CHATHAM COUNTY PURCHASING DEPARTMENT
ADDENDUM NO. 1 TO **ITB#21-0029-7**

FOR: Central Avenue Lift Station Rehabilitation Project

PLEASE SEE THE FOLLOWING ADDITIONS, CLARIFICATIONS AND/OR CHANGES:

1. **CHANGE:** Remove Specification 43 26 15 "Diesel-Driven Self Priming Centrifugal Pump" and replace with the attached specification 43 26 15 "Diesel-Driven Self Priming Centrifugal Pump Rev 1".

THE BID OPENING DATE REMAINS 2:00 PM APRIL 1, 2021.

BIDDER IS RESPONSIBLE FOR MAKING THE NECESSARY CHANGES.

March 11, 2021
DATE

MARGARET H. JOYNER
PURCHASING DIRECTOR
CHATHAM COUNTY

SECTION 43 26 15 – DIESEL-DRIVEN END SUCTION SELF-PRIMING CENTRIFUGAL PUMP

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Diesel Driven Self-Priming Centrifugal Wastewater Pump and Controls.

1.2 RELATED REQUIREMENTS

1. Division 26-Electrical
2. Anchorage in Concrete 03 20 00

1.3 SUBMITTALS

A. Submit shop drawings for pump assembly, showing materials, size, locations and elevations. Include details of connections and anchors in accordance with Section 03 20 00. The following data must be included in the submittal for each pump:

1. Head, capacity, efficiency and brake horsepower curves
2. Duty point
3. Motor horsepower, displacement and fuel economy
4. Complete pump construction details including weight
5. Sound-attenuation canopy details
6. External coating system details

1.4 QUALITY ASSURANCE

A. All pumping systems shall be of a design used in a similar operation with evidence provided by the contractor.

B. The complete pump set shall be factory tested by a certified quality technician. A test report shall be submitted to the Owner prior to acceptance.

1.5 DELIVERY STORAGE AND HANDLING

A. Manufacturer's representative must deliver pumps and accessories to the job site. Materials and equipment delivered to the site must be delivered and shipped with protective cover to protect the material and equipment from the weather until installation. Damaged materials and equipment will be returned and replaced at the manufacturer's representative expense prior to acceptance by the Owner and turning the equipment over to Installer.

1.6 PROJECT SITE CONDITIONS

A. The pump will be installed on a new, concrete pump pad as shown on the drawings and shall be plumbed to the submersible wet well and force main.

1.7 WARRANTY

A. The pump manufacturer shall warrant the pumps in writing against defects in workmanship and material for a period of two years or 5,000 hours of normal use, operation and service. The warranty shall be in printed form and apply to all similar units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering pumps which may be supplied for the work include, but are not limited to, the following:
1. Atlas Copco
2. Approved Equal

2.2 DIESEL DRIVEN BACK UP PUMP

A. Unit Design: The unit shall be a 10" x 8" dry priming, diaphragm-type assisted horizontal sewage pump driven by a water-cooled diesel engine. The pump shall be fully automatic, self-priming from dry conditions and capable of handling large volumes of air, water, and solids. The pump shall be a horizontal end suction, solid handling centrifugal type made from class 30 iron. The pump casing shall also be constructed of class 30 iron. The front cover and float priming chamber shall be on a hinged stainless-steel swing out assembly to provide safe and easy access to the impeller and wearplate area for cleaning and maintenance. The front cover will have four bolts to provide external adjustment of the wearplate to help maintain top performance efficiencies. The impeller shall be semi-open and constructed of ductile iron. The mechanical seal shall be a run dry type with an oil bath lubrication. The faces shall be tungsten carbide vs. silicon carbide mechanical type with Viton® elastomers. The pump shaft shall be stainless steel. The unit provided must meet the following flow conditions:

B. Performance and Design Criteria:
1. Shutoff Head: 240 FT
2. Duty Point: 3600 GPM @ 140 FT
3. Maximum Duty Point: 4,600 GPM @105 FT
4. HP:156 hp @ 1800 RPM

C. Engine: The engine shall be an EPA Tier IV Final approved, six-cylinder, four-cycle, water-cooled turbocharged diesel engine, John Deere model 6068HFC09 maximum or equal capable of producing 156 continuous duty horsepower at 1,800 rpm. The engine shall drive the pump via an elastomeric coupling. An industrial type battery shall be provided with the engine and have 180-amp hour rating and minimum 900 cold-cranking amps. A 12-volt starter and

alternator charging system shall be provided. A critical grade silencing muffler shall be provided. Governor shall be an electronic type. Engine speed shall be adjustable to operate the pump between maximum and minimum design operating speeds. Engine shall have safety shutdown switches for low oil pressure and high coolant temperature. A control panel shall be provided flush to the outside enclosure wall with an easy access viewing window. The control panel shall contain a minimum of the following: instrumentation and controls: throttle control, key switch, tachometer, hour meter, voltmeter, oil pressure gauge, vacuum gauge, pressure gauge and temperature gauge. The leads for the floats and transducer shall feed through a recessed and angled weatherproof opening with weatherproof rubber.

D. Frame/Fuel Tank: The pump set shall be mounted on a combination frame/fuel tank constructed of steel with a minimum fuel capacity of 140 US gallons. The frame must have a hot dipped galvanized steel base; the frame must be stackable. A centralized, recessed lifting eye shall be provided for lifting the entire pump set. The fuel tank shall have two clean-out ports. The fuel tank shall have a lockable cap.

E. Priming System: The priming system shall be fully automatic eliminating the need to pre-fill the pump casing with water to achieve initial prime. The priming system shall be of the diaphragm-type. The separation system shall not include any screens that can clog creating a maintenance nuisance and cause the priming system to fail. The diaphragm system shall produce 50-cfm output. It shall be driven off an auxiliary pulley from the engine drive assembly. A flapper type discharge check valve shall be provided to prevent pulling air through the discharge during priming. The priming system shall incorporate a manual valve to permit the pump to operate under positive suction head conditions. The priming system shall be capable of automatically priming the pump with a 25-foot static suction lift with no water in the pump or suction piping.

F. Painting: A minimum 3.15-mil thick layer of epoxy powder-type coating shall be applied to the entire pump set.

2.3 ACCESSORIES

A. Sound Enclosure:

A lockable sound enclosure shall be provided that mounts directly to the pump set. The sound enclosure shall cover the entire pump set including the pump, engine, pumping system, frame and fuel fill port. Sound enclosures that only cover the engine shall not be considered.

The enclosure shall reduce operating noise below 78 dBa measured at 7-meters at full speed. Units not meeting this requirement shall not be considered.

The enclosure shall be constructed of S235JR EN 10025-2 carbon steel. Fiberglass or plastic enclosures shall not be considered.

Enclosures that must be disassembled in order to facilitate routine maintenance shall not be considered. The enclosure shall contain two rear doors that permit complete access to the pump unit for routine maintenance without having to disconnect the suction or discharge piping. The suction and discharge flanges must be flush to the enclosure with weatherproof rubber surrounding the flanges. Other configurations are not acceptable.

B. Liquid Level Sensors:

Provide liquid level sensors consisting essentially of a contact switch encapsulated in corrosion resistant casing. The leads for the floats and transducer shall feed through a recessed and angled weatherproof opening in the enclosure with weatherproof rubber. The casing shall contain an eccentric weight, which is positioned to ensure that the mercury switch tilts in the proper direction. The entire float switch assembly shall be designed for use in raw sewage. Provide one float for high-level alarm and one float for low-level shut-off.

C. Controls:

An automatic engine controller shall be provided to start and stop the diesel engine in response to varying liquid levels via float switches. The automatic start-stop engine controller shall be part of the main instrument panel. Multiple control panels shall not be considered.

The system shall contain a safety back-up feature allowing the unit to be operated manually and retain safety shutdown protection in the event of automatic engine controller failure. The automatic engine controller shall be fully field programmable and contain pass code protection.

The automatic engine controller shall contain automatic and manual start modes. The automatic start-stop system shall contain two mechanically activated hermetically sealed liquid level control floats; one to turn the pump on and one to turn pump off.

Single float designs that are prone to frequent cycling leading to excessive component wear shall not be considered.

The floats shall be clearly marked, top or bottom, for easy installation into wet well. Floats shall be provided with a minimum 40-feet of cable. The two floats shall be connected together with a single pin terminal for easy connection to control box.

An emergency stop must be provided and located outside the canopy.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install per drawings and manufacturer's instructions

3.2 FIELD QUALITY CONTROL

Test Pumps as soon as possible once installation has occurred.

3.3 FIELD SERVICES

A. Manufacturer shall provide at least two onsite days for installation and startup assistance. Manufacturer shall inspect pump assemblies and accessories prior to installation. The manufacturer shall provide a representative on site to observe the installation of each pump

along with wiring of electrical controls to the pumps before startup. The manufacturer shall certify that the equipment has been installed properly prior to startup of the equipment. Pumps and accessories shall be installed in accordance with the manufacturer's instructions at the locations shown.

B. During startup a representative from the manufacturer and engineering firm must be onsite.

3.4 CLEANING

A. Remove all dirt, marks, and grime from pump prior to turnover

END OF SECTION 43 26 15