

September 26, 2024

ADDENDUM NO. 1

ANN STREET LIFT STATION REPLACEMENT CITY OF PORT LAVACA (U.E. JOB NO. E26133.00)

- Item A. **ADDITION:** Log of Boring for the project is attached.
- Item B. **REVISION:** Revised specification Section 11308 Submersible Pump Lift Station is attached.

A handwritten signature in blue ink, appearing to read "Matt A. Glaze", is written over a horizontal line.

Matt A. Glaze, P.E.
Vice President





The map is not too scale, boring locations are approximate.

Legend

- Geotechnical Borings

TSI LABORATORIES, INC. Ann St. Lift Station Ann Street Port Lavaca, TX 77979		
Drawn by: BT	Date: 06/05/24	Figure 1
Checked by: AN	Date: 06/05/24	
TSI Project No. G-241276		
Boring Location Map		

Log of Boring

PROJECT: Ann Street Lift Station
100 Block of Ann St.
Port Lavaca, TX 77979

BORING NO.: B-1
PROJECT NO.: G-241276
DATE: 07/29/24
SURFACE ELEV.: N/A
LAB. NO.: L-001

CLIENT: Urban Engineering

FIELD DATA		LABORATORY DATA						DRILLING METHOD(S) : Dry Auger 0-30.0'					
DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits %			MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	GROUNDWATER INFORMATION:	
						Liquid Limit	Plastic Limit	Plasticity Index				Groundwater was encountered at 16.0'	
DESCRIPTION OF STRATUM													
0												FAT CLAY - with sand, gray (CH)	
			P=2.5	31		73	21	52	80			- with sand, brownish gray (CH)	
5			P=2.5	31		87	28	59	82			- with sand, brown (CH)	
			P=3.0									- with sand, brown and light brown (CH)	
10			P=4.0	21		52	18	34	82			SANDY SILTY CLAY - brown (CL-ML)	
			P=1.0	15		19	13	6	53				
20			P=1.5										
			P=1.0	26		19	19	0	12			SILTY SAND - brown (SM)	
25			P=1.0	25		18	18	0	11				
30												Boring terminated at 30.0'	
35													

- Steel Tube Sample
- Split Spoon Sample
- Disturbed Sample





REMARKS:

TS₁
Laboratories, Inc.




KEY TO SYMBOLS

Symbol Description

Strata symbols

	Low plasticity clay
	High plasticity clay
	Poorly graded clayey silty sand
	Clayey sand

Soil Samplers

	Steel Tube Sample
	Split Spoon Sample
	Disturbed Sample

REVISED PER ADDENDUM NO. 1

SECTION 11308

SUBMERSIBLE PUMP LIFT STATION

PART 1 GENERAL

1.01 SUMMARY

This section describes the requirements for a triplex (three pump) submersible pump lift station.

1.02 RELATED SECTIONS

Section 01526 Trench Safety Systems

Section 02227 Excavation & Backfill For Utilities

Section 02229 Utility Backfill Materials

1.03 MEASUREMENT AND PAYMENT

Measurement and payment will be on a lump sum basis. The payment made according to the Bidder's proposal shall be full compensation for all materials, tools, equipment, labor, superintendence, fees, permits, and incidentals for a complete operational facility.

1.04 SYSTEM DESCRIPTION

The lift station includes the wetwell (basin), pumps, discharge piping and valves to a point ten (10) feet from the final valve, electrical service entrance, electrical starting equipment, electrical controls including alarm, and driveway base material as shown on plans, site grading, and incidentals for a complete operational facility.

1.05 SUBMITTALS

A. Shop Drawings and Pump Performance Curves

Contractor shall submit to Engineer for approval six (6) copies of data on equipment proposed to be used, including pump performance curves. Performance curves shall include efficiency curves and horsepower requirements.

B. Operation and Maintenance Manuals

The Contractor shall furnish the Owner with five (5) copies of operation and maintenance instructions for the equipment furnished under this specification.

1.06 QUALITY ASSURANCE

A. Testing and Materials

Only materials specified and approved shall be used in construction of the facility. All components of the pump station shall be given an operations test of all equipment at the factory to check for excessive vibration, for leaks in all piping or seals, and for correct operation of the control system and all auxiliary equipment.

The pump suction and discharge lines shall be coupled to a reservoir and the pump shall recirculate water under simulated service connections.

B. Pump Warranty

The pump shall be guaranteed to be free from defects in materials and workmanship for a period of one year from the date of final acceptance. (FIVE YEARS Flygt Warranty)

1.07 DELIVERY, STORAGE, AND HANDLING

All equipment and materials to be incorporated into construction of the facility shall be delivered, stored, and handled in accordance with the recommendation of the manufacturer for each piece of equipment and or material.

1.08 PROJECT SITE CONDITIONS

The Contractor shall visit the site to become familiar with the site conditions. Contractor is responsible for performing any testing he deems necessary to satisfy himself of site conditions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

The lift station pumps shall be manufactured by Flygt.

2.02 MATERIALS AND/OR EQUIPMENT

- A. Wetwell - Reinforced concrete pipe meeting ASTM C76, Class III; inside diameter and depth as shown on the plans. The interior shall be **shop coated** with a 65 mil thickness of Polyurea FE-100, or Engineer approved equal.
- B. Pumps – Pumps shall be Flygt model as shown on the plans.
- C. Lift System - A lift system shall be supplied that shall consist of a ¼” Type 316 stainless steel chain. The chain shall be attached to the pump and shall be long enough to reach the station top. The chain shall be attached so that it can be pulled by the use of lifting equipment. All miscellaneous metal associated with the lift system shall be stainless steel.
- D. Casting - Each pump casting shall be constructed of fine-grained cast iron. The casting shall be designed for a minimum working pressure of 50 psig and hydrostatically tested to 1-1/2 times the working pressure.
- E. Exposed Surfaces - All fasteners and hardware inside wet well nuts and bolts shall be Type 316 stainless steel.
- F. Discharge Elbow - The discharge elbow shall have a foot for anchoring to the wet well floor and a means for firmly supporting the guide rails. The design and mass of the discharge elbow shall be sufficient for rigidly supporting the eccentric load for the pump unit and discharge piping. The discharge elbow inlet flange face shall be perpendicular and make a metal-to-metal contact with the pump discharge nozzle flange face. Sealing of the discharge interface by means of a diaphragm, o-ring or other device is not acceptable. The discharge elbow outlet shall connect to the discharge piping riser. The elbow shall have ANSI, 125-pound flange dimensions and drilling.

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- G. Pump Guides - The pumps shall be capable of being lowered into position in the pump chamber and automatically connected to the discharge connection elbow by the use of a sliding bracket and positioning devices. The sliding bracket shall be part of the pump assembly. The sliding bracket and positioning device shall be constructed of stainless steel.

The upper guide rail bracket and the guide rails shall be constructed of stainless steel, sized as shown on the drawings.

Intermediate guide rail brackets shall be constructed of stainless steel and be positioned a maximum of 10 feet apart.

- H. Discharge Piping and Valves - A check valve and a plug or a gate valve (as noted on the plans) shall be installed on the discharge pipe from each pump. The valves shall be installed as shown on the plans. Plug valves shall be Cam Centric as manufactured by Val-Matic or Engineer approved equal.
- I. Electrical Service Entrance - An electrical service entrance is required for electrical power to the lift station.
- J. Control Panel, Breakers, Controls and Wiring
1. Control Panel - The control system shall be designed to operate the required number and types of pumps shown on the plans. The control panel shall provide full operation of the pumps under normal conditions and alternate the pumps down cycles to equalize run times. Pumps shall be set to cut on and off at elevations shown on the plans.

- a. Control panel shall have a NEMA 4X stainless steel enclosure with a stainless steel hinged dead front door on a continuous piano hinge and removable sub-panel. The inner door shall be stainless steel or aluminum mounted on a continuous hinge and shall be furnished for protection against exposed wiring. A lock hasp shall be provided on door. A circuit breaker shall be provided for each pump with mechanical through-the-door operators and shall be Square D Mag-Guard or preapproved equal. A magnetic starter with three (3) leg overload protection for three-phase operation or one (1) leg overload protection for single-phase operation shall be supplied for each pump. The control circuit shall be protected by a single-pole 10- Ampere circuit breaker. An alternating relay shall be provided to alternate pumps on each successive cycle of operation. Starters shall have auxiliary contacts to operate all pumps on override condition. H-O-A switches and run lights shall be supplied for each pump. Pump control switches and pilot devices will be oil-tight units mounted on inner door. Toggle switches will not be acceptable. Hand-off-auto switches shall be Square D 9001 K Series or approved equal. Pilot lights shall be domed 30 MM LED or approved equal. Detection and display on the inner door of seal failure and overtemperature failure within each pump shall be required. The overtemperature and seal failure alarm circuit shall be self-latching and shall require resetting by means of a pushbutton on the inner door. The overtemperature alarm shall lock out each individual pump. Alternator relay shall be Diversified ARB-120-AEA by Idec or equal, with switch to allow choice of either pump as lead pump or automatic alternation. Motor starters must be NEMA-rated for horsepower. No IEC-rated starters will be allowed in the panel. Starter coils shall be 120-volt. Starters will be Square D 8536 or approved equal. All starters, breakers, and relays must be enclosed. Open-frame components shall not be used. IEC rated components

are not acceptable. A power monitor relay shall be used to protect the pumps against damage from being directly switched by the power monitor relay. Activation time of the relay shall be adjustable, but not be longer than 250 milliseconds with an adjustable release time of up to 30 seconds. Relay shall be PBE series by Diversified or approved equal. There shall be no penetrations of the top of the panel enclosure, in order to prevent moisture from damaging panel components. Panel shall include 120/240V, 1 ϕ load center with four single-pole 20 A circuit breakers and a ground-fault protected 120-volt receptacle for service use. Individual control relays (as required) for 120V 3-pole service shall be Idec RR3BUL120V AC or approved equal, and for 24V 2-pole service shall be RR2PUL24V AC or approved equal. Time delay relays shall be Idec RTEB 11-120V AC or approved equal. All relays and time delay relays shall have contacts rated at 10 amperes. Lightning Protection shall be provided to protect against lightning strikes. Unit shall be Delta Lightning Arrestors Model LA603. Unit must be mounted on exterior of control panel. Non-resettable elapsed time meters shall be provided for each pump. They shall be Cramer 635G or approved equal. A copy of the schematic drawings with a bill of material shall be placed inside the control panel. One additional copy shall be provided to the operating entity.

- b. The controller shall output to the existing SCADA panel relocated from the existing lift station.

2. Wetwell (Sump) Level Controls – A SC1000 Controller manufactured by MP ELECTRONICS located in Apopka FL or equal will provide primary control utilizing a 4-20mA LM series Submersible transducer as a primary level sensing device.

A 24-volt ac control system shall be provided for the full float backup control system. Backup floats shall indicate high water and low water levels.

They shall be suspended from a stainless-steel float bracket mounted to lip of pump hatch opening. Float switches shall be utilized for backup to the submersible transducer.

3. Alarm - A high water alarm shall be supplied. Alarm light shall be provided to display warning of excessive fluid level. Alarm light to be mounted on side of panel or on conduit box elevated above panel. No penetration of top of panel will be allowed. Alarm light shall have a red glass globe and shall be RAB GL100R or approved equal. In addition, an audible alarm with manual silencing switch shall be provided. A “press to test” switch without locking relay shall be provided to manually test the alarm light and audible alarm.
4. Wiring - All wiring in the pump station shall be color coded as indicated on the wiring diagram. Wiring diagram matching the unit wiring shall be provided. All control wiring shall be #14 AWG THHN/THWN or approved equal. Each wire shall have slide on wiring markers to identify each end of the wire. Wire markers shall be Wieland Z-type markers or approved equal. All power wiring shall be sized per the full load amps of the pumps and be THWN or MTW. Terminal connections shall be black phenolic, 300 volt rated, and numbered for each position. Terminals shall be SQD 9080-GK6 or approved equal.

- K. Access Covers and Frames with Safety Grate System - The supplier shall provide aluminum access covers and frames with a safety grate system. Fasteners, hinges, and other hardware shall be Type 316 stainless steel. The access cover shall be as specified on the drawings as manufactured by US Fabricating, E.J. or approved equal. Door panels shall be ¼” aluminum diamond plate, reinforced to withstand a live load of 300 psf.

Doors shall open 90 degrees and automatically lock with a stainless-steel hold open arm with an aluminum release handle and shall include a stainless-steel spring assist. When closed, doors shall be flush with the frame and equipped for padlocking. Padlock assembly shall be recessed and sized to restrict access by bolt cutters. Access Cover shall meet the required live load as a stand-alone unit only. No grating system will be acceptable if the hatch door rests on the grating frame to achieve the load rating. The contractor shall insure that the pumps will pass through the doors.

Each access hatch shall be fitted with a permanently installed fall through prevention grate system.

PART 3 EXECUTION

3.01 PREPARATION

- A. Location of Existing Utilities - Contractor shall verify the existence and location of all existing underground utilities in the area of the work.
- B. Protection of Existing Utilities - Contractor shall take the necessary precautions to protect all existing utilities from damage due to his operations. Any damage to the existing utilities shall be repaired at the Contractor's expense by qualified personnel. In order to protect existing utilities that are required to be exposed, Contractor's operation shall be such that a sufficient distance back from the edge of the excavation is maintained to avoid overloading and to prevent slides or caving. No unnecessary excavation or exposing of existing underground utilities will be allowed.
- C. Convenience to Public - All trenching and excavating shall be performed in a manner that will cause as little inconvenience to the public as possible. All excavated material shall be kept trimmed such that minimum inconvenience is caused to the public or adjoining property owners.
- D. Erosion Control - Employ measures and construction practices to prevent erosion at, or adjacent to, the project site. "The Contractor is solely responsible for providing stormwater pollution prevention measures to comply with the stormwater pollution prevention requirements of local, State, and Federal regulatory agencies, including, but not limited to the Texas Commission on Environmental Quality (TCEQ) and the United States Environmental Protection Agency (EPA)". Erosion control shall begin at the onset of the project (prior to mobilization) and be maintained throughout the duration of the work until final acceptance.

3.02 ERECTION / INSTALLATION / APPLICATION AND / OR CONSTRUCTION

- A. Excavation. Excavation shall include the removal of any trees, stumps, brush, debris or other obstacles that obstruct the line of work, and the excavation and removal of all earth, rock or other material to the extent necessary to install the utility and all appurtenances in conformance with the line and grades shown on the plans or as specified herein.
- B. Lift Station Components. The components of the lift station shall be installed in accordance with the recommendation of the manufacturer of each component used.

Installation of the pump chamber shall be done in accordance with the written instructions provided by the manufacturer. These instructions shall be securely attached to and readily visible on the outside of the main chamber of the pump station.

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3.03 OPERATOR TRAINING

The Contractor shall provide start-up training for the personnel of the Owner regarding the operation of the equipment installed.

END OF SECTION