

ADDENDUM NO. 3
05/06/2024

PROJECT: CITY OF IDALOU
WATER TREATMENT IMPROVEMENTS

BID DATE: MAY 9, 2024

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) GENERAL

- a) This project must follow both AIS and BABA requirements.
- b) The order of priority for alternates. In the case of budget overruns, and if the city so chooses, it is expected that the following order would be utilized for deducts to be awarded within the proposed budget. Final deductive alternatives taken will be chosen by the City.
 - i) D1 – Boom Gate
 - ii) D2 – Crushed Base Drive
 - iii) D4 – Sand Trap
 - iv) D3 – Site Improvements – Concrete Pavement

2) CONTRACT DOCUMENTS

- a) Bid Schedule – The bid schedule has been revised to add deductive alternates. Please use the updated bid schedule.

3) PLAN SHEETS

- a) Sheet C-14 – This sheet has been revised to add a side access manway per TCEQ requirements and a 2” threaded fitting.
- b) Sheet C-15 – This sheet has been revised to show a double barrier boom gate instead of the single boom configuration.
- c) Sheet D-2 – This sheet has been revised to clarify verbiage related to the feed pump.
- d) Sheet D-3 – This sheet has been revised to provide additional details on the feed and booster pumps.
- e) Sheet D-7 – This sheet has been revised to add a butterfly valve after the feed pump and details on possible deductive alternate.
- f) Sheet D-11 – This sheet has been revised to clarify the water treatment system controls.

4) SPECIFICATIONS

- a) 01 03 01 – Measurement and Payment – Has been revised to clarify additional line items in the bid schedule.
- b) 11 05 01 – Centrifugal Pumps – Has been revised to modify the design of the feed pump as well

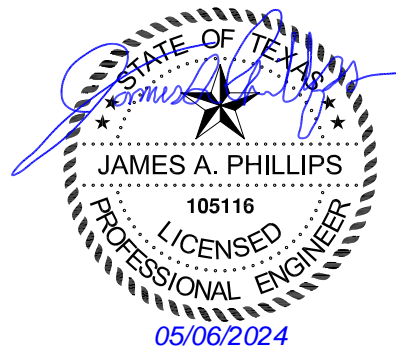
as clarify that the feed pump shall be provided separately by the GC and is not included in the QED equipment.

Bidder's Acknowledgment

Date

Prepared by:

JACOB | MARTIN
TBPE Firm No. 2448



CITY OF IDALOU
WATER SYSTEM IMPROVEMENTS – CONTRACT 1 – WATER TREATMENT IMPROVEMENTS
BASE BID - ADDENDUM #3

Show prices in numerals. Round off unit prices to two decimal places only.
 These Bid Prices must include all labor, materials, equipment, insurance, overhead, superintendence, transportation, profits & incidentals to cover the finished Work called for in the Contract Documents.

For all Labor, Materials, Equipment and Incidentals to Furnish and Install the Following:

Bid Item	Description	Est. Qty.	Unit	Unit Price	Extended Amount
1	Mobilization, Bonds, and Insurance	1	LS	\$	\$
2	Water Treatment Plant Building	1	LS	\$	\$
3	Site Improvements - Concrete Paving	177	SY	\$	\$
4	Low Profile Sieve Aeration Equipment	1	LS	\$	\$
5	Water Treatment Plant Electrical Improvements	1	LS	\$	\$
6	Water Treatment Plant Control	1	LS	\$	\$
7	Sand Trap	1	EA	\$	\$
8	6" Water Line (Feed and Return)	535	LF	\$	\$
9	2" Water Line	140	LF	\$	\$
10	6" Water Line Connections	2	EA	\$	\$
11	2" Water Line Connections	1	EA	\$	\$
12	8" Gate Valve	2	EA	\$	\$
13	6" Gate Valve	2	EA	\$	\$
14	5,000 Gallon Raw Water Tank	1	EA	\$	\$
15	Backup Generator & ATS	1	EA	\$	\$
16	Fiberglass Chlorine Building	1	EA	\$	\$
17	Metal Tape	675	LF	\$	\$
18	Crushed Base Drive	274	SY	\$	\$
19	6" Feed Water Flow Meter	1	EA	\$	\$
20	VGAC Containers	2	EA	\$	\$
21	Mini Rae 3000 Air Sampler	1	EA	\$	\$
22	Feed Water Booster Pump	1	LS	\$	\$
23	WTP Piping	1	LS	\$	\$
24	Mini Split AC Unit	1	LS	\$	\$
25	Fencing and Gates at VGAC and Head Tank	54	LF	\$	\$
26	Boom Gate	1	LS	\$	\$
27	Double block and bleed assembly vault and 1" connection with Ball Valve	1	LS	\$	\$

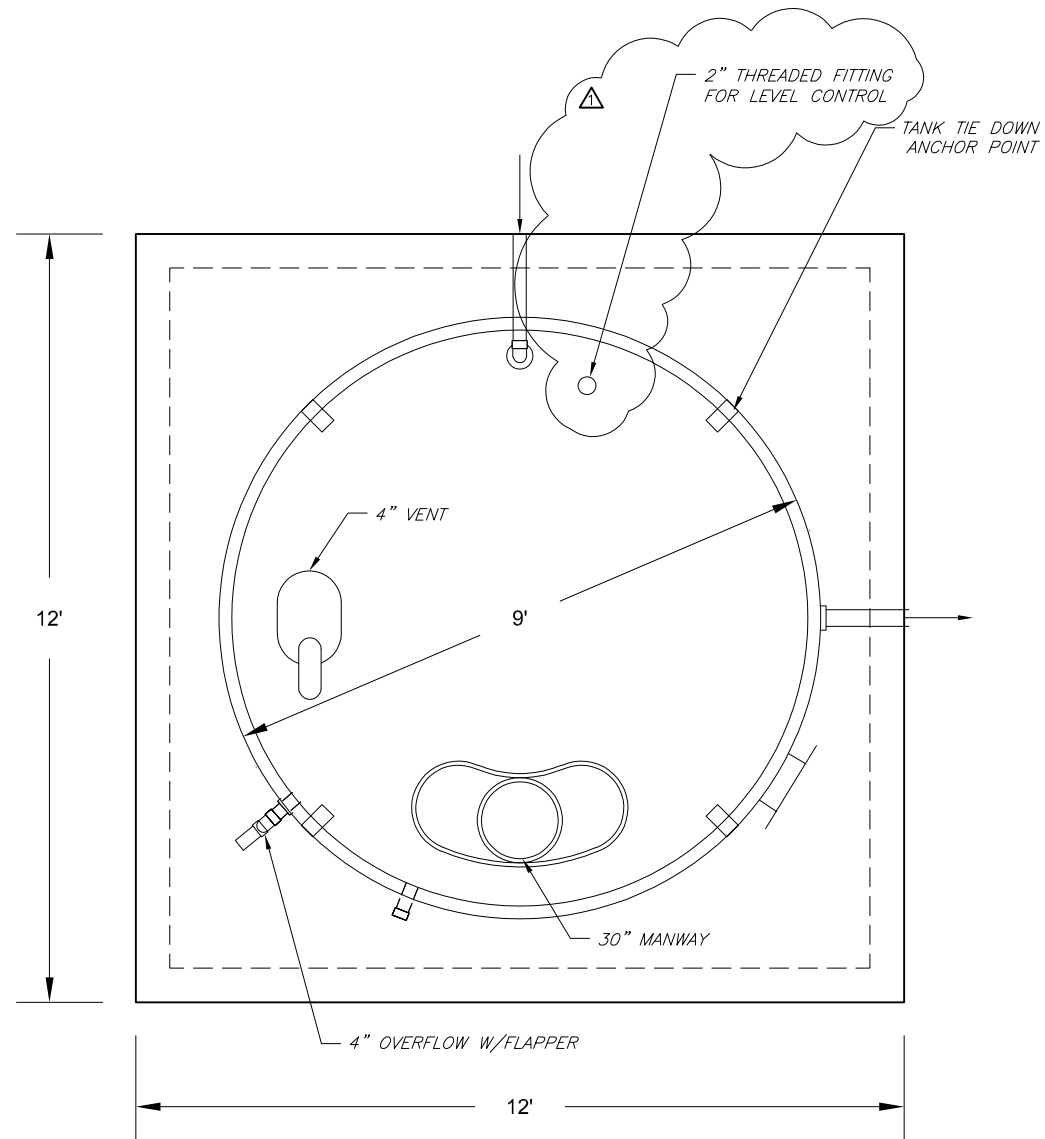
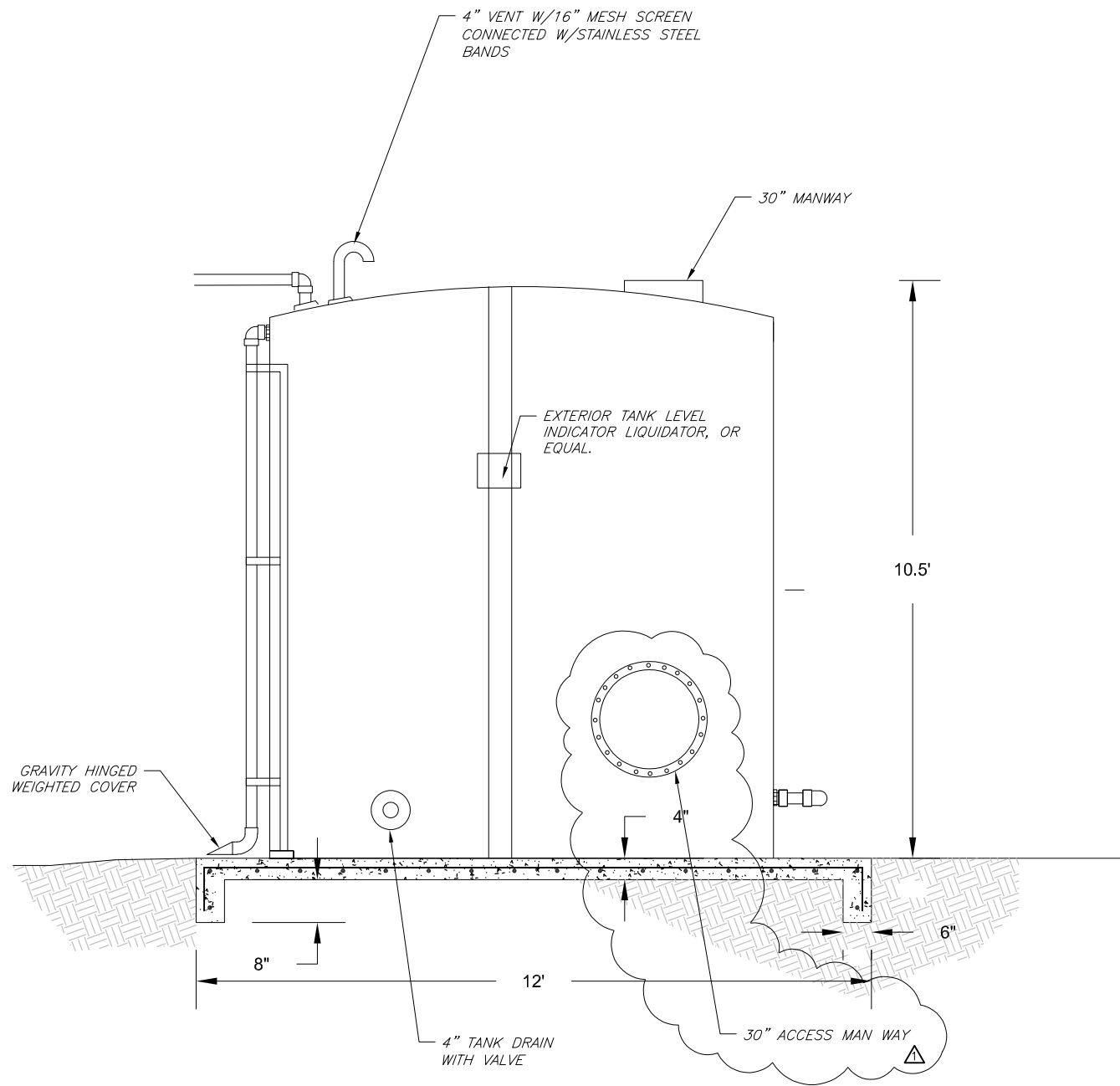
28	Project Signage - WTP	1	LS	\$	\$
TOTAL BASE BID (Items 1-28)					\$

ADDITIVE ALTERNATE BID SCHEDULE					
For all Labor, Materials, Equipment and Incidentals to Furnish and Install the Following:					
Bid Item	Description	Est. Qty.	Unit	Unit Price	Extended Amount
A1	Blower Enclosure	1	LS	\$	\$
A2	Mass Air Flow Gauge	1	EA	\$	\$
A3	Brick Wainscot for WTP Building	1	LS	\$	\$
TOTAL ADDITIVE ALTERNATE BID (Items A1-A3)					\$

DEDUCTIBLE ALTERNATE BID SCHEDULE					
For all Labor, Materials, Equipment and Incidentals to Furnish and Install the Following:					
Bid Item	Description	Est. Qty.	Unit	Unit Price	Extended Amount
D1	Boom Gate	1	LS	\$	\$
D2	Crushed Base Drive	274	SY	\$	\$
D3	Site Improvements - Concrete Paving	177	SY	\$	\$
D4	Sand Trap	1	EA	\$	\$
TOTAL DEDUCTIBLE ALTERNATE BID (Items D1-D4)					\$

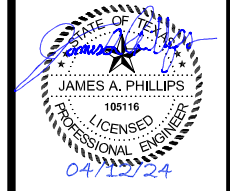
TOTAL PROPOSED NUMBER OF DAYS FOR COMPLETION:	
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Note: All products used for this project must meet Build America, Buy America (BABAA) domestic preference requirements.



NOTES:

- 1) PROPOSED TANK IS TO BE 5,000 GALLON, FIBERGLASS.
- 2) TANK SHALL BE NSF APPROVED.
- 3) TIEDOWN TANK W/CABLE TIES MOUNTED TO CONCRETE.
- 4) TANK SHALL COMPLY WITH ALL TCEQ RULES AS SHOWN ON SHEET G-3.



ISSUED FOR BID

JACOB MARTIN
TIBAE FIRM # 2446
TIBFELS FIRM # 10194493

IDALOU, TEXAS
WATER TREATMENT IMPROVEMENTS
RAW WATER TANK DETAILS

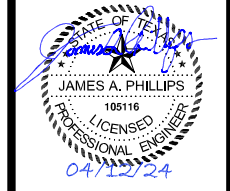
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CHECK SCALE AND ADJUST ACCORDINGLY.				
18	47	C-14		

Plotted by: Joshua Baker Plot Date: 5/6/2024 2:26 PM

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Saved By: j baker

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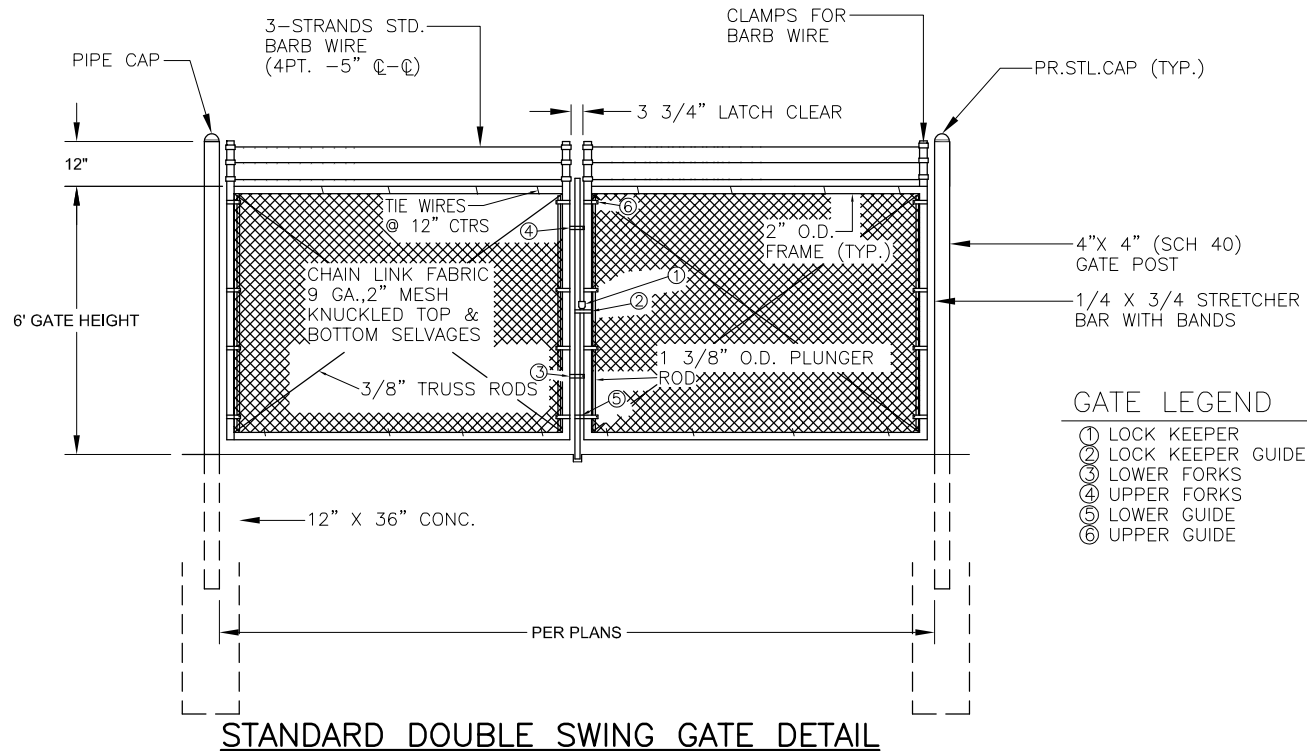


ISSUED FOR BID

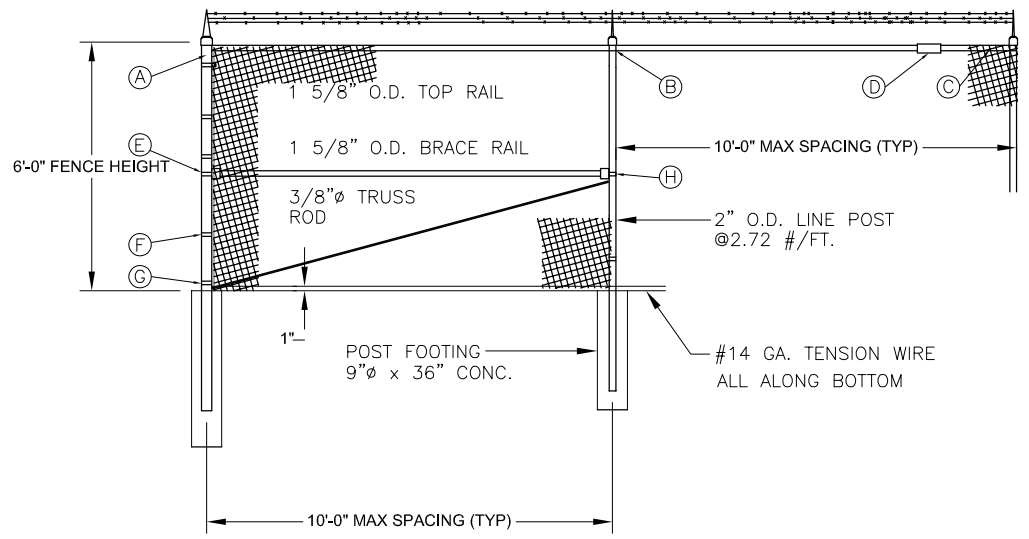
JACOB MARTIN
 TBPE FIRM # 2446
 TBPAE FIRM # 10194493

IDALOU, TEXAS
 WATER TREATMENT IMPROVEMENTS
 FENCING & GATE DETAILS

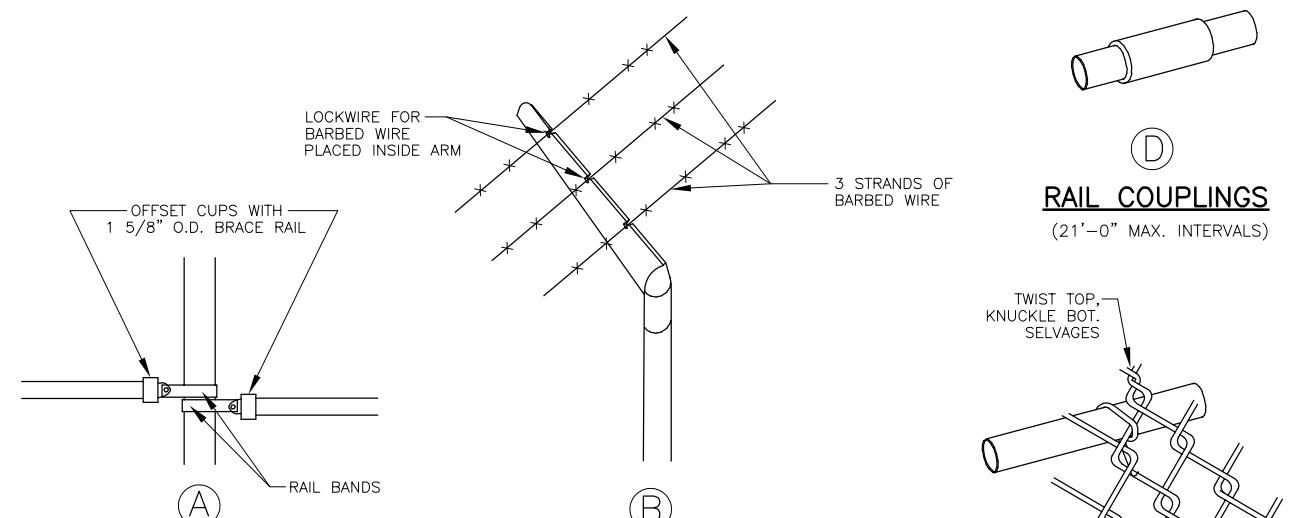
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ADDENDUM #3		
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SEQ.	SHEET	
19	47	C-15



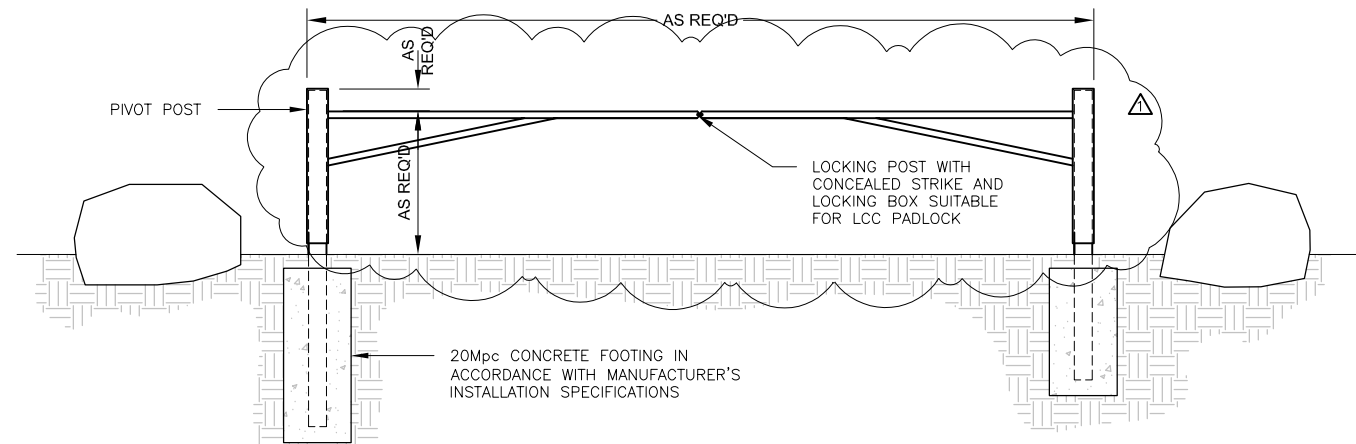
- GATE LEGEND**
- ① LOCK KEEPER
 - ② LOCK KEEPER GUIDE
 - ③ LOWER FORKS
 - ④ UPPER FORKS
 - ⑤ LOWER GUIDE
 - ⑥ UPPER GUIDE



TYPICAL FENCE DETAIL



RAIL COUPLINGS
(21'-0" MAX. INTERVALS)



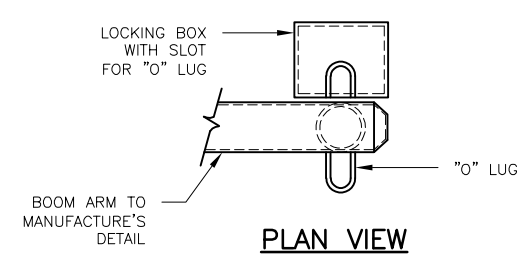
BOOMGATE DETAIL

RAILS @ CORNER

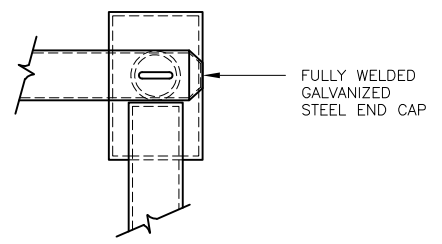
LINE POST TOP



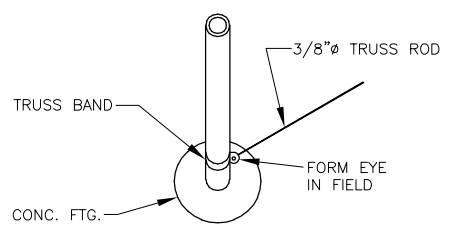
TIE WIRES
(24" MAX. SPACING)



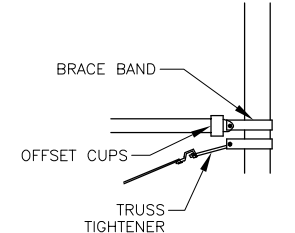
PLAN VIEW



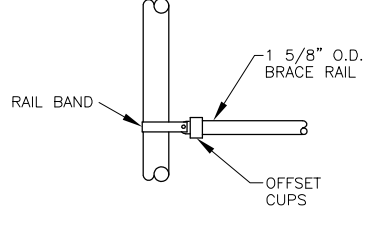
ELEVATION



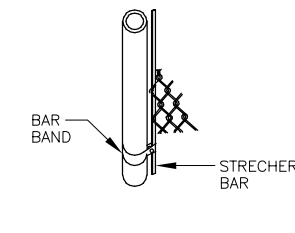
TRUSS CONNECTION @ TERMINALS



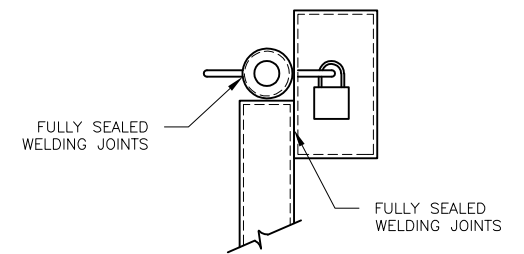
BRACE & TRUSS CONN. @ LINE POSTS



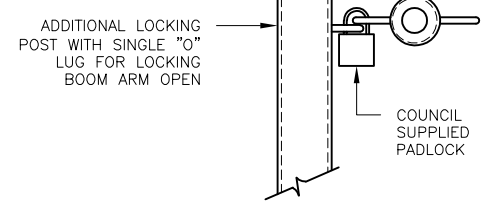
RAILS @ END



CHAIN LINK CONN. @ TERMINALS

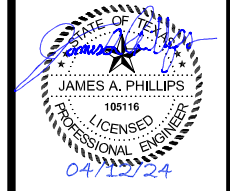
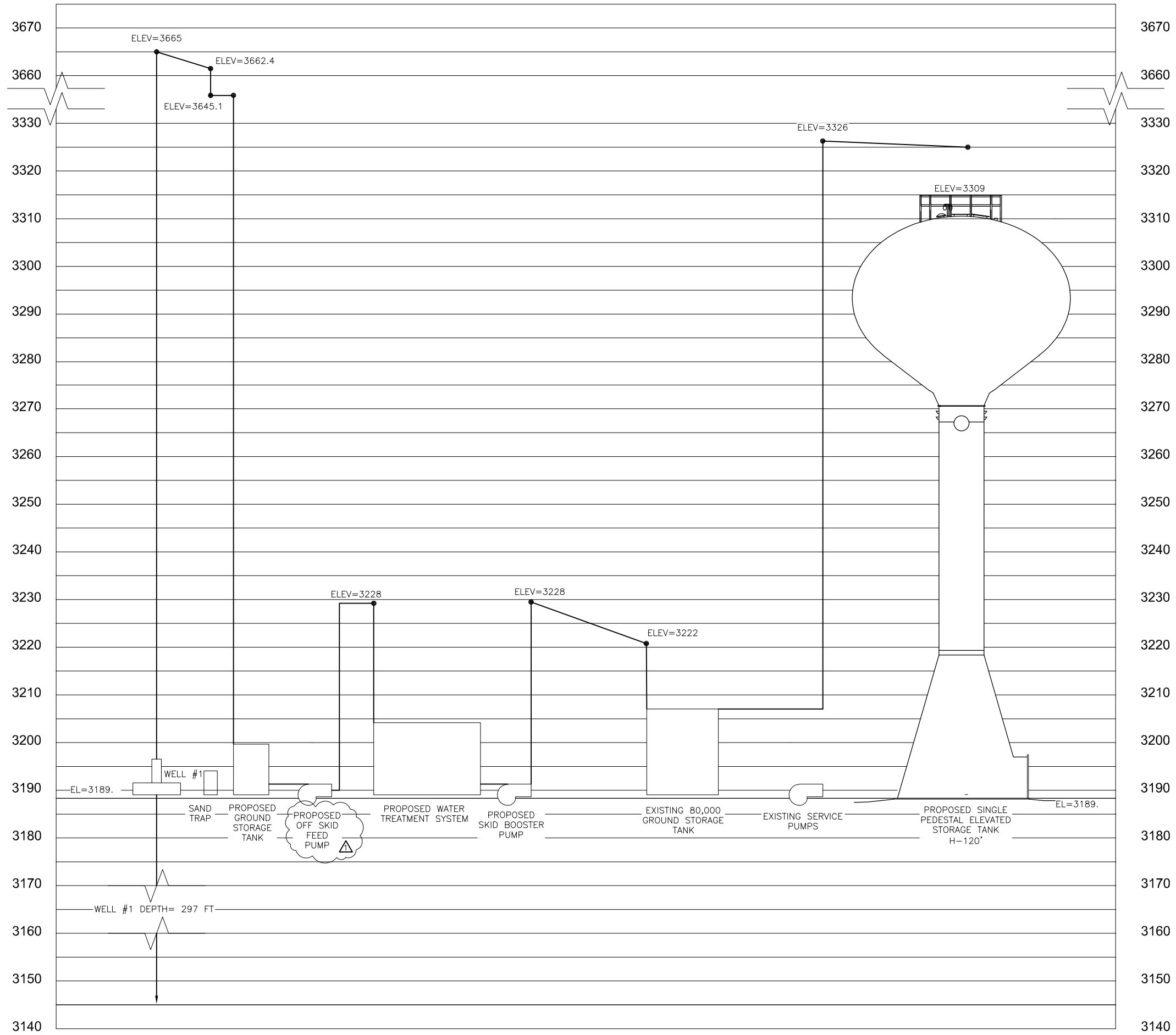


SIDE VIEW



LOCKING POST

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ISSUED FOR BID

JACOB MARTIN

TBAE FIRM # BR 2261
 TBEF FIRM # 2446
 TBEFLS FIRM # 10194493

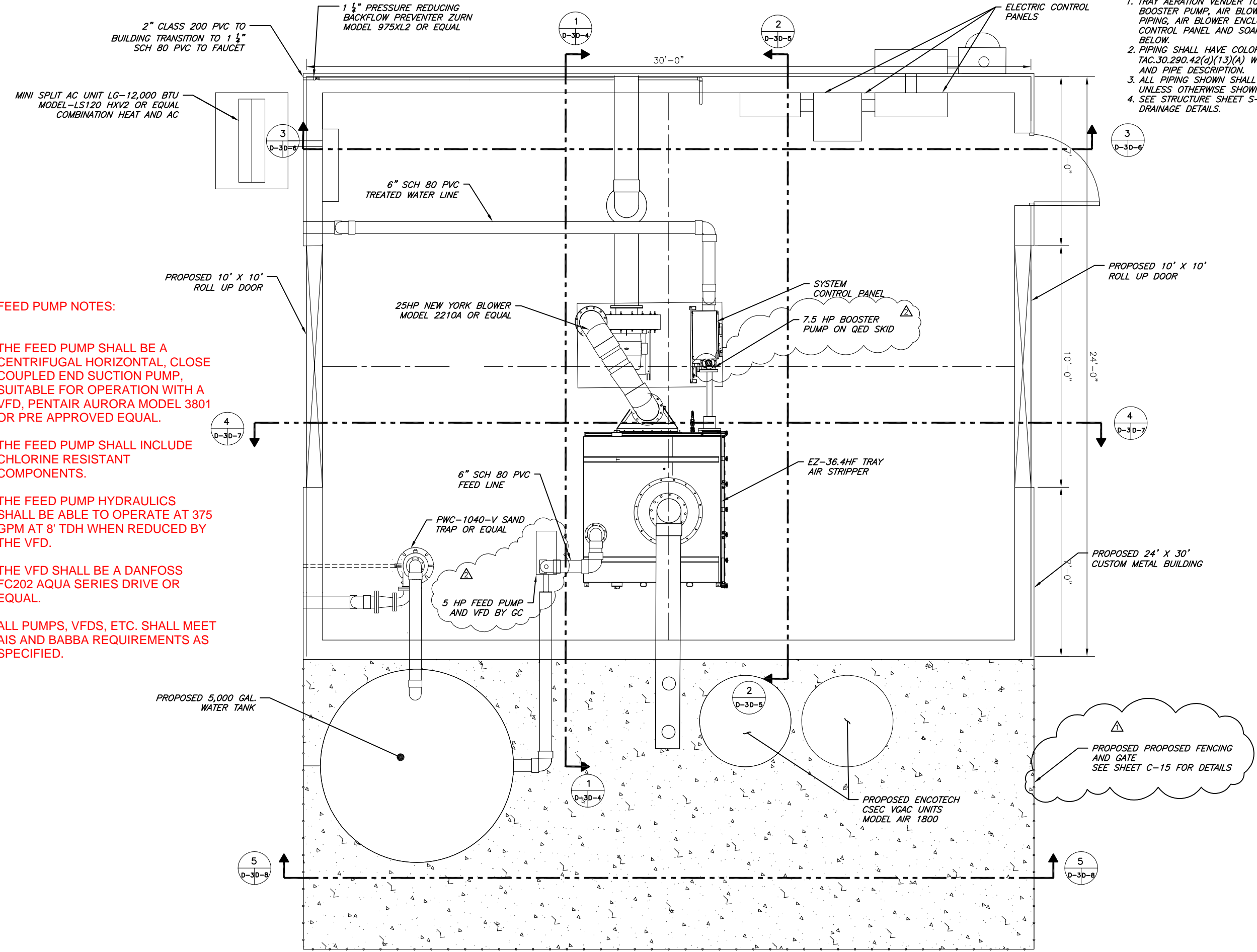
IDALOU, TEXAS

WATER TREATMENT IMPROVEMENTS

HYDRAULIC PROFILE

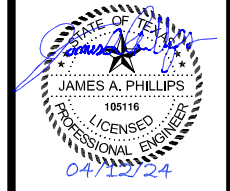
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PROJECT #	21132	SCALE NTS
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING		
CHECK SCALE AND ADJUST ACCORDINGLY.		
SEQ.	SHEET	
21	47	
		D-2

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 Plot Date: 5/6/2024 2:41 PM



NOTE:

1. TRAY AERATION VENDER TO PROVIDE FEED AND BOOSTER PUMP, AIR BLOWER AND AIR FEED PIPING, AIR BLOWER ENCLOSURE AND SILENCER, CONTROL PANEL AND SOAK SINK AS SHOWN BELOW.
2. PIPING SHALL HAVE COLOR CODED LABELS PER TAC.30.290.42(d)(13)(A) WITH FLOW ARROWS AND PIPE DESCRIPTION.
3. ALL PIPING SHOWN SHALL BE SCH 80 PVC UNLESS OTHERWISE SHOWN.
4. SEE STRUCTURE SHEET S-4 FOR FLOOR DRAINAGE DETAILS.



ISSUED FOR BID

JACOB MARTIN

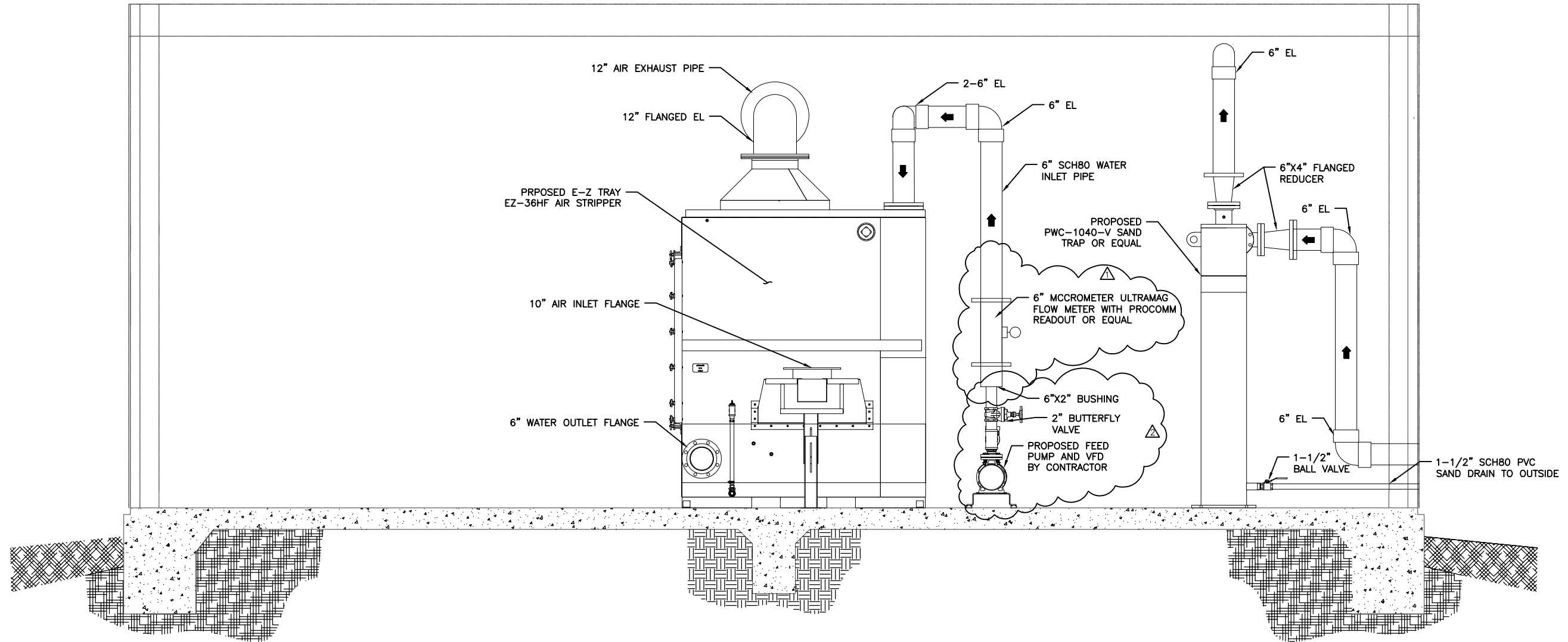
TBAE FIRM # 10194493
 TBPE FIRM # 2446

IDALOU, TEXAS
WATER TREATMENT IMPROVEMENTS
 WTP BUILDING LAYOUT

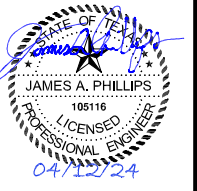
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1	ADDENDUM #1	04/26/2024
2	ADDENDUM #3	05/06/2024
PROJECT #	SCALE	BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING
21132	1" = 1'	4"
SEQ.	SHEET	CHECK SCALE AND ADJUST ACCORDINGLY.
22	47	D-3

PIPE SUPPORT NOTES:
 ALL SUSPENDED PIPE TO BE SUPPORTED ON
 PIPE HANGERS, SEE SHEET D-10 FOR DETAILS

NOTE:
 1) SAND TRAP IS DEDUCTIVE LINE ITEM D4. IF
 DEDUCTIVE ITEM D4 IS SELECTED, CONTRACTOR TO
 INSTALL FLANGED SPOOLS SO THAT SAND TRAP
 MAY BE INSTALLED AT A LATER TIME IF NEEDED.



SECTION 4
 SCALE: 3/8"=1'



ISSUED FOR BID



IDALOU, TEXAS
 WATER TREATMENT IMPROVEMENTS

WTP BUILDING SECTION 4

NO.	REVISION	DATE
1	ADDENDUM #1	04/26/2024
2	ADDENDUM #3	05/06/2024
PROJECT #	SCALE	BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING
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SEQ.	SHEET	
26	47	D-7

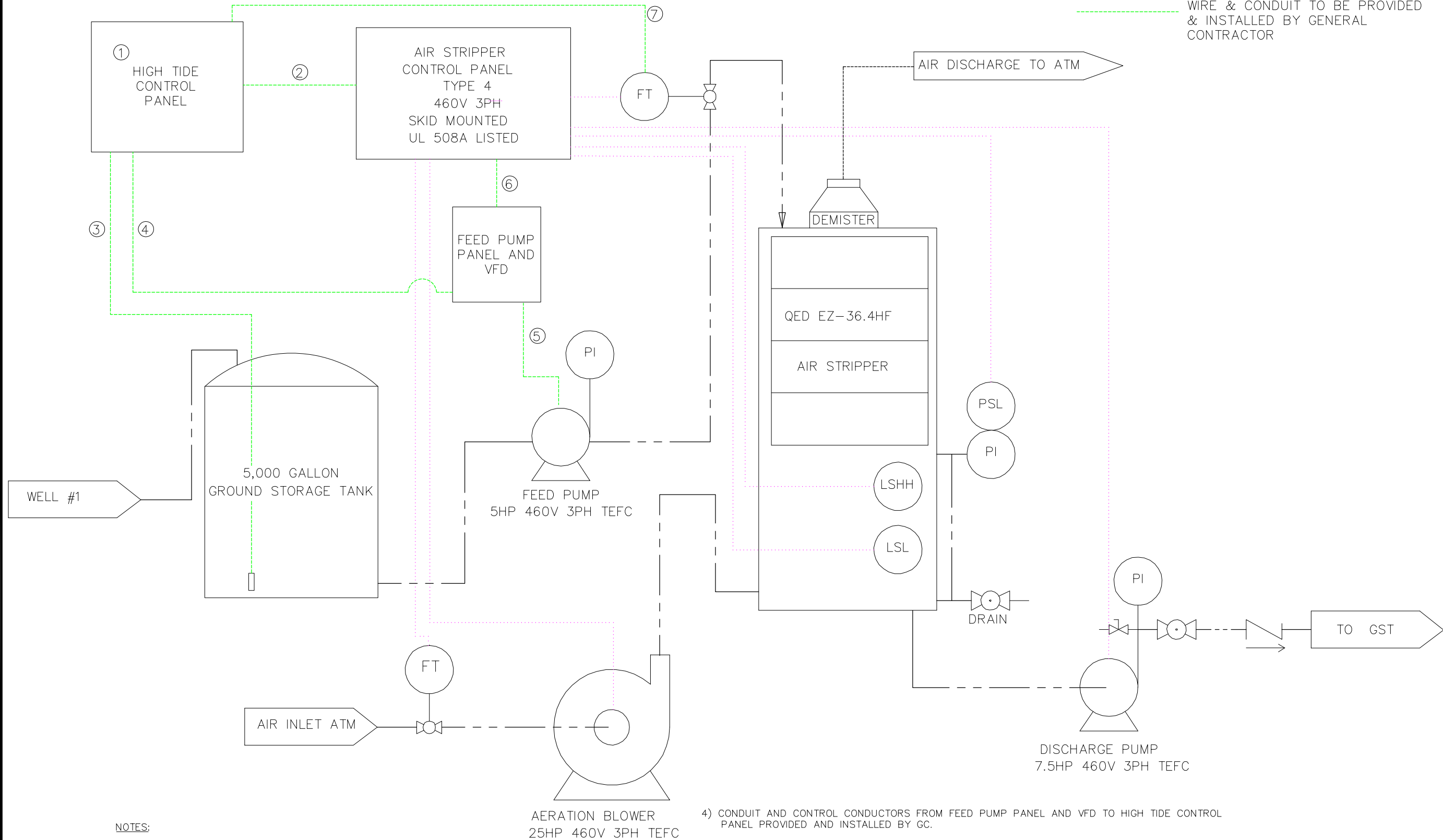
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 Plotted by: joshua baker
 Plot Date: 5/6/2024 3:58 PM

NOTES:

1) SEE SHEET E-8 FOR POWER SUPPLY (CONDUIT AND CONDUCTORS) FOR HIGH TIDE CONTROL PANEL, AIR STRIPPER CONTROL PANEL, AND FEED PUMP PANEL AND VFD.

LEGEND

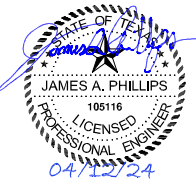
- WIRE & CONDUIT WITHIN QED SKID
- WIRE & CONDUIT TO BE PROVIDED & INSTALLED BY GENERAL CONTRACTOR



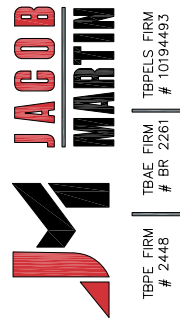
NOTES:

- 1) HIGH TIDE PANEL PROVIDED AND INSTALLED BY GC
- 2) CONDUIT AND CONTROL CONDUCTORS FROM HIGH TIDE CONTROL PANEL TO AIR STRIPPER CONTROL PANEL. 2-1" CONDUITS - (1) 17 - 16 GA THHN (2) 4 SINGLE TWISTED PAIR SHIELDED CABLES W 0.2" OD, PROVIDED AND INSTALLED BY GC.
- 3) SUBMERSIBLE PRESSURE TRANSDUCER PROVIDED AND INSTALLED BY GC FROM 5,000 GALLON TANK TO HIGH TIDE CONTROL PANEL. 1 -1/2" CONDUIT W SINGLE TWISTED PAIR SHIELDED CONTROL CABLE W 0.2" OD.

- 4) CONDUIT AND CONTROL CONDUCTORS FROM FEED PUMP PANEL AND VFD TO HIGH TIDE CONTROL PANEL PROVIDED AND INSTALLED BY GC.
- 5) CONDUIT AND POWER CONDUCTORS FROM FEED PUMP TO FEED PUMP PANEL AND VFD PROVIDED AND INSTALLED BY GC.
- 6) CONDUIT AND CONTROL CONDUCTORS FROM FEED PUMP PANEL AND VFD TO AIR STRIPPER CONTROL PANEL (LOW SUMP LEVEL AND LOW PRESSURE LOCKOUT) TO BE PROVIDED AND INSTALLED BY GC.
- 7) CONDUIT AND CONTROL CONDUCTORS FROM THE FLOW METER TO THE HIGH TIDE CONTROL PANEL TO BE PROVIDED AND INSTALLED BY GC.



ISSUED FOR BID



IDALOU, TEXAS
 WATER TREATMENT IMPROVEMENTS

PROCESS AND INSTRUMENTATION DIAGRAM

NO.	REVISION	DATE

PROJECT #	21132
SCALE	NTS
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING	
CHECK SCALE AND ADJUST ACCORDINGLY.	

SEQ.	30	SHEET	47
D-11			

JACOB MARTIN		01 03 01
21132 - City of Idalou Water System Improvements		MEASUREMENT AND PAYMENT

SECTION 01 03 01 - MEASUREMENT AND PAYMENT

PART 1 PAYMENT ITEMS

1.1 LUMP SUM PAYMENT ITEMS

A. The Measurement and Payment item shall be measured and paid for according to the

1.2 REFERENCE STANDARDS

1.3 MOBILIZATION

A. PAYMENT

The Measurement and Payment item shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for all mobilization to the site. Bonds and Insurance shall be included in individual line items.

B. Unit of measure: LUMP SUM

1.4 ELEVATED STORAGE TANK

A. PAYMENT

The Elevated Storage Tank shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the elevated tank, foundation, sitework, coating, safety climb system, climb prevention device, tank disinfection, electrical (including lighting), control and incidentals as specified and shown on the PLANS.

B. Unit of measure: LUMP SUM

1.5 EXISTING ELEVATED STORAGE TANK DEMOLITION

A. PAYMENT

The Existing Elevated Storage Tank Demolition shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing all equipment and appurtenances needed to fully remove the existing elevated storage tank from the site as specified and shown on the plans. Note, under this item the contractor is responsible for complete removal and disposal of tank and demolition debris.

B. Unit of measurement: LUMP SUM

1.6 ELEVATED STORAGE TANK YARD PIPING AND VALVES

A. PAYMENT

The Elevated Storage Tank Yard Piping and Valves shall be measured and paid for according to the lump sum bid in the proposal. Payment shall constitute full reimbursement for furnishing and installing yard piping and valves as specified and shown on the PLANS.

B. Unit of measure: LUMP SUM

1.7 WATER TREATMENT PLANT BUILDING

A. PAYMENT

The Water Treatment Plant Building shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the Water Treatment Plant Building, including metal building, foundation, insulation, and all appurtenances as shown and described on the PLANS.

B. Unit of measure: LUMP SUM

1.8 LOW PROFILE SIEVE AERATION EQUIPMENT

A. PAYMENT

The Low Profile Sieve Aeration Equipment shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the Low Profile Sieve Aeration Equipment, transfer pump, blower unit, blower piping, blower silencer along and all appurtenances as shown and described on the PLANS.

JACOB MARTIN		01 03 01
21132 - City of Idalou Water System Improvements		MEASUREMENT AND PAYMENT

B. Unit of measure: LUMP SUM

1.9 WATER TREATMENT PLANT ELECTRICAL

A. PAYMENT

The Water Treatment Plan Electrical shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing all power, conduit, panels, etc. to energize all equipment in the RO WTP as shown and described in the PLANS. This item shall also include coordination and payment to the utility for any upgrades to the electrical service described in the contract documents.

B. Unit of measure: LUMP SUM

1.10 WATER TREATMENT PLANT CONTROL

A. PAYMENT - The Water Treatment Plant Control shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing all control wire and conductors as well as HIGH TIDE equipment to fully operate the system and integrate with the city's existing SCADA system as shown and described on the plans.

B. Unit of Measure: Lump Sum

1.11 FIBERGLASS GAS CHLORINE BUILDING

A. PAYMENT

The Fiberglass Gas Chlorine Building shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the fiberglass gas chlorine building, foundation, electrical wiring, and appurtenances as specified and shown on the PLANS

B. Unit of measure: LUMP SUM

1.12 FEED WATER BOOSTER PUMP

A. PAYMENT - The Feed Water Booster pump shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the booster pump and VFD and startup with all appurtenances as specified and shown on the Plans.

B. Unit of Measure: LUMP SUM

1.13 WATER TREATMENT PLANT PIPING

A. PAYMENT - The Water Treatment Plant Piping shall be measured and paid for according to the Lump Sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing all WTP piping, valves, and fittings INSIDE of the water treatment plant building as shown on the plans. This item shall include all appurtenances including caps, screens, sampling ports, etc.

B. Unit of Measure: LUMP SUM

1.14 MINI SPLIT AC UNIT

A. PAYMENT - The Mini Split AC unit shall be measured and paid for according to the Lump Sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the AC Unit as specified and shown on the plans.

B. Unit of Measure: LUMP SUM

1.15 BOOM GATE

A. PAYMENT - The boom gate shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the Boom gate as specified and shown on the plans.

B. Unit of Measure: LUMP SUM

JACOB MARTIN		01 03 01
21132 - City of Idalou Water System Improvements		MEASUREMENT AND PAYMENT

1.16 DOUBLE BLOCK AND BLEED ASSEMBLY VAULT AND 1" CONNECTION WITH BALL VALVE

- A. PAYMENT - The Double Block and Bleed Assembly Vault and 1" connection with Ball Valve shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the item as specified and shown on the plans. Note, full size gate valves are shown under a seperate line item.
- B. PAYMENT - The Project Signage - (per contract) shall be measured and paid for according to the lump sum in the bid proposal. Payment shall constitute full reimbursement for furnishing and installing the item as specified and shown in the plans and Contract Documents. The sign shall meet the applicable USDA funding requirements.
- C. Unit of Measure : Lump Sum

1.17 UNIT PRICE PAYMENT ITEMS

- A. Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

1.18 WATER LINE

- A. PAYMENT
 Payment will be made for costs associated with operations necessary to furnish and install water line as specified and shown on the Plans. Water pipelines shall be measured and paid for at the unit prices for each size and class of water pipeline, which payment shall include trenching, laying, bedding, jointing, backfilling, connection to or plugging of existing water lines and furnishing water pipelines, fittings, couplings and accessories as specified, including labor, equipment, testing, sterilization, cleanup and supervision necessary to complete the water pipeline and place the water system in operation in accordance with these Specifications and may be directed by the ENGINEER.
 No extra payment shall be made for special backfill in public ROW or gravel repair and asphalt repair. These shall be considered subsidiary to the pipeline installation and reimbursement for these items shall be included in the price bid for furnishing and installing the water line.
 * Asphat repair shall be paid under the item "Asphalt Repair".
- B. Unit of measure: LINEAR FOOT

1.19 WATER LINE CONNECTIONS

- A. PAYMENT
 Payment will be made for costs associated with operations necessary to furnish and install water line connections as specified and shown on the Plans. Water line connections including piping, fittings, and coupling shall be measured and paid for at the unit price bid for each size and type of water line connection and incidentals furnished and installed.
- B. Unit of measure: EACH

1.20 GATE VALVES

- A. PAYMENT
 Payment will be made for costs associated with operations necessary to furnish and install gate valves as specified and shown on the PLANS. Gate valves, tapping valves, and sleeves with Valve Boxes shall be measured and paid for at the unit price bid for each size valve, and incidentals furnished and installed.
- B. Unit of measure: EACH

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1.21 METAL DETECTABLE TAPE

A. PAYMENT

Payment will be made for costs associated with operations necessary to furnish and install metal detectable tape as specified and shown on the PLANS. Measurement and payment for the metal detectable tape required, furnished and installed shall be made at the price per linear foot of "Metal Detectable Tape" as bid in the Proposal.

B. Unit of measure: LINEAR FOOT

1.22 5,000 GALLON RAW WATER TANK

A. PAYMENT

Payment will be made for costs associated with operations necessary to furnish and install the 5,000 Gallon Raw Water Tank, foundation, coatings, connections, level controls, and TCEQ required tank appurtenances as specified and shown on the PLANS.

B. Unit of measure: EACH

1.23 SAND TRAP

A. PAYMENT

Payment will be made for costs associated with operations necessary to furnish and install the Sand Trap, connections, drain and other appurtenances as specified and shown on the PLANS.

B. Unit of measure: EACH

1.24 GENERATOR & ATS

A. PAYMENT

Payment will be made for costs associated with operations necessary to furnish and install the Generator & ATS, concrete pad, first full tank of fuel, startup by factory trained representative, 2 hour demo for owners representative, charges by the Electric Utility Company required to route the existing service to the new ATS, along with incidentals as specified and shown on the PLANS.

B. Unit of measure: EACH

1.25 SITE IMPROVEMENTS - CONCRETE PAVING

A. PAYMENT

Payment will be made for costs associated with operations necessary to furnish and install concrete paving as specified and shown on the PLANS.

B. Unit of measure: SQUARE YARDS

1.26 SITE IMPROVEMENTS - CRUSHED BASE DRIVE

A. PAYMENT Payment will be made for costs associated with operations necessary to furnish and install Crushed Base Drive as specified and shown on the PLANS.

B. Unit of measure: SQUARE YARDS

1.27 FEED FLOW WATER METER

A. PAYMENT - Payment will be made for cost associated with operations necessary to furnish and install the feed flow water meter as specified and shown on the plans.

B. Unit of Measure: Each

1.28 VGAC CONTAINERS

A. PAYMENT - Payment will be made for cost associated with operations necessary to furnish and install the VGAC containers as specified and shown on the plans. This item shall include the necessary hoses and connections from the exhaust pipe to the VGAC Units.

B. Unit of Measure: EACH

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1.29 MINI RAE 3000 AIR SAMPLER

- A. PAYMENT -Payment will be made for costs associated with operations necessary to furnish the Mini Rae 3000 Air Sampler as specified and shown on the PLANS.Unit of measure: SQUARE YARDS
- B. Unit of measure: EACH

1.30 FENCING AND GATES

- A. PAYMENT - Payment will be made for cost associated with operations necessary to furnish the fencing and gates as specified and shown on the PLANS. This item shall include fencing to surround the tank and VGAC units with a set of gates to access the VGAC canisters.
- B. Unit of measure: Linear Foot

PART 2 NOT USED

PART 3 NOT USED

-- END OF SECTION --

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SECTION 11 05 01 - CENTRIFUGAL PUMPS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This item of the Specifications covers the types and sizes of pumping units to be installed for pumping [treated] water. The CONTRACTOR shall furnish, install and place in satisfactory operation at the location shown on the Plans the water pumping units with electric motors described in the following sections.
- B. The equipment is to be installed and placed in proper operating condition in full conformity with the instructions and recommendations of the equipment manufacturer as approved by the ENGINEER.
- C. The proposed pump shall specify the guaranteed efficiency, as well as the efficiency at specified rated head operation conditions. These efficiencies will be considered when evaluating the pump.
- D. The pump and motor shall have a standard manufacturer's nameplate securely affixed in a conspicuous place showing the ratings, serial number, model number, manufacturer, and other pertinent nameplate data.

1.2 REFERENCE STANDARDS

1.3 SUBMITTALS

- A. Shop Drawings: The pump supplier shall submit to the ENGINEER one (1) electronic copy of complete shop drawings on the pumping equipment.
- B. Performance Curves: Characteristic curves for the equipment proposed shall be submitted with the pump quotes. The curves shall show the capacity, head, efficiency, required NPSH, and brake horsepower throughout the full range of the pump from shut-off to maximum capacity. The characteristic curves shall have the capacity plotted as abscissa and the operating head, brake horsepower, efficiency, and required NPSH plotted as ordinates.
- C. Operations and Maintenance Manuals: One (1) electronic copy and Two (2) hard copies of Operations and Maintenance Manuals shall be submitted to the OWNER prior to final acceptance of the equipment.

PART 2 PRODUCTS

2.1 CENTRIFUGAL PUMPING UNITS

- A. General:
1 Pumps and motors shall be furnished, installed and placed into operation at the location shown on the Plans. Pumps shall be Close Coupled, bronze fitted, single stage, 1750 RPM centrifugal pump(s) as manufactured by Pentair, or equal.
- B. Performance:
Each of the pumping units shall meet the following conditions:

Feed and Booster Pumps Located within the new Water Treatment Building

Quantity	1	#
Minimum Horsepower (HP) (Total)	5	#
Pentair Pump Model	Aurora Model 3801	#
Design Point #1 Capacity, GPM	375	#
Design Point #1 Head (TDH), Feet	30	#
Design Point #1 Efficiency, Percent	#%	#%
Design Point #2 Capacity, GPM	375	#
Design Point #2 Head, (TDH), Feet	8	#

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Design Point #2 Efficiency, Percent	#%	#%
Pump Type	#	#
Minimum shutoff Head	#	#

- C. Pump: Pump casing shall be gray iron and shall be constructed with back pull-out capability. Models 3" and larger shall have balanced double volute design to reduce radial thrust and to prolong seal and bearing life. Pump casing shall incorporate a suction baffle to reduce pre-rotation and improve efficiency. Suction and Discharge connections shall be the same size, flanged (125, 250) PSI rating, 180 degrees opposite on centerline for pipeline mounting. Casing shall have bronze replaceable wear ring. Impeller shall be cast aluminum bronze, enclosed, statistically, dynamically and hydraulically balanced, and shall be factory trimmed to match the delivery conditions indicated above. Motor shaft shall be one piece stainless steel, or steel with bronze shaft sleeve. Pumps shall have mechanical seal suitable for the temperatures and pressures indicated, and shall be properly vented to the pump suction connection. Seal faces shall be Silicon Carbide vs. Silicon Carbide or Silicon Carbide vs. Tungston Carbide.
- D. Grout: After alignment and initial operation of the pumping assembly have been performed, the CONTRACTOR shall solidly grout the pump base with grout mixed one part cement to one part sand.
- E. Motor: The motor to drive each pump shall be 1750 RPM, 60 cycle, Three phase, 480/277 volt, drip proof, squirrel cage electric motor. The motor shall be designed for 40° C. ambient temperature rise and shall have a service factor of 1.15. The motor shall be sized so that the motor is not overloaded at any point along the pump curve that is proposed to be furnished without application of the service factor. Minimum horsepower of the motor shall be 5 HP as specified. Motors shall be General Electric, Westinghouse, or an approved equal. Efficiency of the motor shall not be less than 92%.
Each motor shall be provided with a combination switch, across the line magnetic starter with ambient temperature compensated, bimetallic, overload protection on all three phases, and under voltage release installed in NEMA Type 1 enclosure, and equipped with hand-off-automatic selector switch. The starter shall be equipped with the necessary circuitry to operate in conjunction with the proposed Turner Controller for each pressure tank as specified and as shown on the plans. The CONTRACTOR shall furnish an alternator to alternate the 5 HP pumps after each cycle.
- F. Shop Painting:
The exterior surfaces of the discharge column, motor stand, and discharge head, shall be shop-cleaned by sandblasting and shop primed with final painting, using two coats of best quality machinery enamel applied at the factory.
All wetted surfaces including the can interior, pump column and bowls exterior shall be sand blasted to near white metal and coated with two coats for a total of 9 mils of TNEMEC Epoxy. Equipment nameplates shall be aluminum and shall be left unpainted so that the information stamped thereon remains clearly legible.

PART 3 EXECUTION

3.1 GENERAL

- A. Manufacturer's Representative:
The Supplier shall furnish the services of a competent technical representative, or representatives, who shall have had experience in installation and operation of the type equipment which is being contracted. This service is for the purpose of insuring proper installation and adjustment of the equipment; instructing operating personnel in proper

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operation; maintenance and care of the equipment; for making check tests of equipment and making recommendations for obtaining the most efficient use thereof.

The services of the manufacturer's representative shall be provided for whatever time period is required to assure proper installation and "start-up" of the equipment, a minimum of one (1) day of eight (8) hours duration.

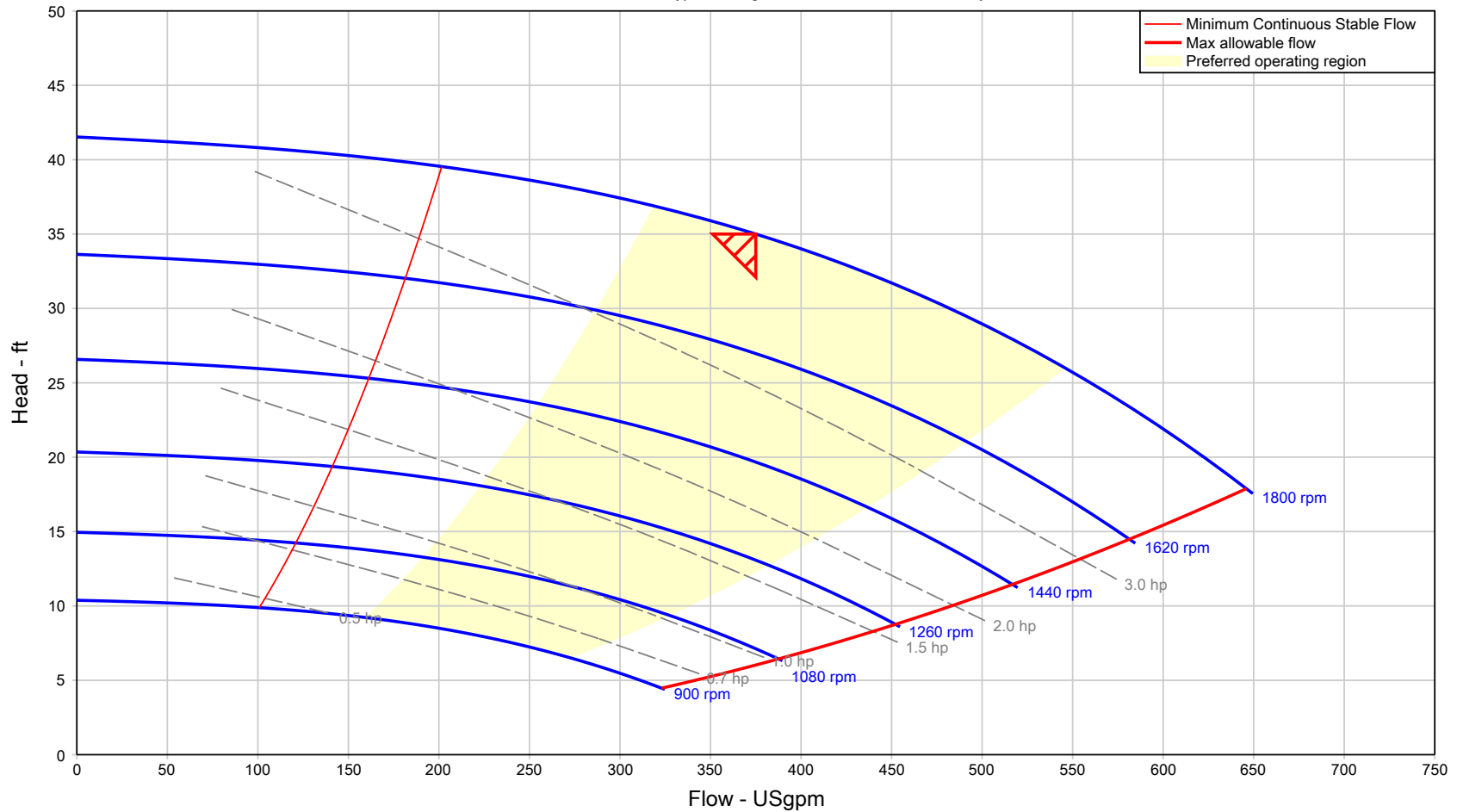
B. Acceptance Tests:

Upon completion of installation of equipment, an acceptance test to verify the satisfactory operation of each unit shall be conducted. The test shall be conducted in a manner approved by and in the presence of the ENGINEER and OWNER. Units shall be checked for excessive noise, alignment, vibration, general operation, etc. The units must perform in a manner acceptable to the ENGINEER before final acceptance will be made by the OWNER.

-- END OF SECTION --

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Curve efficiencies are typical. For guaranteed values, contact factory



Item Number / Tags : 001	Size : 3801 - 4x5x7A	Flow, rated : 375.0 USgpm
Service :	Stages : 1	Differential head / pressure, rated : 35.00 ft
Quantity : 1	Efficiency : 75.92 %	Speed, rated : 1800 rpm
Quote number : 446242	PEI (VL) : 0.49	Impeller diameter, rated : 6.44 in
Based on curve number : 3800_4x5x7A_1800	Power, rated : 4.36 hp	Fluid density, rated / max : 1.000 / 1.000 SG
Basic model number : 4x5x7A 3800 1800-CL	NPSH required : 6.70 ft	Viscosity : 1.00 cP
Date last saved : 02 May 2024 2:25 PM	Site Supply Frequency : 60 Hz	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00
	Nominal speed : 1760 rpm	