, low-voltage temperature sensors.

- 7) Programmable Thermostat: Microcomputer based with adjustable setpoints.
- d. Schedule

Packaged Vertical, Wall-Mount Air-Conditioning Unit Schedule

Building ID	Unit ID	Nominal Cooling Capacity	Electric Heat KW	Electrical Voltage
Electrical BLDG	AC1	2 Tons	5	240V, 1PH.

C. Additional Accessories:

- 1. Smoke Detector: (1) Smoke detector.
- 2. Fire Extinguisher: (1) 5-lb CO2 fire extinguisher, wall mounted by each door.
- 3. Log Book: (1) Literature Holder, wall mounted.

2.6 CAULKING

- A. All joints between panels shall be caulked on the exterior and interior surface of the joint using SikaFlex-1A elastic sealant or equivalent.
- B. Precast Site Assembled Building: Exterior caulk joint to be 3/8-inch by 3/8-inch 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 to back.

2.7 FINISHES

- A. Exterior Walls:
 - 1. Chamfered; prepare concrete surface per coating supplier’s instructions and apply two coat epoxy coating system, 9.0 MDFT, tan color.
- B. Interior Walls and Ceiling: Finished with R-12 insulation with FRP laminated 3/4-inch wheat board or equivalent; color white or be of sandwich construction.
- C. Roofing: Provide smooth trowel finish, sealed with elastomeric coating system; color white.

2.8 ROOF INSULATION (FURRED AND INSTALLED ON UNDERSIDE OF ROOF PANELS):

- A. Polyisocyanurate rigid panel:
 - 1. ASTM-C1289 Type 1, Class II.
 - 2. Compressive strength: 25 psi minimum
 - 3. Density: 2 pcf nominal.
 - 4. Vapor transmission: 0.03 perm-IN maximum.
 - 5. Water absorption: 0.3 percent maximum.
 - 6. Thermal conductivity (k-value at 75 DegF): 0.14.
 - 7. Reflective foil facer both sides.
 - 8. Minimum thickness as noted.
- B. Flame spread: ASTM E84, not greater than 25.

2.9 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect assembled precast concrete building according to ACI, ASTM, IEEE, NEMA, and appropriate building codes standards.
 - 1. Concrete Testing:
 - a. As a minimum, concrete testing will be once per day. Testing will be performed by an ACI Certified Concrete Field Testing Technician Grade I.
 - b. Concrete testing will include the following:
 - 1) Slump Test per ASTM C143.
 - 2) Temperature per ASTM C1064.
 - 3) Obtain Concrete Cylinder Test Samples per ASTM C31 in accordance with ASTM C172.
 - 4) Air content percentage determined by ASTM C231.
 - c. Concrete Test Cylinders: Quantity of test cylinders will be a set of four with compressive strength tests performed at ages of 1 day, 7 days and 28 days (2 cylinders). After curing per ASTM C31, cylinders will be compression tested to failure per ASTM C39.
 - 2. Mill Certificates: Provide mill certificates for reinforcing steel, cement, and chemical admixtures to verify compliance with material specifications.
 - 3. Aggregate Testing: Provide latest coarse aggregate test results demonstrating compliance with ASTM C33.
- B. Product Inspection:
 - 1. Provide Manufacturer's Certification of Compliance indicating the product has been manufactured in compliance with the Drawings and Specifications. If repairs are required, they will be performed and re-inspected before the product is approved for shipment.
 - 2. Precast building installation for Projects constructed in Texas, CONTRACTOR shall comply with have Texas Department of Licensing and Regulation (TDLR) requirements; have an independent third party provide the required inspection; and complete TDLR Form 035ihb "Industrialized Housing and Building application for Installation Permit."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Install and adjust equipment in accordance with the Drawings, approved shop drawings, and the manufacturer's instructions. Do not operate the equipment until the installation is approved by the manufacturer's representative.
 - 1. Comply with the requirements of Division 1 Section 01700 "Execution Requirements".
 - 2. Store building on dunnage placed at the proper locations to prevent cracking, distortion, or any other physical damage.
- B. Buildings should be handled in such a manner at the jobsite such that they are not damaged from equipment and excessive stresses. Lift gear, rigging, etc. shall be as specified by the manufacturer.
- C. Examine and inspect precast concrete building upon arrival for compliance with Drawings and Specifications. Proceed with installation only after unsatisfactory conditions have been

corrected.

3.2 INSTALLATION

- A. Precast concrete building shall bear fully on a raised concrete foundation that is larger than the building footprint. Concrete foundation should be level to 1/8-inch in all directions. Provide positive drainage from the foundation. Floor foundation shall have a 1/2-inch step down around the entire perimeter to prevent water migration into the building along the bottom of the wall panels.
- B. Install building on the concrete foundation in accordance with manufacturer's instruction.

3.3 MANUFACTURERS' CERTIFICATES

- A. Provide equipment manufacturer's Certificate of Installation stating that the equipment is installed per the manufacturer's recommendations and in accordance with the Drawings and Specifications.

END OF SECTION