ADDENDUM #2
January 8, 2021

PROJECT: ***USDA Sewer System Improvements – Contract A – WPCP Upgrades***

OWNER: City of Thomaston

BID DATE: Original Bid Date – Friday, January 8, 2021 at 2:00 PM
Revised Bid Date (Per Addendum #1) – Friday, January 22, 2021 at 2:00 PM

Please be advised the following has changed:

1. CLARIFICATIONS & MISCELLANEOUS INFORMATION

a. CONSTRUCTION PLANS, SHEET G0.0

- See revised sheet for corrected sheet index.

b. AERATOR REPLACEMENT - The Contractor shall remove & replace four(4) existing aeration units. Stainless steel bolts, epoxy anchorage (Red head equivalent) shall be utilized to affix new aeration equipment to the existing concrete pedestals, existing bolt holes shall be grouted flush. Bearing base plates shall be set with grout leveling. Existing wiring shall be disconnected and reused to connect to proposed motor junction boxes. If new or modified concrete pedestals are required for selected equivalent to fit (Lakeside), it shall be provided for in the contractors bid price. See Technical Specification 11500 for further requirements (added at end).

c. The deadline for submittal of an "or equal" package shall be changed to Friday, January 15, 2021 at 2:00 PM.

- All "or equal" submittal packages shall be submitted by a prime bidder following the bidder's review and acceptance that the proposed "or-equal" equipment conforms to the "Design-Based" equipment from an installation and construction perspective. "Design-Based" manufacturers are shown below in Bold. All manufacturers (named or "or-equal") must provide a product that matches performance, standard of materials, and the standard of quality established in the specifications for that equipment.

- In accordance with USDA guidance that requires the naming of two manufacturers and "or-equal" for all equipment, the following equipment manufacturers shall be considered acceptable. **"Design-Based" manufacturers are shown below in Bold.**

Clarifiers:

- **Evoqua Water Technologies – Pittsburgh, PA**
- Amwell – North Aurora, IL
- Or approved equal

Belt Press

- **BDP Industries – Greenwich, NY**
- Charter Machine Company – Metuchen, NJ
- Andritz
- Or approved equal

Aerators

- **Evoqua Water Technologies – Pittsburgh, PA**
- Lakeside Equipment Corporation – Bartlett, IL
- Or approved equal

Telescoping Valves

- **Amwell – North Aurora, IL**
- Waterman Industries – Exeter, CA
- Rodney Hunt – Houston, TX
- Or approved equal

Submersible Pumps

- Gorman Rupp – Mansfield, OH
- **Flygt – Rye Brook, NY**
- Or approved equal

Flow Meters

- **Mccrometer – Hemet, CA**
- Krohne Flow Meters
- Or approved equal

Weir Gates

- **Waterman Industries – Exeter, CA**
- Rodney Hunt – Houston, TX
- Or approved equal

Back Pressure Sustaining Valves

- **Ross Valve Mfg. Co. – Troy, NY**
- GA Industries – Mars, PA
- Or approved equal

Clarifier Weirs, Scum & Stamford Baffles

- **NEFCO Systems – Palm Beach Gardens, FL**
- Enduro Composites – Houston, TX
- Or approved equal

2. TECHNICAL SPECIFICATIONS, SECTION 11500

a. Technical Specification section 11500 has been added and in included and attached to this addendum.

All bidders shall acknowledge receipt of all addenda issued where indicated on the bid sheets. (SECTION 00410 – Bid Form, Page 2)

ATTENTION

BIDDERS ARE ADVISED THAT IT IS THEIR RESPONDIBILITY TO VERIFY THAT ANY AND ALL ADDENDA HAVE BEEN RECEIVED PROPR TO SUBMISSION OF THE BID. IN CASE ANY BIDDER FAILS TO ACKNOWLEDGE RECEIPT OF ANY SUCH ADDENDA IN THE SPACE PROVIDED ON THE BID FORM, THE BID WILL NEVERTHELESS BE CONSTURED AS THOUGH THE BIDDER HAS RECEIVED AND ACKNOWLEDGED ALL SUCH ADDENDA, AND THE SUBMISSION OF THE BID WILL CONSTITUTE ACKNOWLEDGEMENT AND RECEIPT OF SAME.

END ADDENDUM

USDA SEWER SYSTEM IMPROVEMENTS - CONTRACT A - WPCP UPGRADES

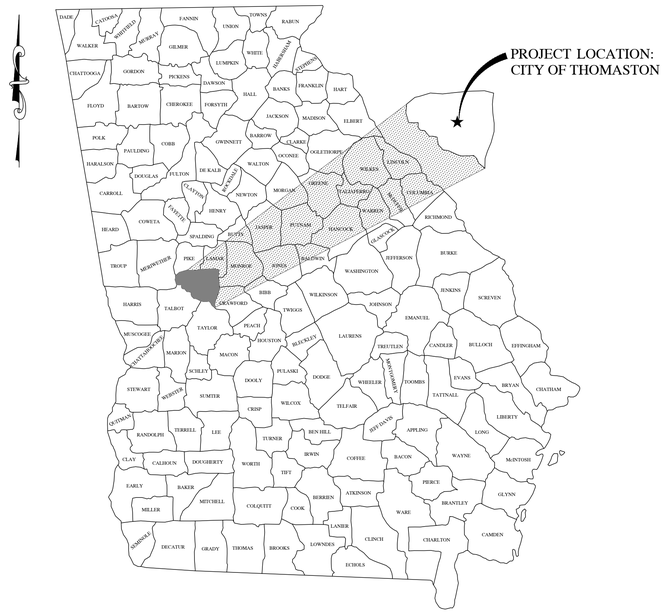
FOR THE

CITY OF THOMASTON

DECEMBER 2020

CITY COUNCIL

JOHN DAVID STALLINGS	MAYOR
DOUG HEAD	MAYOR PRO-TEM
LAKEITHA REEVES	COUNCIL MEMBER
JEFF MIDDLEBROOKS	COUNCIL MEMBER
RYAN TUCKER	COUNCIL MEMBER
DONALD M. GREATHOUSE	COUNCIL MEMBER
RUSSELL THOMPSON	CITY MANAGER



VICINITY MAP

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C1.1	TOWN BRANCH SITE PLAN
C1.2	TOWN BRANCH GRADING & DRAINAGE PLAN
C1.3	TOWN BRANCH STORM PROFILES
C2.0	TOWN BRANCH HYDRAULIC PROFILE
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ES1.0	EROSION & SEDIMENTATION CONTROL PLAN - BELL CREEK WPCP

ESG ENGINEERING
6400 Peake Rd
Macon, GA 31210
Ph: (478) 474-4996
Fax: (478) 474-5045

USDA SEWER SYSTEM IMPROVEMENTS - CONTRACT A
WPCP UPGRADES
FOR THE
CITY OF THOMASTON

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	01-08-2021

BID SET

GEORGIA REGISTERED NO. 28694 PROFESSIONAL ENGINEER ARTHUR B. GAVIN

DRAWN BY: WLN
CHECKED BY: ABG
DATE: DEC 2020
SCALE: NTS

CONTENT:
COVER SHEET

SHEET NO:
G0.0

Last Saved By: 032118
Plotted: 1/8/2021 3:10 PM
Drawing Path: Z:\Engineer Projects\T3000 - THOMASTON_CITY OF\T3000.115 USDA Sewer System Improvements\CAD\BASE\G0.0,G0.1,C1.0,C2.0,C2.1.dwg

SECTION 11500
OXIDATION DITCH AERATION

PART I. – GENERAL

1.01 SCOPE

A. Description of Work

1. Provide all labor, material and equipment to furnish and install the Orbal Aeration Equipment as specified herein.

2. This specification covers the general requirements for the design, fabrication and installation of four (4) oxidation ditch aeration units.

B. Work and Components Included (But Not Limited To)

1. The Manufacturer shall furnish the items listed below:

(a) Aeration disc assemblies with hardware

(b) Shaft assemblies

(c) Shaft-mounted drive assemblies

(d) Bearings with bearing base plates

(e) Shaft couplings

(f) Splash shields

2. Like items of equipment specified herein shall be the end products of one manufacturer in order to achieve standardization for operation, maintenance, spare parts and manufacturer's service.

C. Work Not Included

1. The following items are specified under other sections of these specifications:

(a) Concrete Formwork – Section 03100

(b) Concrete Reinforcement – Section 03200

(c) Cast-In-Place Concrete – Section 03300

(d) Grout (Non-shrink) – Section 03601

(e) Structural Steel – Section 05100

(f) Painting – Section 09900

1.02 ACCEPTABLE MANUFACTURERS:

A. The Contractor shall use one of the following Engineer approved Manufacturers:

1. Evoqua Water Technologies LLC, of Waukesha, WI

2. Lakeside Equipment Corporation of Bartlett, IL

3. or pre-qualified equal which meet or exceed the following requirements

B. Experience

1. The Manufacturer shall have at least twenty five (25) successful installations of the specified type equipment at different locations in the United States.

2. The Engineer may require evidence, in the form of operating records, from these installations to substantiate any claims concerning the ability of the equipment to perform as required.

1.03 SUBMITTALS

A. Operating instructions, manuals and shop drawings shall be submitted in accordance with Section _____01300_____.

B. Shop drawings shall be submitted to the Engineer for approval. Shop drawings shall include dimensional layouts, materials, details of appurtenances, anchoring, and installation and operation instructions. Fabrication and installation shall be in accordance with approved drawings.

C. Manufacturing certificate verifying aeration discs are fabricated in the United States.

D. Six (6) copies of the manufacturer's operation, installation and maintenance manual shall be submitted for approval prior to shipment of the equipment.

1.04 MANUFACTURER'S SERVICE REPRESENTATIVE

A. Manufacturer's Field Service for Equipment Installation

1. The Manufacturer's field service technician shall check the installation of the equipment, assist in the start-up, and provide training on the maintenance of the equipment. A minimum of three (3) trips, and a total of six (6) days at site shall be provided.

PART II. – PRODUCTS

2.01 EQUIPMENT

A. General

1. The aeration equipment shall consist of four (4) complete rotary aerator assemblies designed for operation at controlled disc submergence of 12 to 24 inches, so that the oxygen transfer rate and power requirements can be varied with the flow and treatment requirements.

B. Design Criteria

1. The rotary aerator assemblies to be furnished and installed shall be capable of delivering a SOR of 545 lb. O2/hr, minimum. The oxygen values are measured at Standard Operating Requirements of 68°F (20°C) and 30" Hg.

C. Disc Aeration Equipment

1. Total of four (4) 50 HP complete disc rotary aerator assemblies to replace the four existing brush rotors.

2. There shall be a provided total of 116 circular aeration discs, located as determined by the Manufacturer in order to provide the required oxygen requirements. The disc shall be 66” in diameter. 54” nominal diameter discs shall not be considered an alternate.

3. The discs shall be US manufactured. The disc shall be fabricated of 1/2" thick molded polystyrene structural foam, resistant to corrosive action of the mixed liquor being aerated. Each disc shall have a compound for ultra-violet stabilization. A multiplicity of cavities and raised protrusions shall be provided in the disc to cause entrained air to be dispersed in the mixed liquor. The raise protrusions shall be of cup shape with a trailing tail.

4. The aeration discs shall be firmly attached to the shafting by means of a shaft locating collar. This shaft locating collar shall be an integral part of

the aeration discs. To enable the individual discs to be attached, adjusted, or removed from the shafting without disassembling the shafting, discs shall be split into half sections held in position by bolts at the shaft. All bolts, washers and nuts shall be 304 stainless steel.

5. The disc manufacture/seller shall submit a certificate verifying manufacture location of the discs and ownership of the disc molds. If validation of owner ship is not of the manufacture/seller this shall be grounds for rejection.

6. Contractor shall be required to field install discs, and set disc location along the shaft as required meeting the specifications and the treatment process as determined by the Manufacturer and the Engineer.

D. Aerator Shafting - Torque Tubes

1. The central aerator torque tube shall be made from nominal 14" diameter steel pipe conforming to ASTM-A53, Grade B steel pipe specifications with a wall thickness of 0.688" and machined end flanges.

2. The shaft ends shall be one-piece ASTM-A536 (DI 66-45-12) cast ductile iron with machined flanges matching the end flanges of the torque tube, and with smaller diameter stub shafts machined to suit the bearings and shaft-mount drive assemblies. Each drive stub end shall have an extended shaft fitted with a key for mounting the drive assembly. (Each intermediate stub end shall also have an extended shaft fitted with a key for mounting the flexible shaft coupling between the intermediate support bearings.)

3. Grade 5 carbon steel bolts shall be used for the assembly of the tube and stub shafts.

4. Tubes to be blast cleaned per SSPC-SP10-63. Shafts shall have two (2) coats of Sherwin Williams, Dura-Plate 235 B67A235 Haze Gray. Shafts shall be supplied with manufacturer's standard paint to ensure proper fit-up between the aeration discs and the disc aerator shaft system which provides the grip required for this application.

5. Shafting shall be capable of withstanding all dead, live, and radial loads imposed on it.

E. Bearings

1. Each aerator shaft shall be supported by self-aligning, grease lubricated, roller bearings with cast iron pillow block housings. Housings shall be coated for corrosion protection according to this proposal. Each bearings

shall have double row spherical roller bearings with locking collars to secure the bearing to the shaft. Heavy duty contact seals shall be provided to insure positive sealing against contaminants. The seals shall be designed for operation in a moisture laden environment.

2. Minimum B-10 bearing life shall be 200,000 hours.

F. Bearing Base Plates

1. Base plates shall be provided for setting the pillow block bearings. Base plates must be set and grouted level by the contractor in accordance with approved general arrangement drawings. Bearing base plates shall be fabricated from commercial quality steel and coated for corrosion protection according to the specification specified herein. Stainless steel hardware shall be provided for securing the bearings to the base plates.

G. Remote Bearing and Automatic Lubrication System

1. A remote lubrication system will be provided for each bearing assembly. The system will provide convenient access for bearing lubrication by the plant operator.

2. The remote lubrication system will consist of tubing and an installation kit. Fit-up and installation is to be by the contractor.

3. A Memolub or equal automatic lubricator shall be installed which will deliver small, metered amount of grease over a period of time.

4. It is factory pre-lubricated with Mobilth 460.

Specification	
Operation:	Electro-Mechanical, positive displacement pump
Lubricant cartridge capacity:	240cc, 1 pt or 480cc , 2 pt (Replaceable)
Connection thread:	¼" NPT Male
Max operating pressure:	350psi (25 bar)
Temperature Range:	5°F to 120°F (-15°C to 50°C)
Output timing settings:	52 Adjustable settings
Power supply:	4.5VDC Alkaline battery pack
External On/Off Control	No
Remote Installation:	Up to 40 feet, single point*
Reusable:	Yes
Multi-Point:	2pt for a double bearing and 1pt for single bearing

H. Rotor shaft flexible coupling

1. Each disc aerator assembly consisting of two or more rotor shafts rotated with a common drive assembly shall have a flexible shaft coupling located between the intermediate pillow block support bearings. The coupling shall be designed to withstand all of the combined dead, live, torque, and dynamic radial loads.

2. The flexible shaft couplings shall include a non-lubricated polyurethane center element and shall be maintenance free. The coupling hubs shall be coated for corrosion protection according to the manufacturer's standards.

3. The flexible shaft coupling shall have the ability to be replaced in situ, without moving the hubs.

I. Direct Drive

1. The drive mechanism for each aerator assembly shall consist of a single speed motor and a shaft mounted AGMA Class II helical gear reducer sized for 24-hour continuous operation with allowance for moderate shock loads. The motor and reducer shall be fully suitable for outdoor service and exposure to the atmosphere encountered and shall be coated for corrosion protection according to the manufacturer’s standards.

2. An adjustable torque arm shall be provided to secure the reducer in position. The reducer shall be attached to the motor using a cast iron adapter. Each drive shall produce a maximum aerator speed of 52 rpm.

3. Motors shall be 50 HP, TEFC, 1800 RPM, 460-volt, 3 phase, 60 Hz, induction type, NEMA Design A or B, with Class F insulation and a 1.15 service factor. All motors shall be compatible with variable frequency drive (VFD) controller (inverter ready) and shall be premium efficiency design. Each motor shall be C-faced mounted to the drive

4. Gearbox will be furnished with an oil level float switch. The switch shall have a clear acrylic reservoir is used for remote indication of low liquid levels. When the liquid in the reservoir recedes to the low level, a magnet carried inside of the float actuates a reed switch. The magnetic reed switch is single pole-single throw for pilot control of the motor.

   Normally closed switch: Single Pole – Single Throw (S.P.S.T) contact shall open with descending level in the float chamber. The switch shall be interlocked to the gearbox motor through a rely in the Motor Control Center (MCC). This relay is provided by the MCC manufacturer.

   Area class: If installed in a classified area, an intrinsically safe barrier will

be required in the MCC. The is barrier is provided by the MCC Manufacturer.

J. Splash Shields

1. Splash shields shall be provided to prevent the wetting of bearings, and drive units from disc spray. Shields shall be constructed of galvanized steel.

2. Mounting brackets for the splash shields shall be fabricated from commercial quality steel and hot dip galvanized for corrosion protection. Components for the splash shields shall be shipped loose for field assembly and installation by the contractor in accordance with Manufacturer's instructions, and approved general arrangement drawings.

3. Neoprene seals shall be attached to the splash shields where the shaft passes through the plate.

K. Rotor Immersion Gauge

1. One (1) rotor immersion gauge shall be provided for each channel to indicate disc submergence levels. Gauge shall be anodized aluminum.

L. Anchors and Hardware

1. All anchor bolts shall be 304 stainless steel and furnished by the Manufacturer and set with proper projection by the Contractor in accordance with approved, certified drawings furnished by the Manufacturer.

2. All hardware shall be 304 stainless steel.

M. Painting

1. Bearing base plates shall be blast cleaned followed by one (1) coat of Tnemec Series FC20 primer. Finish painting shall be done in the field by the installing contractor after equipment installation and alignment.

2. Exposed machined surfaces - solvent wiped followed by one (1) coat of shop preservative.

3. Non ferrous materials stainless steel, aluminum, and galvanized surfaces unpainted.

4. Reducers, motors, base plates, guards and other related drive components shall be coated per the manufacturer's standards.

5. Bearings and couplings – Manufacturer’s standard coating.

PART III. – EXECUTION

3.01 INSTALLATION

A. The Contractor shall install the Orbal Aeration System as shown on the drawings.

B. Equipment shall be installed in accordance with GENERAL MECHANICAL REQUIREMENTS, and in accordance with the Manufacturer's recommendations to provide a complete installation.

C. The Contractor shall level, align shafting, grout beneath bearing base plates, install drives, aeration discs and accessories in accordance with the Manufacturer's drawings and installation manual.

END OF SECTION