Bid Number 50 - 00117318

A ONE-TIME PURCHASE OF PUMPS WITH VFD'S AND SCADA RTU PANELS FOR CLEARY AND WEST NAPOLEON S. (F6-5) LIFT STATION FOR THE JEFFERSON PARISH DEPARTMENT OF SEWERAGE

BID DUE: September 1, 2016, 2:00 PM

ATTENTION VENDORS!!!

Please review all pages and respond accordingly, complying with all provisions in the technical specifications and Jefferson Parish Instructions for Bidders and General Terms and Conditions. All bids must be received in the Purchasing Department by the bid due date and time.

Jefferson Parish Purchasing Department
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General Government Building, Suite 4400
Gretna, LA 70053
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JEFFERSON PARISH

Department of Purchasing

Michael S. Yenni
Parish President

Brenda J. Campos
Director

CHANGES TO JEFFERSON PARISH BIDDING PROCEDURES

Bidders should carefully read and must respond accordingly per the requirements of the bid packages.

Effective August 1, 2016, please be advised:

- Affidavits (Non-Public Works Affidavit or Public Works Affidavit) – as you are aware, bidders are required to submit affidavits pursuant to LA public bid law and Jefferson Parish Code of Ordinances. Bidders must read each bid package to ensure compliance. Effective August 1st, ***affidavits are required with bid submission***. While copies are acceptable to include with bid submission, original affidavits are required upon contract execution. Original affidavits are encouraged with bid submission.
- Current W9 Forms and vendor applications may be submitted at any time; however, if your company is not registered and/or a current W-9 form is not on file, a current W-9 form must be supplied upon contract execution, should you be awarded a contract and/or issued a purchase order.
- Upon contract execution, successful bidder must continue producing final insurance certificates per standard Jefferson Parish insurance requirements. Proof of insurance is required for bidding purposes. Bidders must read the insurance requirements attachment included in each bid package for specific instructions.

These changes are pursuant Louisiana Public Bid Law more specifically, Act 406 of the 2016 Louisiana Legislative Regular Session. For the purposes of this communication, this change applies to Jefferson Parish Government bid solicitations only. For more information, please call Jefferson Parish Purchasing at 504-364-2678.

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JEFFERSON PARISH DEPARTMENT OF SEWERAGE

SPECIFICATIONS FOR DRY PIT SUBMERSIBLE

SOLIDS-HANDLING PUMPS AND CONTROL COMPONENTS

FOR SEWERAGE LIFT STATION F6-5 (Cleary & West Napoleon South, Metairie, LA)

PART 1 - GENERAL

1.01 WORK INCLUDED

A. GENERAL – This work prescribed herein pertains to pump stations up to and including 100 Hp, three phase, 480 VAC, and below for JEFFERSON PARISH Department of Sewerage. The pumps, controls, and accessories as shown on the plans shall be provided by a single source supplier to insure complete responsibility for an integrated pumping and controls solution. The equipment performance and material specifications shall be used to establish a level of quality suitable for the intended service. The control system shall be capable of being integrated into the JEFFERSON PARISH SCADA system if so desired and that work shall be performed by JEFFERSON PARISH personnel.

B. Furnish two (2), Dry-Pit Submersible Solids-Handling Pumps with integral electric submersible motors, cooled by closed loop cooling system, suction elbow and stand, and other accessories required for complete installation. Control Components shall also be furnished by the equipment supplier to insure single source responsibility for a fully functioning pump system. Pumps shall have suction and discharge sizes and motor ratings as noted in the performance table below.

C. The Bidder shall be responsible for supplying the equipment specified herein to meet or exceed these specifications. The equipment supplier shall be an Authorized Distributor of the proposed products and must be capable of servicing the products with repair service and parts availability. The equipment supplier must routinely stock complete pumps and parts to repair those units in their own facility. All equipment submitted for this specification shall meet or exceed all performance, service, and warranty requirements of this specification.

1.02 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. The pump manufacturer shall manufacture and stock units of similar type pumps.

2. All equipment submitted for this specification shall meet or exceed all performance, service, and warranty requirements.

3. The solid-handling pumps shall be suitable for domestic sewage, pre-treatment plant effluent, and possible storm water; and shall be designed and fully guaranteed for this use. The fluid temperature range shall be from 40 degrees to 104 degrees Fahrenheit.

1.03 TESTING

A. General

Each pump shall be shop tested and field tested, as specified hereinafter. All costs for the tests shall be borne by the Bidder. In the event any equipment fails to meet the performance values set forth in this specification, the equipment shall be modified and re-tested, or replaced with equipment that performs in accordance with this specification.

B. Shop Tests

Each pump and motor shall be performance tested as specified herein; all pumps shall be tested with motor cable to be supplied with the pumps. Three copies of certified test reports, including actual test records, shall be submitted and approved by the Engineer prior to shipment of the equipment.

Each pump shall be tested for performance at the factory to determine the head vs. capacity, motor total electrical power draw (KVA), and motor active electrical power draw (KW) for the full speed at which the pumps are specified and shown on a performance test curve, certified by a registered professional engineer, as continuous functions throughout the pump's performance range. Tests of models, prototypes, or similar units will not be accepted.

The motor and cable on each pump shall be tested for moisture content or insulation defects. After the test, the pump cable end shall be fitted with a shrink-fit rubber boot to protect it from moisture or water.

C. Field Tests

Equipment shall be field tested as specified hereinafter. Field testing shall be composed of preliminary tests and acceptance tests. The Bidder shall provide the services of authorized equipment supplier's representatives to conduct all field tests.

1. Preliminary tests shall be run on all pumps, motors, and control systems, to demonstrate that they are in proper working order.

2. Acceptance tests shall be run to demonstrate that the pumping units, motors, and control system meet the following requirements:

    a. The pumping units operate as specified without excessive noise, cavitation, vibration, and without overheating of the bearings.

    b. All automatic and manual controls function in accordance with the specified requirements.

1.04 PERFORMANCE

Performance Requirement	**DRY PIT SUBMERSIBLE PUMPS – 8" DISCHARGE MEDIUM HEAD**
Minimum Shutoff Head (ft.) – 60 Hz	110 Feet
Pump Rating (GPM/Ft/Hydraulic Efficiency) – at 60 Hz	2400 GPM @ 64 feet @ 81%
Maximum Allowable Specific Energy at Rating (KWHr/MG)	271 KWH/MG
Maximum NPSHRe at Either Rating (Ft.)	22 feet
Secondary Curve Point (GPM/Ft/Efficiency) – at or below 60 Hz	3050 GPM @ 52 feet TDH @ 78%
Maximum Allowable Specific Energy at Secondary Point (KWHr/MG)	231 KWH/MG
Min - Max Motor Rating (HP) at 40 degrees C	60-65Hp
Voltage/Cycle/Phase -	460v/60Hz/3
Motor Design Type	NEMA B – Inverter Duty Rated MG 1, Part 31 – FM Explosion Proof
Motor Service Factor	1.15
Motor Insulation Rating	H
Maximum Pump Speed (RPM)	1170 RPM
Maximum Rated Current (A)	72 Amps
Minimum Rated (FL) Power Factor (%)	0.86
Maximum Starting Current (A)	420 Amps
Pump Suction x Discharge Size (inches)	12 x 8 inch

*** - NOTE: Pump Suction and Discharge Must Be on Same Centerline.**

1.05 SUBMITTALS

A. Upon Request a complete assembly, foundation support, and installation drawings, together with detailed specifications and data covering pumps, motors, material used, parts, devices, and other accessories forming a part of the equipment furnished shall be submitted for approval in accordance with the procedure set forth in the General Conditions.

Data and specifications for the equipment shall include, but shall not be limited to the following:

a. Setting Plans. Setting plans shall include:

1. Anchor bolt layout
2. Anchor bolt dimensions
3. Outline dimensions and weights of pumps, bases, motors, and control enclosures.

b. Pumps. Data and drawings shall include:

1. Manufacturer, type, and model number.
2. Assembly drawing, nomenclature and material list, O&M manual, and parts list.
3. Type, manufacturer, model numbers, location, and spacing of bearings.

4. Impeller type, diameter, thru-let dimensions, shredder size, number of vanes, and identification number.

5. Complete motor performance data including: rating, voltage/phase/frequency; design type; service factor; insulation class; motor pole number; actual rotation speed when combined with the specified pumps; current, power factor, and active input power (KW) as a continuous function of shaft power from no load to at least 115 percent load, start (max. inrush) current; locked rotor current; NEC code letter; and motor torque as a continuous function through the motor start cycle from no rotation to synchronous speed.

6. Complete performance test curve(s) showing full range (shutoff to run-out) head vs. Capacity, NPSHR, hydraulic efficiency, motor active (KW) input power, motor total (KVA) input power (Based on measured current and voltage), and shaft power (BHP). See Section 1.03 - Shop Tests.

7. Location and description of Service Centers, and spare parts stock.

8. Warranty for the proposed equipment.

The manufacturer shall indicate, by arrows to points on the Q/H curves, limits recommended for stable operation, between which the pumps are to be operated to prevent surging, cavitation, and vibration. The stable operating range shall be as large as possible, and shall be based on actual hydraulic and mechanical characteristics of the units. It must meet the hydraulic performance requirements of the proposed system.

B. Successful bidder must furnish shop drawings and other pertinent data to the Engineer and obtain his approval before fabrication. The drawings shall be complete with respect to dimensions, materials of construction, wiring diagrams, and all supporting engineering information.

C. At least one month before installation of this equipment, submit four (4) copies of operation and maintenance instructions to the Engineer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle items of equipment in a manner that will prevent any damage.

B. Follow manufacturer's instructions for short term and long term storage, particularly with respect to proper lubricants and periodic rotation of shafts and bearing.

C. Touch up shop paint to prevent corrosion.

1.07 CO-ORDINATION

A. Co-ordinate this work with Jefferson Parish Department of Sewerage personnel to avoid interferences, and to provide for timely installation.

1.08 WARRANTY

A. See Section 5

PART 2 - PRODUCTS

2.01 Solids-Handling Pumps with Electric Submersible Motors

A. Furnish two (2) Dry-Pit Submersible Solids-Handling Pumps. Each pump shall be equipped with closed-loop cooling, inverter duty rated, submersible electric motors connected for operation on 460 volts, 3 phase, 60 hertz, and 4-wire service. Pumps shall be furnished with 60 feet of submersible cable (SUBCAB) suitable for submersible pump applications. The power cable shall be sized according to NEC and ICEA standards and also meet with P-MSHA Approval. Each pump shall be supplied with a mating 12 inch cast iron suction elbow, with the base plate and discharge of 8 inches drilled on an ANSI B16.1 bolt pattern.

1. Acceptable Manufacturers will be those who meet or exceed all performance, material, warranty, and service requirements of these specifications

2.02 PUMP DESIGN

A. The pumps for this application shall be designed to operate in a completely dry pit configuration without the need of an external cooling source except as noted. The motors and cable entry system shall be capable of complete submergence, and capable of handling a liquid temperature of at least 104 degrees Fahrenheit.

2.03 PUMP CONSTRUCTION

A. Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other casting irregularities. Higher density cast irons (Class 40 and above) with reduced vibration dampening capacity, will not be accepted for pump driver castings, such as stator and bearing housings. All exposed nuts or bolts shall be AISI type 316 stainless steel. All metal surfaces coming into contact with the pumped media, other than stainless steel and/or brass, shall be protected by a factory-applied spray coating of acrylic dispersion zinc phosphate primer, with a polyester resin paint finish on the exterior of the pump.

Sealing design shall incorporate metal-to-metal contact between machined surfaces. Pump/Motor unit mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton Rubber O-rings. Joint sealing will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific bolt torque limit.

Rectangular cross sectioned gaskets that require specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease, or other devices shall be used.

2.04 COOLING SYSTEM

A. Each unit shall be provided with an adequately designed integral cooling system that allows up to 15 motor starts per hour, with completely dry conditions, fully or partially-submerged motor on a continuous basis in an ambient 104 degree Fahrenheit environment, and in a standard available version, with no damage to motor windings, bearings, or drive shaft seals. The pump supplied under this specification must be suitable for continuous operation; under, all noted conditions. The cooling system shall be a glycol cooled, stainless steel cooling jacket system, providing for dissipation of motor heat, regardless of the type of pump installation.

2.05 CABLE ENTRY SEAL

A. The cable entry seal design must provide strain relief and preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of at least two elastomer grommets, flanked by washers, all having a close tolerance fit against the cable outside diameter; the cable entry inside diameter; compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing the cable, when necessary, using the same entry seal. Epoxies, silicones, or other secondary sealing systems shall not be accepted.

The cable junction chamber must be sealed off from the stator housing, and shall allow connection of the motor leads to the power cable, in an isolated sealing chamber.

2.06 MOTOR

A. Each pump shall be driven by a vertical, submersible squirrel cage induction motor, shell type NEMA B design, housed in a dry watertight chamber. The motor and the pump shall be produced by the same manufacturer.

The stator winding shall be insulated with moisture resistant Class H insulation, rated for a temperature of 180° Celsius. The stator shall be insulated by the trickle impregnation method, using Class H monomer-free polyester resin, resulting in a winding fill factor of at least 95%. The stator shall be heat shrink fitted into the cast iron stator housing. The use of multiple step dip and bake type stator insulation process will not be accepted. The use of bolts, pins, screws, or other fastening devices used to locate or hold the stator and that penetrate the stator housing will not be accepted. The motor shall be designed for continuous duty, while handling pumped media of up to 104 degrees Fahrenheit. The motor shall be capable of withstanding at least 10 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of aluminum.

Three thermal switches shall be embedded in the stator end coils, one per phase winding, to monitor the stator temperature. These thermal switches shall be used in conjunction with, and supplemental to, external motor overload protection, and shall be connected to the motor control panel.

The motor service factor (combined effect of voltage, frequency, viscosity, and specific gravity) shall be 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for continuous operation in a 40° Celsius ambient environment, and shall have a NEMA Class B maximum operating temperature rise of 80° Celsius. A motor performance curve shall be provided upon request, showing torque as a function of speed and current, power factor, speed, input power in KW, and efficiency as a function of shaft power.

The motor shall be sized to be non-overloading when the pump is operated at any point on the pump performance characteristic curve.

Pump and motor shaft shall be a solid continuous unit. The pump shaft is an extension of the motor shaft. Couplings and shafts incorporating sleeves will not be accepted. The pump shaft shall be completely isolated from the pumped liquid.

Pump motor power cables installed shall be oil resistant chloroprene rubber jacketed, type SPC multi-conductor cable, suitable for submersible pump applications and heavy mechanical stresses. The power cable shall also be sized according to NEC and ICEA standards and also have P-MSHA approval. The total length of each cable shall be a minimum of 60 feet long. Power cables shall each include a ground check conductor.

Motors shall be Inverter Duty Rated in accordance with NEMA MG-1, Part 31, and shall be rated by Factory Mutual for NEC Class I, Division I, Group C & D Locations.

2.07 BEARINGS

A. The integrated pump/motor shaft shall rotate on two (2) sealed and permanently lubricated bearings. External bearing lubrication ports, which allow bearing contamination and over-packing, will not be accepted. The upper bearing, providing for radial thrust, shall be a single row, roller, or ball bearing. The lower bearing shall consist of one double row angular contact bearing for combined axial and radial loads. Minimum L_{10} bearing life shall be 50,000 hours at any usable portion of the pump curve.

2.08 MECHANICAL SEAL

A. Each pump shall be provided with dual tandem mechanical shaft seal system comprising two totally independent seal assemblies. The seals shall operate in a seal lubricant buffer chamber that hydro-dynamically lubricates the lapped seal faces at a constant rate. The inner seal, located between the lubricant buffer chamber and the stator housing, shall contain one stationary and one positively driven rotating ring, functioning as an independent secondary barrier between the pumped liquid and the stator housing. Both inner seal faces shall be corrosion resistant Tungsten Carbide (WCCR). The outer of the tandem set of seals functions as the primary barrier between the pumped liquid and the stator housing. This set shall consist of a stationary ring and a positively driven rotating ring, both of which shall be corrosion resistant WCCR.

Each interface shall be held in contact by its own spring system, supplemented by external liquid pressures. The seals shall require neither maintenance nor adjustment, but shall be easily inspected and replaceable. The lower (outer) seal shall not bear on the impeller, and shall remain fixed upon impeller removal.

<u>Upon request of the Engineer or Jefferson Parish, as a requirement for equipment acceptance on this project, the pump manufacturer shall provide dry-run/leakage test procedures and data for the specific pump shaft seal system on pumps proposed for this project</u>.

Shaft seals without positively driven rotating members, or conventional double mechanical seals with a common single or double spring acting between the upper and lower units, requiring a substantial pressure differential to offset external pressure and effect sealing, will not accepted, nor considered equal to the dual independent seal system specified. Cartridge-type seals comprising a single

rotating element sandwiched between dual stationary elements will not be considered a dual tandem seal system and will not be accepted. Seals shall not be of the uni-directional type, but capable of dual rotation with no damage. The shaft sealing system shall be capable of withstanding volute pressures up to 1.5 times pump shutoff head. No seal damage shall result from operating the pumping unit in its liquid environment, from running pump dry, or from reverse pump operation. The seal system shall not rely upon the pumped media for lubrication.

Each pump shall be provided with a seal buffer chamber containing FDA-approved, non-toxic lubricant for the shaft sealing system. Petroleum-based oil in the buffer chamber will not be accepted. The buffer chamber shall be designed to ensure that air is left in the buffer chamber to absorb the expansion of the lubricant due to temperature variations. The drain and inspection plug, with positive anti-leak seal, shall be easily accessible from the outside.

2.09 PUMP SHAFT

A. The pump and motor shaft shall be a single piece unit. The pump shaft is an extension of the motor shaft. Shafts using mechanical couplings will not be accepted. The shaft shall be stainless steel – ASTM A479 S43100-T. Shaft sleeves will not be accepted.

2.10 IMPELLER

A. The impeller shall be of Hi-Chrome Iron, ASTM A532 (Alloy III A) 25% dynamically balanced, semi-open, multi-vane, back swept, screw-shaped, non-clog design. The impeller leading edges shall be mechanically self-cleaned automatically upon each rotation as they pass across a spiral groove located on the volute suction. The screw-shaped leading edges of the impeller shall be capable of handling solids, fibrous materials, heavy sludge, and other matter normally found in back wash water. The impeller to volute clearance shall be readily adjustable by the means of a single trim screw. The Impeller shall be locked to the shaft, held by an impeller bolt, and treated with a corrosion inhibitor. The design stated above shall be used, with a Brinnell hardness of at least 500.

Mass moment of inertia calculations of the rotating assembly shall be provided by the pump manufacturer upon request.

2.11 VOLUTE

A. The pump volute shall be a single piece gray cast iron, ASTM A-48, Class 35B, non-concentric design with smooth passages of sufficient size to pass any solids that may enter the impeller. Minimum discharge size shall be 10 inches. The volute shall have integral spiral-shaped, sharp-edged insert ring that is pressed into the suction cover of the volute. The spiral groove(s) of the insert ring shall provide the sharp edge(s) across which each impeller vane leading edge shall cross during rotation so to remain unobstructed. The insert ring shall provide effective sealing between the multi-vane semi-open impeller and the volute. It shall be constructed of ASTM A532 (Alloy III A) 25% – Hi-Chrome Iron.

2.12 PROTECTION

A. All stators shall incorporate thermal switches in series to monitor the temperature of each phase winding. At 140° Celsius, the thermal switches shall open, stop the motor, and activate an alarm.

USE OF VOLTAGE SENSITIVE SOLID STATE SENSORS AND TRIP TEMPERATURE ABOVE 140° CELSIUS WILL NOT BE ACCEPTED.

B. Each pump/motor unit shall be provided with a stator leakage sensor that will sense water intrusion into the motor housing, in the event of seal failure or cable entry failure.

PART 3 - EXECUTION

3.01 INSPECTION

A. Inspect all equipment upon arrival at job site and prior to installation. Notify manufacturer of any damage and/or shortage.

3.02 PREPARATION

A. Make corrections and/or repairs as required for items inspected and found deficient.

3.03 FIELD QUALITY CONTROL

A. The manufacturer's field engineer or representative shall inspect and check the installation after erection, and be on hand for initial start-up of the equipment for a period of at least three days. He shall also instruct Department of Sewerage personnel in the operation and maintenance of the system.

3.04 ADJUSTING AND CLEANING

A. Adjust equipment as required and within limits of manufacturer's instructions for proper alignment.

B. Apply proper type and quantity of lubricants for short term storage or start-up operation, as applicable.

C. Clean equipment of any foreign matter or substances.

D. Field paint all components to be painted, in accordance with manufacturers recommendations.

3.05 PROTECTION

A. After painting, protect the equipment from any damage by work of other trades. Repair any damage that nevertheless occurs.

PART 4 – DUPLEX CONTROL PANEL COMPONENTS

4.01 SCOPE

A. The Pump Supplier shall provide components for a Triplex Pump Control system that shall control 3 pumps in an energy conservation mode of operation. The system shall be capable of adapting to changing inflow conditions and shall automatically regulate pumped outflow, based on inflow conditions, and shall seek an optimal energy efficiency for the pump station. This shall be accomplished by either providing a Programmable Logic Controller (PLC) with Variable Frequency Drives (VFDs) to provide this adaptable feature, or Variable Frequency Drive with integral software that is SCADA ready for operation. This system will incorporate the functionality as noted in the following sections.

4.02 Electrical Control Panel Furnished by JEFFERSON PARISH

A. JEFFERSON PARISH shall furnish a NEMA 3R stainless steel control panel that will house the equipment furnished herein to provide integral liquid level control, moisture and thermal protection modules, and/or PLC and/or VFD's, and will be provided with the minimum of the following:

(a) Mainline lugs of the appropriate sizes shall be furnished for connecting the incoming supply power. The lugs shall be suitable for use with aluminum or copper conductors.

(b) Each pump motor circuit shall be protected by a properly sized E frame molded case circuit breaker. Each pole of these breakers shall provide inverse time delay overload protection and instantaneous short circuit protection, by means of a thermal magnetic element. The breaker shall be operated by a toggle type handle and shall have a Quick-make, Quick-break over center switching mechanism that is mechanically trip free from the handle so that the contacts cannot be held closed against short circuits and abnormal currents. Tripping due to overload or short circuit shall be clearly indicated by the handle automatically assuming a position midway between the manual "ON" and "OFF" position. The minimum interrupting rating of the breaker shall be 42,000 amps at 460 VAC. Pump motor circuit breaker toggle shall be operable through a cutout in the inner door.

(c) Hand-Off-Automatic (integral the VFD HMI) switches to select the operating mode for each pump installed on the control panel inner dead front door.

(d) Elapsed time meters for each pump motor.

(e) In the event either pump operation selector switch is in the "Off" position, the control system software shall automatically designate the operating pump motor as the "next pump motor to operate", after that pump motor is started.

(f) The hinged inner door shall be fabricated from 5052-H32.080, marine alloy aluminum. The hinged inner door shall contain cutouts for all circuit breaker toggles. Control switches and indicators shall be labeled and mounted to the hinged inner door to keep operators from entering the live electrical compartment. A warning sign stating "DANGER -- Disconnect All Sources Of Power Before Opening Door", shall be installed on the inner door. The inner door shall be completely removable, for ease of service, and shall be held closed by at least two (2) hand operated 1/4 turn fasteners. The following items shall be mounted on the inner door:

(g) Pilot lights – Alarm, Pump Run, Pump Fail

(h) Hand-Off-Automatic – Integral to the VFD Operator Interface

(i) Hour meters

(j) <u>Back-panel</u>

(k) The control system enclosure shall include a removable back-panel. The back-panel shall be painted white and fabricated from cold roll steel.

(l) Components shall be fastened to the back-panel using stainless steel pinhead machine screws. All devices shall be clearly labeled, in accordance with the schematic ladder diagram.

(m) Transient Voltage Surge Suppressors on the 120VAC circuit

(n) Loop Power Surge Suppressor

(o) Lightening Arrestor

B. Energy Management Components furnished by the Pump Supplier

(a) A Variable Frequency Drive shall be provided for each pump in the system, sized for the appropriate voltage and power. The pump drive shall be supplied by the pump manufacturer and designed for wastewater pumping, with functionality pre-programmed for the specific pump model used, or a PLC of equivalent functionality shall be provided. The pump drive shall provide all level control functionality, hand/auto operation, pump alternation, pump over temperature monitoring, seal leakage monitoring, pump self-cleaning, sump cleaning, and pipe cleaning algorithms. The pump drive shall also include capability to monitor station inflow, pump speed, and energy consumption in order to automatically operate the pump station at optimal energy efficiency.

The pump drive shall be tested and approved in accordance with national and international standards and comply with Directive 98/37/EC, Safety of Machinery and EN60204-1.

It shall conform to the relevant safety provisions of the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC, and have been designed and manufactured in accordance with the following harmonized European standards:

EN 61800-5-1: 2003	Adjustable speed electrical power drive systems. Safety requirements. Electrical, thermal, and energy.
EN 61800-3 2nd Ed: 2004	Adjustable speed electrical power drive systems. EMC requirements and specific test methods
EN 55011: 2007	Limits and Methods of measurement of radio disturbance characteristics of industrial, scientific, and medical (ISM) radio-frequency equipment (EMC)
EN60529 : 1992	Specifications for degrees of protection provided by enclosures

The variable frequency drive ampere rating shall be equal to, or greater than the ampere rating listed on the motor being driven by the variable frequency drive.

(b) The drive units shall be modularly constructed. Printed circuit boards shall be connected in such manner that they are easily removed from the unit. Power components shall be readily accessible, and connected in such manner that they are easily removed from the unit. The pump drive shall be freestanding for wall

mounting or cabinet installation construction, for 230-480V, 60HZ 3Phase supply. It holds an IP55 and IP66 isolation class.

C. System Operation – VFD or PLC Functionality

a. High/Low Level Sump Control:

The pump controls system shall provide automatic level control, via means of a submersible pressure transducer (4-20mADC) and one (1) non-mercury liquid level float switch. User-programmable Start Level shall indicate the point at which the pump will start. Upon activation, the pump shall run at maximum speed for a pre-determined period, then ramp down to the energy efficient Optimal speed, calculated by the pump drive. When the water level reaches the Stop Level, the pump shall stop. The Optimal Speed shall either be calculated by the pump drive or manually entered by the user.

In case of high inflow, the pump drive shall increase pump speed until the water level begins to decrease. When the water level reaches the Stop Level, the pump shall stop.

In case of very high inflow, in a duplex installation, when a single pump is unable to overcome the inflow conditions even at maximum speed, additional pumps shall be activated and run at maximum speed until the Stop Level is reached. If water levels continue to rise, a High Level Alarm shall be activated.

The pump drive shall incorporate a Minimum Speed function that prevents the pump from operating at speeds too low to move water, based on the pump curve.

b. Run Time Averaging (Duplex Application Only):

In cases of duplex pumps/drives, the pump drive shall provide capability to balance run times for even wear. This shall be an internal function of the drive and not require external devices, such as an Alternating Relay. The function shall operate by determining a "random" start level, based on the Start Level setting. Each drive shall determine its own random start level independent of each other. New random start levels will be determined every 24 hours. The pump with the lowest random start level shall be first to start on any given pump cycle. The second pump shall remain in Standby capacity in case the lead pump shall not be able to lower the water level, as

described in the section above. By recalculating the random start levels every 24 hours, balanced run times are accomplished.

c. Pump Cleaning Function:

The Pump drive shall incorporate a "self-cleaning" function to remove debris from the impeller. The cleaning shall be triggered by three circumstances:

1. Soft Clogging: When motor current equals 20% or greater above rated motor current , in the drive, for a period of 7 seconds
2. Hard Clogging: When motor current equals 80% or greater above rated current for a period of 0.01 seconds
3. Schedule Cleaning: The pump drive is pre-programmed to perform cleaning regularly

The cleaning function shall consist of forced stopping, reversal, and forward runs - timed to allow for debris to fall from the impeller. After cleaning cycle is complete, drive shall resume to automatic operation.

d. Sump Cleaning Function:

The pump drive shall incorporate a sump cleaning function to ensure surface solids and grease is regularly removed from the sump. The sump cleaning function shall perform regularly when enabled by the operator. Sump cleaning shall consist of the following functions:

1. Sump cleaning is triggered when internal timer expires and during a normal pump down cycle
2. Pump is automatically ramped to maximum speed
3. Pump runs at maximum speed for designated time, or until the pump are "snoring"
4. When Sump Cleaning is over, the pump is shut off and resumes normal operation

e. Pipe Cleaning Function:

The pump drive shall incorporate a pipe cleaning function, to avoid discharge pipe sedimentation and clogging, due to reduced pump speed. This shall be an automatic feature that initiates with every pump cycle. Upon reaching Pump Start Level, the drive shall operate the pump at 100% speed for a determined time before ramping down to the most energy efficient speed for the duration of the cycle.

f. Energy efficient speed finder:

The pump drive shall provide a function that automatically calculates the most energy efficient speed for the pump, based on station inflow characteristics. An algorithm calculates the optimal speed whereby the most water is pumped, using the least amount of energy. The optimal speed is constantly adjusted to account for changes in flow, without requiring operator adjustment, multiple setpoints, etc.

The energy efficient function prevents the drive from running off of the system curve for the pump. This will ensure maximum hydraulic efficiency, as well as, maintain electrical efficiency.

g. Alarms & Monitoring:

The pump drive shall provide alarms and monitoring for the drive, pump, and sump. Alarms shall be presented on the LCD display, via a Summary Alarm relay and via Modbus registers. All alarms, when occurring, shall remain active until reset. Alarms shall have a built-in 4 second delay to prevent nuisance tripping. Alarms shall be as follows:

1. Pump Monitoring:

a. Pump Over Temperature (thermal contacts in motor stator)
b. Pump Seal Leak (Flygt FLS leakage sensor)

2. Sump Monitoring:

a. High Sump Level (via level float switch or submersible transducer)
b. Submersible transducer Sensor Error (Submersible transducer is not connected, reports faulty values, or the wrong start level is used)

3. Pump drive Monitoring (includes, but not limited to):

a. Drive Overcurrent
b. Drive Overload Trip
c. Drive Overvoltage
d. Drive Under voltage
e. Drive Over temperature (internal)
f. Drive Over temperature (ambient)
g. Drive Under temperature (ambient)
h. Input Phase Loss
i. Drive Output Max Torque Exceeded

D. Submersible Pressure Transducer

1. The liquid level of the wet well shall be sensed by a submersible level transducer. The transducer shall be a 2-wire type, to operate from the level controller's regulated loop power supply, and produce an instrumentation signal (4-20mA) in direct proportion to the measured level excursion over a factory-calibrated range of zero to ten (10) feet of water.

2. The transducer shall be of the solid-state head-pressure sensing type, suitable for continuous submergence and operation. It shall be installed in accordance with manufacturer's instructions. The bottom diaphragm face of the sensor shall be installed approximately 6 inches above the wet well floor. The sensor shall be mounted using a stainless steel cable suspension system, as shown on the job plans.

3. The transducer housing shall be fabricated of type 316 stainless steel, with a bottom diaphragm 2-5/8 inch diameter of heavy-duty, limp, foul-free, molded Teflon (TM), bonded to a synthetic rubber back/seal.

4. A hydraulic fill liquid behind the diaphragm shall transmit the sensed pressure to a solid-state variable-capacitance transducer element, to convert the sensed pressure to a corresponding electrical value. The sensed media shall exert its pressure against the diaphragm that flexes minutely, so as to vary the proximity between an internal ceramic diaphragm and a ceramic substrate, to vary the capacitance of an electrical field created between the two surfaces. A stable, hybrid, operational amplifier assembly shall be incorporated in the transducer to excite and demodulate the sensing mechanism. The transducer shall incorporate laser-trimmed, temperature compensated, high quality components and construction, to provide a precise, reliable, stable output signal, directly proportional to the sensed pressure over a factory-calibrated range.

5. The transducer element shall incorporate high over-pressure protection, and shall be designed to withstand intermittent overpressures, five times the full-scale range being sensed. Metallic diaphragms will not be accepted, in that they are subject to damage or distortion. Sensing principles employing LVDTs, resistive, or pneumatic elements will not be accepted.

6. The internal pressure of the lower transducer assembly shall be relieved to atmospheric pressure through a heavy-duty urethane jacketed hose/cable assembly and a slack PVC bellows mounted in the control panel. The sealed breather system shall compensate for variations in barometric pressure, expansion, and contraction of air, due to temperature changes and altitude, as well as prevent fouling from moisture and other corrosive elements.

7. The transducer assembly shall be installed where directed by the Engineer, connected with other system elements, and placed in successful operation.

8. The sensor shall be suspension-mounted using a stainless steel cable suspension mounting kit. The mounting kit shall consist of a 2 foot long, one-inch NPT type 316 stainless steel pipe with coupling, bolt, cable clamps, and hardware. The required length of 1/8 inch diameter 7 x 19 stainless steel cable shall also be provided.

PART 5- SERVICE AND WARRANTY

5.01 SERVICE

A. The pump manufacturer shall have an authorized factory service center capable of completely servicing the proposed pumps available to the Jefferson Parish Department of Sewerage. The pump manufacturer must also have a direct factory service center/stocking facility capable of completely servicing, and which stocks identical complete drive units and spare parts for the proposed pumps available to the Jefferson Parish Department of Sewerage.

5.02 WARRANTY

A. Upon request the pump manufacturer must provide a prorated warranty, in writing, for the units supplied to Jefferson Parish against defects in material and workmanship, for a period of at least five (5) years or 10,000 operating hours, under the operating conditions presented by this specification, in accordance with their standard published Municipal Pump Warranty. The pump manufacturer shall demonstrate ability to support claimed warranty coverage by meeting all requirements of this specification.

REMOTE TELEMETRY UNIT (RTU) SCADA PANEL

&

MONITORING SYSTEM

PART 1 - GENERAL

1.01 Scope

A. The System Supplier shall provide a fully functional RTU SCADA Panel, as specified herein; and shall provide connection to the Owner's Existing equipment, along with a Human Machine Interface (HMI) specified herein, that meets or exceeds the specifications; and managed monitoring of the deployed system for the timeframe noted herein. Equally, the System Supplier shall provide commissioning and configuration services as noted for each Remote Telemetry Unit (RTU) supplied, and three years of monitoring of each commissioned site.

B. Acceptable manufacturers are those that meet the specifications and can provide the specified interface to the equipment provided for this project, and insure complete functionality. All equipment approved for this project shall meet or exceed all performance, service, and warranty requirements of this specification.

1.02 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. The supplier shall provide an installation list upon request.
2. All equipment approved for this project shall meet or exceed all performance, service, and warranty requirements of this specification.
3. The RTU shall be capable of direct interface via RS-485 serial connection to the pump controller. The communications protocol from the existing equipment to the RTU shall be MODBUS and communications from the RTU to the SCADA system shall be via DNP-3 protocol over cellular network.

1.03 TESTING

A. General

Each RTU shall be shop tested and field tested as specified hereinafter. All costs for the tests shall be borne by the System Supplier. The System Supplier shall submit the complete shop test procedures to the Owner for approval prior to the shop test. In the event any equipment fails to meet the performance requirements set forth in the test procedure, the equipment shall be modified and re-tested, or replaced with equipment that performs in accordance with this specification.

B. Shop Tests

As noted, the RTU equipment shall be connected to like or similar test equipment. Data tags shall be verified from existing equipment to the proposed RTU.

C. Field Tests

The RTU Equipment shall be field tested to demonstrate stable communications, and to demonstrate that the specified values are properly displayed on the HMI system. The System Supplier shall provide the services of authorized equipment supplier's representatives to conduct all field tests.

A report shall be submitted to the Owner demonstrating a successful 48 hour burn in Field Test that provides the necessary and specified data, as noted herein.

1.04 SUBMITTALS

A. Furnish complete layout and bill of material drawings, upon request.

B. Successful bidder must furnish shop drawings and other pertinent data to the Engineer and obtain his approval before fabrication. The drawings shall be complete with respect to dimensions, materials of construction, wiring diagrams, and all supporting engineering information.

C. At least one month before installation of this work, submit four (4) copies of operation and maintenance instructions to the Engineer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle items of equipment in a manner that will prevent any damage.

B. Follow manufacturer's instructions for short term and long term storage.

1.06 CO-ORDINATION

A. Co-ordinate this work with the work of the Jefferson Parish Department of Sewerage, to avoid interferences, and to provide for timely installation.

PART 2 - PRODUCTS

2.01 RTU SCADA CONTROL PANEL

a) It is the intention of this specification that a complete RTU SCADA Control Panel, along with a fully functional SCADA system be provided, as a completely integrated system from a single system supplier. This includes all necessary appurtenances noted herein that will interface with existing control panels and internal equipment that operate existing pumps in the station. The panel shall be factory assembled, wired, tested, and documented with complete electrical drawings and O&M Manuals for all equipment.

b) The system described hereafter shall be supplied by single source to insure responsibility for a complete functioning system.

c) Signal conditioning, set point, control, alternation, logic function, transducer, alarm, and all other control functions shall be performed by solid-state modules, which shall be standard catalog items of the system manufacturer.

2.02 QUALITY ASSURANCE

A. The Supplier shall maintain quality in design and workmanship, as well as materials used in manufacture of equipment supplied. All equipment supplied under this Contract shall be of new manufacture.

B. The Supplier shall be a firm that is engaged in the manufacturing of pump station control and SCADA systems. The system shall be in regular production with pre-designed hardware and software for process control systems. When the specification conflicts with a manufacturer's standard system, the standard system may be furnished if the intention of the specification is met.

C. System shall be a standard system. Custom one-of-a-kind application software, and customized hardware components will not be accepted. A standard system is defined as one which is available, at time of bid, with fully tested hardware and software, full documentation, and prepared training classes, such that no development must be done beyond system configuration.

D. Supplier shall be responsible for detailed engineering, manufacture, programming, testing, start-up, and demonstration of all equipment and software programs to the Owner, to provide a complete operating system.

E. Provide all engineering and render coordination assistance, necessary for calibration of overall system and to resolve interface discrepancies between panels, equipment, instrumentation, and final control devices. Where interface conflicts exist, the Supplier shall document conflicts in writing to the Owner; providing absolute information such as terminal numbers, device name, tests performed, and diagnosis of problem.

F. All equipment supplied shall be of the most current and proven design at the time of delivery. The completed System and the equipment provided by the Supplier shall be compatible with the functions required, and shall be a complete working System.

G. All electrical components of the System shall operate on 120 volt, single- phase, 60 Hertz current, or less, except as otherwise noted in the specifications and on the drawings.

2.03 DOCUMENTATION

A. The complete assembly shall be provided with specific wiring diagrams, parts lists, enclosure dimensional, door layout drawings, and instructions.

B. Each RTU SCADA panel shall be provided with a job-specific wiring diagram, parts list, enclosure door layout, and enclosure dimension drawing. Manufacturer's wiring diagrams that are not job-specific (standard drawings with options crossed out, etc.) will not be accepted. The wiring diagram requirement applies to all field mounted instrumentation and control equipment. Interconnection details shall be shown for all field-mounted instrumentation. A

Description of Operation shall be provided, detailing the operation of the complete system, including the control and alarm handling.

C. Provide As-built Drawings and Instruction Manuals. These manuals shall include corrected Shop Drawings. In addition, a detailed Programming and Operations Manual for the Microprocessor-based Controller Unit shall be included. The manual shall include all information as detailed for the Shop Drawing Submittals above.

2.04 GENERAL EQUIPMENT REQUIREMENTS

A. U.L. SERIALIZED LABEL

1. The RTU SCADA panel(s) shall be constructed in compliance with Underwriter's Laboratories Categories 508A standards.
2. Prior to shipment from the manufacturer's facility to the jobsite for installation, an Underwriter's Laboratories (U.L.) representative shall inspect the completed control panel(s).

B. WIRING

1. All wiring shall be in complete conformity with the national electric codes and electrical standards. For ease of servicing and maintenance, all wiring shall be color-coded. The wire color code shall be clearly shown on the drawings, with each wire's color indicated. In addition, the equipment wiring shall be permanently marked with wire numbers that correspond to the system schematics. The numbering convention shall comply with the municipal industry standard.
2. All control wiring shall be contained within plastic/PVC wiring duct with covers. Where dimensional constraints prevent the use of wiring duct, wires shall be trained to panel components in groupings. The wire groupings shall be bundled and tied, not less than every 3 inches, with nylon self-locking cable ties as manufactured by Panduit, or equal.
3. Every other cable tie shall be fastened to the enclosure door or inner device panel with a cable tie mounting plate with pressure tape. Where wiring crosses hinged areas, such as when trained from the inner device panel to the enclosure door, spiral wrap shall be used.

D. NAMEPLATES

1. All major components and sub-assemblies shall be identified as to function with laminated, engraved Bakelite nameplates, or similar approved means.

2.05 RTU SCADA CONTROL PANEL

A. SCOPE

1. The System Supplier shall furnish a complete, new RTU SCADA CONTROL panel, housed in a NEMA 4X, FRP wall mounted enclosure, adequately sized in accordance with the NEC for the components contained therein. The enclosure door shall be provided with a padlock-able hasp. The RTU SCADA PANELS shall be provided for the following location in the East Bank Sewage Collection System: F6-5 Cleary & West Napoleon South

2. The system shall be furnished with all components installed, tested, and completely programmed to function as noted herein.
3. Connection to the existing field equipment, where necessary, shall be accomplished via RS-485 serial bus connection.

All other electrical pull boxes, switches, disconnects, junction boxes, conduit, and wiring, not specifically mentioned herein, shall be provided by the Contractor.

B. INCOMING POWER

1. Incoming control power to the panel shall be 120/1 phase from the existing pump station control panel. An internal power supply shall provide 24vDC power, where applicable.

C. SOLID STATE RTU

1. The Solid State RTU shall be based on a robust, field proven, current technology hardware platform. It shall allow for utilization of the latest advances in technology, and permit the most open programming and communication architectures. The system shall be modular, scalable, and capable of being programmed to function as described herein.

2. Functional Description of the RTU
   The unit shall function to communicate with the existing pump station control system for the pump station listed herein.

a. The RTU shall read and communicate with internal MODBUS registers of the existing equipment and shall provide the data to be communicated to a cloud based control and monitoring system.
b. The control system shall be provided with a UPS and battery backup system to allow communication to the owner's SCADA system, to communicate station status during periods of power outage.

D. RTU Capabilities and Features:

1. The RTU system shall include a real time of day time clock w/battery back-up for time stamping of data log records and scheduling of periodic time of day based events. Clock shall not require reset after a site power failure has occurred.
2. The RTU shall store system parameters including, logic configuration, set points, time delays, alarm and event data, counters and totalizers, etc., in field programmable (FLASH) non-volatile memory. Sufficient non-volatile memory must be provided to protect at least 8,000 variables. The RTU shall also provide enough protected memory for time stamped data logging of up to 50,000 process values. This data shall be unaffected by power interruptions.
3. The RTU shall have enough processing power and working (DRAM) memory to enable high-level programs, such as Internet Web Servers to operate efficiently, without affecting other simultaneous multitasking operations.
4. The RTU shall be furnished with a minimum of 6 communication ports with true multitasking, and allow simultaneous support of all ports. Ports can be configured for local input/output (I/O), Operator Interface/display support, LAN/WAN, etc.
5. The RTU processor shall meet the following, as a minimum:

    1. CPU – Clock speed of 500 MHz capable of 900M IPS and 3.5G FLOPS.
    2. 16 MB – 32 bit Dynamic RAM
    3. 64 MB FLASH
    4. 256 MB Static RAM
    5. 2 (Two) Ethernet ports (RJ45)
    6. 2 (Two) RS-232 Serial Communications (115 KB PS) (DB9)
    7. 2 (Two) RS485 Serial Multi-Drop Communications
    8. 1 (One) Local I/O port CANBUS
    9. 1 (One) Display Port

6. The RTU shall not require any specialized tools for removal of the unit. System components, including RTU, power supplies, etc. shall be DIN rail mounted. Terminations shall be via plug in connectors, facilitating quick field replacement.
7. RTU and associated I/O modules shall meet national and international safety standards, including UL, CSA, and CE.
8. The RTU shall operate from a 12-24 VDC power source. A battery and charger shall be supplied to power the master and remote unit during 120 Volt service power outage conditions.

9. The RTU shall have an operational temperature range of -10° Celsius to +60° Celsius (14° Fahrenheit to 140° Fahrenheit) under relative humidity conditions of 5 to 95% non-condensing. Storage temperature range up to 90° Celsius (194° Fahrenheit)
10. Software:
    a. The software shall have a high performance, open source software architecture that utilizes a true multitasking operating system, running a combination of standard and specially designed for water and wastewater application software modules. The system provided shall utilize an integrated system approach, providing a comprehensive common configuration tool for all components within the system, including I/O, Processor, Communications, and Operator Interface Display. The architecture shall permit all system components to be configured, simulated, tested, and downloaded from one terminal to all system components.
    b. The operating system shall be multitasking, and allow a minimum of two separate programs to run simultaneously, without affecting each other.
    c. RTU's provided under this specification shall be capable of performing the necessary logic to control the system as previously defined. These capabilities shall include, but not be limited to the following:

        1. Discrete input/output
        2. Analog input
        3. Analog output
        4. Timers
        5. Data Logging
        6. Latch/unlatch relays
        7. Counters
        8. Totalization/Integration
        9. Time of Day Control

    d. RTU's shall be capable of performing diagnostic functions. CPUs shall continuously monitor the functionality of the system, and record errors and specific system events. A diagnostic buffer shall retain fault and interrupt events.
    e. Each RTU shall have memory protected, built in historical archiving/data logging of system alarms and events, and process variables. Data logger shall be able to log data, based on time or an event. RTU shall have enough memory allocated to allow 50,000 time and date stamped discrete and/or analog values to be archived. The historical archive shall allow the oldest data to roll off the system as memory is used, keeping the 50,000 most

current data points available. Process point time stamping frequency shall be selectable within the configuration software. It shall be possible for the archived data to be exported in CSV format, allowing use with standard spreadsheet and data base software applications.

f. Each RTU shall have built in web server capability, allowing system information to be stored in a format that allows for easy access and viewing with standard Windows™ based browser. This information shall be accessible locally or remotely.

11. RTU Communications Capabilities:

a. The RTU system shall utilize an "open" industry, non-licensed standard communications protocol that will permit interface with other equipment that may not be supplied by the same manufacturer. Protocols that are proprietary and closed ended will not be accepted. Upon request, the system supplier shall provide documentation describing the supplied communications protocol, so that it may be used in future telemetry additions, to insure interface-ability of other third party RTUs and or RTUs.
b. The system must be able to simultaneously support multiple communications protocols. The system supplied, as a minimum shall be able to supply "open" and Modbus RTU/ASCII (Remote/Slave) output data via RS-232, 485 & Ethernet format, thus insuring a primary means of interfacing with non-related equipment.
c. The RTU system shall allow operations over multiple (LAN/WAN) communication media, affording the most efficient and reliable solution including; DC metallic wire pair, dedicated leased voice grade phone line, standard dial up phone line, wireless cellular dial up system, cable TV, Fiber optics, Ethernet 10/100 BaseT, VHF Radio, UHF Radio, Dedicated Microwave Radio, and Ethernet Wireless. System communication architecture can be based on any one or a combination of these media. The communications speed shall be set to the highest speed allowed by the selected media.
d. The system shall support multiple modes of operation, allowing highest possible system reliability, and real-time response including; standard polling cycles, peer-to-peer, quiescent (Report on exception). System communication architecture can be based on any one, or a combination of these modes of operation.
e. The RTU system shall employ a high level, efficient, secure communications protocol for communications between Master Telemetry Unit (MTU) and Remote Telemetry Unit(s) (RTU). Systems utilizing communications protocols with less capable error detection/rejection capabilities shall not be suitable for this application and will not be accepted.
f. The RTU system shall allow local or remote configuration of RTU troubleshooting without the need to be onsite. The system protocol shall support remote upload and down load file transfers between the master unit and associated RTU's, where applicable. File transfer function shall provide reliable means of remotely transferring RTU configuration files so that any RTU configuration can be uploaded through the selected telemetry communications media to the online PC via the MTU, modified, and then

downloaded to the RTU.

12. Input/Output (I/O) Systems:
    a. The RTU system shall have I/O resources to support a wide variety of applications, without needing to depend upon alternate technologies to meet various system data requirements. Each RTU shall be supplied with the required I/O to meet the specified requirements and allow for a minimum of 100% spare capacity for future expansion.
    b. The RTU system shall support a wide variety of modular I/O with various configurations, to permit the most efficient use of I/O hardware and panel space. I/O modules shall be available for local I/O (within control panel), remote I/O (RS-485 based distributed outside of the control panel), and Ethernet based I/O (Distributed I/O on high speed in plant network or wireless Ethernet). Each I/O module shall be DIN rail mounted, have compression wire type terminals capable of accepting 14 AWG wire, have wire identification markers, and I/O wiring diagram. Each module shall include diagnostic LEDS indicating module operational and I/O status. Each I/O module shall be electrically isolated, meet IEEE-472 (ANSI C37.90) surge, withstand certification, shall be removable under power, and easily field replaced with a spare module, requiring no software/hardware reconfiguration adjustments. Each module shall be safety keyed, to insure proper installation. I/O modules shall permit installation and operation in hazardous locations, as classified under UL, CSA Class 1, Div. 2, Groups A, B, C & D.
    c. Remote I/O modules shall be connected to the RTU by high speed serial communications. Remote I/O modules shall support multiple communications protocols, including Modbus ASCII and RTU, allowing connection to any device supporting these protocols.
    d. Ethernet I/O modules shall be connected to the RTU by on board Ethernet 10/100 BaseT connection port. Ethernet I/O modules shall support multiple communications, including TCP/IP, Modbus ASCII, and RTU, allowing connection to any device supporting these protocols over standard Ethernet backplane.

I. SUPERVISORY CONTROLS, SERVICE, TRAINING, AND GUARANTEE

1. The services of a factory trained, qualified representative shall be provided to inspect the completed installation, make all adjustments necessary to place the system in trouble-free operation, and instruct the operating personnel in the proper care and operation of the equipment.
2. After the system has been installed, the Supplier shall demonstrate with performance of the unit, and document that the system operates properly, as specified.
3. The Supplier shall provide system training for operations staff, totaling no less than 2 hours.
4. All training shall be conducted at the site. Travel expenses are the responsibility of the supplier.
5. All equipment shall be guaranteed against defects in material and workmanship for a period of 5 years from the date of Owner's final inspection and acceptance, to the effect that any defective equipment shall be repaired or replaced without cost or obligation to the Owner.

PART 3 – SCADA SOFTWARE

GENERAL - The SCADA HMI will be based on a well-supported global SCADA platform and accessible via mobile devices, such as, tablets and smart phones, as well as, any PC running Internet Explorer version 5 or higher. The software shall provide the following:

A. System Configuration/Daily Operations

1. Software configuration and operational actions shall be protected from unauthorized access by a password/pass-code security system. The security model must be centralized, such that each user may use the same password to access the following SCADA features;
   a. Development environment
   b. Runtime displays
   c. Alarm management
   d. Alarm dialer (incoming and outgoing calls)
2. Software help manuals shall be provided to assist operators and administrative personnel with daily operations and software configuration. The latest versions of all manuals shall be made available for download from the software manufacturer's website.

B. Graphics and Displays

1. Software shall support both animated and static graphic objects. Animated graphic objects shall provide real-time process information to the user via displays. Alarms and process data depicted on displays shall be updated immediately upon receiving new data.
2. Standard tag types with graphics shall be provided for the following;
   a. Analog/discrete inputs
   b. Analog/discrete outputs. Outputs sent to field devices must include feedback.
   c. Multi-position switches. Position changes sent to field devices must include feedback of status received and verification of field action taken. For example, a switch intended to turn on a pump shall generate an alarm if the pump running status is not received within a predefined timeout.
   d. Alarms
3. Software shall include pre-built displays for standard HMI features. The following pre-built displays shall be provided, as a minimum;
   a. Alarm display that can be filtered by name, and includes: current, unacknowledged, disabled, and history
   b. Trending/Tabular viewing of historical data
   c. Report creator

4. Software shall include a menu for navigating from one display to another. Menu shall be configurable to allow logical grouping of displays where necessary.
5. Operators, with sufficient security privileges, shall have access to system set points and control points, and shall have the ability to modify these points.
6. It shall be possible to determine the properties of any I/O value displayed by selecting it with the mouse. This shall be done in real-time and shall display the following data:
   a. Name, description, and logical system area
   b. Scaling of field data
   c. I/O address
   d. Alarm properties
7. Software shall support background bitmaps on graphical pages.
8. Software shall be capable of displaying multiple graphical windows simultaneously.

C. Historical and Real-Time Data Management

1. Software shall provide historical data storage. A synchronization scheme shall be included, ensuring an exact copy of all historical data resides on three server workstations. In the event that the primary or backup historical data storage servers are not synchronized, the outdated server will backfill all missing data from the server with the most recent historical data.
2. The system will maintain all tag properties in a relational database.
3. Software shall display historical and real-time data in both plot and tabular format. Historical and real-time plotted values shall be shown in a continuous, uninterrupted, scrolling fashion. These shall be displayed in strip-chart style with the vertical axis depicting the variable value and the horizontal axis representing time. Each display shall be scaled in appropriate coordinates for the specific tag being monitored. The plot's time frame shall be operator selectable from a minimum of one second to five years. Time intervals shall be clearly marked on the x-axis with date/time stamps and shall scroll with the data.
4. User shall be able to see the value of plotted tags for any selected point in time.
5. Software shall be capable of displaying an unlimited number of analog and digital tag plots on a single display. Color shall be used to differentiate between tags. Means must be provided to quickly determine the name and description of each tag displayed.
6. Scaling of each displayed tag plot shall, at the user's choice, be either independently configurable, or shall follow the scaling of the tag. Changing the scaling of the tag plot shall not affect the scaling of the tag.
7. Where data is not available over duration for a particular variable, data plots shall show no data. At no time shall the gap be replaced with a connection between the last good value and the next good value.

8. Means must be provided to do the following;
   a. Stop the plots from scrolling
   b. Zoom in both the time (x) and value (y) axis
   c. Pan/Scroll along the time axis or select a particular date to display
   d. Move analog tag plots vertically (in the value axis), either individually or as a group
   e. Display statistical data, including average, minimum, and maximum values, for each plot.
9. Ability to print displayed plots shall be provided.
10. Presently viewed plot values shall be exportable to comma separated value (.csv) file, for use by 3rd-party data analysis software.
11. Software shall be capable of saving groups of tags for later recall. There shall be no limit to the number of these groups.

D. Alarm and Event Management

1. A minimum of the last 10,000 alarms and events shall be stored. A synchronization scheme shall be included; ensuring an exact copy of all alarm history resides on three server workstations. In the event that the primary or backup alarm history storage servers are not synchronized, the outdated server will backfill all missing data from the server with the most recent alarm history.
2. Alarms and events records shall include;
   a. Time/Date stamp
   b. The name and description of the alarm tag
   c. Priority
   d. Status of Alarm (i.e. Active, Acknowledged, Cleared). Alarm Acknowledgement records shall include the name of the user.
3. When an alarm condition occurs, the following sequence shall be provided:
   a. An audible tone shall annunciate from each of the clients that have access to this alarm. This audible tone shall repeat until the alarm is acknowledged.
   b. The alarm shall be added to the alarm history.
   c. In the event the alarm has not been acknowledged within a user configurable time period, a telephone dialer shall begin notifying users on predefined rosters.
4. Software shall provide user-configurable settings for dead-band and delay on analog alarms.
5. Users must be notified, both visibly and audibly, of the occurrence of an alarm, regardless which display is presently being viewed.

6. An alarm shall be acknowledged by selecting the alarm event from the alarm summary interface, and then choosing an 'Acknowledge' button. Alarms shall not be acknowledged simply by clicking on the alarm event. This two-step approach alleviates inadvertent alarm acknowledgement actions.
7. Alarm acknowledgement shall immediately be propagated to all user interfaces.
8. Operators shall be able to filter the alarms display to show current, unacknowledged, disabled, or historical alarm. Alarms shall be filterable by priority, or by alarm areas/groups.
9. Software shall allow the project to be split into functional areas, such that the alarms a user sees/acknowledges are determined by the areas to which the user has access.
10. The application shall include a telephone dialer. The dialer shall support text-to-speech, and be automatically synchronized with the tag database at all times.
11. The telephone dialer shall share the SCADA system security, requiring users to enter a security code from a telephone keypad to access data, and to acknowledge alarms. All alarm acknowledgements shall be recorded in the application event log.
12. The telephone dialer shall be capable of contacting different groups of system users, based upon the service needs of the alarm. Each group should be capable of making up to 30 actions (email, SMS or text-to-speech phone call). Once the list of actions is complete, it must be able to repeat or activate another group of actions. Systems shall be able to make groups active/inactive to allow for shift changes and duty rosters. Changes to users in groups and active/inactive status changes shall be made without stopping and restarting the application or computer. There shall be no limit to the number of active and inactive groups. The telephone dialer must be able to switch between groups, based on time of day or changes in system values. Changes to these groups shall require sufficient user privileges.
13. The software must be configurable to detect rapid changes in value or lack of change over a defined period.

E. Report Generation System

1. Software shall be capable of producing reports using historical data. Reports may be created for one-time use.
2. Report generation shall be invoked either on demand, by a monitored event, or on a scheduled basis.
3. The report generation system shall be field configurable, allowing an operator to create, modify, and generate reports and export data to third party software. The report generation system shall be capable of displaying reports to the user interface display, or of exporting files per the following;
   a. To a comma separated value (.csv) file
   b. To a text file
   c. Directly to a new MS Excel spreadsheet

d. Via e-mail

4. Reports generated via an Internet client shall be able to be printed to a local printer.

5. Reports shall be able to display any analog, digital, or calculated tag data from the historical database.

F. Application Upgrades/Support/Diagnostics/Debugging

1. Users shall be notified of application upgrades, and the user shall not incur a cost for the upgrade.

2. Support must include phone and email contact.

3. Training shall be available for users of all levels (i.e. Operators, Developers, Administrators)

G. Security

1. A password protected security system shall support an unlimited number of users, each user having a set of configurable privileges. Privileges for system configuration, data viewing, and operational activities shall be enabled or disabled on an individual user basis

2. User accounts shall be able to be duplicated and assigned to new users.

3. User passwords shall be encrypted using an algorithm that shall render their file storage unreadable.

4. User passwords must be configurable to exceed a minimum length, contain alphabetic, numeric or special characters, or expire after a pre-set period.

5. System shall allow creation of additional security privileges where necessary. The system shall allow an unlimited number of additional privileges.

6. Changes to user access privileges can be made while the application is running and shall become effective immediately. Networked users whose accounts have been altered shall be affected by the changes immediately, not after stopping and starting the application.

7. Security system shall be multi-session. It will validate multiple users simultaneously and record their session activity concurrently for all users.

H. Internet Connectivity/Handheld Device Support/Monitoring

1. Internet connectivity shall not require the installation or configuration of a 3rd party Internet Server product (e.g. Miscrosoft IIS, Apache).

2. On-line configuration changes shall be pushed immediately to all Internet client interfaces, without requiring the browser interface to be restarted or refreshed.

3. Internet clients shall require only the latest version of Microsoft Internet Explorer to communicate with the application. Internet clients shall require no software to be manually installed. Upon first contact with the Internet server serving the application, the Internet client shall automatically synchronize with the application and download any necessary files. All subsequent connections to the server shall synchronize the Internet client with the server.

4. Internet client shall cache displays in order to reduce display access time.

5. Internet client interfaces shall have graphical displays identical to the standard client and server interfaces. It shall not require separate development time, or a separate development interface. The automatic display generation process shall not distort the graphical layout of any display.
6. Software shall support access to alarms and real-time status information via hand-held devices.
7. The HMI system shall include monitoring and alarm notification for a period of 3 years from the date of commissioning. Pricing for monitoring shall be included in the bid price for the equipment.

I. Redundancy and Load Sharing

1. Software shall support a minimum of three levels of redundancy for I/O communications (i.e. primary server, 1st backup server, 2nd backup server). Software shall support a minimum of two levels of redundancy for all other services. In the event of primary server failure, software shall be capable of automatic fail-over to a backup server. No manual intervention shall be required.
2. Software shall support distribution of services across any number of computers to facilitate load sharing.
3. All servers shall be aware of which server is in control of each software process. No two servers shall perform the same function at the same time. This ensures efficient use of network communications and connections to I/O devices.
4. Software must not require each redundant server to use a second network card to monitor the status of the primary server.
5. Backup servers shall be capable of load-sharing the various system operations (including I/O communications and data logging, alarm management, network communications management, security management).

J. Pre-built for Pump Stations

The supplied HMI will have the following features already setup and display all values supported by the controller:

Screens

1. Station overview, including:
   a. summary alarms (including level alarm, level device fault, WAN comms fault, supply fault)
   b. numbers of pumps and pump summary alarm
   c. comms statistics
   d. 3-phase voltage
   e. level
   f. station name and ID
2. Pump status, including:
   g. auto / off/ manual (hand)
   h. detailed pump fault status

- thermal
- seal
- delay fail input
- critical fault
- non-critical fault
- under-current
- over-current
- phase fail
- earth fault

i. Control for:
- pump mode – auto / off/ manual (hand)
- pump fault reset

j. Detailed pump data
- 3-phase currents (where available at site)
- power and kWh (where current monitoring module installed at site)
- accumulators

3. Flow data:

k. Derived flow data (if module installed in field hardware), or

l. From flow meter if installed

Configuration

Configuration screens for:

m. Changing set-points of all pumps and alarms

n. Changing between profiles in the field hardware

Pre-configured reports

The system will include standard reports relevant to pump station networks, including:

o. Daily station report

p. Monthly station report

PART 4 - EXECUTION

4.01 INSPECTION

A. Inspect all equipment upon arrival at job site, and prior to installation. Notify manufacturer of any damage and/or shortage.

4.02 PREPARATION

A. Make corrections and/or repairs as required for items inspected and found deficient.

4.03 INSTALLATION

A. The system shall be provided for Owner installation at each respective site. Commissioning shall be provided by the System Supplier to insure functionality and Field Testing as noted.

PART 5 - SERVICE AND WARRANTY

5.01 SERVICE

A. The System Supplier shall have an authorized factory service center capable of completely servicing the equipment available to Jefferson Parish. The manufacturer shall have a direct factory service center/stocking facility capable of completely servicing, and which stocks identical complete units and spare parts for the proposed system, available to Jefferson Parish.

5.02 WARRANTY

A. Upon request the manufacturer must provide, in writing, a prorated warranty for the units supplied to the Owner against defects in material and workmanship for a period of at least five (5) years under the operating conditions presented by this project, in accordance with their standard published Municipal Warranty. The manufacturer shall demonstrate ability to support claimed warranty coverage by meeting all requirements of this specification.

DATE: 8/17/2016

BID NO.: 50-00117318

INVITATION TO BID
THIS IS NOT AN ORDER

JEFFERSON PARISH

PURCHASING DEPARTMENT
P.O. BOX 9
GRETNA, LA. 70054-0009
504-364-2678

BUYER: MOVALLE@jeffparish.net

BIDS WILL BE RECEIVED IN THE PURCHASING DEPARTMENT, SUITE 4400, JEFFERSON PARISH GENERAL GOVERNMENT BUILDING, 200 DERBIGNY STREET, GRETNA, LA 70053 UNTIL 2:00 PM, 9/01/2016 AND PUBLICLY OPENED THEREAFTER.

LATE BIDS WILL NOT BE ACCEPTED

Unless submitting via online (see Page 3), each bid must be submitted in a sealed envelope bearing on the outside; the name of the Bidder, his address, and the name of the project for which the bid is submitted and the bid number.

NOTE: ONLY BIDS WRITTEN IN INK OR TYPEWRITTEN, AND PROPERLY SIGNED BY A MEMBER OF THE FIRM OR AUTHORIZED REPRESENTATIVE, WILL BE ACCEPTED. PENCIL AND/OR PHOTOSTATIC FIGURES OR SIGNATURES SHALL RESULT IN BID REJECTION.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

THE FOLLOWING INSTRUCTIONS APPLY TO ALL BIDS

All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal reference. By submitting a bid, vendor agrees to comply with all provisions of Louisiana Law as well be in compliance with the Jefferson Parish Code of Ordinances, Louisiana Code of Ethics, applicable Jefferson Parish ethical standards and Jefferson Parish Resolution No. 113646 and/or Resolution No. 113647.

All vendors submitting bids should register as a Jefferson Parish vendor if not already yet registered. Registration forms may be downloaded from www.purchasing.jeffparish.net and by clicking on Vendor Information. While Jefferson Parish may have these on file, all bidders should furnish their current W-9 Form and respective Tax Identification Numbers with bid submission; records on file may be invalid or expired. The successful bidder must submit a W-9 Form and respective Tax Identification Number upon contract execution. Failure to do so may result in delay of payment.

All quotations shall be based on F.O.B. Agency warehouse or job site, anywhere within the Parish as designated by the Purchasing Department. This provision does not apply to public works projects

JEFFERSON PARISH requires all products to be new (current) and all work must be performed according to standard practices for the project. Unless otherwise specified, no aftermarket parts will be accepted. Unless otherwise specified, all workmanship and materials must have at least one (1) year guaranty, in writing, from the date of delivery and/or acceptance of the project. Any deviations or alterations from the specifications must be indicated and/or supporting documentation supplied with bid submission.

Bidders should submit all questions in writing and fax them to the Purchasing Department at (504) 364-2693 no later than FIVE (5) working days prior to bid opening. Bid numbers should be mentioned in all requests. Questions may also be emailed to the buyer for this bid at the email address listed above. If submitting online, vendors may send questions via the E-Procurement site no later than Five (5) working days prior to the bid opening.

If this bid requires a pre-bid conference (see Additional Requirements section), bidders are advised that such conference will be held to allow bidders the opportunity to identify any discrepancies in the bid specifications and seek further clarification regarding instructions. The Purchasing Department will issue a written response to bidders' questions in the form of an Addendum. Please note that all official communication will be expressed in the form of an addendum.

All formal Addenda require written acknowledgement on the bid form by the bidder. Failure to acknowledge an Addendum on the bid form shall cause the bid to be rejected. JEFFERSON PARISH reserves the right to award bid to next lowest responsive and responsible bidder in this event.

The purpose and intention of this invitation to bid is to afford all suppliers an equal opportunity to bid on all construction, maintenance, repair, operating supplies and/or equipment listed in this bid proposal. JEFFERSON PARISH WILL ACCEPT ONE BID ONLY FROM EACH VENDOR. Items bid must meet specifications.

JEFFERSON PARISH will accept one price for each item unless otherwise indicated. Two or more prices for one item will result in bid rejection. Bidders are required to complete, sign and return the bid form and/or complete and return the associated line item pricing forms as indicated. Vendors must not alter the bid forms. Doing so will cause the bid to be rejected.

If the bid exceeds $30,000.00 and the company is duly authorized to do business in the state of Louisiana, a corporate resolution must be submitted with the bid or the person signing the bid documents must be listed on the Louisiana Secretary of State's website as an officer of the corporation, unless bidder has otherwise complied with LSA-R.S. 38:2212 (B)(5). If the bid is in excess of $30,000 and bidder is registered out of the state of Louisiana, a corporate resolution must be submitted with the bid, unless bidder has otherwise complied with LSA-R.S. 38:2212 (B)(5). Failure to comply will cause bid to be rejected; the Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event. Bids submitted by Owner or Sole Proprietorships must include certification that he or she owns the entity for which the bid is signed. This documentation must be submitted with the bid. Failure to do so will result in bid rejection.

NOTE: A sample corporate resolution can be downloaded from our website http://purchasing.jeffparish.net or you may provide your own document. A sample certification of sole proprietorship can also be downloaded from our website http://purchasing.jeffparish.net or you may provide your own document.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

A. AWARD OF CONTRACT: JEFFERSON PARISH reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination, as shall in its judgment be in the best interest of JEFFERSON PARISH. Every contract or order shall be awarded to the LOWEST RESPONSIVE and RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS and the DELIVERY AND/OR COMPLETION DATE. SPLIT AWARDS MADE TO SEVERAL VENDORS WILL ONLY BE GRANTED TO THOSE DEEMED RESPONSIVE AND RESPONSIBLE.

All bid prices shall remain valid for 45 days. Jefferson Parish and the lowest responsive and responsible bidder(s) by mutual written consent may mutually agree to extend the deadline for award by one (1) or more extensions of thirty (30) calendar days.

Preference is hereby given to materials, supplies, and provisions produced, manufactured or grown in Louisiana, quality being equal to articles offered by competitors outside the state. "LSA-R.S.38:2251-2261"

B. USE OF BRAND NAMES AND STOCK NUMBERS: Where brand names and stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, provided brand names and stock numbers are specified. Complete product data may be required prior to award.

C. CANCELLATION OF CONTRACT: JEFFERSON PARISH reserves the right to cancel all or any part if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel any contract at anytime and for any reason by issuing a THIRTY (30) day written notice to the contractor.

For good cause and as consideration for executing a contract with Jefferson Parish, vendor conveys, sells, assigns and transfers to Jefferson Parish or its assigns all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of Louisiana, relating to the particular good or services purchased or acquired by Jefferson Parish.

D. PRICES: Jefferson Parish is exempt from paying sales tax under LSA-R.S. 47:301 (8)(c). All prices for purchases by Jefferson Parish of supplies and materials shall be quoted in the unit of measure specified and unless otherwise specified, shall be exclusive of state and Parish taxes. The price quoted for work shall be stated in figures. In the event there is a difference in unit prices and totals, the unit price shall prevail.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Bidders are not to exclude from participation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, or sex; nor discriminate on the basis of age under the Age Discrimination Act of 1975, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, or on the basis of religion, except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Act of 1964, or Title VI and VII of the Act of April 11, 1968, shall also apply. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k)(5) of the Regulations. New construction or renovation projects must comply with Section 504 of the 1973 Rehabilitation Act, as amended, in accordance with the American National Standard Institute's specifications (ANSI A17.1-1961).

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

Advertised bids will be tabulated and a copy of the tabulation will be forwarded to each responding bidder.

IN ACCORDANCE WITH STATE REGULATIONS JEFFERSON PARISH OFFERS ELECTRONIC PROCUREMENT TO ALL VENDORS

This electronic procurement system allows vendors the convenience of reviewing and submitting bids online. This is a secure site and authorized personnel have limited read access only. Bidders are encouraged to submit electronically using this free service; while the website accepts various file types, one single PDF file containing all appropriate and required bid documents is preferred. Bidders submitting uploaded images of bid responses are solely responsible for clarity. If uploaded images/documents are not legible, then bidder's submission will be rejected. Please note all requirements contained in this bid package for electronic bid submission.

Please visit the Purchasing Department webpage at http://purchasing.jeffparish.net to register and review Jefferson Parish solicitations.

The general specifications for construction projects and the purchase of materials, services and/or supplies are those adopted by the JEFFERSON PARISH Council by Resolution No. 113646 or 113647 dated 12/09/09. The general conditions adopted by this resolution shall be considered as much a part of this document as if they were written wholly herein. A copy may be obtained from the Office of the Parish Clerk, Suite 6700, Jefferson Parish General Government Building, 200 Derbigny Street, Gretna, LA 70053. You may also obtain a copy by visiting the Purchasing Department webpage at http://purchasing.jeffparish.net and clicking on Online Forms.

ADDITIONAL REQUIREMENTS FOR THIS BID

PLEASE MATCH THE NUMBERS PRINTED IN THIS BOX WITH THE CORRESPONDING INSTRUCTIONS BELOW.

10,13,15

1. All bidders must attend the MANDATORY pre-bid conference and will be required to sign in and out as evidence of attendance. In accordance with LSA R.S. 38:2212(I), all prospective bidders shall be present at the beginning of the MANDATORY pre-bid conference and shall remain in attendance for the duration of the conference. Any prospective bidder who fails to attend the conference or remain for the duration shall be prohibited from submitting a bid for the project.

2. Attendance to this pre-bid conference is optional. However, failure to attend the pre-bid conference shall not relieve the bidder of responsibility for information discussed at the conference. Furthermore, failure to attend the pre-bid conference and inspection does not relieve the successful bidder from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the specification with no additional cost to the owner.

3. Contractor must hold current applicable JEFFERSON PARISH licenses with the Department of Inspection and Code Enforcement. Contractor shall obtain any and all permits required by the JEFFERSON PARISH Department of Inspection and Code Enforcement. The contractor shall be responsible for the payment of these permits. All permits must be obtained prior to the start of the project. Contractor must also hold any and all applicable Federal and State licenses. Contractor shall be responsible for the payment of these permits and shall obtain them prior to the start of the project.

4. A LA State Contractor's License will be required in accordance with LSA R.S. 37-2150 et. seq. and such license number will be shown on the outside of the bid envelope. Failure to comply will cause the bid to be rejected. Additionally if submitting the bid electronically, then the license number must be entered in the appropriate field in the Electronic Procurement system. Failure to comply will cause the bid to be rejected.

5. It is the bidder's responsibility to visit the job site and evaluate the job before submitting a bid.

6. Job site must be clean and free of all litter and debris daily and upon completion of the contract. Passageways must be kept clean and free of material, equipment, and debris at all times. Flammable material must be removed from the job site daily because storage will not be permitted on the premises. Precautions must be exercised at all times to safeguard the welfare of JEFFERSON PARISH and the general public.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

7. PUBLIC WORKS BIDS: All awards for public works in excess of $5,000.00 will be reduced to a formal contract which shall be recorded at the contractor's expense with the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. A price list of recordation costs may be obtained from the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. All awards in excess of $25,000.00 will require both a performance and a payment bond. Unless otherwise stated in the bid specifications, the performance bond requirements shall be 100% of the contract price. Unless otherwise state in the bid specifications, the payment bond requirements shall be 100% of the contract price. Both bonds shall be supplied at the signing of the contract.

8. NON-PUBLIC WORKS BIDS: A performance bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The performance bond shall be supplied at the signing of the contract.

9. NON-PUBLIC WORKS BIDS: A payment bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The payment bond shall be supplied at the signing of the contract.

10. Unless otherwise stated in the bid specifications, the successful bidder will be required to procure standard insurance policies evidencing Parish-mandated insurance requirements as indicated on the attached "insurance requirements" sheet. All bidders must comply with the instructions in this sheet. Failure to comply will cause bid to be rejected.

11. A bid bond will be required with bid submission in the amount of 5% of the total bid, unless otherwise stated in the bid specifications. Acceptable forms shall be limited to cashier's check, certified check, or surety bid bond. All sureties must be in original format (no copies) If submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in the electronic bid solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.

12. This is a requirements contract to be provided on an as needed basis. JEFFERSON PARISH makes no representations on warranties with regard to minimum guaranteed quantities unless otherwise stated in the bid specifications.

13. Freight charges should be included in total cost when quoting. If not quoted FOB DELIVERED, freight must be quoted as a separate item. Bid may be rejected if not quoted FOB DELIVERED or if freight charges are not indicated on bid form.

14. PUBLIC WORKS BIDS - Completed, Signed and Properly Notarized Affidavits Required; This applies to all solicitations for construction, alteration or demolition of public buildings or projects, in conformity with the provisions contained in LSA-RS 38:2212.9, LSA-RS 38:2212.10, LSA-RS 38:2224, and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Conviction Affidavit, Non-Collusion Affidavit, Campaign Contribution Affidavit, Debt Disclosures Affidavit and E-Verify Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.

15. NON PUBLIC WORK BIDS - Completed, Signed and Properly Notarized Affidavits Required in conformity with the provisions contained in LSA – RS 38:2224 and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Collusion Affidavit, Debt Disclosures Affidavit and Campaign Contribution Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled NON PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.

16. The ensuing contract for this bid solicitation may be eligible for FEMA reimbursement and/or Federal funding/reimbursement. As such, the referenced appendix will be applicable accordingly and shall be considered a part of the bid documents. All applicable certifications must be duly completed, signed and submitted with bid submission. Failure to submit applicable certifications with bid submission will result in bid rejection.

17. For this project, the Contractor shall not pay any state or local sales or use taxes on materials and equipment which are affixed and made part of the immovable property of the project or which permanently incorporated in the project (hereinafter referred to as "applicable materials and equipment"). All purchases of applicable materials or equipment shall be made by the contractor on behalf of and as the agent of Jefferson Parish (Owner), a political subdivision of the State of Louisiana. No state and local sales and use taxes are owned on applicable materials and equipment under the provisions of Act 1029 of the 1991 Regular Session – Louisiana Revised Statute 47:301(8)(c). Owner will furnish contractor a certificate form which certifies that Owner is not required to pay such state or local sales and use taxes, and contractor shall furnish a copy of such certificate to all vendors or suppliers of the applicable materials and equipment

It shall be the duty of every parish officer, employee, department, agency, special district, board, and commission: and the duty of every contractor, subcontractor, and licensee of the parish, and the duty of every applicant for certification of eligibility for a parish contract or program, to cooperate with the Inspector General in any investigation, audit, inspection, performance review, or hearing pursuant to Jefferson Parish Code of Ordinances Section 2-155.10(19). By submitting a bid, vendor acknowledges this and will abide by all provisions of the referenced Jefferson Parish Code of Ordinances.

BID FORM
Non Public Works

All Public Work Projects are required to use the Louisiana Uniform Public Work Bid Form

All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be applied to purchases made after the request is made.

Are you requesting an escalation provision?

YES _____ NO _____

MAXIMUM ESCALATION PERCENTAGE REQUESTED _____%

INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF _____.

For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed,for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES _____

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) _____

THIS SECTION MUST BE COMPLETED BY BIDDER:

FIRM NAME: _____

ADDRESS: _____

CITY, STATE: _____ ZIP: _____

TELEPHONE: ( ) _____ FAX: ( ) _____

EMAIL ADDRESS: _____

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form.Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: _____

NUMBER: _____

NUMBER: _____

NUMBER: _____

TOTAL PRICE OF ALL BID ITEMS: $ _____

AUTHORIZED SIGNATURE: _____ _____

Printed Name

TITLE: _____

SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the BID NUMBER and BID OPENING DATE indicated on the outside of the envelope submitted to the Purchasing Department.

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00117318

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
			A ONE-TIME PURCHASE OF PUMPS WITH VFD'S AND SCADA RTU PANELS FOR CLEARY AND WEST NAPOLEON S. (F6-5) LIFT STATION FOR THE JEFFERSON PARISH DEPARTMENT OF SEWERAGE		
1	2.00	EA	0001 - Dry pit submersible pump with corrosion resistant tungsten carbide mechanical seals, inverter duty rated motor, suction elbow and high chrome impeller and insert wear ring, shield power cable and FM explosion proof motor Item no. NT3202.095		
2	2.00	EA	0002 - SmartRun VFD's for 60 HP duplex operation Item no. SMR311		
3	1.00	EA	0003 - Submersible pressure transducer Item no. Expert3400		
4	1.00	EA	0004 - SCADA RTU Panel Item no. SCADA RTU		
5	1.00	EA	0005 - 3 year monitoring of SCADA		
6	1.00	EA	0007 - Factory Startup		

CORPORATE RESOLUTION

EXCERPT FROM MINUTES OF MEETING OF THE BOARD OF DIRECTORS OF

_____

INCORPORATED.

AT THE MEETING OF DIRECTORS OF _____
INCORPORATED, DULY NOTICED AND HELD ON _____,
A QUORUM BEING THERE PRESENT, ON MOTION DULY MADE AND SECONDED. IT WAS:

RESOLVED THAT _____, BE AND IS HEREBY APPOINTED, CONSTITUTED AND DESIGNATED AS AGENT AND ATTORNEY-IN-FACT OF THE CORPORATION WITH FULL POWER AND AUTHORITY TO ACT ON BEHALF OF THIS CORPORATION IN ALL NEGOTIATIONS, BIDDING, CONCERNS AND TRANSACTIONS WITH THE PARISH OF JEFFERSON OR ANY OF ITS AGENCIES, DEPARTMENTS, EMPLOYEES OR AGENTS, INCLUDING BUT NOT LIMITED TO, THE EXECUTION OF ALL BIDS, PAPERS, DOCUMENTS, AFFIDAVITS, BONDS, SURETIES, CONTRACTS AND ACTS AND TO RECEIVE ALL PURCHASE ORDERS AND NOTICES ISSUED PURSUANT TO THE PROVISIONS OF ANY SUCH BID OR CONTRACT, THIS CORPORATION HEREBY RATIFYING, APPROVING, CONFIRMING, AND ACCEPTING EACH AND EVERY SUCH ACT PERFORMED BY SAID AGENT AND ATTORNEY-IN-FACT.

I HEREBY CERTIFY THE FOREGOING TO BE A TRUE AND CORRECT COPY OF AN EXCERPT OF THE MINUTES OF THE ABOVE DATED MEETING OF THE BOARD OF DIRECTORS OF SAID CORPORATION, AND THE SAME HAS NOT BEEN REVOKED OR RESCINDED.

_____
SECRETARY-TREASURER

_____
DATE

Non-Public Works Bid
Affidavit Instructions

- **Affidavit is supplied as a courtesy to Affiants, but it is the responsibility of the affiant to insure the affidavit they submit to Jefferson Parish complies, in both form and content, with federal, state and parish laws.**
- **Affidavit must be signed by an authorized representative of the entity or the affidavit will not be accepted.**
- **Affidavit must be notarized or the affidavit will not be accepted.**
- **Notary must sign name, print name, and include bar/notary number, or the affidavit will not be accepted.**
- **Affiant MUST select either A or B when required or the affidavit will not be accepted.**
- **Affiants who select choice A must include an attachment or the affidavit will not be accepted.**
- **If both choice A and B are selected, the affidavit will not be accepted.**
- **Affidavit marked N/A will not be accepted.**
- **It is the responsibility of the Affiant to submit a new affidavit if any additional campaign contributions are made after the affidavit is executed but prior to the time the council acts on the matter.**

Instruction sheet may be omitted when submitting the affidavit

Non-Public Works Bid

AFFIDAVIT

STATE OF _____

PARISH/COUNTY OF _____

BEFORE ME, the undersigned authority, personally came and appeared: _____ _____, (Affiant) who after being by me duly sworn, deposed and said that he/she is the fully authorized _____ of _____ (Entity), the party who submitted a bid in response to Bid Number _____, to the Parish of Jefferson.

Affiant further said:

Campaign Contribution Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all campaign contributions, including the date and amount of each contribution, made to current or former elected officials of the Parish of Jefferson by Entity, Affiant, and/or officers, directors and owners, including employees, owning 25% or more of the Entity during the two-year period immediately preceding the date of this affidavit or the current term of the elected official, whichever is greater. Further, Entity, Affiant, and/or Entity Owners have not made any contributions to or in support of current or former members of the Jefferson Parish Council or the Jefferson Parish President through or in the name of another person or legal entity, either directly or indirectly.

Choice B _____ there are **NO** campaign contributions made which would require disclosure under Choice A of this section.

Debt Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all debts owed by the affiant to any elected or appointed official of the Parish of Jefferson, and any and all debts owed by any elected or appointed official of the Parish to the Affiant.

Choice B _____ There are **NO** debts which would require disclosure under Choice A of this section.

Affiant further said:

That Affiant has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for Affiant; and

[*The remainder of this page is intentionally left blank.*]

That no part of the contract price received by Affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for Affiant.

_____
Signature of Affiant

_____
Printed Name of Affiant

SWORN AND SUBSCRIBED TO BEFORE ME
ON THE _____ DAY OF _____, 20___.

_____
Notary Public

_____
Printed Name of Notary

_____
Notary/Bar Roll Number

My commission expires _____.

STANDARD INSURANCE REQUIREMENTS – PUBLICLY ADVERTISED BIDS

All required insurance under this bid shall conform to Jefferson Parish Resolution No. 113646 or No. 113647, as applicable. Contractors may not commence any work under any ensuing contract unless and until all required insurance and associated evidentiary requirements thereto have been met, along with any additional specifications contained in the advertised bid. Except as where otherwise precluded by law, the Parish Attorney or his designee, with the concurrence of the Director of Risk Management or his designee, may agree on a case-by-case basis, to deviate from Jefferson Parish's standard insurance requirements, as provided in this Section. Vendors requesting deviation therefrom shall submit such requests in writing, along with compelling substantiation, to the Purchasing Department prior to the bid's due date. Any changes to the insurance requirements will be reflected in the bid specifications and addenda. Prior to contract execution and at all times thereafter during the term of such contract, contractors must provide and continuously maintain all coverages as required by the foregoing Resolutions, and the contract documents. Failure to do so shall be grounds for suspension, discontinuation or termination of the contract.

For bidding purposes, bidders must submit with bid submission a current (valid) insurance certificate evidencing the required coverages. Failure to comply will cause bid to be rejected. The current insurance certificate will be used for proof of insurance at time of evaluation. Thereafter, and prior to contract execution, the low bidder will be required to provide final insurance certificates to the Parish which shall name the Jefferson Parish, its Districts Departments and Agencies under the direction of the Parish President and the Parish Council as additional insureds regarding negligence by the contractor for the Commercial General Liability and the Comprehensive Automobile Liability policies. Additionally, said certificates should reflect the name of the Parish Department receiving goods and services and reference the respective Jefferson Parish bid number.

JEFFERSON PARISH REQUIRED STANDARD INSURANCE

☑ **WORKER'S COMPENSATION INSURANCE**

As required by Louisiana State Statute, exception; Employer's Liability, Section B shall be $1,000,000 per occurrence when Work is to be over water and involves maritime exposures to cover all employees not covered under the State Worker's Compensation Act, otherwise this limit shall be no less than $500,000 per occurrence.

Note: If your company is not required by law to carry workmen's compensation insurance, i.e. not a Louisiana company, sole employee of the company, then bidders must request a workmen's compensation insurance declaration affidavit prior to the bid opening date. This insurance declaration affidavit must be fully completed, signed, properly notarized and submitted with the bid. A scanned copy may be submitted with the bid; however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.

☑ **COMMERCIAL GENERAL LIABILITY**

Shall provide limits not less than the following: $1,000,000.00 Combined Single Limit per Occurrence for bodily injury and property damage.

☑ **COMPREHENSIVE AUTOMOBILE LIABILITY**

Bodily injury liability $1,000,000.00 each person; $1,000,000.00 each occurrence. Property Damage Liability $1,000,000.00 each occurrence.

Note: This category may be omitted if bidders do not/will not utilize company vehicles for the project or do not possess company vehicles. Bidder must request an automobile insurance declaration affidavit prior to the bid opening date. This insurance declaration affidavit must be fully completed, signed, properly notarized and submitted with the bid. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid; however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.

DEDUCTIBLES

No insurance required shall include a deductible not greater than $10,000.00. The cost of the deductible shall be borne by the contractor.

NOTE: If the vendor requires a change in deductibles, the request must be submitted in writing to the Purchasing Department prior to the due date of the bid. Such request shall be reviewed by the Parish Attorney's Office with the concurrence of the Director of Risk Management.

UMBRELLA LIABILITY COVERAGE

An umbrella policy or excess may be used to meet minimum requirements.

FOR CONSTRUCTION AND RENOVATION PROJECTS:

The following are required unless otherwise specified in the bid. Such insurance is due upon contract execution.

1) **OWNER'S PROTECTIVE LIABILITY**
   To be for the same limits of liability for bodily injury and property damage liability established for commercial general liability.

2) **BUILDER'S RISK INSURANCE**
   The contractor shall maintain Builder's Risk Insurance at his own expense to insure both the owner (Parish of Jefferson) and contractor as their interest may appear.