

ADDENDUM NO. 1
06/10/2024

PROJECT: CITY OF VERNON
FERRELL STREET LIFT STATION RECONSTRUCTION

BID DATE: June 20th, 2024, at 11:00 AM

The following changes and/or additions shall be made to the Plans, Specifications, and Contract Documents for the above-referenced project. The bidder shall acknowledge receipt of this Addendum by signing below and returning this Addendum with the Bid.

1) PLAN SHEETS

Sheet 2 – Existing Site Plan – This sheet has been revised to clarify lift station dimensions.

Sheet 3 – Proposed Site Plan – This sheet has been revised to clarify the valve vault dimensions.

Sheet 4 – Miscellaneous Details – This sheet has been revised to correct the lift station vault location on Section B-B. Section A-A has also been revised to show circle saw cuts on the pass-through wall instead of squares. A note was also added to this sheet to provide details on rebar protection near the saw cut areas.

2) SPECIFICATIONS

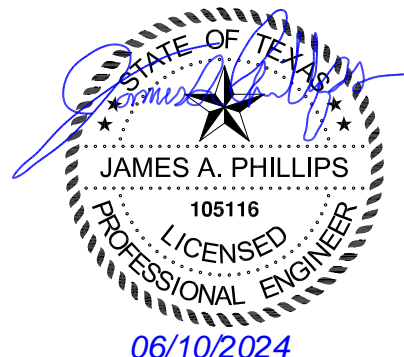
33 04 01 – Lift Stations – This specification has been modified to change the verbiage for the lift station pump selection from “approved equal” to “pre-approved equal”. Pump selections shall be sent to the engineer no later than 1 week before the bid opening for review and consideration.

Prepared by:

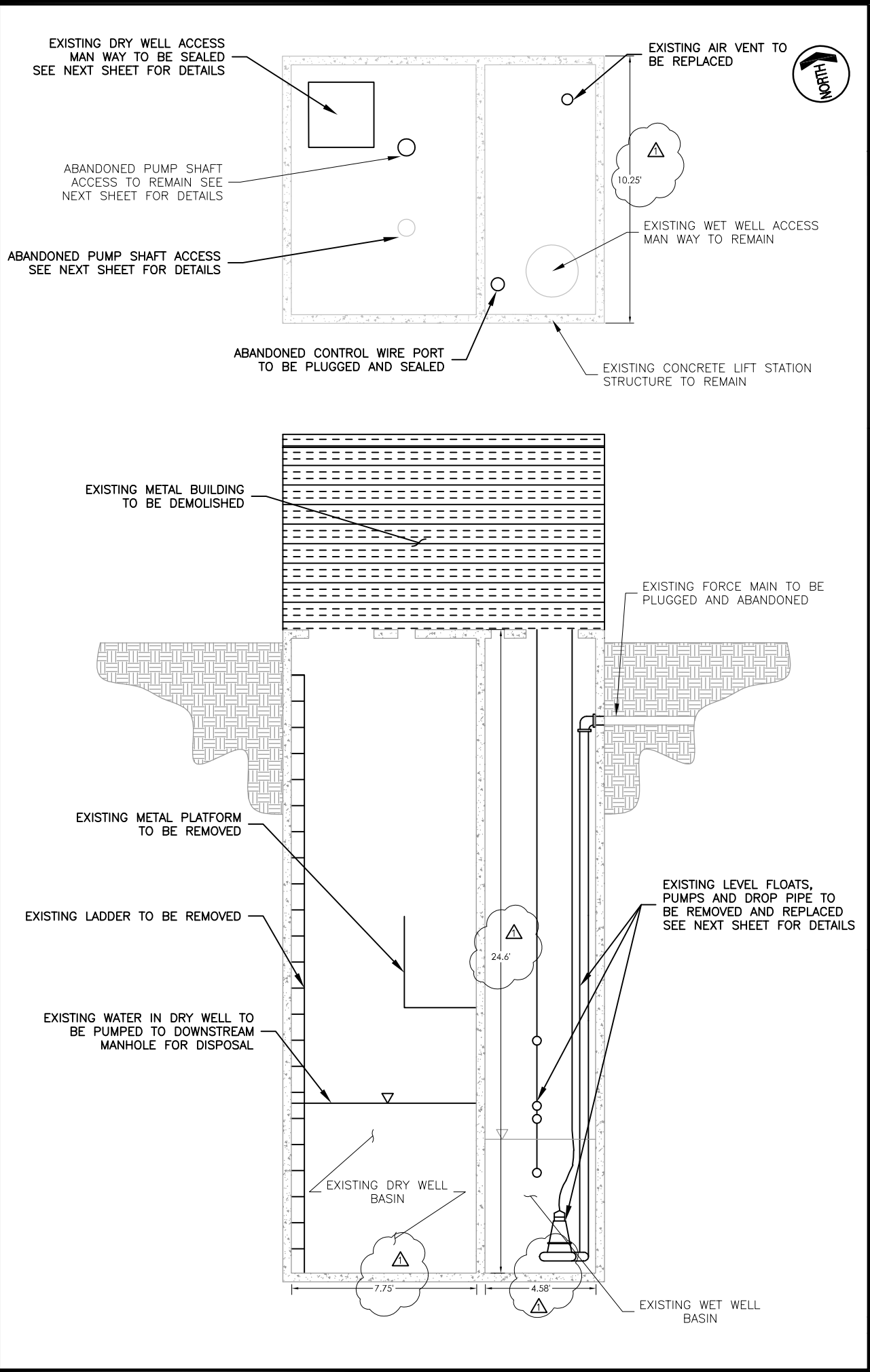
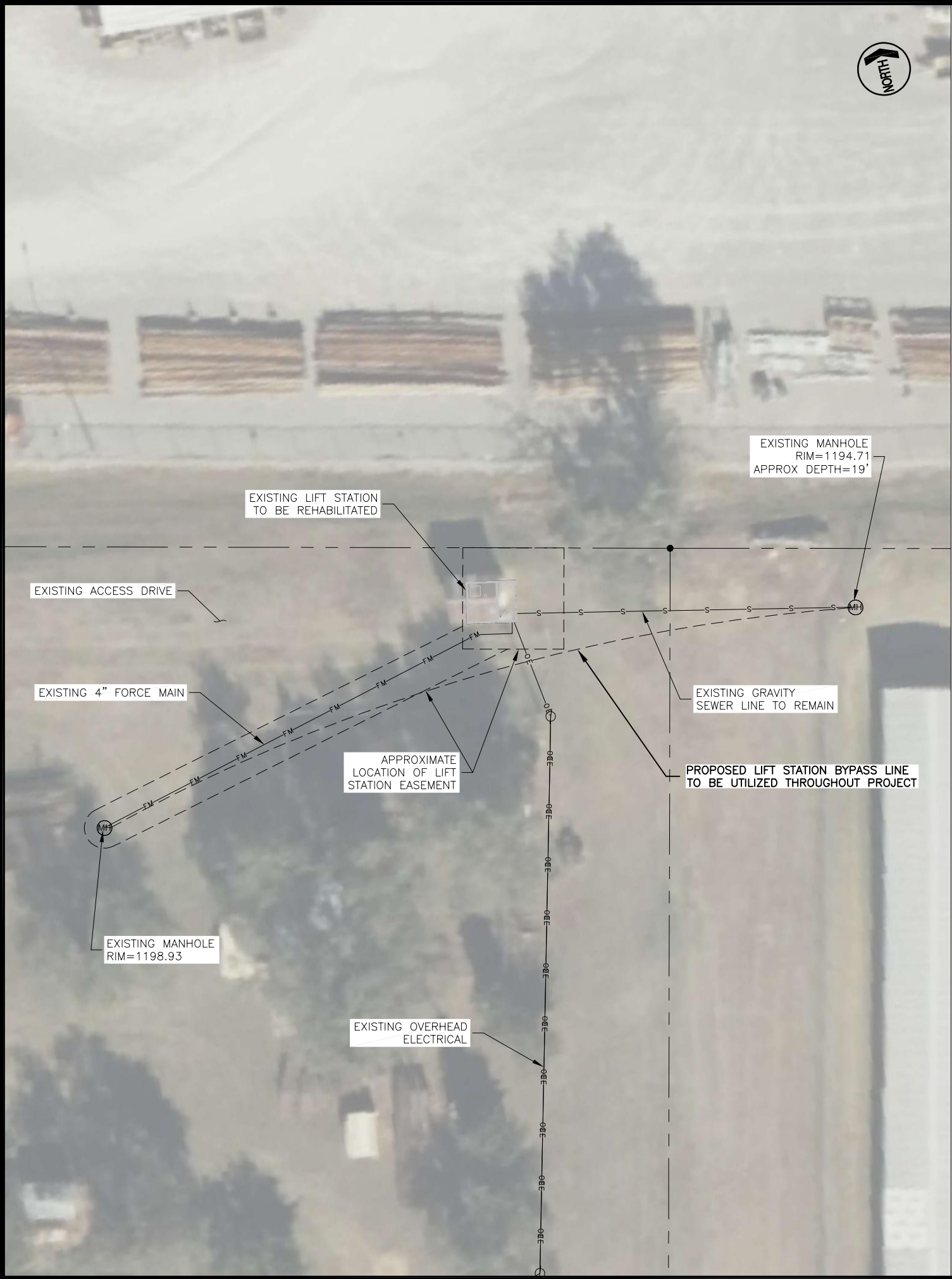
Bidder's Acknowledgment

JACOB | MARTIN
TBPE Firm No. 2448

Date



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VERNON, TEXAS	
FERRELL STREET LIFT STATION IMPROVEMENTS	
EXISTING LIFT STATION PLAN & SECTION	
NO. REVISION	DATE
1	06/10/2024
PROJECT # 23480	
SCALE 1" = 20'	
DRAWING CHECK SCALE AND ADJUST ACCORDINGLY.	
SEQ. 2	SHEET 2

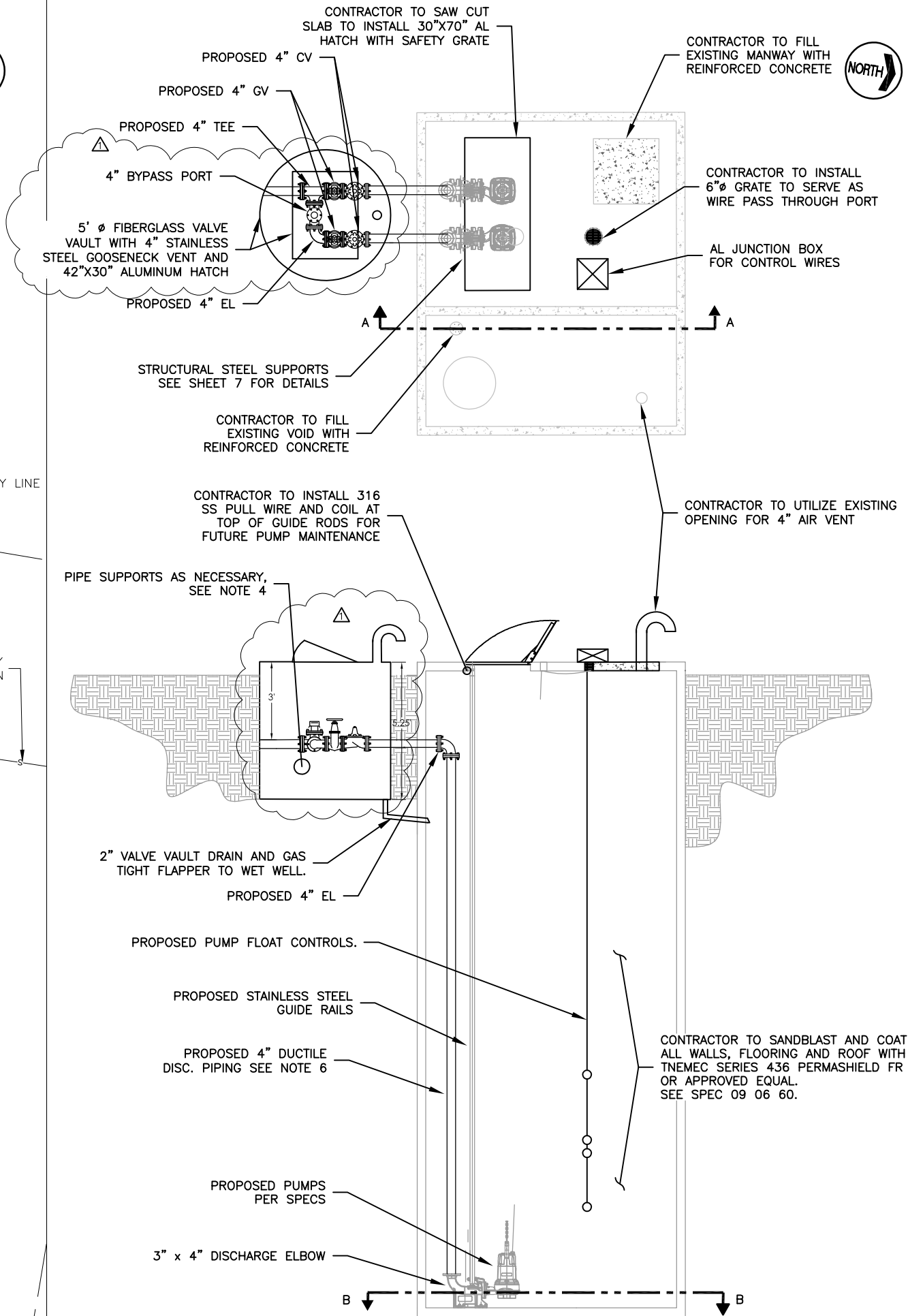
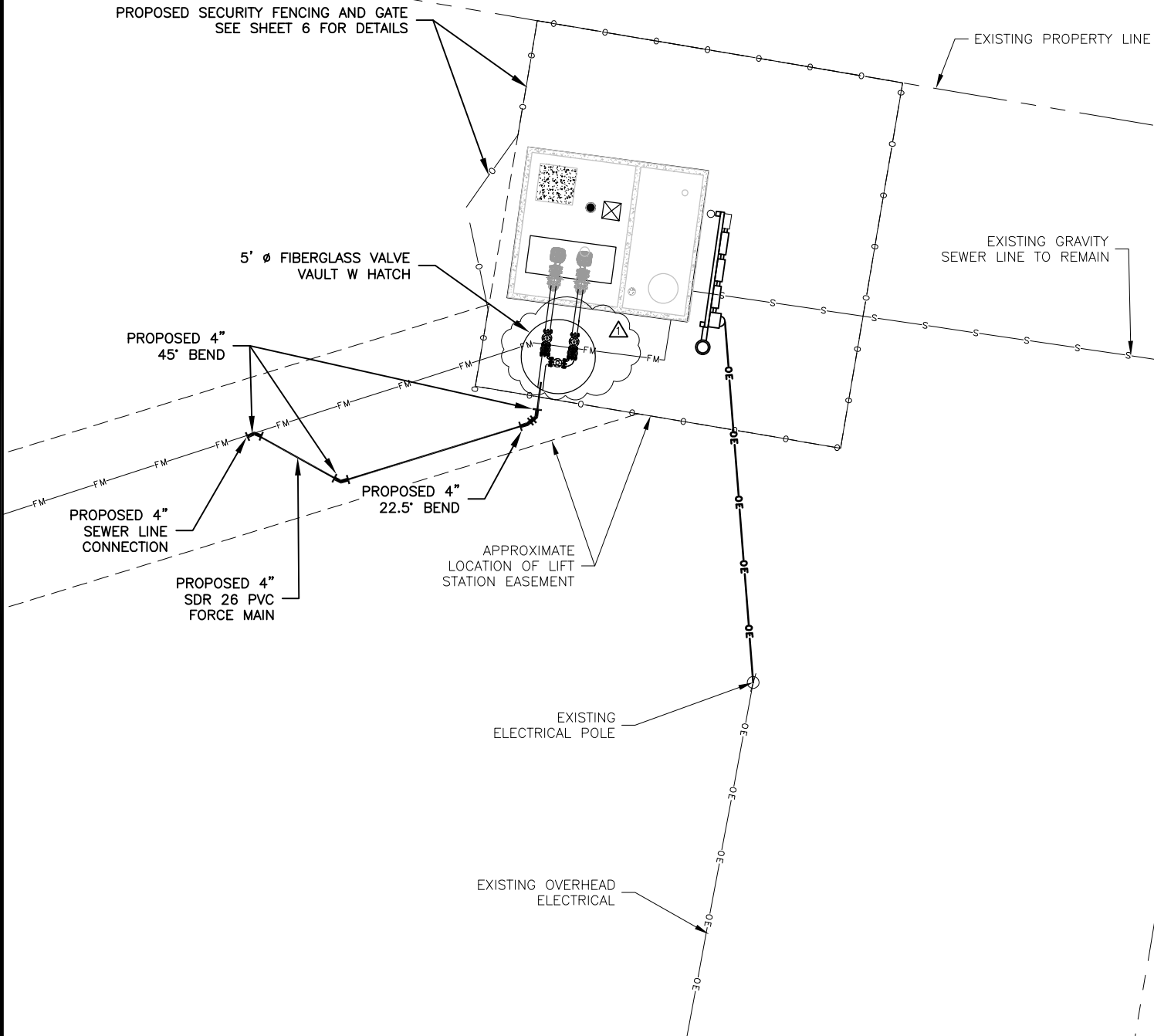
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NOTE:

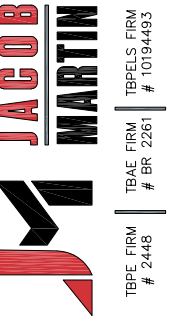
- 1) DUPLEX PUMP CONTROL PANEL SHALL INCLUDE AUDIO-VISUAL ALARM (WITH BATTERY BACKUP) WHICH IS ACTIVATED AT HIGH WATER LEVEL OR POWER FAILURE.
- 2) ALL ANCHOR BOLTS, ETC. SHALL BE 316 STAINLESS STEEL.
- 3) PROPOSED VALVE VAULT TO EXTEND BEYOND EX GROUND EL BY 6" MIN.
- 4) WHILE NOT SHOWN, CONTRACTOR TO PROVIDE AND INSTALL ALL NECESSARY PIPE SUPPORTS. PIPE SUPPORTS SHALL BE SUBSIDIARY TO VALVE VAULT LINE ITEM.
- 5) CONTRACTOR TO VERIFY AND MAINTAIN EXISTING PUMP CONTROL FLOAT ELEVATIONS.
- 6) ALL PIPING WITHIN VALVE VAULT SHALL BE DUCTILE IRON.
- 7) ALL DUCTILE IRON PIPING SHALL BE COATED WITH TNEC SERIES 431 PERMASHIELD PL OR EQUAL. SEE SPEC 09 06 60.

NOTE CONT.:

- 8) CONTRACTOR TO VERIFY WITH CITY LOCATION OF PROPOSED GATE.
- 9) THE PROVIDED DIMENSIONS ARE APPROXIMATIONS BASED ON THE BEST AVAILABLE FIELD MEASUREMENTS. CONTRACTOR TO FIELD VERIFY LIFT STATION DIMENSIONS PRIOR TO CONSTRUCTION.



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VERNON, TEXAS
FERRELL STREET LIFT STATION IMPROVEMENTS

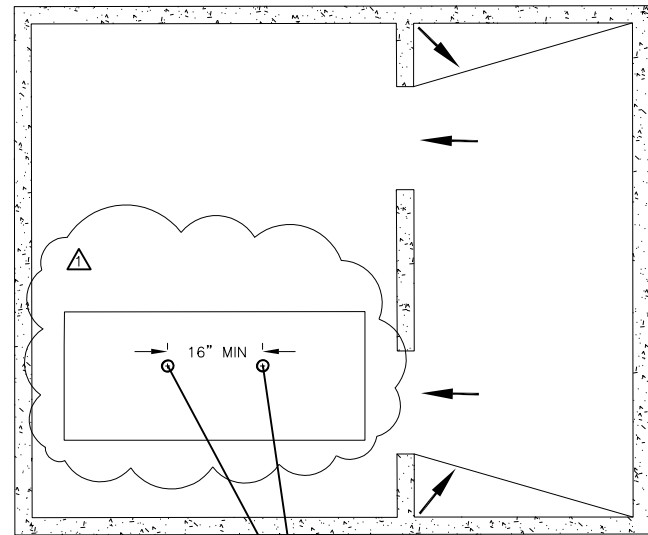
PROPOSED LIFT STATION PLAN & SECTION

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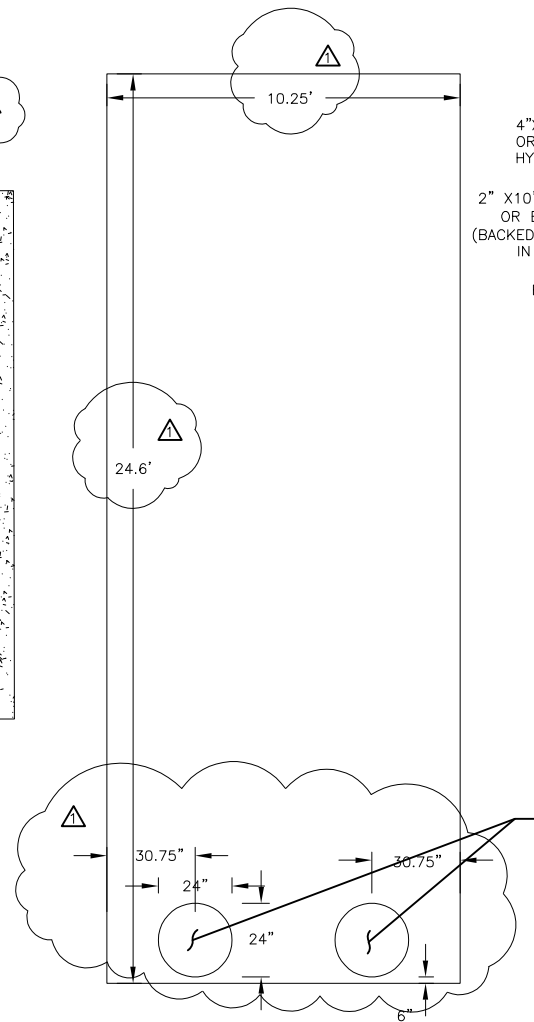
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NOTE:

- 1) CONTRACTOR TO MAINTAIN 10% FLOOR SLOPES PER TAC 217.61(e)(1).
- 2) CONTRACTOR TO GROUT BOTTOM OF LIFT STATION TO SLOPE FLOOR TO PUMP LOCATIONS.
- 3) CONTRACTOR TO COAT PROPOSED SAW CUT CHANNEL HOLES WITH TNEC SERIES 436 OR APPROVED EQUAL.



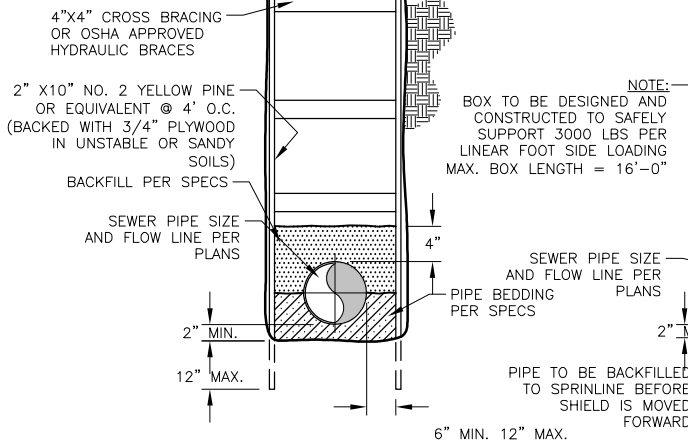
SECTION B-B



SECTION A-A

24"x24" CHANNEL HOLES TO COMBINE WET AND DRY WELLS

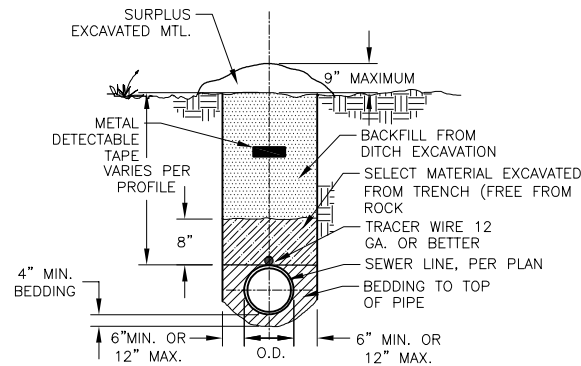
WALL BRACING DETAIL



MOVABLE SHIELD

TRENCH WALL PROTECTION
N.T.S.

TRENCH WALL SLOPING

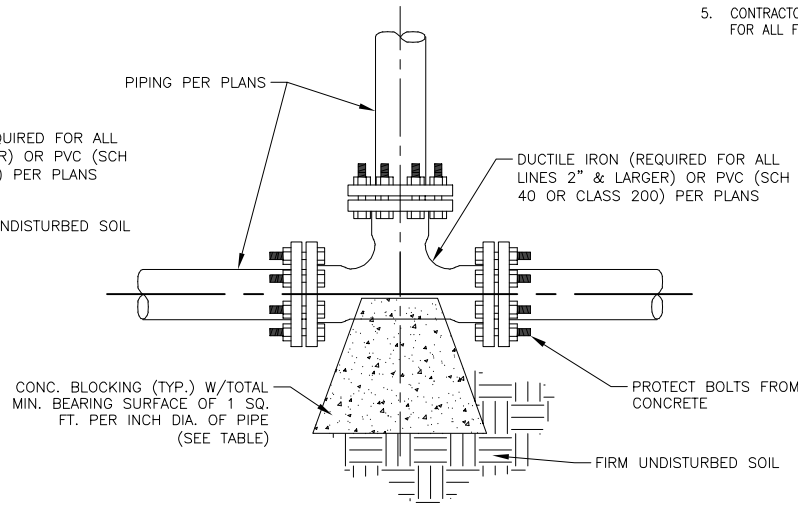
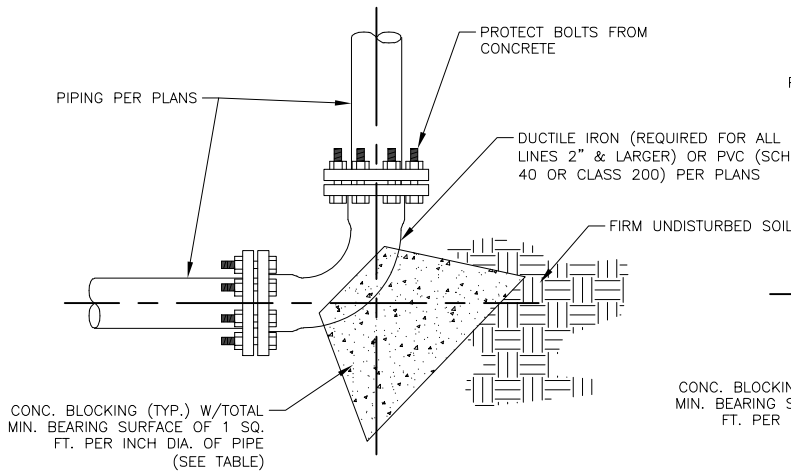


OUTSIDE ROADWAYS

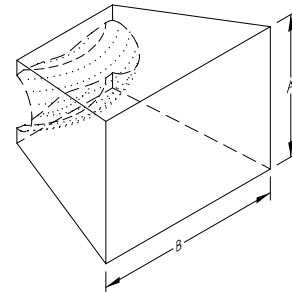
WASTEWATER TRENCH DETAILS

NOTES:

1. BLOCKING REQ'D. ON ALL FITTINGS 2" & LARGER.
2. ALL REQUIRED BENDS & FITTINGS MAY NOT BE LABELLED ON THE PLANS.
3. PIPE MAY BE CURVED UP TO 75% OF MANUFACTURER'S RECOMMENDED MAXIMUM CURVATURE WITHOUT A BEND AS APPROVED BY OWNER & ENGINEER.
4. ALL DUCTILE IRON FITTINGS AND VALVES TO BE PROTECTED FROM CONCRETE WITH A WRAPPING OF 8 MIL POLYETHYLENE PER SPECS.
5. CONTRACTOR SHALL USE MEGA LUG RESTRAINTS FOR ALL FITTINGS.

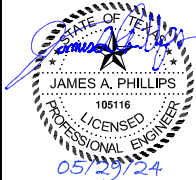


TYPICAL BLOCKING DETAILS

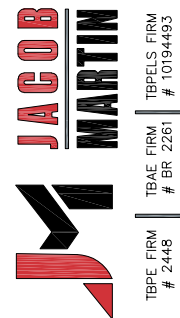


DIMENSIONS FOR CONCRETE THRUST BLOCKS			
PIPE DIA. (INCHES)	MINIMUM SOIL BEARING AREA REQUIRED (SQUARE FEET)	TYPICAL DIMENSIONS OF BEARING AREA IN INCHES (A X B)	TYPICAL VOLUME OF CONC. REQUIRED (CUBIC FEET)*
2	2.0	12" x 24"	3.0
2 1/2	2.5	15" x 24"	4.0
3	3.0	16" x 27"	4.5
4	4.0	18" x 32"	6.0
6	6.0	24" x 36"	9.0
8	8.0	29" x 40"	12.0
10	10.0	30" x 48"	15.0
12	12.0	36" x 48"	18.0
14	14.0	36" x 56"	21.0
16	16.0	39" x 59"	24.0
18	18.0	42" x 62"	27.0

* VARIES CONSIDERABLY W/DISTANCE BETWEEN PIPE AND BEARING POINT



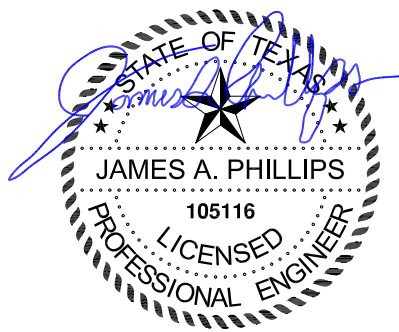
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VERNON, TEXAS
FERRELL STREET LIFT STATION IMPROVEMENTS

MISCELLANEOUS DETAILS

NO.	REVISION	DATE	PROJECT #	SCALE	CHECK SCALE AND ADJUST ACCORDINGLY.
1	ADDENDUM #1	06/10/2024	23480	N.T.S.	
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SECTION 33 04 01 - LIFT STATIONS

PART 1 GENERAL

1.1 REFERENCE STANDARDS

06/10/2024

ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.

ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2016.

ASTM C357 - Standard Test Method for Bulk Density of Granular Refractory Materials; Latest Edition.

ASTM C478 - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2015a.

1.2 WORK INCLUDED

This item of the Specifications covers the work to be performed for the rehabilitation of one duplex lift station with a proposed pre cast concrete valve vault and appurtenances related to the lift station work. Work related to the proposed lift station rehabilitation shall commence at the location as shown on the Plans.

1.3 DESCRIPTION OF OPERATION

The proposed duplex lift station shall operate in a lead lag configuration.

1.4 SUBMITTALS

Submit the following information in accordance with the requirements of the Contract Documents:

- A. Preconstruction Submittals
 - 1. Submit Material, Equipment, and Fixtures
- B. Shop drawings
 - 1. Fabrication drawings
 - 2. Erection/Installation drawings
- C. Product Data
 - 1. Submit manufacturer's catalog data and equipment and performance data for the following items:
 - a. Man hole chambers
 - b. Entrance covers
 - c. Sewage pumps
 - d. Pump controls
 - 2. Submit the following.
 - a. Preventative maintenance and inspection
 - b. Special tools
 - c. Posted instructions
- D. Operation and Maintenance Data
 - 1. Submit Operation and Maintenance Manuals for package lift stations including the following.
 - a. Equipment description
 - b. Assembly and installation procedures
 - c. Adjustment and Alignment
 - d. Checkout procedures
 - e. Procedures of operation
 - f. Troubleshooting

PART 2 PRODUCTS

2.1 PUMPS AND MOTORS

Pump shall be of the non-clog, standard type FLYGT Model #N80-2150 or pre-approved equal with an integrally built in submersible type motor. All openings in pump shall be large enough to pass a 3" diameter sphere. Discharge shall be standard 4" flange. Pump and motor assembly shall be UL listed for Class 1, Group D explosion-proof service.

Pump shall have a capacity of 180 GPM at a total head of 40 feet and shall use a 3 HP motor operating at 1887 RPM.

Pump motor shall be of the totally enclosed, submersible, squirrel cage induction type rated 3 horsepower at 1887 RPM. Motor shall be for three phase 230 volts. Three phase motors shall be NEMA B type.

Stator winding shall be of the open type with Class F insulation good for 155 deg C (311 deg F) maximum operating temperature. Winding housing shall be filled with a clean high dielectric oil that lubricates bearings and seals and transfers heat from windings and rotor to outer shell. Air-filled motors which do not have the superior heat dissipating capabilities of oil-filled motors shall not be considered equal.

Motor shall have two heavy duty ball bearings to support pump shaft and take radial and thrust loads and a sleeve guide bushing directly above the lower seal to take radial load and act as flame path for seal chamber. Ball bearings shall be designed for 50,000 hours B-10 life. Stator shall be heat shrunk into motor housing. A heat sensor thermostat shall be attached to top end of motor winding and shall be connected in series with the magnetic contactor coil in control box to stop motor if motor winding temperature reaches 221 deg F. Thermostat to reset automatically when motor cools. Three heat sensors shall be used on 3 phase motors. The common motor pump and grinder shaft shall be of #416 stainless steel threaded to take pump impeller and grinder impeller.

- A. Seals - Motor shall be protected by two mechanical seals mounted in tandem with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell.
Seal face shall be carbon and ceramic and lapped to a flatness of one light band. Lower seal faces shall be standard.
A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop motor but shall act as a warning only, indicating service is required.
- B. Impeller - The pump impeller shall be cast ductile iron and of the 2 vane non-clog enclosed type. Vane inlet tips shall be carefully rounded to prevent stringy material from catching in vanes. Pump-out shall be used in front and back chamber. Impeller shall be dynamically balanced. Impeller to be driven by stainless steel shaft key and impeller held in place with lock screw and washer. Impeller and motor shall lift off case as a unit without disturbing discharge piping. Impeller neck shall run in bronze wear ring that is pressed into volute case.
- C. Corrosion Protection- All iron castings shall be pre-treated with phosphate and chromic rinse and to be painted before machining and all machined surfaces exposed to the sewage water to be re-painted. All fasteners to be 302 stainless steel.
- D. Bearing End Cap - Upper motor bearing cap shall be a separate casting for easy mounting and replacement.
- E. Power Cables - Power cord and control cord shall be double sealed. The power and control conductor shall be single strand sealed with epoxy potting compound and then clamped in place with rubber seal bushing to seal outer jacket against leakage and to provide for strain

pull. Cords shall withstand a pull of 300 pounds to meet U.L. requirements. Insulation of power and control cords shall be type SOOW. Both control and power cords shall have a green carrier ground conductor that attaches to motor frame.

2.2 CONTROL PANEL

The CONTRACTOR shall install a NEMA 3R main disconnect on the meter pole, conduit, conductors, and connections from the power company service to the lift station controls. The pump control panel(s) will be housed in a NEMA 3R enclosure with a hinged door. The enclosure will be 16" x 14"-6", 16 Ga. for duplex use. The enclosure will be properly cleaned, galvanized, and painted with gray enamel paint. The enclosure will have holes for mounting. The back panel shall be mounted by means of four (4) #10 screws which will mate to four (4) threaded stand-offs which are welded to the back of the enclosure. Mount the control on 2-inch galvanized pipe, as shown on the Plans.

Each pump shall be protected by circuit breakers and shall be 2-pole 20 amp lug mounted breaker. Each pump shall be controlled by a 3 HP motor starter rated 3 IJP, 230 volt, 3 phase motor and have a 115-volt operating coil. Motor starter shall be cross the line starter. The control panel shall be fitted with a green pump run light for each motor and two red alarm lights with a horn (for high water and for power failure). The alarm light shall have a 15-watt clear intensity bulb covered by a heavy Lexan lens that magnifies and intensifies light. The lens will have a flanged base with a gasket to create a watertight seal.

The duplex panel shall have a solid-state plug-in type alternator.

The control panel shall also have the following:

1. Fuse in control panel circuit (3 amp).
2. Terminal blocks for connecting pump & switches.
3. Isolated terminal for mounting neutral wire & grounding screen in back plate.
4. H-O-A switch for each pump with green run light.
5. Schematic diagram mounted on control box cover.
6. Override relay in duplex panels.
7. One Seal Sensor red light and one high water light.
8. Automatic rest of each starter after power failure.

2.3 ACCESS DOORS

General Lift station access hatch shall be one door, 70"x30" Aluminum by Halliday Products or approved equal.

2.4 PIPING, VALVES & RAIL ASSEMBLY

All fasteners shall be stainless steel.

- A. Discharge Piping - Ductile iron discharge piping shall connect to the stationary discharge base lift assemblies and terminate at a 4" NPT discharge flange mounted on the basin at the height shown in the Plans.
- B. Valves - 4" Swing Flex Check Valves, Model 5044 by Val-matic or approved equal shall be provided, 4" plug valves shall also be included in the pre cast concrete valve vault.
- C. Rail Assemblies - The lift-out rail system assemblies shall permit easy removal and installation of the pumps and lower check valves without necessity of personnel entering the basin. Structural guide brackets with guide yokes of sufficient bearing strength to prevent binding shall bolt to each pump. The yokes shall mate over guide rails of a minimum of 2-inch stainless steel pipe running between an upper rail support and the discharge case. Lower discharge nozzles at the bottom of the check valves shall be guided into a chamfered cavity in the discharge cases. A shoulder on the nozzle shall bottom on the discharge cases to insure alignment for a leak tight seal. Dual "O" rings shall affect a hydraulic seal around each nozzle when it is in its operating position. A brace, easily removable from the top of the basin, shall be provided to lock the parts together and to prevent line surges from breaking the seal and allowing leakage. The

discharge case shall have a discharge opening with piping to a discharge coupling through the basin wall.

2.5 LEVEL CONTROL SWITCHES

The level control switches shall be of the mercury type sealed in a polypropylene housing. The switches shall be supplied with 30' of SJO 16-2 cord and have an external stabilization weight fastened to the cord approximately 6" above float.

PART 3 EXECUTION

3.1 GENERAL

Install all lift station appurtenances as indicated, in accordance with Drawings and the manufacturer's instructions.

3.2 TESTS

Perform Tests, including hydrostatic leak checking of piping and operation of equipment.

-- END OF SECTION --