FAX TRANSMITTAL

Date: February 19, 2020

To: Plan Holders

Company: Contractors

Number of Pages: 15 (Including Cover)

From: Anika Ture - Contract Administration
      Telephone No. 918-596-9637
      Fax No. 918-699-3470
      Email – ature@cityoftulsa.org

RE: PROJECT NO. ES 2018-01 NORTHSIDE LIFT STATION AND FORCEMAIN

ADDENDUM NO. 2

Please fax or email a signed cover sheet 918-699-3470 to or ature@cityoftulsa.org as acknowledgement of receipt.

Thank you,

Signature ______________________  Company ______________________  Date ______________________
ADDENDUM NO. 2
TO
PROJECT NO. ES 2018-01
NORTHSIDE LIFT STATION AND FORCEMAIN

This Addendum No. 2 consisting of (9) items submitted by Holloway, Updike and Bellen, Inc. is hereby made a part of the Contract Documents to the same extent as though it were originally included therein, and shall supersede anything contained in the Plans and Specifications with which it might conflict. This entire Addendum shall be attached to the Index Sheet of the Contract Documents, recorded on page P-5 of the proposal, and submitted with bid. Failure to do so shall result in the bid being deemed non-responsive.

This Addendum No. 2 consists of the following:

1. The attached documents list the detail items that have been modified in Addendum No 2. These documents shall be inclusive and apply to this project.

All other provisions of the Plans and Specifications shall remain in full force and effect.

CITY OF TULSA

[Signature]

Paul D. Zachary, P.E.
City Engineer

[Signature]

HAS/AJ/AD/kr
ADDENDUM NO. 2
FEBRUARY 13, 2020
PROJECT NO. TMUA ES 2018-01
NORTHSIDE LIFT STATION IMPROVEMENTS

This Addendum No. 2, consisting of nine (9) items is hereby made a part of the Contract Documents to the same extent as though it were originally included therein, and shall supersede anything contained in the Plans and Specifications with which it might conflict. This Addendum shall be attached to the Index Sheet of the Contract Documents and submitted with bid. Failure to do so shall result in the bid being deemed non-responsive.

CONTRACT DOCUMENTS:

VOLUME II - SPECIFICATIONS:

1. SPECIFICATION SECTION 4.1 - MASONRY:
   Add the attached Specification Section 4.1 – Masonry to Volume II Specifications.

2. REFER TO SPECIFICATION SECTION 16.10 – PAD MOUNTED TRANSFORMER:
   a. In Section 2.04, Paragraph A and the following item to the list:
      14. Pad mounted transformer shall be provided with an external drain valve and an external nitrogen test port.

VOLUME III - CONSTRUCTION DRAWINGS:

3. REMOVE AND REPLACE THE ATTACHED DRAWINGS WITH REVISIONS INDICATED AS “ADDENDUM 2”:
   a. Drawing Sheet 22 – Northside Lift Station Plan
   b. Drawing Sheet 29 – Northside Lift Station Door, Window and Finish Schedule
   c. Drawing Sheet 32 – Northside Lift Station Details
   d. Drawing Sheet 43 – FEB Storage Building Improvements Plan Upper Level
4. REFER TO DRAWING SHEET 3, GENERAL NOTES:
   a. Add the following note:

   30. CONTRACTOR SHALL USE THE AREA NORTH AND EAST OF THE
       ADJACENT EXISTING STORM WATER PUMP STATION AS A
       CONSTRUCTION STAGING AREA. COORDINATE WITH OWNER AND
       MAINTAIN ACCESS TO THE STORM WATER PUMP STATION AT ALL
       TIMES.

5. REFER TO DRAWING SHEET 4, EQUIPMENT INFORMATION:
   a. In the Equipment Information Table delete items: “INFLUENT CUT-OFF
      KNIFE GATE” and “107-LFT1-KGV01” and replace with: “INFLUENT CUT-
      OFF SLIDE GATE” and “107-LFT1-SGT05”.

6. REFER TO DRAWING SHEETS 30 AND 31, NORTHSIDE LIFT STATION
   BUILDING ROOF FRAMING PLAN & BUILDING DETAILS:
   a. Delete all references to wood trusses, framing and plywood.
   b. Add following plan sheet notes to both sheets:

   1. CONTRACTOR TO PROVIDE PRE-ENGINEERED METAL TRUSS
      ROOFING SYSTEM. TRUSS COMPONENTS INCLUDING TRUSS
      MEMBERS, BOLTS, ANCHOR BOLTS AND FASTENERS SHALL BE
      HOT DIPPED GALVANIZED. CONTRACTOR SHALL PROVIDE DESIGN
      CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL
      ENGINEER REGISTERED IN THE STATE OF OKLAHOMA. DESIGN
      SHALL CONFORM TO THE 2015 INTERNATIONAL BUILDING CODE.
      DESIGN CALCULATIONS SHALL INCLUDE DESIGN THE ANCHOR
      BOLT SYSTEM TO THE TOP OF THE BLOCK WALL BOND BEAM AS
      PART OF THEIR DESIGN SERVICES.

   2. INTERIOR CEILING SHALL BE ½” X 4’ X 8’ WHITE PVC LINER
      PANELS SECURED WITH STAINLESS FASTENERS.

7. REFER TO DRAWING SHEET 39, LAGOON DECANT STRUCTURE PLAN AND
   PROFILE – SECTION DETAIL “A/39” NOTES:
   a. Replace Note 3 with the following:

   3. PROVIDE AND INSTALL A ½ -TON DAVIT CRANE WITH PEDESTAL
      BASE AND MANUAL HOIST. DAVIT CRANE SHALL BE THERM
      MODEL ENSIGN 1000 316 SS OR EQUAL. COORDINATE PEDESTAL
      LOCATION DURING CONSTRUCTION PRIOR TO INSTALLATION.
8. REFER TO DRAWING SHEET E6 ELECTRICAL LIFT STATION POWER PLAN & M3 MECHANICAL LIFT STATION HVAC PLAN:

   a. Move the MSCU-1 to along the Northside LS Building north wall between the double door landing and the by-pass vault. Update other plan sheets as applicable. Coordinate final placement with Owners Representative.

9. REFER TO DRAWING SHEET M3 - MECHANICAL LIFT STATION HVAC PLAN:

   a. Add the following plan note:

      1. CONTRACTOR SHALL PROVIDE THE SERVICES OF A THIRD PARTY TEST AND BALANCE REPORT VERIFYING ALL EQUIPMENT FAN SPEEDS AND AIRFLOWS PERFORM AND ARE ADJUSTED AS INDICATED IN DESIGN DRAWINGS. SUBMIT FINAL TEST AND BALANCE REPORT TO OWNER/ENGINEER UPON COMPLETION AND INCORPORATE INTO THE FINAL EQUIPMENT O&M MANUAL.

HOLLOWAY, UPDIKE AND BELLEN, INC.

[Signature]
Stephen Tolar, P.E.
Vice President

END OF ADDENDUM NO. 2
A. GENERAL

Work under this section includes providing all material, equipment and labor necessary to complete the masonry work shown on the drawings and specified herein.

B. SAMPLES

Before delivery to the site of any materials which are to be incorporated into the new project work, the following samples shall be submitted to the Engineer approval:

1. Concrete Block. Two (2) of each type proposed for use.
2. Anchors and Ties. Two (2) of each type proposed for use.
3. Split-faced Concrete Block. Two (2) of each type proposed for use.

Contractor shall deliver samples to the project site for part of the submittal process and the matching of existing facilities, as required.

C. MATERIALS

1. Concrete Block:

Lightweight concrete masonry units to be manufactured of expanded shale aggregate, and conforming to ASTM Designation C90 for Hollow Load Bearing Concrete Masonry Units, Grade N, Type I. Moisture absorption limitation of blocks shall be 25% of saturation during delivery and until time of installation. Units are to be cured in a moisture-controlled atmosphere or in an autoclave at normal pressure and temperature to comply with ASTM C90, Type I. All blocks exposed in the finished work shall have the same uniform texture. Provide special shapes as required for lintels, corners, jambs, sash sills and other special conditions.

2. Split-Faced Concrete Masonry shall generally be 8" x 16" x 4" thick units, with other thickness blocks and special shaped units, where indicated or required. Units shall be textured on exposed faces and exposed ends where indicated or required. Units shall be lightweight concrete masonry, ASTM C90 for Grade N - Type I. All units shall be autoclave cured for not less than 8 hours, under minimum pressure of 125 psi and 350°F temperature.

3. Reinforcement:

Masonry reinforcement shall be truss type equal to "Dur-O-Wal" as manufactured by Dur-O-Wal National, Inc., Cedar Rapids, Iowa; or "Bet-R-Wal" as manufactured by Southern Wire Mesh Company, Memphis, Tennessee; or equal.
Masonry reinforcement shall be used in the construction of all walls of lightweight concrete block, or any combination of masonry units.

4. Bond Beams:

Bond Beams shall be reinforced as detailed with ASTM A 615 grade 40 steel and filled with concrete of 3000 psi minimum compressive 28-day strength and maximum aggregate size 3/8". Do not use masonry mortar for this purpose. Provide standard channel shaped masonry units to form bond beams.

5. Sand:

Sand shall conform with ASTM Designation C144 and be well screened, clean, hard, sharp, siliceous, free from loam, silt or other impurities and composed of grains of varying sizes within the following limits:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent of Sand Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>100%</td>
</tr>
<tr>
<td>No. 8</td>
<td>95% - 100%</td>
</tr>
<tr>
<td>No. 16</td>
<td>60% - 100%</td>
</tr>
<tr>
<td>No. 3</td>
<td>35% - 70%</td>
</tr>
<tr>
<td>No. 50</td>
<td>15% - 35%</td>
</tr>
<tr>
<td>No. 100</td>
<td>2% - 15%</td>
</tr>
</tbody>
</table>

6. Cement:

Cement shall be standard brand Portland cement (ASTM C 150-Type I, II, or III), Masonry cement (ASTM C 91-Type II), as required and approved by the Engineer.

7. Hydrated Lime:

Lime shall conform to ASTM Designation C 207, Type S.

8. Water:

Water for mortar shall be clean, fresh, free from acid, alkali, sewage, or organic matter.

9. Wall Flashing:

"Waseco" Copper-Fabric Flashing, or approved equal, consisting of 3 oz. (unless otherwise indicated) per sq. ft. electro-sheet copper bonded to and between two
layers of coarsely woven asphalt saturated cotton fabric by means of asphalt mastic; or "Wasco Seal," or equal, non-reinforced poly-vinyl chloride sheet, Type 60, weighing approximately 60 oz. per sq. yd., .056" thick (unless otherwise indicated), at Contractor's option.

In corrosive buildings, structures or environments, 316 stainless steel flashing shall be provided. Galvanized or copper are not acceptable.

D. STORAGE AND HANDLING

Masonry units shall be handled in such manner as to prevent chipping and breakage. Storage piles, stacks, or bins shall be located to avoid or be protected from heavy or unnecessary traffic. Concrete block units shall be stored on platforms or in any other approved manner to protect these materials from contact with the soil. Concrete block units storage piles shall be protected from the weather by keeping them covered with tarpaulins, polyethylene sheeting, or other approved covering. During the process of erection, open joints or tops of masonry work shall be protected in like manner until the following day's work is begun.

E. MORTAR

Mortar shall be machine mixed and shall be turned over in the mixer until all ingredients are uniformly distributed throughout the mixer. The water content of the mortar shall be the minimum that will give a workable mix, except that "grouting mortar" shall be of a consistency to allow it to flow in and fill voids. All sand shall be measured as it is placed in the mixer. Retempered mortar or mortar which has started its initial set shall not be used.

Mortar for the various types of masonry work shall be proportioned by volume as follows:

Concrete Block Mortar in
Interior/Exterior Walls (Type S) 1 part Portland Cement

1/2 part hydrated lime or lime putty
41/2 parts sand
2 lbs. waterproofing per bag of cement

F. ERECTION

1. General:

No masonry shall be erected when the ambient temperature is below 32°F, on a rising temperature or below 40°F, on a falling temperature, or when there is probability of such a condition existing within 48 hours, unless special provisions are made for heating the materials and protecting the work from freezing. Use of admixtures or antifreeze agents will not be permitted. Such provisions shall be as
directed or approved by the Engineer. No frozen water or mortar shall be built upon. No masonry units having a film of water or frost on their surface shall be laid in the walls. All masonry shall be laid plumb, true to line, with level and accurately spaced course and reveals, with corners plumb and true, and with each course breaking joint with the course below except where otherwise indicated on the drawings. Bond shall be kept plumb throughout. Work required to be built in with the masonry, including anchors, wall plugs, flashing and accessories, shall be built in as the work progresses.

Unless otherwise shown on the drawings or specified, the space around built-in items shall be filled solid with masonry. Chases and pockets shall be built as shown on the drawings or directed by the Engineer. Chases and reglets shall be kept free from mortar or other debris. Cut masonry units with motor-driven saw designed to cut masonry with clean sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible.

2. Concrete Block:

Concrete masonry units shall be erected where shown on the drawings. Each course shall be solidly bedded in mortar, with vertical joints breaking half-way over the course below. Vertical joints shall be butted their entire length. Each course shall be bonded at corners and intersections, and shall be either bonded into or anchored to the adjacent construction with metal anchors spaced not over 16 inches on centers in both directions. Units terminating against beam or slab soffits shall be wedged tight with slate or clay tile wedges and the joint shall be slushed solidly with mortar. Jamb units shall be of shapes and sizes required to bond with wall units and shall be built in where shown on the drawings or as required. All joints are to be approximately 3/8" wide, and shall be formed with a concave jointer tool.

3. Install flashing where indicated for through wall, spandrel, foundation sill flashing, flashing under window sills and at heads of windows or openings, parapet or coping flashings, etc., according to manufacturer's instructions. Flashings for horizontal surfaces shall be laid in a slurry of fresh mortar and topped with a fresh full bed of mortar. Flashing for vertical surfaces shall be firmly adhered to the surface with mastic recommended by the flashing manufacturer. Copper-fabric flashing shall be spliced by splitting the two plies, lapping 4" and coating contact surfaces with plastic cement. Ends of PVC flashing shall lap a minimum of 6" and side laps a minimum of 4", all sealed with Wasco Type "R" cement and laps rolled with a heavy hand roller, until beads of cement appear at edges. Unless otherwise indicated, flashing shall start ½" from outside face of wall or toe of shelf angles, be carried through the wall, and turn up wall, spandrel or other vertical surface. Flashing shall drain to outside through
weep holes at 32" o.c., in masonry head joints of first course above flashing or by other means as indicated.

4. Reinforcing shall be installed in every other course (16" o.c. vertically) unless otherwise indicated. Type of masonry reinforcement used must be approved for each different specific application prior to installation. Reinforcement shall be 1" less than wall or partition thickness and where used in exterior walls shall be galvanized. Particular attention must be given to insure proper laps and corners to provide reinforcing continuity and to develop a minimum surface bond stress of 700 p.s.i. with mortar.

5. Stopping and Resuming Work:

Rake back one-half masonry unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly, and remove loose masonry units and mortar prior to laying fresh masonry.

G. CUTTING AND PATCHING

Cutting and patching of masonry work required to accommodate the work of others shall be performed by masonry mechanics.

H. LINTELS

Openings in concrete block walls and partitions shall have cast-in-place lintels with 8" bearing each side, or bond block masonry lintels, as scheduled, unless otherwise indicated. Precast lintels to match color and texture of adjacent block and shall be reinforced with one (1) #5 deformed bar top and bottom for each 4" thickness.

I. CURING

Rapid drying of masonry work will not be permitted. The Contractor shall keep the masonry moist, by whatever means necessary until the mortar has set thoroughly. The Contractor shall protect from freezing for three day by whatever means necessary.

J. POINTING AND CLEANING

At completion of the work, all holes in joints of exposed masonry surfaces shall be pointed by completely filling with mortar. After pointing all exposed masonry surfaces shall be wetted and then cleaned with soap and water, or an approved masonry cleaning solution which will not injure or stain, and applied with a stiff fiber brush leaving the masonry clean throughout. Immediately after cleaning the masonry, surfaces shall be rinsed down with clear water.
K. CLEAN-UP

Upon completion of all work on this section, promptly remove from the job site all mortar droppings, broken units, debris arising from the work of this section, and all tools and equipment of this section, leaving all areas in a neat and orderly condition to the approval of the Engineer.

L. PAINTING AND FINISHES

Painting shall be in accordance with painting section of the specifications. Block filler or grout rubbed finish shall be provide on walls planned for coating or paint.

M. EXPANSION STOPS AND JOINTS

Provide 1/4" vertical expansion joints at 20' to 24' on center. Provide backer rod and caulk joints.

END OF SECTION
## DOOR SCHEDULE

<table>
<thead>
<tr>
<th>MARK</th>
<th>LOCATION</th>
<th>QTY</th>
<th>EXTERIOR GRADE</th>
<th>JELLY</th>
<th>RH</th>
<th>DOOR/FRAMING REQUIREMENTS</th>
<th>HARDWARE</th>
<th>FRAME GAUGE</th>
<th>ANCHOR</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>O1</td>
<td>NORTHSIDE LS EXTERIOR</td>
<td>2</td>
<td>X</td>
<td>LH</td>
<td>3'-0&quot; - 1/2&quot;</td>
<td>0'-0&quot;</td>
<td>0'-0&quot;</td>
<td>0'-0&quot;</td>
<td>0'-0&quot;</td>
<td>Panic Bar, Night Latch, Closer</td>
</tr>
<tr>
<td>O2</td>
<td>NORTHSIDE LS</td>
<td>1</td>
<td>X</td>
<td>LH</td>
<td>6'-0&quot;</td>
<td>7'-0&quot;</td>
<td>0'-0&quot;</td>
<td>3'-0&quot;</td>
<td>0'-0&quot;</td>
<td>Panic Bar, Night Latch, Closer</td>
</tr>
<tr>
<td>O2</td>
<td>ELECTRICAL ROOM</td>
<td>1</td>
<td>X</td>
<td>LH</td>
<td>6'-0&quot;</td>
<td>7'-0&quot;</td>
<td>0'-0&quot;</td>
<td>3'-0&quot;</td>
<td>0'-0&quot;</td>
<td>Panic Bar</td>
</tr>
</tbody>
</table>

**DOOR NOTES:**
1. Package doors shall be 2426A and 2026B.
2. Exterior door shall include manual chain operation & double clo sset insulated door panels & interior locking latch.
3. All hinges striker & hardware to be lever action w/ stainless steel, unless grade 2, with loose key. All exterior door to city of Tulsa system office & personnel areas shall be stainless steel finish. All other areas of the door shall have solid stainless steel door hardware, firewall hinges & components.
4. All hardware to be NEA compliant.
5. All metal doors and frames will be painted. Color selection by owner. Refer to painting specifications for additional requirements.

**ROOF FINISH SCHEDULE**

<table>
<thead>
<tr>
<th>MARK</th>
<th>ROOM</th>
<th>WALLS</th>
<th>CEILING</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>LST</td>
<td>None</td>
<td>Painted</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>LST</td>
<td>None</td>
<td>Painted</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>LST</td>
<td>Painted</td>
<td>Painted</td>
<td>1</td>
</tr>
</tbody>
</table>

**FINISH NOTES:**
1. Paint shall be oil based satin finish.

**WINDOW SCHEDULE**

<table>
<thead>
<tr>
<th>MARK</th>
<th>ROOM</th>
<th>WIDTH</th>
<th>HEIGHT</th>
<th>FRAME MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>LS EXTERIOR WINDOWS</td>
<td>4'-0&quot;</td>
<td>0'-0&quot;</td>
<td>Bronze Aluminum</td>
</tr>
<tr>
<td>W2</td>
<td>LS EXTERIOR WINDOWS</td>
<td>4'-0&quot;</td>
<td>0'-0&quot;</td>
<td>Bronze Aluminum</td>
</tr>
<tr>
<td>W3</td>
<td>LS ELECTRICAL ROOM</td>
<td>3'-0&quot;</td>
<td>5'-0&quot;</td>
<td>Bronze Aluminum</td>
</tr>
</tbody>
</table>

**WINDOW NOTES:**
1. Coordinate window opening with CMU block walls.
2. Refer to structural drawings for CMU bond beam requirements.

**NOTES:**
1. Package doors shall be 2426A and 2026B.
2. Exterior door shall include manual chain operation & double clo sset insulated door panels & interior locking latch.
3. All hinges striker & hardware to be lever action w/ stainless steel, unless grade 2, with loose key. All exterior door to city of Tulsa system office & personnel areas shall be stainless steel finish. All other areas of the door shall have solid stainless steel door hardware, firewall hinges & components.

**ENGINEERING SERVICES DEPARTMENT**
CITY OF TULSA, OKLAHOMA

**NORTHSIDE LIFT STATION DOOR, WINDOW & FINISH SCHEDULE**

<table>
<thead>
<tr>
<th>MARK</th>
<th>DOOR</th>
<th>WINDOW</th>
<th>FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ENGINEERING SERVICES DEPARTMENT**
CITY OF TULSA, OKLAHOMA

**NORTHSIDE LIFT STATION AND FORCE MAIN**

<table>
<thead>
<tr>
<th>MARK</th>
<th>DOOR</th>
<th>WINDOW</th>
<th>FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>