

ADDENDUM NO. 5

TO: ALL PLAN HOLDERS

RE: North Texarkana Wastewater Treatment Plant Improvements

ADDENDUM DATE: September 11, 2026

The Plans, Specifications and Contract Documents for the above referenced project are hereby modified as follows:

1. Remove and replace Sheets 9 & 11A with attached. Additional specifications attached.

PROJECT CLARIFICATIONS

1. Please see attached aerial for preapproved job trailer locations. Job trailer will be able to connect to water, sewer and electricity onsite.
2. Further explanation of project timeline: Contract period is 400 days from Notice to Proceed to Substantial Completion. An exact date for Notice to Proceed is not known at this time primarily due to bids having not been received yet. It is expected that a Notice to Award will be issued within 2-3 weeks after bid opening, contingent upon a bid being in budget and from a qualified contractor. After Notice of Award, bonds and insurance will need to be provided by the contractor. After bonds and insurance is received a pre-construction meeting will be scheduled to discuss Notice to Proceed date that fits all parties schedule. It is fully expected that the Notice to Proceed will be executed within 2026.
3. Influent pump discharge elbow is 8" a 8"x12" increaser/reducer will be needed to connect piping as shown on Sheet 11
4. RAS discharge elbow is 6" a 6"x8" increaser/reducer will be needed to connect piping as shown on Sheet 25
5. Section 11310 of specifications also applicable to RAS pump with modifications made to pump data as shown on Sheet 25 Lift Station Data table
6. Proposed centrifugal blower is to be 75hp.
7. Aquarius diffuser system is acceptable alternative. Specification attached.
8. Proposed manhole south of Clarifier #3 is to be 4.0' diameter manhole.
9. All C-900 PVC shall be DR-18
10. Stainless steel may be used instead of FRP for clarifier weir.
11. Due to segmented nature of clarifier troughs, algae sweeper arms are not required.
12. Attached DBS drive unit is approved alternate for clarifier drive unit.
13. Stainless steel air drops
 - a. To be 316 Stainless steel rated up to 232psi. Pipe shall be rated for working temperatures between -4° F and 248° F. All stainless steel air piping to be Sch 405 with NPT threads and FKM seals. Seals to be Vitor or approved equal.

14. D.I. Air Line

- a. D.I. air mains to be a minimum Class 50 thickness meeting all requirements of ANSI/AWWA C151/A21.51 D.I. air mains shall be rated up to 350 psi and have a water based asphaltic seal coat. Above ground piping shall be flanged joints and below ground may be slip joint with blocking. Gaskets shall be FKM (Vikon) or approved equal. Bolts for flanged above ground connections to be 316 stainless steel.

15. Pipe Supports

- a. Pipe supports shall be 304 stainless steel and be designed to accommodate longitudinal movement in piping components due to thermal expansion and contraction. Each support shall restrain axial and rotational movement while providing unrestrained longitudinal movement. Supports shall allow for leveling of the pipe with 2" vertical adjustments at each support. Each support shall be anchored into concrete by at least 2 anchor bolts.

- 16. Flanged coupling adapters shall meet or exceed the specification of the two pipes that are being connected.
- 17. Purge valves to be Watts B6000 bronze ball valve or approved equal.
- 18. Butterfly valves to be Pratt BF series with lever operator or approved equal.
- 19. Headworks is currently bypassing mechanical bar screen and grit chamber. This method should still allow contractor to install new bar screen, grit chamber and classifier without affecting current operations. All new headworks equipment should be onsite before beginning replacement of existing equipment.
- 20. No chemicals were presently stored in caustic room at time of site visit and is expected for that to still be the case at the time of construction.
- 21. RAS influent shown on Sheet 13 is to remain existing 10"
- 22. Owner will provide sampling mechanism for proposed sampling manhole and associated testing of sampling mechanism. Contractor responsible for all other work associated with sampler manhole.
- 23. Shipping weights, center of gravity, lift points, etc. for proposed equipment is provided by manufacturer.
- 24. A single waterstop submittal will be considered after award.
- 25. Handrails and fall prevention to be OSHA compliant.
- 26. Contractor is responsible for ordering tests per specifications or as directed by owner or engineer. Re-testing for failed tests will be at contractors expense. Tests will need to be witnessed by engineer/engineers inspector and/or owners representative.
- 27. Regarding inspection of cleaned existing equipment. If preexisting conditions are found during inspection, they will be reviewed by the owner, engineer and contractor and a change order will be negotiated for potential repairs. Damages caused by negligence or poor workmanship of the contractor will be repaired at the expense of the contractor.
- 28. Bypass for sample manhole may occur from existing manhole to headworks or sample manhole may be installed by doghouse method. Influent pump station will need to be bypassed from existing manhole or sample manhole to headworks.

ADDENDUM NO.5 ISSUED BY:

A.L. FRANKS ENGINEERING



9-11-26

Caleb Mudford, P.E.
Project Manager



QUANTAER™ FINE BUBBLE CERAMIC DISC AERATION SYSTEM

PART 1.00 – GENERAL

1.01 – SCOPE OF WORK

- A. Contractor shall furnish all materials, equipment, and services required for the fine bubble aeration system as shown on the contract drawings and contained herein.
- B. Contractor to furnish the fine bubble aeration system for the aeration tanks.

1.02 – SUBMITTALS

- A. Pre-Submittal Requirements
 - 1. Whenever an item or material or equipment is specified or described in the contract documents, the specification or description is intended to establish the type, function, appearance, and quality required.
 - 2. All equipment suppliers wishing to submit a bid shall, 14 days prior to the Bid Date, provide a letter signed by an authorized representative of the company certifying:
 - a. "The undersigned hereby attests that he/she has examined all applicable contract drawings and specifications and certifies that the equipment that he/she proposes to furnish and deliver meets the requirements of Specification _____, is suitable for installation as presented in the contract drawings and specifications and will provide satisfactory performance at the design criteria specified."
 - b. Included with the letter of certification shall be a copy of the referenced Specification _____ and associated plans acknowledging compliance and certifying the materials of construction and manufacturing methods proposed for the aeration piping and the diffusers has not changed within the past five (5) years.
 - c. Any deviations to the Plans or Specifications shall be accompanied by detailed written justification.
 - 3. Acceptable equipment suppliers and deviations shall be included by Addendum 7 days prior to the Bid Date.
- B. Submittal Requirements
 - 1. Drawings showing general arrangement of the aeration system.
 - 2. Drawings showing details of the diffusers, diffuser holders, piping, pipe supports, pipe joints and condensate evacuation system.
 - 3. Materials and manufacturing specifications.
 - 4. Oxygen transfer and system headloss calculations.
 - 5. Certified oxygen transfer efficiency curves stamped by a registered Professional Engineer.
 - 6. Installation, operation, and maintenance instructions.
 - 7. List of any exceptions taken to the plans and specifications including written justification.

1.03 –PERFORMANCE REQUIREMENTS

- A. Design the aeration system for installation in the following tanks.

Tank Dimensions	Aeration Tanks 9, 10, 1, 2, 3, 4, 5, 6	Aeration Zone 3
Length (ft.)		
Width (ft.)		
Water Depth (ft.)		

- B. Design the aeration system to transfer the following minimum amount of oxygen per day at standard conditions in clean water at the specified submergence, air rate and pressure.

Oxygen Transfer Rate (lbs/day/zone)	Condition A	Condition B
Air Rate (scfm/zone)		
Pressure @ Top of Drop Pipe (psig)		
Diffuser Submergence (ft.)		

- C. Minimum Diffuser Quantity

Aeration Zone	Number of Diffusers	Number of Diffuser Holders

- D. Design the aeration system with a diffuser centerline spacing not to exceed 4 feet from any adjacent diffuser, wall, or obstruction to maximize the oxygen transfer efficiency and minimize solids deposition.

PART 2.00 – PRODUCT

2.01 – ACCEPTABLE MANUFACTURERS

- A. The aeration system shall be supplied by Aquarius Technologies, LLC of Saukville, WI, or approved equal.

2.02 - MATERIALS, MANUFACTURING & FINISHING

- A. Stainless Steel
1. Fabricate all welded parts and assemblies from sheets, plates, or bars of 304L stainless steel with a 2D finish conforming to ASTM A240, A554, A774 and A778.
 2. Fabricate all non-welded parts and assemblies from sheets, plates, or bars of 304 stainless steel conforming to ASTM A240, or ASTM A276.
 3. Furnish all nuts, bolts, washers, and anchors bolts from 18-8 series stainless steel.

4. Weld in the factory with ER 316L filler wire using MIG, TIG or plasma-arc inert gas welding processes. Provide a cross section equal to or greater than the parent metal.
 5. Clean all welded stainless-steel surfaces and welds after fabrication to remove weld splatter and finish clean all interior and exterior welds by full immersion pickling and rinse with water to remove all carbon deposits and contaminants to regenerate a uniform corrosion resistant chromium oxide film per ASTM A380 Section 6.2.11, Table A2.1 Annex A2 and Section 8.3.
- B. PVC
1. Fabricate 4-inch diameter manifolds and air distribution headers of SDR 33.5 PVC conforming to ASTM D3915 and D3034.
 2. Fabricate manifolds 6-inch diameter and larger of Schedule 40 PVC conforming to ASTM D1784, D1785 and D2466.
 3. Fabricate diffuser holders and retainer rings of PVC material conforming to ASTM D3915.
 4. PVC components shall contain a minimum 1.5 percent titanium dioxide to minimize ultraviolet light degradation.

2.03 – EQUIPMENT COMPONENTS

- A. Drop Pipes – Provide a minimum 12-gauge stainless steel drop pipe from the air main connection to a point 3 feet above the manifold.
1. Provide a stainless-steel flange with a 150-pound drilling at the top connection.
 2. Provide a stainless-steel EPDM gasketed coupling for connection to the manifold.
- B. Manifolds – Provide a PVC manifold for connection to the air distribution headers.
1. Fabricate manifolds in sections up to 25 feet in length.
 2. Connections between separate manifold sections and between the manifold and air distribution headers shall be threaded union or flanged joints to prevent rotation and blow apart. All joints shall be factory solvent welded.
 3. Design manifolds to withstand a 130° F mean wall temperature.
- C. Air Distribution Headers and Diffuser Holders
1. Fabricate air distribution headers in sections up to 24 feet in length.
 2. Connections between air distribution header sections shall be threaded union or flanged joints to prevent blow apart and rotation. All joints shall be factory solvent welded.
 3. Design air distribution headers to withstand a 130° F mean wall temperature.
 4. Design threaded union joints with spigot and socket ends joined with a threaded ring and sealed with an O-ring gasket.
 5. Threaded unions will provide an uninterrupted 360° rotation to provide for leveling adjacent distributors. Unions with spline locks or ratchets will not be acceptable.
 6. To prevent damage to the joint, the union will provide the anti-rotation feature through the O-ring, spigot and socket.

7. Threads on union joints shall be a minimum of 0.013 square inches to provide adequate strength of the socket and retainer ring.
 8. Flange joints shall be Van Stone style follower flanges with 150lb drilling and stainless-steel hardware.
 9. Diffuser holders shall incorporate diffuser holder and membrane support plate as a single unit. Multiple piece assemblies will not be acceptable.
 10. Diffuser holders shall be factory bonded to the crown of the distributor with one continuous contact area of 13 square inches minimum to ensure structural integrity and strength.
 11. Diffuser holders will be factory solvent welded and ultrasonically staked to the pipe to maximize adhesion and ensure a positive air seal.
 12. The diffuser holders shall be attached to the distributor piping following application of primer along the crown of the pipe, mechanically scrubbed and allowing sufficient activation time. Solvent shall be applied to the pod to insure full coverage without voids at the pod to pipe interface.
 13. The holder shall be applied to the pipe immediately followed by an ultrasonic weld to create a hermetic seal and securely hold the holder in place while the solvent sets and cures.
 14. Diffuser holders shall be attached to the pipe with no more than +/- 1-degree angular variation from top dead center, and no greater than +/- 1/8" lateral spacing variation to insure diffuser uniformity within the grid piping.
 15. Air distribution headers and diffuser holders shall be able to resist a dead load of 200 lbs. applied vertically to the outer edge of the diffuser holder.
 16. Provide end caps at the end of each air distribution header.
- D. Pipe Supports – Provide each section of manifold and air distribution header with a minimum of two supports.
1. Design all supports to allow for thermal expansion and contraction forces over a temperature range of 125° F and to minimize stress build up in the piping system.
 2. Design supports to be adjustable without removing the manifold or air distribution header from the support.
 3. Manifold Support – 6-inch diameter and larger
 1. Support spacing shall be limited to a maximum of 8 feet.
 2. Design supports to include guide straps, support structure and two anchor bolts.
 3. Guide straps shall be fabricated from minimum 2 inch wide, 12-gauge stainless steel to eliminate point load on manifold and minimize binding.
 4. Design support to allow +/- 2 inches of vertical adjustment for leveling of manifold within 1/4 inch of a common plane.
 5. Attach supports to tank floor with stainless steel anchor bolts.
 4. Air Distributor and Manifold Supports – 4-inch diameter
 - a. Support spacing shall be limited to a maximum of 7.5 feet.
 - b. Design supports to include guide straps, support structure, locating plate and a single anchor bolt.
 - c. To prevent improper installation, the locating plate shall be able to be installed in either of two directions relative to the support.
 - d. Guide straps shall be fabricated from minimum 1 1/2-inch wide, 18-gauge stainless steel and have contoured bearing surfaces with chamfered edges to minimize binding and resistance to movement of air distributor under full buoyant uplift load.

- e. Design guide straps with 1/8-inch clearance around distributor so strap is self-limiting and cannot be over tightened.
 - f. Design support to allow +/- 1 1/2 inches of vertical adjustment for leveling air distribution headers within 1/4 inch of a common plane.
 - g. Attach supports to tank floor with stainless steel anchor bolts.
- E. Diffuser Assemblies – Furnish diffuser assemblies including diffuser, diffuser O-ring, holder, retaining ring and air flow control orifice.
 - 1. Ceramic Diffuser
 - a. Manufacture circular ceramic diffuser discs composed of crystalline fused alumina oxide with a ceramic bonding material fired at a minimum kiln temperature of 2,000 degrees F. Resin or low temperature fired diffusers are not acceptable.
 - b. Produce diffusers free of loose or unbonded material, cracks, chips, spalling, or other structural defects or any material soluble in wastewater.
 - c. Design and test diffusers at point of manufacture for specific permeability of 26 SCFM +/- 20 percent. Specific permeability rating is defined as the number of cubic feet of air per minute at 70 degrees F +/- 5 percent and 10 to 50 percent relative humidity which will pass through one square foot of diffuse material, 1 inch thick, with a differential pressure of 2 inches water column.
 - d. Design and test diffuser to support a vertical load of 750 pounds applied to the center 1 inch diameter of the diffuser when the edges are supported in a fixture similar to a diffuser holder.
 - e. Quality Control – Test diffuser using primary sampling criteria outlined in Military Standard 105E, AQL Level 4 General Inspection Level 2, Sample Size Code Letter K.
 - 2. Diffuser O-ring
 - a. Manufacture diffuser O-rings of polyisoprene with a Shore A durometer of 40 +/- 5.
 - 3. Diffuser Holders
 - a. Design holder with air flow control orifice and removable retainer ring. Holder to provide support for the diffuser and seal the diffuser in the holder to prevent air leakage around the O-ring.
 - b. Design retainer ring threads with minimum cross section of 1/8 inch and allow for one complete turn to engage threads.
- F. Anchor Bolts
 - 1. Design a mechanical or adhesive anchor bolt system for embedment in 4,000 psi concrete with a pullout safety factor of 10.
- G. Condensate Evacuation System - Provide a condensate evacuation system to substantially drain the submerged aeration piping system for each aeration grid.

PART 3.00 – EXECUTION

3.01 – INSTALLATION AND TRAINING SERVICES

- A. Inspection services to be provided for ____ days to verify the proper installation of the aeration system.

- B. Training services to be provided for ____ days to instruct owner's personnel on aeration system operation and maintenance.

3.02 – EQUIPMENT WARRANTY

- A. Equipment shall be warranted free from defects in materials and workmanship under normal conditions for a period of one (1) year after installation or eighteen (18) months after shipment of equipment, whichever occurs first.
- B. Contactor to repair or replace any items found to be defective within the warranty period.

Combination Air Valves – Raw Water

Description:

All transmission mains shall have combination air/vacuum release valves installed as indicated on the plans. The valve shall automatically exhaust large amounts of air during filling, release small amounts of accumulated air during operation and admit large amounts of air upon impending vacuum during draining.

The valves shall be of a single body design and the valve body shall be conical in shape to maintain optimum clearance between lower float and the body of the valve. The spring-loaded float and seal plug connection shall combine to ensure no contact between the fluid and the seal. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials.

The valve working pressure shall range from 1.5- 250 psi.

The valve test pressure shall be 1.5 times its max working pressure.

The valve shall be nominal with a 2" male threaded inlet and 2" female threaded outlet.

Materials:

Body: 316 Stainless Steel or Fiberglass Reinforced Nylon

Internals: 316 Stainless Steel or Corrosion Resistant Composite Materials

External Hardware: 316 Stainless Steel

Seals: EPDM

O-Rings: Buna-N

Float: Polypropylene

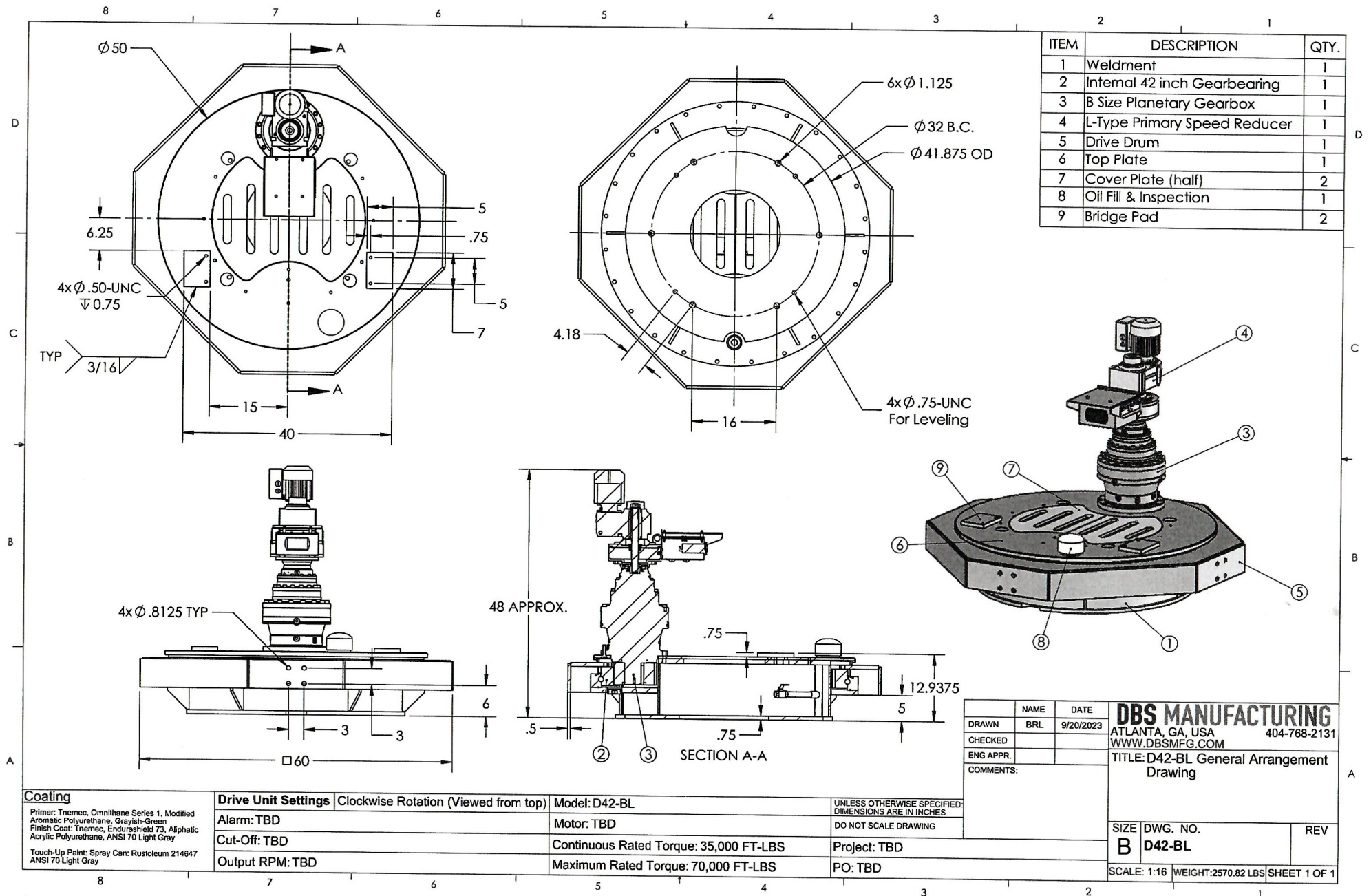
Acceptance:

Valves shall have a written manufactures' 5-year warranty on the valve body, seals, float and all internal parts. Warranty shall include corrosion of the body and any internal parts.

The valve manufacturer shall supply a valve sizing and placement analysis for the project prior to the bid date. This analysis shall be at no cost to the owner or design engineer.

Approved Valves:

D-26 Series Valves as Manufactured by ARI USA or pre-approved equal



ECCENTRIC PLUG VALVE SPECIFICATION

Scope

This specification covers the design, manufacture and testing of 4" through 36" cast iron eccentric plug valves suitable for water or wastewater service with pressure up to 175 psig.

Plug valves shall be quarter turn, non-lubricated, eccentric type with resilient faced plug.

Connections

Flanged valves shall have flanges with drilling to ANSI B16.1, Class 125.

Design

Port areas of not less than 85% of pipe area shall be provided.

The valve seat shall be a welded overlay of 99% pure nickel applied directly to the body on a pre-machined, cast seating surface and machined to a smooth finish.

Shaft seals shall conform to ANSI/AWWA C504 and consist of V-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameters of the packing manufacturer.

Permanently lubricated, shaft bearings shall be supplied in the upper and lower bearing journals. Thrust bearings shall be provided in the upper and lower journal areas.

Both the packing and bearings in the upper and lower journals shall be protected by a Grit-Guard shaft seal located on the valve shaft to minimize the entrance of grit into the bearing journal and shaft seal areas.

Materials

The valve body and cover shall be constructed of ASTM A126 Class B cast iron for working pressures up to 175 psig. The words "SEAT END" shall be cast on the exterior of the body seat end.

The plug shall be of one-piece construction and made of ASTM A126 Class B cast iron with resilient facing per ASTM D2000-BG and ANSI/AWWA C504 requirements.

Radial bearings shall be constructed of self-lubricating type 316 stainless steel. The top thrust bearing shall be Teflon. The bottom thrust bearing shall be Type 316 stainless steel. Cover bolts shall be corrosion resistant with zinc plating.

Manufacture

The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of plug valves. The valves shall be proof of design tested in accordance with ANSI/AWWA C504. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.

The exterior of the valve shall be coated with a universal alkyd primer.

Valves shall be marked with the Serial Number, Manufacturer, Size, Cold Working Pressure (CWP) and the Direct and Reverse Actuator Pressure Ratings on a corrosion resistance nameplate.

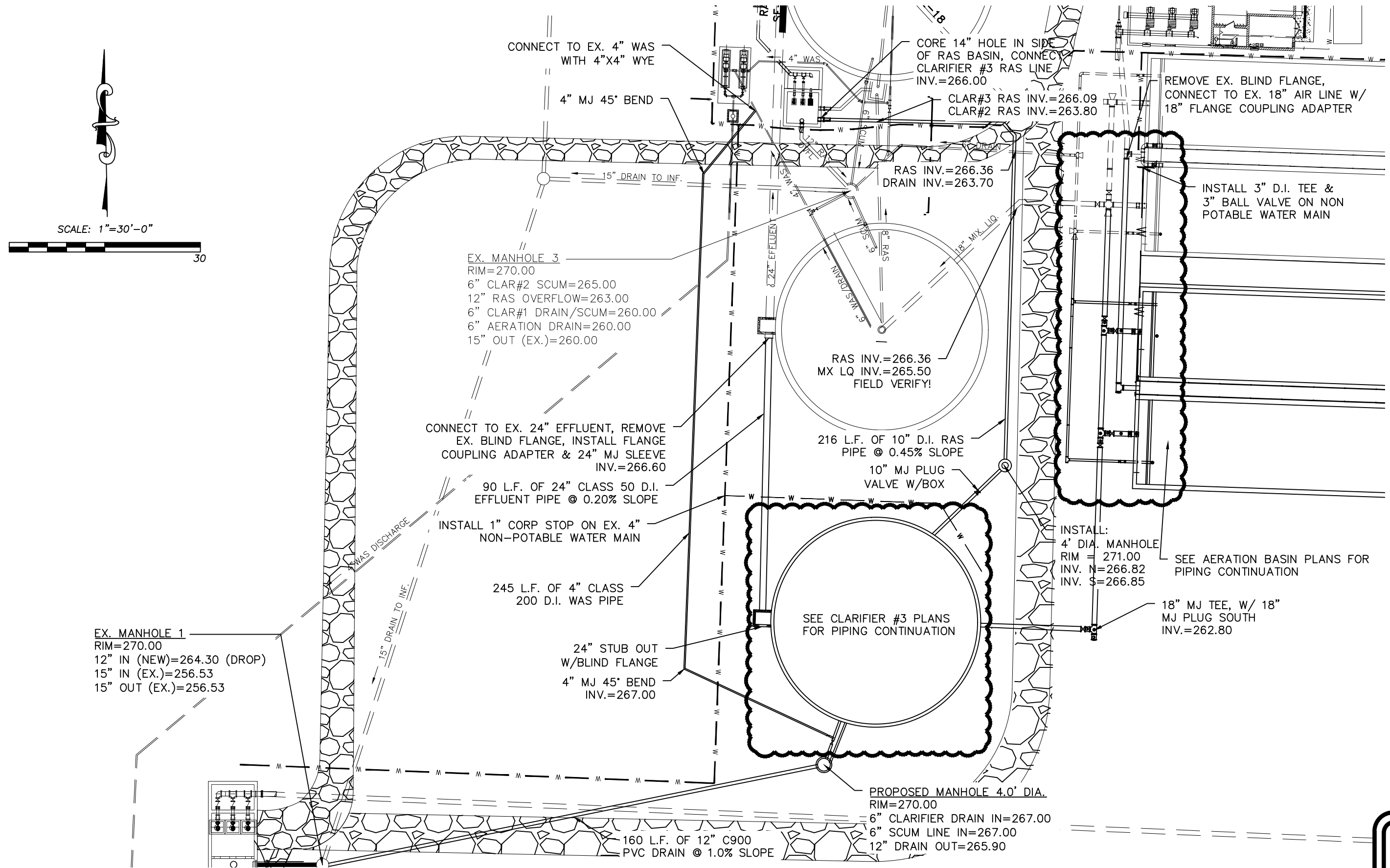
Eccentric plug valves shall be Series 5800R (flanged) as manufactured by Val-Matic Valve and Mfg. Corporation, Elmhurst, IL USA or approved equal.

Sizes and Quantities

Valve sizes and quantities are as follows:

- One (1) 8 inch flanged valves with handwheel geared operator.
- One (1) 10 inch flanged valves with handwheel geared operator.
- One (1) 12 inch flanged valves with handwheel geared operator.

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8-26-26	2-CLARIFIER 3 RAS PIPING MODIFIED	CJM
9-11-26	4-D.I. PIPE CLASS MODIFIED FOR GRAVITY	CJM
Date	Revision	By

Designed **CJM**
Checked **KSB**
Drawn **CJM**
Approved **KSB**



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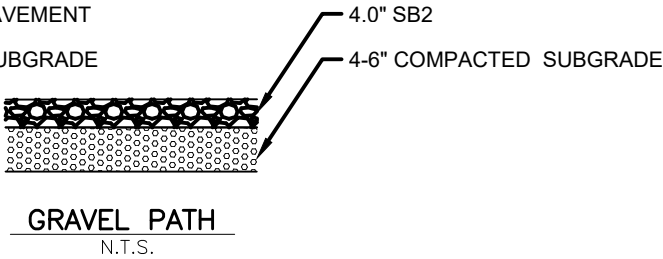
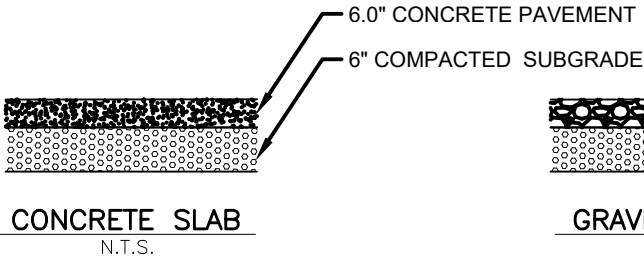
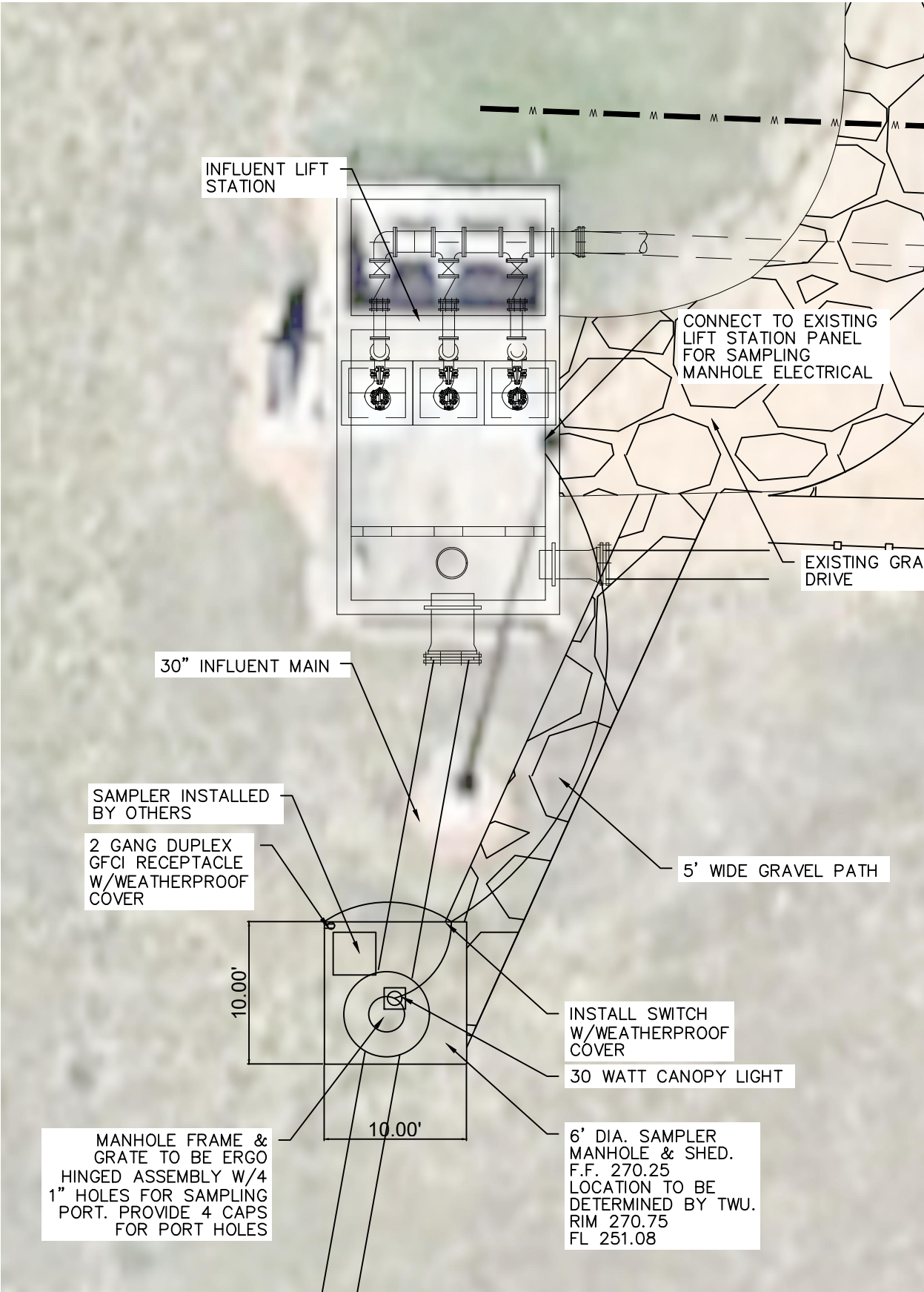
TEXARKANA WATER UTILITIES
NORTH WWTP
TEXARKANA, ARKANSAS 71854

YARD PIPING

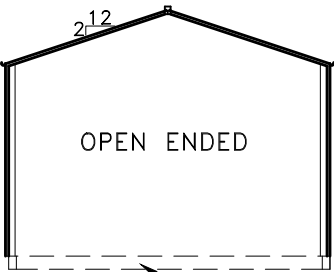
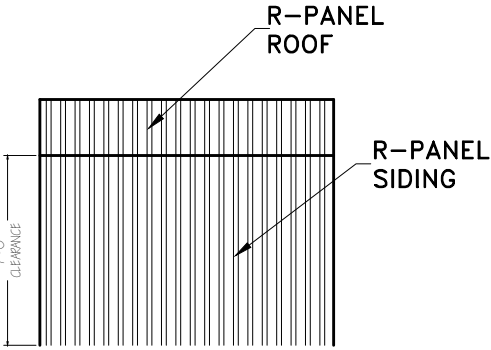
Job No. TWU-02-23
Scale: 1"=30'
Date: 9/2026
Sheet 9

9-11-26

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- NOTE:
1. CONCRETE SHALL HAVE A MINIMUM 3,000 28-DAY COMPRESSIVE STRENGTH W/4.5-6% ENTRAINED AIR.
 2. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR +/-3%.
 3. REINFORCEMENT SHALL BE NO. 3 BARS @ 18" EACH WAY C-C



NOTE

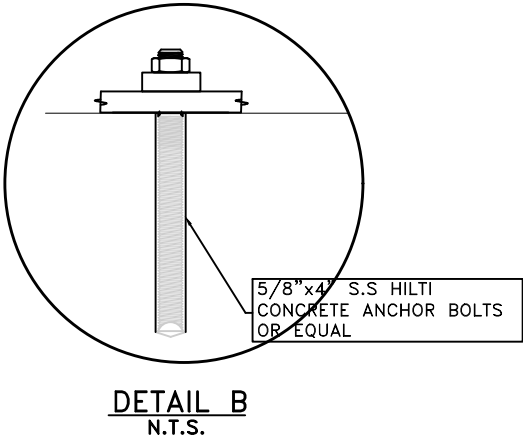
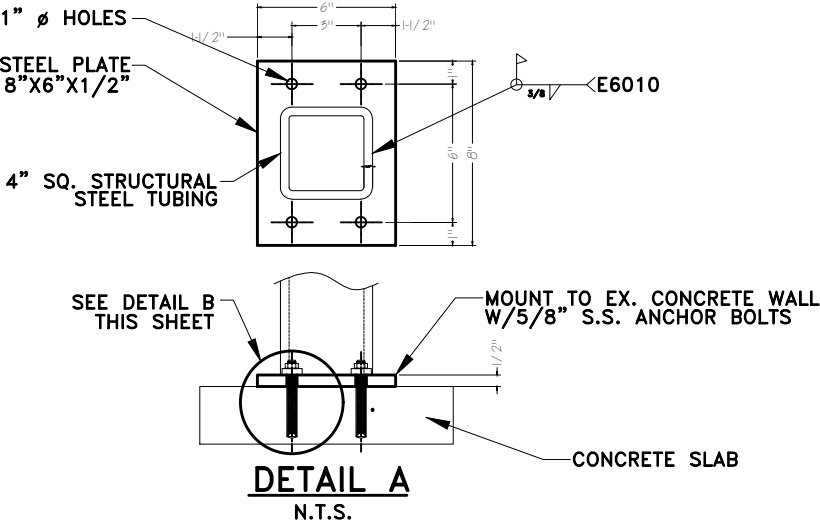
PURLINS TO BE ADDED AT 1/3 POINTS

ROOF TO BE GABLE STYLE 2"x2" SQUARE TUBING EXTERIOR FLUSH WELDED TO TOP WALL RAIL WITH MAX 5' TRUSS SPACING

10'X10' PRE-ENGINEERED METAL BUILDING WITH ENGINEER STAMPED DRAWINGS MAY BE UTILIZED IN LIEU OF ONSITE FABRICATION

SOUTH AND NORTH ELEVATION
N.T.S.

EAST AND WEST ELEVATION
N.T.S.



8-17-26	1-PROPOSED SAMPLING MANHOLE & PATH	CJM
9-11-26	4-NOTE ADDED	CJM
Date	Revision	By

Designed	CJM
Checked	KSB
Drawn	CJM
Approved	KSB



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INFLUENT SAMPLING MANHOLE

Job No.	TXU-02-23
Scale:	N/A
Date:	9/2026
Sheet	11A

