

ADDENDUM NO. 2

WASTEWATER TREATMENT PLANT EXPANSION  
KYLE, TEXAS

CONTRACT DOCUMENTS, DRAWINGS AND TECHNICAL SPECIFICATIONS

**This addendum does not modify the project bid date. Sealed Bids will be received addressed to the City of Kyle for the Project until 2:00 p.m. on Tuesday, December 3, 2019 at City of Kyle Public Works Department, 520 E. RR 150, Kyle, Texas. The bids will be publicly opened and read aloud starting at 2:01 pm on Tuesday, December 3, 2019 at City of Kyle Public Works Department Training Room.**

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This Addendum, issued pursuant to the provisions of the Instructions to Bidders of the Contract Documents identified by heading above, is hereby made a part of said Documents and should be acknowledged in the space provided on Section 00 30 00 - Page 3 on the Bid Form by all persons submitting bids on the Project. Such acknowledgement also constitutes certification by the bidder that he has obtained corresponding acknowledgement of receipt by all of his subcontractors and suppliers.

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Following are select questions and their answers from the project advertisement website CivCast (with the original CivCast question number along the left side of the page). Only these Addendum 2 answers shall be incorporated into the contract documents. Answer text that have been updated or supplemented since the original CivCast posting are shown in orange.

4           **Question:**    Can you confirm this is not a Buy America or Texas Water Board project requiring all domestic material? Thanks

**Answer:**        This is not a Buy America or Texas Water Board project. All domestic material is not required.

5           **Question:**    Please see section 00 32 00-page 1 of 1 "Bid Equipment and Components" form. See Diesel Engine Generator (26 32 13). Option is given for Caterpillar, Cummins and Kohler.

**Answer:**        All three manufacturers listed in Section 00 32 00 are approved to supply generators for this project.

6           **Question:**    Sheet 43 note 4, calls for interior protective coating in concrete structures; which spec section applies to protective coating requirements including phys properties, approved brands, thickness etc...

**Answer:**        The applicable specification is Section 09 90 00 (Painting), Article 4.2 (Paint Schedule), where the row "Precast Concrete and Cast-in-Place Concrete" indicates F and H codes are applicable to the ceilings and walls for the referenced structures in this section and on the drawings.

7           **Question:**    Ref Spec 33 05 33 - Will you allow MJ C153 Compact Fittings for sizes 30" - 48"? And Spec 33 05 53 - Will you allow MJ C153 Compact Fittings for all size ranges?

**Answer:**        MJ C153 compact fittings are allowable for all size ranges as part of Section 33 05 33.

8           **Question:**    Ref Spec 40 05 07. 2.1 D. 1. Please verify if there is any lining required other than Cement Lining. The pipe schedule on plan page 21 doesn't list any pipe linings.

**Answer:**        Supply DIP and fittings with asphaltic liner per Article 2.1.D.1.a of Section 40 05 07.

- 9           **Question:**    Ref Plan Page 21 Buried Pipe Schedule Note #2. Please verify if a Wedge Action Restraint (Megalug type) will be acceptable for the required restrained joint on all buried fittings.
- Answer:**       Wedge-action components can be used to restrain buried fittings' joints.
- 10           **Question:**    Drawing 23, Enlarged yard piping plan - 2, is showing the 48" SS line going from the Influent Junction Box over to the Headworks structure. We do not see this " SS " line listed in the pipe schedule on drawing 21. Please clarify the type of pipe to provide for the SS line.
- Answer:**       Revised Sheets 21 and 23, and Section 33 05 42 issued as part of this addendum, define the Buntun Creek 42" SS influent line (from Station 2+10.77 outside the WWTP fence to Manhole 1 and then to Influent Junction Box) and 48" SS influent line (from Influent Junction Box to 8' concrete manhole to Headworks influent channel) as part of this project.
- 13           **Question:**    Section - C on drawing 44 is showing the inlet wall pipe at the Headworks Structure. The wall pipe is drawn with a single vertical line at the connection point. Reading in the specifications section - 40 05 14, 2.2, A, Wall and Floor Pipe, 2, it states that the end connections shall be as shown on the drawings. The single vertical line shown in the section view does not indicate the type of joint to provide. Please review and clarify the type of pipe joint to provide for the wall pipe.
- Answer:**       Install compression connectors suitable for use with PVC closed-profile pipe, as specified in Section 33 05 32, and issued as part of this addendum.
- 14           **Question:**    Looking at the wall and floor penetration details on drawing 132, we see penetrations for existing walls and slabs with pipe, C.I. wall sleeve and a cored hole with a link seal set. There is a wall penetration with a C. I. sleeve and link seal set for what appears to be for new walls. We have not found a detail for a wall pipe for new construction walls. Please review and provide a detail for new wall pipe.
- Answer:**       Wall and floor penetration details for new construction match those shown for existing walls and floors, but without the exterior non-shrink grout.
- 15           **Question:**    Specification section - 40 05 14, 2.2, Wall and Floor Pipes and Pipe Sleeves, B, Pipe Sleeves, 1, states that pipe sleeves shall be ductile iron. We note the wall penetration detail on sheet 132, Wall Penetration Compressible Rubber Link Type, is indicating the sleeve can be C. I., steel or high impact thermoplastic materials. We do not find steel or the high impact thermoplastic material indicated in the specifications. Is the Century -Line HDPE wall sleeve acceptable for the project? Please review and clarify.
- Answer:**       Century-Line HDPE wall sleeves are acceptable for this project.
- 16           **Question:**    The pipe schedule on drawing 21 is indicating that the buried ductile iron pipe is to be either pressure class 250 or 350 based upon the size. Reading in the specifications, section - 33 05 33 - 2, 2.1, A, we see that the ductile iron pipe is indicated to be either thickness class 51, 52 or 53 based upon the size. Please review and clarify the ductile iron rating to provide for the project.
- Answer:**       Supply DIP per Pressure Class 250 or 350, as applicable for pipe diameter.
- 17           **Question:**    Reading in specification section 33 05 33 - 4, 2.1, C, 3, Ball and socket joint pipe is described. Is there a particular process line or lines, in this project that requires this type of pipe? We do not see this indicated in the buried pipe schedule. Please review and clarify.
- Answer:**       Ball and socket joint pipe is not required for this project.

- 18      **Question:**      Drawing 43 is showing section - A, and the Influent Pump. Looking at the section view, it appears that there is a flange reducer connected to the pump discharge. Reading in the Influent Pump specification section - 43 21 22, 3.5 Pump Schedule we see that it indicates a minimum pipe connection size of 12". Please review and clarify the discharge piping for the four influent pumps.
- Answer:**         Should pump discharge elbow (supplied by pump manufacturer) vary from 12" diameter, reducer will be required. Otherwise, reducer shown will be a 12" spool piece for each pump.
- 19      **Question:**      Reading in specification section - 40 05 03 - 3, 2.2, A, 3, b, Submerged Service, it indicates that for bolts 1 2/4 inches in diameter and larger, bolt studs with a nut on each end are recommended. Please review and clarify the diameter of the bolt.
- Answer:**         Revise diameter reference to 1-3/4" (matching the diameter of nonsubmerged service bolts referenced in 2.2.A.3.a).
- 20      **Question:**      We do not see the SW pipe listed in the buried yard piping schedule on drawing 21. Please review and clarify.
- Answer:**         Information for SW piping, which includes flanged above-grade at Influent Lift Station (ISL) and buried pipe to Aeration Splitter Box (ASB), and buried from ASB to two existing package plants (PP) **has been updated on revised Sheet 21, issued as part of this addendum.**
- 21      **Question:**      Specification section - 40 05 23 - 7, 2.2, D - Plug Valves, lists one valve as eccentric, non-lubricated and having an 80 percent port opening. Then there is a second listing for a full port plug valve. We do not know where each type of valve is to be provided. Please review and clarify where 80 percent port valves are to be installed and where 100 percent port valves are to be installed.
- Answer:**         Provide full-port (100% opening) plug valves in all applications.
- 22      **Question:**      Do pipe going through concrete slabs on grade require a pipe sleeve? Can expansion joint material be used to wrap around the barrel of the pipe? We do not see a detail of a slab on grade pipe penetration. We see the details on drawing 132 for existing wall and slab sleeve but we assume those are meant for suspended concrete floors. Please review and clarify.
- Answer:**         Piping through SOG requires DIP wall pipe with seep ring (matching detail for existing wall/slab closure, without non-shrink grout, and detail for underslab pipe encasement).
- 23      **Question:**      Section - E on drawing 43 at the Headworks Structure is showing two 12" flanged gate valves. We looked in the specifications but did not find a paragraph describing flanged gate valves. Please review and provide a specification description for the flanged gate valves.
- Answer:**         Provide two full-port plug valves instead of the gate valves.
- 24      **Question:**      Looking at section - B on sheet 43, we see the 6" air release valve in the SW discharge header pipe. The air release valve is drawn as being a dual body type. Reading in specification section 40 05 23 - 11, 2.2, I, the description does not mention the valve being a dual body type. We do not see any mention of the air release valve having a flushing connection. Is a flushing connection needed for this sewage service valve? Please review and clarify this air release valve at this location.
- Answer:**         Provide the ARV per Section 40 05 23. with flushing connection.

- 25      **Question:**      Section - A on drawing - 43 is showing the vent pipe coming off of the top of the small air release valve on the combination air release valve assembly. The section is showing a 1/4" copper drain tube. We looked at a Val-Matic combination dual body air release valve and the outlet on the top of the small valve was indicted to be 1/2" size. Since the specifications do not specify a particular air release valve we are assuming which valve to provide. Is it your intention to reduce the vent outlet down to 1/4" as shown on the section view? Please review and clarify the size of the vent drain line to provide for these combination air release valves.
- Answer:**            Provide 1/2" vent drain line.
- 26      **Question:**      Looking in the pipe schedule on sheet 21, we see the line for DR - Drain piping. In the restrained joint length column, there are no distances indicated. Reading note # 2 below the schedule, it states to provide restrained joint fittings on all buried pipe. Are we to provide restraints only where there is a distance indicated in the schedule? Please review and clarify which lines are to be restrained.
- Answer:**            Drain piping does not require mechanical restraint in addition to fitting blocking. Only piping with a length in feet on the schedule requires restraint joints. Provide restraint on all joints within that distance, both before and after the fitting.
- 28      **Question:**      We see the six mud valves in the bottom of the channels in the Headworks Structure. Looking at section - D on sheet - 45, we see four of the mud valves. There are no extension stems shown in this section view. Is it up to the mud valve supplier to design the extension stem and supports for the guides? We assume that there will have to be an opening in the grating to access the top of the extension stem for the center channel with the manual bar screen. We are looking at the distance from the slide gate over to the mud valve. Projecting that distance up to the operating level, it appears that that is in the edge of the automatic bar screen and compactor support beam. Please review and clarify the configuration of the mud valve extensions. [See revised Sheets 41, 43, and 45 issued as part of this addendum.](#)
- Answer:**            Mud valves are to be provided with operating stems that terminate in operator nuts, with their tops flush with operating floor elevation (concrete or grating). Location will be dimensioned so stem is in center of space between screen channel gate and press pad. One additional mud valve shall be added to drain the bypass channel.
- 29      **Question:**      Drawing - 41 is showing the channel level of the Headworks structure. We see key note # 2, which is a 6" flanged rubber duckbill check valve in the Influent Wetwell No- 1. We searched through the specifications but did not find a specification section describing a rubber duckbill check valve. Please review and provide a paragraph describing the duckbill check valve required for the project.
- Answer:**            Provide Tideflex Series 35 flanged check valve, with EPDM body, and Type 304 stainless steel Class 150 flange and mounting hardware.
- 30      **Question:**      Drawing 42 is showing a 4" NPW water line coming into the building and extending along the east wall of the Operating floor level at the Headworks Structure. We do not know what pipe material to provide for this pipe. There is no indication on the plan sheet and we do not have a pipe schedule to find the pipe material. Is the pipe to be flanged ductile iron or is it to be schedule 80 PVC pipe? Please review and clarify the NPW pipe in the Headworks building.
- Answer:**            Provide Schedule 80 PVC pipe for the NPW piping in the Headworks, including the 4" header, two 2" screen/compactor feeds, and smaller-diameter connections as required by the screening and compactor equipment supplied.

- 31        **Question:**     Drawing 42 is showing a 4" NPW water line coming into the building and extending along the east wall of the Operating floor level at the Headworks Structure. We do not see any elevation indication for this line. Looking at section - C cut through this area does not show the NPW water line. Please review and clarify the elevation of the 2" and 4" NPW water lines.
- Answer:**         Install 2" and 4" NPW lines at centerline elevation 615.5.
- 32        **Question:**     Drawing 42 at the Headworks Building is showing NPW, HB - hose bibbs outside along the west side of the upper exterior floor slab. There are also two NPW, hose bibbs shown inside the east wall of the Headworks Building. There is no indication as to what size hose bibbs to provide. We did not find a detail showing the installation for hose bibbs. We did find hose bibbs described in the Plumbing specification for Domestic Water Piping Specialties, Section - 22 11 19 - 3, 2.6. It indicates the supply sizes can be either 1/2" or 3/4" with a 1/2" garden hose thread outlet. It also includes a vacuum breaker which would apply to a potable water service line. But this is a NPW water service line. Please review and clarify the hose bibbs to provide inside the building.
- Answer:**         Provide 3/4" hose bibbs, 30 ft of 3/4" hose, and aluminum hose rack at both locations inside headworks. Vacuum breakers are not required.
- 33        **Question:**     Drawing 42 at the Headworks Building is showing NPW, HB - hose bibbs outside along the west side of the upper exterior floor slab. Since these are outside of the building should these be yard hydrants rather than hose bibbs? Please review and clarify the exterior hose bibbs.
- Answer:**         Provide yard hydrants instead of hose bibbs in the two locations on the west edge of the lift station's concrete slab.
- 35        **Question:**     Can a door schedule be added for the Aeration Blower Building? These doors are mentioned in the Metal Building spec, but the Metal Building suppliers will not supply personnel or overhead doors.
- Answer:**         Provide two single and one double exterior hollow-metal person doors (per Section 08 11 13, Article 2.4), one interior hollow-metal person door (per Section 08 11 13, Article 2.3), and one rollup door (per Section 08 33 23), as dimensioned on Sheets 62 and 64.
- 36        **Question:**     Is a 1- or 2-year maintenance bond required for this project? 5.4.4 of the GC's references a maintenance bond but does not indicate whether a maintenance bond is required or not and does not specify duration.
- Answer:**         General Contractor to provide a 1-year maintenance bond.
- 37        **Question:**     Please confirm surety may use their own bid bond form as none is provided in the bidding documents.
- Answer:**         Use of a form that conforms with State Law for municipal public works projects is acceptable.
- 38        **Question:**     Article 5 of the Supplemental Conditions lists the only required insurance as being Auto, WC/Employers Liability and Commercial General Liability. Is Builder's Risk/Property Insurance not required? Is Owner purchasing Builder's Risk/Property Insurance?
- Answer:**         General Contractor to provide Builder's Risk/Property Insurance.
- 39        **Question:**     Please provide actual physical address or exact coordinates of project site for insurance and bonding purposes. Our insurance carrier is unable to model coverage without this information.
- Answer:**         Address: 941 New Bridge Drive, Kyle TX 78640

- 40      **Question:**      Please confirm there is no MWBE goal on this project.
- Answer:**        A MWBE goal is not required on this project.
- 42      **Question:**      Drawing 58 is showing the Aeration Splitter Box. We see the callout for an 12" OF - overflow pipe in the plan view. We do not see this OF pipe in any of the section views. There is no indication of the elevation for the top of the OF pipe. Is the OF pipe to be a plain end piece of pipe? Is the pipe to have a flanged flare fitting at the top? Please review and provide a section view of the pipe.
- Answer:**        Provide vertical overflow pipe with plain end located at elevation 623.0.
- 43      **Question:**      Drawing 58 is showing the Aeration Splitter Box. We see the hose bibb up on the upper deck level. We see the callout for a buried 2" NPW water line coming up to the structure. Does the 2" NPW pipe extend up to the upper deck level? What size hose bibb is needed at this location.
- Answer:**        Schedule 80 PVC 2" NPW line extends vertically along splitter box wall exterior to service 3/4" hose bibb, to be supplied with 20' of hose and aluminum hose rack.
- 44      **Question:**      Drawing 13 appears to show new security fence around the entire perimeter of the site. There also appears to be existing fence along the top (NW) of the site, and there is a call out stating "Security Fence (Ex. Fence to Remain)". Is there actually new fence at the top of the site, or are we connecting new fence to the existing at the left and right limits? If we are installing new fence, does it go right against the existing fence?
- Answer:**        The existing residential wood fence is to remain, with the new security fence installed paralleling it, and minimum spacing between the two as required to install the new fence.
- 45      **Question:**      Drawing 51 is showing the Aeration Basin. We see the two hose bibb up on the walkway deck level. We see the callout for a buried 2" NPW water line coming up to the structure on the left side of the layout. Does the 2" NPW pipe extend to the right side or east end of the walkway at the second hose bibb? What size hose bibb is needed at this location?
- Answer:**        Both hose bibbs on the walkway deck are tied into the buried 2" NPW on the west end of the structure. Provide 1" PVC Schedule 80 NPW piping between the two bibbs (each 3/4" size, with 30' of 3/4" hose, on aluminum or Type 304 stainless steel hose rack). Secure 1" piping on concrete with pipe clamps.
- 46      **Question:**      Can a detail/elevation be provided for the automatic slide gate shown on sheet 13?
- Answer:**        For both slide fence gates indicated on Sheet 13, [see revised Sheet 112 issued as part of this addendum.](#)
- 47      **Question:**      Aeration Basin Influent Pipe: Drawing - 53 is showing the enlarged area of the west end of the Aeration Basin. The plan view layout is showing the 18" SW pipe connecting to the influent chamber with a flanged 90 degree bend fitting. This 90 bend fitting would have to be a flange by MJ 90 bend. Then looking at the section view of this influent chamber in section - A on drawing - 54, we see the 18" SW pipe turning up and extending to the Aeration Basin influent chamber with a MJ 90 degree bend fitting and a short piece of pipe which connects to the wall pipe. Which layout are we to use? Please review and clarify which layout is correct.
- Answer:**        Install aeration basin influent piping per Section A on Sheet 54 with MJ fittings and pipe.

48 **Question:** 00 48 00 Notice of Award indicates that Awarded Contractor must execute the agreement and furnish required bonds and certificates of insurance within 10 calendar days of receipt. However, Article 2, Section 1 of 00 70 00 states that, "Within five (5) Working Days after written notification of award of Contract, CONTRACTOR shall deliver to OWNER signed Agreement, Bond(s), Insurance Certificate(s) and other documentation required for execution of Contract". Please clarify the expectation.

**Answer:** Use Section 00 48 00 referenced duration of 10 days.

50 **Question:** Spec section 41 33 34 - Sampler Equipment-  
 1.2.A Indicates that the influent sampler will be located in a Class 1 Div 2 area. Note that the specified samplers are not rated for hazardous areas.  
 1.2.A Indicates that the effluent sampler shall be installed in a weather enclosure suitable for outdoor installation. I don't see a spec for an enclosure. Is the Plasti-Fab Model 4B acceptable.  
 1.3.D Names the Isco 3710FR. This model has been discontinued and replaced by the Isco 5800. Please confirm that this model is acceptable.  
 2.3.A Requires two 5.5-gallon bottles. Is the intent to use a single bottle and have a second bottle as a spare or do you want the sampler to use a 2-bottle configuration with both bottles installed at the same time?

**Answer:** Provide sampler suitable for classified area. Plasti-Fab Model 4B is acceptable, as is Isco 5800, with second bottle as a spare.

51 **Question:** Sheet 20 - Can a schedule be provided stating the types of plants and shrubs required and a quantity for each? Can a spec be provided for the grass and drivable pavers? Is any permanent irrigation required for this area?

**Answer:** Any plant fitting generic description (such as "drought-tolerant grass") will be suitable, with number of minimum plantings shown on Sheet 20. Distribution of plant type to be determined by landscaper. Provide GeoPave aggregate porous paver system, with 4" minimum base depth, or similar system with high-strength polyethylene grid suitable for fire truck access. No permanent irrigation system is required.

52 **Question:** The RAS pipe in the Aeration Basin is shown in section - B on drawing 55, as having a flange 45 deg. bend fitting with a flange by PE - plain end. We do not know of any one that makes a cast flange by plain end 45 degree fitting. Is it your intention to have a ductile iron grooved end 45 degree bend fitting with a grooved flange adapter on the side that connects to the flanged plug valve? This would essentially provide the plain end. Would a standard flanged 45 degree bend fitting be acceptable at this location? Please review and clarify.

**Answer:** Provide standard 45-degree flanged fitting (FLxFL) for each RAS discharge.

54 **Question:** We are looking at the ALP piping on the Aeration Basins. We notice the pipe appears to be drawn with some flanged joints at the 90 bends and tee fittings. We see the butterfly valves in the air header that extends down the basins that appear to have flanged connections. Reading through the Carbon Steel Process Piping section - 40 05 05, Part - 2, C, Joints, it has welded, threaded or grooved types. There is no mention of flanged joints. There is no description of the type of flanges to provide in the piping. It is your intention to have grooved type couplings in the pipe joints and flange adapters at any valves? Please review and clarify the fabricated steel air piping system.

**Answer:** Flanges at ALP bend and tee fittings are not required, and can be welded. Standard flanges are required at valves, flow meter inserts, expansion couplings, and dropleg materials transition.

- 55 **Question:** The ALP air piping on the Aeration Basin is showing what appears to be wafer style butterfly valves. Reading in specification section 40 05 23, 2.2, B, Butterfly valves there are two paragraphs. B. 1 - describes an AWWA C504, cast iron body, metal seated valve. The manufacturer reference in subparagraph j, lists M H Valve Co. and a style 1450. This is a flanged body valve. The other paragraph - 2 , is for an AWWA C504, cast iron body valve with a resilient seat. Which one of these valves did you intend to be used in the ALP air piping system? Please review and clarify.
- Answer:** Provide flanged butterfly valves for the ALP system.
- 56 **Question:** Reading through specification section - 40 05 05 Carbon Steel Process Piping, we do not find a reference for the type of bolts and nuts to be provided. Are the ASTM A 307, Grade B bolts and nuts referenced in section 40 05 03 - Process Piping Basic Requirements acceptable for the ALP system?
- Answer:** Provide Type 316 stainless steel nuts and bolts for the ALP system.
- 57 **Question:** Reading in the butterfly valve specification paragraph - 40 05 23 - 5, 2.2, B, 2, 1, we see that lever operators are mentioned. There is no indication as to what size valves that lever operators can be provided. Please review and clarify what size valves can have lever operators.
- Answer:** Provide level operators on butterfly valves 4" diameter and less.
- 58 **Question:** On Sheet 94 in the PLAN Drawing, Key Note 4, is for a SST Slide Gate. Specification Section 40 05 24 Slide, Sluice, and Weir Gates doesn't show this in the schedule. Is this Slide Gate to be in accordance with 40 05 24? Please Advise.
- Answer:** Provide nominal 18" by 12" plate with handle so slide gate can be manually pulled out completely from guides. Compliance with Section 40 05 24 requirements is not required.
- Answer:** Provide three Aerobic Digester Blowers.
- 60 **Question:** Specification Section 43 21 55 Non-Potable Water Centrifugal Pumps, as shown in Specification Section 00 32 00 Bid Equipment and Components, appears to be missing from the documents. Please provide missing Specification.
- Answer:** See Section 43 21 55, Non-Potable Water Centrifugal Pumps, issued as part of this addendum.
- 61 **Question:** With regard to 00 40 00 Statement of Bidder's Experience, Attachments G- Current Projects and Attachment H- 5 years of worth of completed Projects: Given the volume of projects requested, can bidder use their own current and completed project listings in a different format, as long as they contain the required elements of the City's forms for Attachments G, H?
- Answer:** Use of bidder's forms is acceptable to define Bidder's Experience.
- 62 **Question:** With regard to the twelve comparable projects required by owner. In order to demonstrate best similar, comparable projects based on the criteria provided there may be overlap with one project being the best illustration for more than one experience category. Is this acceptable?
- Answer:** Yes, this type of project experience overlap is acceptable.
- 63 **Question:** In a couple of the responses regarding NPW hose bibbs on the Headworks and the Aeration Basin Splitter Box, they have indicated that the hose racks are to be aluminum. The hose rack detail on drawing 131 is showing it to be made with some grade of stainless steel. Are some racks to be aluminum and some to be stainless steel? Please review and clarify the hose rack materials.



- Answer:** Aluminum or Type 304 stainless steel hose racks are acceptable. Supply hose racks made of one material and install throughout the WWTP.
- 64 **Question:** Drawing 53 is showing the influent area of the Aeration Basin. We see the 12" RAS line coming into the basin and extending across to the left side into basin 1B. We see that the line is showing a blind flange at the last tee fitting. Then there is a wall pipe with blind flanges for future expansion. Looking at the P ID layout on sheet - I-0304, we see that a plug valve is shown at this location and the pipe extends over to the wall pipe. Please review and clarify if the plug valve and spool piece of pipe is to be provided.
- Answer:** Install piping as per P&ID on Sheet 146, with 12" plug valve and spool piece between tee and wall pipe at south end of basin. Do not supply two 12" blind flanges shown inside basin, but do provide blind flange indicated on wall pipe outside of basin.
- 65 **Question:** Drawing 62 is showing the Blower Building and the air pipe going through the metal building walls. We see the wall penetrations but there is no reference for a detail of the pipe penetration. The wall penetration details on drawing - 132 appear to be for concrete walls. Please review and clarify the wall penetration detail for the metal building walls.
- Answer:** For each ALP wall penetration in the Blower Building, provide a circular cutout in the metal wall panels, backed by a rectangular 1" thick minimum of high-temperature clad insulation mounted on the inside of the wall and adjacent to the pipe exterior to seal all peripheral gaps.
- 66 **Question:** Looking through the LV Switchboard spec section 26 24 13 it states that GE, ASO, SQ'D, and Siemens are the approved manufacturers. If ESS Metron quotes the LV Switchboards using a circuit breaker from one of the manufacturers listed are we OK to quote and supply the LV Switchboards?
- Answer:** Per Section 26 24 13, Article 1.3 B: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source and single manufacturer. Accordingly, it is not acceptable to quote various overcurrent part manufacturers for the switchboard.
- 67 **Question:** Reading in specification section - 40 05 14 - 4, 2.3, D, Coatings, 1, it states that steel items shall be hot dipped galvanized at the factory unless otherwise noted on the drawings. Looking at the riser bracket detail on sheet - 132, it indicates in note 1, that the steel shall be hot dipped galvanized. Then looking at the blower pipe support detail, it has a callout for this post support to be shop primed and painted. Looking on sheet 131, in the maximum unsupported pipe span schedule, in note - 6, it states that miscellaneous metal fabrications shall be welded construction, 304 stainless steel, unless noted otherwise. We are not sure which finish or materials to use for the supports on the project. Please review and clarify what materials and finish to provide for the different locations or service areas.
- Answer:** For the fabricated ALP pipe supports and cradles inside and outside the Blower Building and on the aeration basins (per Sheet 50), provide hot dipped galvanized components.
- 69 **Question:** Does the hose bibb inside the Blower Building require a hose rack and hose? Ref. drawing 62.
- Answer:** Provide rack and hose (20' length minimum).

- 71      **Question:**      Looking at the 24" ML lines coming out of the Clarifier Splitter Box going to Clarifiers no -1 2, it appears that the yard fitting layout needs to be adjusted. The ML line going to Clarifier No - 2 needs to have a MJ 45 bend at the end of the pipe that is coming down from the flanged 45 bend at the wall. This fitting is needed to bring the line back to a level orientation. Is it your intention for the contractors to add whatever pipe or fittings to the project to make the piping work out? Do you need to add the fitting to the drawing? Please review and clarify.
- Answer:**            Provide four additional 45-degree bends on Sheets 68 and 69 for the vertical-to-horizontal transition of the 24" ML lines at the Clarifier Splitter Box.
- 72      **Question:**      Drawing - 68 is showing the Clarifier Splitter Box. Looking on the left side of the structure we see the ML lines extending out for the two future clarifiers. We see the callout for the MJ plugs to be installed at the end of the pipe. The section - C on sheet - 69, cut across these pipe does not show the ends of the pipe. Is it your intention for the ends of the slanting flanged pipe connecting to the flange 45 bend fittings that are connected to the wall pipe, to have a "cap " on the end of them? Should we provide a MJ 45 degree bend fitting on the ends of the pipe and then provide MJ "plugs" in the outlet of the 45 MJ bends? Please review and clarify the piping configuration.
- Answer:**            Per answer to Question 71 above, add fitting so both 24" ML lines to be extended in the future are horizontal, and **cap** those lines' ends **with restrained, removable plugs**.
- 73      **Question:**      Drawing 119 is showing the typical pressure relief valve details for wall and floors. We have looked on the plans but have not seen these hydrostatic pressure relief valves indicated on any of the structures. Please review and clarify if these valve are required for the project.
- Answer:**            These structures require pressure relief valves: For each secondary clarifier, install 6 PRVs in the walls (spaced about 36'-8" on center equally around the walls). For the post-aeration basin, install 4 PRVs in the walls (2 along the north wall and 2 along the south wall, at the third points of each wall).
- 74      **Question:**      What are the flows in the existing 30" ss influent line? Where is the nearest existing upstream manhole?
- Answer:**            **Current influent flows in the existing 30" sanitary line average 2.5 mgd and peak during storm events at 8 mgd. The nearest existing upstream manhole is approximately 270 ft northeast of the existing splitter manhole.**
- 75      **Question:**      Sheet 119, Detail 1: Are mud slabs required? Is select fill being placed then a mud mat?
- Answer:**            Per Detail 1 on Sheet 119, mudmats/sealslabs are only required if the excavation depth exceeds 6'-6".
- 76      **Question:**      Please confirm 4500 psi concrete is required for the structures.
- Answer:**            Provide 4500 psi concrete for all treatment process structures.
- 77      **Question:**      Drawing 68 and 69 are showing the two 10" telescoping valves in the RAS / WAS wetwell. We see that they are drawn having electrical motor actuators. Looking on sheet I - 0306, we see the two valves but there is no indication of any feedback signals. Section - 40 05 23, 2.2, F, does not include a description for the operators. Reading in section - 2.3, Operators, B, Electrical, it describes open / close operators and modulating operators. The section describes limit switches in the motor. There is no mention of the motor operator support stand. We see section - 2.4, D, Floor Stands, which describes a 304 stainless steel, manual crank operated, non-rising type. There is no mention of having an electric motor mounted on the floor stand. Please review and clarify the telescoping valve motor operator and controls.

- Answer:** Telescoping valves shown on Sheets 68, 69, and 148 shall be operated using open-close electric actuators (fitted with horizontal handwheel) which are mounted on vertical floor stands. Provide local controls for these two electric actuators. There are no interlocks with the actuators to the control system.
- 78 **Question:** Please provide a concrete coating schedule by structure for interior and exterior coating requirements. The spec implies that all concrete structures are to be coated.
- Answer:** For process buildings (headworks and UV disinfection), paint CIP and block concrete interior and exterior walls and ceilings per Schedule 4.2 in Section 09 00 00.
- 80 **Question:** Drawing 69 is showing the section B view through the RAS / WAS pump station. We see the 4" WAS pump discharge header and the callout for a "4" cleanout". We are assuming that is meant to be a 4" quick disconnect, pump out connection. We searched the specification division - 40 and did not find a mention of a cam-lock type quick disconnect fitting. We do not know what material the quick connect coupling is to be made. Please review and clarify the material of construction for this pump out connection.
- Answer:** Provide Type 316 stainless steel 4" cam-lock type quick disconnect fitting with dust cap for the item on Sheet 69, Section B called out as "cleanout".
- 81 **Question:** Item number 5 of 00 41 00 Bidder's Safety Experience states that, "The Bidder acknowledges the requirements for Safety Training (listed in Section 00 41 00) must be met before any work commences on the project". Please clarify which specific trainings are required, or is this in reference to the competent persons?
- Answer:** The bidder must acknowledge they have a safety coordinator who has completed the 30-hour OSHA construction safety training program noted in the general conditions.
- 82 **Question:** Can sizing be added for the 24" ALP structural supports shown on sheet 55, section C?
- Answer:** ALP supports' component size and connection requirements on Sheet 55 are the same as those indicated on Sheet 50, Section 3.
- 84 **Question:** Drawing - 90 is showing the four 10" telescoping decant valves in the Aerobic Digesters. There is no callout or indication as to what elevation the telescoping valves are to be installed. The section view - B on drawing 92 shows the 8" overflow pipe and not the 10" telescoping decant valve. We do not know how long to provide the 10" riser pipe. Please review and provide the installation information necessary for these valves.
- Answer:** Provide four 10" telescoping valves in the Aerobic Digesters with a range of travel between Elevation 617.5 and Elevation 613.5.
- 85 **Question:** Reading in specification section - 40 05 23 - 9, 2.2, F, Telescoping valves, paragraph 1, d, indicates that the floor pedestal shall be of type 60601-T6 aluminum and shall be designed for center or offset mounting as shown on the drawings. Reading in section - 2.4, Accessories, D, Floor Stands, it indicates that floor stands shall be type 304 stainless steel. Looking at the plan view layout on drawing - 91, it appears that the telescoping valves are mounted off of the concrete walkway and on a separate mounting bracket, bolted to the wall. The specification paragraph does not mention a mounting bracket for the floor stand. Are they to have a crank operator or a handwheel operator? Please review and clarify the configuration that is required for these telescoping valves.
- Answer:** Provide aluminum floor stand pedestals and wall-mounted brackets that support electrical actuators with horizontal handwheel operator for each of the four 10" telescoping valves in the Aerobic Digesters.

- 86      **Question:**      Reading in the specifications for butterfly valves, we find section 40 05 23 - 6, 2.2, B, Butterfly valves, 3, Anti-cavitation trim. The paragraph states where indicated in the valve schedule shall include a stainless steel air distribution ring. The project does not have a valve schedule. Please review and clarify if any of the butterfly valves in the project will require this anti-cavitation trim.
- Answer:**            No butterfly valves on this project require anti-cavitation trim.
- 87      **Question:**      The Aerobic Digester is showing the 2" NPW water lines on the upper level extending to the hose bibb stations. We see key note # 2, which indicates to mount the 2" pipe on the handrail. We did not find a detail of this mounting configuration. Is it your intention to use U-bolts to mount the 2" pipe to the hand rail posts? Do you want "unistrut" to be fastened to the hand railing and the pipe mounted on the "unistrut" with pipe clamps? Please review and clarify how the pipe is to be mounted on the hand railing.
- Answer:**            For three north-south 2" PVC NPW runs, mount pipe with galvanized strap-clamp supports (Grinnel 262 or equal) to side of concrete walkway. Provide supports on 6-ft centers. For vertical NPW pipe segments, secure to handrail with U-bolts
- 88      **Question:**      Can the doors at the Tertiary Treatment Facility be added to the door schedule?
- Answer:**            Provide two single exterior hollow-metal person doors (per Section 08 11 13, Article 2.4), both 3'-10" wide and 8'-0" tall.
- 91      **Question:**      Drawing 23 is showing the new 42" SS Bunton Creek Interceptor line to be installed by others. This line is connecting to the stub out in the Influent Junction Box. We need to know what pipe is being installed. We are assuming that this pipe is not restrained joint type. Are we to just stub out a push on joint bell end piece of pipe with a push on joint plug? Is it up to the other contractor to adapt to the pipe end that this project provides? Please clarify.
- Answer:**            *Interconnection with 42" SS Bunton Creek interceptor will occur at Station 2+10.77, as indicated on revised Sheet 23 issued with this addendum and the two answers for Questions 10 and 13 above. Timing of the interceptor installation by others is not currently determined, so interconnection between new and existing 42" closed-profile PVC per Section 33 05 42, or providing temporary cap on ready-to-interconnect pipe end, are the two scope options for the WWTP project's 42" SS segment.*
- 92      **Question:**      Reading in specification section - 33 05 13, Manholes and Inlets, in paragraph 2.1, I, Frames and Covers, it indicates that the covers shall have "SANITARY SEWER " OR "STORM SEWER" on them. Looking at the details for the Influent Junction Box on sheet - 31, we see the top level plan. In the plan view we notice that the manhole cover has " KYLE SEWER" on it. Please review and clarify if the project manhole ring covers require a special name in the casting.
- Answer:**            Standard manhole cover designations listed in Section 33 05 13 are applicable for this project.
- 93      **Question:**      Drawing E-9001 detail ED-16 shows 2-<sup>3</sup>/<sub>4</sub>" 316 SS All-Thread Rod support for 4' LED fixtures. Each <sup>3</sup>/<sub>4</sub>" SS All-thread rod is rated for 2700 lbs., could this have been a typo and <sup>1</sup>/<sub>4</sub>" was intended for 4' LED Fixtures that weigh between 12-22 lbs. Please review advise.
- Answer:**            For support of the LED fixtures, use of 1/4" stainless steel all-thread is acceptable.
- 94      **Question:**      Specification 26 28 16 3.2 A - requires disconnect switches to be installed at locations shown on the Drawings and as required for device connections and code compliance. However, there is only 2 disconnects shown on the one-line diagrams (E-1100, Sheet 4 and E-5001, Sheet 3). No other disconnects are not shown on the drawings. Please review and advise if these 2 are the only disconnects to be installed for the project.

- Answer:** As part of this design there are only two disconnects, as referenced in the question.
- 96 **Question:** Looking at the yard valve detail on sheet - 116, we see the valve boxes are drawn showing adjustable screw type. In the notes the first point indicates that in unpaved areas the valve boxes are to be telescoping type box and in the paved areas the boxes are to be adjustable screw type. The valve boxes shown are including a base, center section and then an adjustable screw top section. Then in the last point of the notes we notice that it states that valve box shall be 6" diameter ductile iron. We are not sure where the ductile iron pipe is to be used. We know it cannot be used with a screw type valve box. Would the pipe be used in unpaved areas where the valve would be buried at a very deep elevation? Do you have a detail that shows a valve box with a 6" ductile iron extension pipe? Please review and clarify the use of the ductile iron extension pipe.
- Answer:** In addition to ductile iron, 6" valve boxes can be cast iron or Polyiron
- 97 **Question:** Reading in specification section - 33 05 33 - 3, 2.1, C, Joints, 2, Flanged, it states that flanged joints shall not be used in underground installations except where specified or shown on the plans. Looking on drawing - 58, at the Aeration Basin Splitter Box, we see the two 18" SW pipe coming out from the structure. The plan is showing two tee fittings and there is a callout at one of the tee fittings that states, " 18" BF (TYP OF 2)". Then there is a 24" x 18", reducing fitting connected to the branch of the tee. Is it your intention for these buried fittings to be flanged at this location? Please review and clarify the piping at this location.
- Answer:** Follow Section 33 05 33 regarding buried MJ joints, which are to be installed around Aeration Basin Splitter Box. Instead of the two 18" blind flanges indicated, provide two 18" restrained plugs.
- 102 **Question:** General Conditions Article 13 states that the Owner will provided the Quality Control testing. Specification section 03 30 00 paragraph 3.5A states that we are to provide the concrete quality control testing. Who provided the quality control testing on this project?
- Answer:** Concrete quality control testing shall be conducted according to Section 03 30 00.
- 103 **Question:** Section 00 20 00 Scope of Bids Item #4 calls for \$8,000 of Office Furniture. Bid form has \$18,000 inserted into this bid item.
- Answer:** Use Bid Form allowance of \$18,000.
- 105 **Question:** Combustible sensor (section 44 52 52, para. 2.4). The only reference I found discussing this sensor is section 40 75 05, para. 2.7 (the spec instead called for sect 40 91 06). We need confirmation that the blower spec is indeed referencing this sensor.
- Answer:** Correct; the blower specification section does reference this sensor.
- 106 **Question:** Section 44 52 52. We would also like to confirm the ventilation system in the blower rooms are designed to reject at least 18 kW of heat per blower. Please also confirm it is acceptable to have a stand-alone chiller unit installed separately from the blower unit (but still inside the blower room) to provide cooling to the blower as necessary. The chiller unit will be powered from the blower unit, so no additional wiring or control is required from the plant.
- Answer:** Blower Building ventilation system is suitable for removing 18kW of heat, and stand-alone chiller unit is acceptable.
- 107 **Question:** SECTION 44 12 05. 2.1.A.3 Frame design is specific for a single supplier. Other named suppliers utilize separate L-shaped guide tracks. Please confirm that this frame design is allowed.

- Answer:** Separate L-shaped guide tracks are acceptable.
- 108 **Question:** SECTION 44 12 05. 2.1.A.5 Requesting that screen bars also allowed bars that are trapezoidal shaped 8 mm wide by 40 mm deep, from Type 304 stainless steel.
- Answer:** Type 304 stainless steel trapezoidal bars 8mm by 40mm are acceptable.
- 109 **Question:** Section 44 12 05 2.1.A.7 Screen Dead plate.  
Please indicate the reasoning for having the dead plate be removable. It is not a wear item and dead plates are typically welded to the screen side frames to provide a rigid structure. Vulcan has been designing and manufacturing heavy-duty bar screens for over 40 years and we have never replaced a dead plate in a screen.
- Answer:** Screen dead plate can be stationary or removable.
- 110 **Question:** SECTION 44 12 05. 2.1.A.13 Please consider changing the material for the take-up screw from zinc plated steel to 304 SS. We would not recommend the use of zinc plated steel in that highly corrosive environment.
- Answer:** Provide take-up screw constructed of Type 304 stainless steel.
- 114 **Question:** The window schedule is showing window "TA" being located at the Tertiary Building. The elevations of this building don't show windows, and there are no marks identifying windows. Are there any windows required at this structure, or is the window "TA" located elsewhere on the project?
- Answer:** Delete TA designation on Sheet 128, as the Tertiary Building does not have windows.
- 115 **Question:** Looking on drawing - 90 showing the piping layout at the Aerobic Digesters, we notice a 8" SEP pipe shown coming down and connecting to the 8" WAS header pipe. This line is to the left of the 4" WAS pipe. Looking on the yard piping drawing - 26, this pipe does not appear. Please review and clarify this 8" SEP line.
- Answer:** On Sheet 90, delete the 8" SEP piping and tee interconnected with the 8" WAS header. **See revised Sheets 26 and 90, issued as part of this addendum.**
- 116 **Question:** Looking on drawing - 90, we see the 8" DS line coming out from the digester structure and connecting to an 8" DS header pipe. We see two locations where the DS line extends out to the north. There are two 8" plug valves at the MJ tee fittings where the line is shown going out to the north. Then looking on the yard piping sheet - 26 of this area, we see one pipe stubbed out to the north, between Aerobic Digesters No - 3 4. The line does not appear to go anywhere. Please review and clarify the piping configuration for this DS piping and where it should extend.
- Answer:** On Sheet 90, cap the east 8" DS line with a restrained plug. For the west 8" DS line shown on Sheet 90 and Sheet 26, extend the line to the dashed area reserved for dewatering equipment (Coded Note 5). Terminate this 8" DS line with a buried plug valve and flange 12" above grade. **See revised Sheets 26 and 90, issued as part of this addendum.**

- 117      **Question:**      Looking at the existing package treatment plant No - 1, we see a new 8" WAS line coming out of the existing tank where key note # 5 is located. This is approximately in the four o'clock position on the tank. We see the new WAS line curving around the outside of the tank wall. The callout for the elevation of the line is INV. 602.25. Looking at the grading plan for this area the existing grade elevation is approximately 605.50'. The pipe schedule indicates that buried WAS pipe is to be ductile iron pipe. The line is drawn similar to the 18" influent pipe that curves around the outside of the tank wall. This influent line is above grade and is indicated to be fabricated steel pipe. We were wondering if you were intending for the buried WAS line to curve around the tank with a buried fabricated steel pipe. Please review and clarify the new 8" WAS line at the package treatment plant.
- Answer:**              Curvature of both lines are illustrative and route can be replicated with the most efficient of straight pipe segments, low-angle bends, and pipe deflection. As designed, the buried WAS line is intended to be DIP pipe and fittings.
- 118      **Question:**      Looking at the existing treatment plant No - 1, we see the key note # 1, that indicates to cut the existing vertical 18" ductile iron pipe, thread on a new flange, reinstall a flanged tee fitting at C/L elev. 612.75'. We are assuming that the existing flanged tee fitting is part of the existing influent piping on the tank. There does not appear to be a section view showing this vertical pipe. We do not know the elevations of the top 18" flanged 90 bend fitting going into the tank nor the top of the concrete wall. Please review and clarify the new piping by providing a section view.
- Answer:**              Flanged tee is a new fitting installed at the referenced elevation, with both discharges clearing the existing concrete wall, which top is Elevation 618.10.
- 119      **Question:**      Looking at the existing treatment plant No -1 , we see key note # 1, which indicates to cut the existing vertical 18" ductile iron pipe and thread on a new flange. Reading over the information provided, we do not know how long the vertical influent pipe measures. We do not know the type of pipe joint at the lower end of the pipe or if it is above ground or below ground. Is it your intention to have this vertical piece of pipe disconnected and sent to a pipe fabrication shop to have the new flange threaded onto the end of the pipe? We do not believe that this can be accomplished in the field. We could cut the pipe and provide a flange adapter coupling. Please review and clarify the modifications to this existing pipe.
- Answer:**              Either restrained FCA installation in the field or fabricated piping offsite is acceptable to make this interconnection.
- 120      **Question:**      Looking at the existing package treatment plant No - 1, we see the new 18" influent pipe curving around the outside of the tank wall. This line extends from the six o'clock position around to the right to about the 1 o'clock position. This line has the key note # 3 designation in several locations. The note indicates to transition from ductile iron pipe to welded steel pipe. We are not sure in the pipe that turns up and into the tank, at the 1 o'clock position, is to be fabricated steel or if it is to be ductile iron pipe. The influent pipe at the 6 o'clock position is to be ductile iron. Please review and clarify this influent pipe.
- Answer:**              Following the new DIP tee, new exposed piping can be DIP or carbon steel as necessary to route the conveyance and discharge piping.
- 121      **Question:**      On Sheet 41 note 7 indicates a 12" Intermediate Bracing Wall. On Sheet 33 it shows that as being a 1'6" wall. Which is correct, and could you provide a cross section?
- Answer:**              Provide intermediate bracing walls 18" throughout, as indicated on revised Sheet 41, issued as part of this addendum.
- 122      **Question:**      Are fire extinguishers required at the Operations Building?

- Answer:** Provide ten wall-mounted fire extinguishers for the Operations Building (eight Class A, one Class B, and one Class C).
- 124 **Question:** Looking at drawing - 24, showing the two 8" drain lines coming out of the Aeration Basins to the 16" drain line, we do not see any valves in these lines. Drawings 51 and 52 also do not show valves in the drain lines. Please review and clarify.
- Answer:** Provide two 8" buried drain plug valves, per revised Sheet 24, issued as part of this addendum.
- 125 **Question:** Looking at drawing - 24, we see the two 8" drain lines coming out of the Clarifiers to the 16" drain line. We do not see any valves in these lines. Please review and clarify.
- Answer:** Provide two 8" buried drain plug valves, per revised Sheet 24, issued as part of this addendum.
- 127 **Question:** Section 46 43 21. 1.02 – Manufacture’s representative shall provide a maximum of one (1) trip with a total of 3 days on site. Please confirm that its one trip for the two clarifiers combined. If the clarifiers are expected to start up at different times, two (2) trips would be required.
- Answer:** Provide one 3-day trip for both clarifiers.
- 128 **Question:** Section 46 43 21. 2.02: ... "the turn table assembly shall be so designed that the balls and strip liners (if used) may be removed without removing the access bridge." It is requested to remove “without removing access bridge” from the specifications.
- Answer:** Remove phrase “without removing access bridge” from Section 46 43 21, Article 2.02.
- 129 **Question:** Section 46 43 21. 2.08-B A 3-footwide walkway, with aluminum grating...Please confirm that aluminum grating for walkway and platform is per section 05 53 00 – 2.06 – E: Pressure Locked, Aluminum I-Bar Grating. Pressure locked grating is significantly higher in price then standard (non-pressure locked) I-Bar grating.
- Answer:** Pressure-locked grating is not required for the clarifiers’ walkways.
- 130 **Question:** Looking on sheet - 94 at the Vactor Truck Unloading Station, we see the SST slide gate in the drain trench. The gate is drawn being installed on the inside face of the trench wall. The key note # 4, is indicating to have the hand slide gate installed in the 8" wall with embedded channels. We are wondering how the 8" drain pipe is to connect to the trench drain if the slide gate is in the wall. What type of wall pipe or sleeve should be provided that will allow for the slide gate in the wall. Please review and clarify the 8" drain line connection.
- Answer:** Terminate the 8" drain’s plain-end wall pipe flush with the concrete wall interior surface (allowing a gap between the wall and slide gate location in the trench).
- 132 **Question:** Reference drawing 27. Please provide additional details for the new connections and work to be done in existing lift stations 1 2? Will the existing coatings need to be replaced or patched at new connections?
- Answer:** Install new piping and abandon existing piping per Sheet 23, and patch and repair interior/exterior concrete and coatings as necessary to accomplish this work. See Sheets 144 and 165 for instrumentation and electrical modifications.
- 134 **Question:** Detail 1 on sheet 120 shows perimeter insulation under the floor slab. Is this required for any of the structures on this project?
- Answer:** Delete the perimeter insulation requirement from Detail 01 on Sheet 120.



- 135      **Question:**      Drawings - 22 and 23 are showing the 8" SS pipe extending from the manhole north of the Operations Building, east to the Influent Junction Box. Looking in the buried yard pipe schedule we do not find a listing for SS service pipe. We see in the specifications sections describing SDR 35 PVC sewer pipe and also a section for ductile iron sewer pipe. Please review and clarify which pipe material is to be provided for the SS line.
- Answer:**            This pipe is now referenced as OSS and updated in revised Sheet 21, issued as part of this addendum.
- 136      **Question:**      Neither the specs or drawings provide the type of fiber (single mode or multimode). Please advise.
- Answer:**            Multimode FOC is acceptable granted it meets the 1GBps throughput requirement for each segment.
- 137      **Question:**      Drawings 21 and 22 are showing the 3" W and 2" W lines coming from the north west corner of the site over to the new backflow preventer. We do not find the W service pipe line listed in the buried pipe schedule. The specifications division - 33 - Utilities, does not include a section for water service pipe materials. The division - 40 - Process Integration also does not have a section for water service materials. We do not know if it is to be copper pipe, HDPE pipe, schedule 40 or 80 PVC pipe. Please review and clarify the W water line in the yard piping .
- Answer:**            Provide Schedule 80 PVC for all potable water pipes and fittings (W) shown as yard piping on Sheets 21 and 22.
- 138      **Question:**      Reading in the pipe schedule on drawing - 21, we see the listing for NPW, Non-Potable Water line, and the pipe material to be PVC / C900 / DR14. Looking in the project specifications, we do not find a section describing this pipe material and fittings to be provided. The pipe schedule indicates that the pipe shall be restrained sixty feet from a fitting. Please review and clarify this pipe materials and type of restraints to be provided.
- Answer:**            Provide Schedule 80 PVC for all NPW pipes and fittings shown on yard piping sheets. Bell or screwed ends are acceptable, with fittings restrained accordingly for operating and test pressure requirements. See schedule on revised Sheet 21, issued as part of this addendum.
- 139      **Question:**      Can you please clarify where on the plans it is shown the limits of excavation and shoring?
- Answer:**            In accordance with Texas Health and Safety Code Chapter 756, Subchapter C, Section 756.023.(a).(4), the City of Kyle has provided a separate pay item for trench excavation safety protection. As required in Texas Health and Safety Code Chapter 756, Subchapter C, Section 756.023.(b), the pay item for trench protection is provided per linear foot and the pay item for special shoring is provided per square foot. These bid items are required by State Law, described in Paragraph 6.11 of the General Conditions, and provided on the Bid Form in the required unit price basis. The OWNER and ENGINEER will make no determination of the limits of any excavations which may be subject to the trench safety or shoring requirements. The general conditions in paragraph 6.11.2 requires the CONTRACTOR to determine when the various types of trench safety and shoring are required. Where trench safety and shoring is required and provided, the actual quantity shall be measured and paid at the unit price bid. The quantities provided on the Bid Form are estimates per Paragraph 11.6.1 of the General Conditions and are not guaranteed.
- 142      **Question:**      Please clarify if the UV system is required to meet the 5-log poliovirus effluent requirement. Should the system be required to meet this requirement, please confirm the required NWRI dose.
- Answer:**            Provide UV system capable of meeting the 5-log poliovirus effluent requirement.

- 143 **Question:** Sheet E-1038, Sheet 1 DB 11 and DB 12 shows inconsistency for the lighting circuit # to the Splitter Box. Also, shouldn't the DB containing the light circuit be routed to the ELP-HW instead of DP-HW? Please review and advise.
- Answer:** Replace conduit name "C-DPHW-19" with "ELPHW-1601-2-C" and size "1" with "1.25" on drawing E-1038, Sheet 1 at the following ductbank locations: Section 2 position 7, Section 6 position 5, Section 7 position 2, and Section 11 position 4. Increase minimum size of conduit in ductbank section 12 position 4 to "1.25". Leave stub ups inside Headwork Building as shown on drawings. Contractor can route exterior lighting conduit "ELPHW-1601-2-C" along wall/ceiling to access the lighting contactor panel "ELP-HW" and ductbank.
- 144 **Question:** Sheet E-1034 Sheet 1 ductbanks 7, 6, E-1030 Sheet 1 ductbanks 2, 11, and ductbank 12 on E-1106 do not show circuit # 21 for the Splitter Box receptacles from HW panel. Also, Sheet E-1106, Sheet 1 shows the receptacle circuit to be #33 instead of #21. Headworks power distribution panel only has 30 circuits. Please review and advise.
- Answer:** See the answer to Question 143 as well as the following: The receptacle circuit Number 33 shown on drawing E-1106 sheet 1 is incorrect (it should be Number 21).
- 145 **Question:** In section 44 52 52 para. 2.6, a harmonic filter is to be supplied in accordance with section 26 35 26, which states the harmonic filter is supplied as a stand-alone unit and needs to have less than 5% in both iTHD and vTHD. The standard Spencer equipment has a built-in harmonic filter inside the blower enclosure, eliminating the need for a separate unit. The standard KEB passive harmonic can guarantee an iTHD less than 8%, and vTHD less than 3.5% at maximum load. This is normally considered sufficient to comply with IEEE519 in a blower building, which typically has a  $I_{sc}/I_L$  ratio over 20. Please confirm the built-in harmonic filter is acceptable, and 8% iTHD will be sufficient for IEEE519 compliance.
- Answer:** The built-in harmonic filter complying with IEEE 519 is sufficient.
- 146 **Question:** Section 44 62 60, Paragraph 2.2.B.1 requires 6" PVC manifold. Suggest deleting paragraph 2.2.B.1 since stainless is required in paragraph 2.2.B.2 and is appropriate for stainless 24" diffusers. Section 44 42 44, Paragraphs 2.1. C and D, suggest modifying specification to 1500 SOR minimum delivered per tank, and increasing minimum diffusers to 113 (to correspond with 225 scfm @ maximum 2 scfm/diffuser).
- Answer:** Provide stainless manifold per Article 2.2.B.2 of Section 44 63 60 for aerobic digesters. For post aeration tanks, provide 113 diffusers per grid (rather than 81 listed in Article 2.1.D).
- 149 **Question:** Section 44 52 52 para 2.2.L. Discharge isolation valve is not required for routine blower operation. In cases where the blower needs to be isolated from the piping system, a manual discharge isolation valve with wheel or chain can be used. Please confirm manual isolation valve is acceptable.
- Answer:** Provide isolation valves for blowers with electric actuator operation as per Section 44 52 52.
- 150 **Question:** Please provide details for work to be done in the Existing Electrical Building shown on E-1030, Sheet 1.
- Answer:** The electrical and I&C work within the Existing Electrical Building shown on I-0302 and E-1036 shall include the following:
1. Replacement of PLC/RTU-100(101) with new PLC-EB.
  2. Modifications to existing MCC Motor Starter controls to add new interface signals and relocate existing local level controls to PLC.
  3. Modifications for new and replacement instrumentation at the Waste Sludge Lift Station.
  4. Modifications for new and replacement instrumentation at the Drain Lift Station.
  5. New fiber optic cabling and termination to PLC-EB.

- 151      **Question:**      Drawing - 18, is showing the storm water drain pipe and the concrete catch basins. It is also showing two headwalls. We see the catch basin detail on drawing - 117. We have not been able to find a detail of the headwall. Please provide a detail of how the headwall is to be constructed.
- Answer:**            Provide standard precast concrete collar-type headwall suitable for grade and 12” pipe discharge.
- 152      **Question:**      Drawing - 18, showing the site storm water drain lines and the catch basins, is showing a catch basin with the tag - CB-2A. This is not in the storm sewer schedule. This is located in the roadway between the future clarifiers and the future aerobic digesters. There is no pipe shown connecting to this catch basin. Please review and clarify this catch basin.
- Answer:**            Delete CB-2A from the project.
- 153      **Question:**      Looking at drawing - 18, we see the callouts for the floodwall berm type - I on the south side of the sampling point and berm type - II, farther north, in line with the existing package treatment plants. Then north of this berm type - II we see the callout for the floodwall (concrete). There is a second floodwall (concrete) shown just north of the sampling point. Does the concrete flood wall extend the whole distance from the south side of the site, around and up to the north side of the site? Does the berm extend along with the concrete wall or just in certain locations? The plan does not clearly show where they are to be installed. Please review and clarify the flood wall berm and concrete wall.
- Answer:**            Limits of concrete, Type I, and Type II walls and berms have been added to revised Sheet 18, issued as part of this addendum.
- 154      **Question:**      Drawing - 113 is showing section views of the earth berms type - I and II. The sections are indicating 6" drain pipe to be placed in the berms. The callout does not indicate what type of drain pipe to provide. We looked through the earthwork specifications and the other piping sections but did not find any mention of this drain pipe. Is the pipe SDR 35, schedule 40 DWV or black flexible corrugated HPDE drain pipe by ADS? Please review and clarify the drain pipe in the earth - flood berms.
- Answer:**            Provide SDR-35 PVC drain pipe for the berm applications shown on Sheet 113.
- 155      **Question:**      Questions/comments for 44 32 30 - Secondary Clarifiers: Please confirm a 19'-9" well is acceptable for this project, AGMA continuous and 100-percent design running torque values to be the same (21,900 ft.-lbs.), and a ductile iron worm gear (low-torque) vice a centrifugally cast Herculoy bronze (high torque) worm gear be accepted for this application.
- Answer:**            The well, torque, and gear requests are acceptable for this project.
- 156      **Question:**      Looking on drawing - 94, showing the Vactor Truck Unloading Station, we notice a YH shown at the south west corner of the structure. There is a 2" NPW pipe extending away at an angle to the south east. Key note # 1 indicates to see the yard piping for continuation of the line. Looking on sheet - 26, we see the Vactor Unloading Station but we do not see a NPW water line going to the station. Please review and clarify where the NPW water line should be routed for this YH.
- Answer:**            See revised Sheet 26 (with extended NPW serving vactor station yard hydrant on Sheet 94), issued as part of this addendum.

**SPECIFICATIONS**

Specification sections attached to this addendum include:

- 33 05 42PVC Closed Profile Gravity Sanitary Sewer Pipe
- 43 21 55Non-Potable Water Centrifugal Pumps

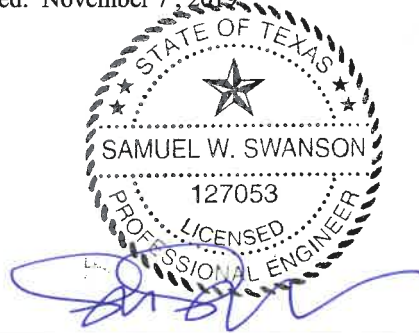
**PLANS**

Drawings attached to this addendum include:

- Sheet 18 Site Grading Plan
- Sheet 21 Yard Piping Key Plan
- Sheet 23 Yard Piping Enlarged Plan
- Sheet 24 Yard Piping Enlarged Plan
- Sheet 26 Yard Piping Enlarged Plan
- Sheet 41 Headworks Process Channel Level Plan
- Sheet 43 Headworks Section A
- Sheet 45 Headworks Section D
- Sheet 90 Aerobic Digesters Lower Plan
- Sheet 112 Security Fence Details

End of **ADDENDUM NO. 2**

Dated: November 7, 2019



By: \_\_\_\_\_

Samuel W. Swanson, P.E.  
Burgess & Niple, Inc.  
TBPE FIRM REGISTRATION NO. F-10834

SECTION 33 05 42

PVC CLOSED-PROFILE GRAVITY SANITARY SEWER PIPE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **General.** Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1, Section 33 05 40 "Sewer Pipe Installation," and all related specification sections, apply to this section.

1.2 DESCRIPTION OF WORK

- A. **Scope of Work.** The Contractor shall provide the labor, tools, equipment, and materials necessary to furnish and install the closed-profile, gravity polyvinyl chloride (PVC) sanitary sewer pipe in accordance with the Drawings and as specified herein.

1.3 QUALITY ASSURANCE

- A. **General.** In accordance with Section 33 05 40 "Sewer Pipe Installation."

1.4 SUBMITTALS

A. **General.**

- 1. All submittals shall be submitted in accordance with the Division 1 Submittal Requirements and the requirements within this specification section.

B. **Shop Drawings, Certifications, and Test Reports.**

- 1. Shop Drawings.
  - a. Submit detailed plan and profile drawings for all piping showing full details of piping, specials, and connections to new and existing pipes and new structures.
- 2. Certifications. Submit certification of compliance with the referenced standards.
- 3. Test Reports. Submit description of proposed testing methods, procedures, and apparatus.

1.5 JOB CONDITIONS

- A. **Pipe Identification.** On each length of pipe, with waterproof paint, paint the class and specification designation, date of manufacture, name or trademark of manufacturer, and identification of plant.

1.6 **DELIVERY, STORAGE, AND HANDLING**

A. **General.** In accordance with Section 33 05 40 "Sewer Pipe Installation."

1.7 **SPECIAL WARRANTY**

Not used.

1.8 **SUBMITTALS**

A. **Reference Standards.**

1. Reference standards cited in this Specification refer to the current version, unless a date is specifically cited.
2. American Association of State Highway and Transportation (AASHTO).
3. ASTM International (ASTM):
  - a. D1784, Standard Specification for Rigid Poly (PVC) Compounds and Chlorinated Poly (CPVC) Compounds.
  - b. D2412, Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
  - c. D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
  - d. F1803, Standard Specification for Poly (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter.
4. Underwriters Laboratories, Inc. (UL).

**PART 2 - PRODUCTS**

2.1 **MATERIALS**

A. **Closed Profile PVC Pipe.** All pipe furnished shall be in conformance with ASTM F1803 for 42-inch and 48-inch diameters.

1. **Pipe.**
  - a. PVC closed-profile gravity sanitary sewer pipe and fittings shall be approved by the UL.
  - b. Assume a standard lay length of 14 feet except for special fittings or closure pieces necessary to comply with the Drawings.
  - c. Use green or white coloring for in ground identification as sanitary sewer pipe.
  - d. PVC meeting the requirements of ASTM D1784.

e. **Deflection Design.**

- 1) Base pipe design on pipe stiffness, soil stiffness and load on the pipe.
- 2) Design pipe according to the Modified Iowa Formula as detailed by the Uni-Bell PVC Pipe Association in the Handbook of PVC Pipe, using the following parameters:
  - a) Unit weight of fill of 130 pounds per cubic foot.
  - b) Live load corresponding to AASHTO HS 20.
  - c) Trench depth as indicated in Drawings.
  - d) Deflection lag factor of 1.0.
  - e) Bedding factor constant of 0.1.
  - f) PVC modulus of elasticity of 400,000 psi.
  - g) Maximum calculated deflection of 5 percent.

f. Pipe shall not be installed deeper than its design allows.

2. **Minimum pipe stiffness** shall be 46 psi at 5-percent deflection when tested in accordance with ASTM D2412.

3. **Pipe markings.**

- a. Meet the minimum requirements of ASTM F1803.
- b. Minimum pipe markings shall be as follows:
  - 1) Manufacturer's name or trademark and production record
  - 2) Nominal pipe size
  - 3) ASTM standard
  - 4) Cell classification
  - 5) Seal of testing agency verifying pipe suitability

4. **Joints.**

- a. Joints shall be gasket, bell and spigot, push-on type conforming to ASTM D3212.
- b. Since each pipe manufacturer has a different design for push-on joints; gaskets shall be part of a complete pipe section and purchased as such.

5. **Connections.**

- a. Use only manufactured fittings.
- b. For connections between new and existing PVC pipe interceptor line ends, use rubber sleeve couplings with Type 316 stainless steel double-band repair sleeves, as recommended by pipe manufacturer.

6. **Field Sealant.**

- a. Use urethane adhesive (3M Scotch-Weld DP605) for sealing connections and field cuts.

7. **Detectable Metallic Tape.**

- a. Use tape with Buried Sewer Line labeling along all runs of pipe.

**PART 3 - EXECUTION**

3.1 **INSTALLATION**

A. **General.** In accordance with Section 33 05 40 "Sewer Pipe Installation."

1. Install pipe, fittings, specials and appurtenances as specified herein, as specified in Section 33 05 40 and in accordance with the pipe manufacturer's recommendations.
2. Lay pipe to the lines and grades as indicated in the Drawings.
3. Excavate and backfill trenches in accordance with 33 05 40.

B. **Pipe Handling.**

1. Haul and distribute pipe and fittings at the project site.
2. Handle piping with care to avoid damage.
  - a. Inspect each joint of pipe and reject or repair any damaged pipe prior to lowering into the trench.
  - b. Use only nylon ropes, slings or other lifting devices that will not damage the surface of the pipe for handling the pipe.
3. At the close of each operating day, protect pipe installation.
  - a. Keep the pipe clean and free of debris, dirt, animals, and trash during and after laying operation.
  - b. Effectively seal open ends of pipe segments using a gasketed night cap.

C. **Pipe Joint Installation.**

1. Clean all dirt and debris from the gasketed socket and the spigot end.
2. Assemble pipe joint by sliding the lubricated spigot end into the gasketed bell end to the reference mark.
3. Install such that identification marking on each joint is oriented upward toward the trench opening.
4. When making sewer pipe connections to precast manholes or cast-in-place structure walls, use an elastomeric compression connector sealing system meeting ASTM C-923 and C-478 requirements respectively.



**D. Field Cutting.**

1. Make pipe cuts before placing pipe in ditch when possible.
2. Cut pipe with disc blade or circular saw for best results.
3. Do not follow the spiral barrel weld as a cutting guide.
4. Use field sealant on cut locations per the manufacturer's recommendation.

END OF SECTION

SECTION 43 21 55

NON-POTABLE WATER CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS.

- A. **General.** Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1, Section 43 21 00 "Pumps Basic Requirements," and all other related specification sections, apply to this section.

1.2 DESCRIPTION OF WORK.

- A. **Scope of Work.** Provide all labor, tools, equipment, and materials necessary to furnish and install the four-pump non-potable water pressure boosting system and its accessories in accordance with the drawings and specifications.

1.3 QUALITY ASSURANCE.

- A. **In accordance with** Section 43 21 00 "Pumps Basic Requirements."

1.4 SUBMITTALS.

- A. **Submit each of the following submittal packages** in accordance with Section 43 21 00 "Pumps Basic Requirements," and this section.
- B. **Submittal Package No. 1 – Shop Drawings and Product Data.** Furnish manufacturer's product data including pump curves, dimensions, and weights. Shop drawings shall be submitted to the Engineer/Architect for approval. Shop drawings shall be in accordance with the Section 01 33 00 "Submittals" and shall include:
  - 1. Manufacturer's name and model numbers.
  - 2. Equipment specifications.
  - 3. Materials of construction.
  - 4. Dimensional layouts and required clearances.
  - 5. Weights.
  - 6. Anchor bolts.
  - 7. Bill of material.
  - 8. Repair parts.
  - 9. Power/utility requirements.
  - 10. Manufacturer's instructions.
  - 11. Coatings.
  - 12. Warranty.
  - 13. Complete description in sufficient detail to permit an item by item comparison with the specifications.

- C. **Submittal Package No. 2 – Source Quality Control Documents.** Contractor shall submit performance data and curves in accordance with Section 01 33 00 "Submittals" to the Engineer/Architect for preliminary review of the pumping equipment to be furnished. Such data shall be based on actual tests of similar

equipment and include sufficient data to demonstrate suitability of both the pump and driver for the conditions specified. Calculations showing compliance with AFBMA B-10 bearing life.

**D. Submittal Package No. 3 – Controls**

1. Shop Drawings. Submit shop drawings showing instrumentation, control panels, control panel components, software, software licenses, accessories, panel layout drawings, panel wiring diagrams, PLC input/output card drawings, and bill of materials.
  - a. Panel drawing submittals shall be complete, fully demonstrating compliance with all specification requirements and features. Panel drawings shall include, but not be limited to, panel layout and bill of materials, panel power wiring schematics, and panel input/output wiring diagrams for each panel supplied.
  - b. Panel assembly and elevation drawings shall be drawn to scale and detail all equipment in or on the panel. Panel drawings shall be at least 11x17 (inch) print size. As a minimum, the panel drawings shall include interior and exterior panel elevation drawings to scale, nameplate schedule, conduit access locations, and panel construction details.
  - c. Panel control schematics and interconnection diagrams detailing the electrical connections of all equipment in and on the panel. Diagrams shall include power and signal connections, UPS and normal power sources, all panel ancillary equipment, protective devices, wiring and wire numbers, and terminal blocks and numbering.
  - d. Point to point I/O wiring diagrams depicting wiring within the panel as well as connections to external devices. The diagram shall identify all device terminal points that the system connects to, including terminal points of equipment provided by others, Wiring labeling used on the drawings shall match that shown on the Contract Documents or as developed by the manufacturer and approved by the Owner/Engineer. Field device wiring shall include the device ISA-tag and a unique numeric identifier. PLC I/O wiring shall be numbered with rack number, slot number, and point number. Two-wire and four-wire equipment shall be clearly identified and power sources noted. Submit final wire numbering scheme for approval by the Owner/Engineer. Point-to-Point drawings shall be 11x17 (inch) minimum in size.
  - e. Submit construction details, NEMA ratings, intrinsically safe barrier information, gas sealing recommendations, purging system details, etc. for panels located in hazardous locations or interfacing to equipment located in hazardous areas.
  - f. Submit evidence that all control panels shall be constructed in conformance with UL 508 and bear the UL seal confirming the construction. Specify if UL compliance and seal application shall be accomplished at the fabrication location or by field inspection by UL inspectors. All costs associated with obtaining

the UL seal and any inspections shall be borne by the Contractor and included in the contract.

- g. Submit seismic calculations and anchoring requirements in conformance with Division 01.

2. Testing Plan.

- a. Test Procedure Submittals: Submit the procedures proposed to be followed for each test. Procedures shall include test descriptions, forms, and checklists to be used to control and document the required tests. Include sign-off forms for each testing phase or loop with sign-off areas for the Supplier, Engineer, and Owner. Refer to Section 3 for specific testing requirements, and submit separate procedures for each specified test phase.
- b. Test Documentation: Upon completion of each required test, document the test by submitting a copy of the signed-off test procedures. Testing shall not be considered complete until the signed-off test procedures have been submitted and favorably reviewed. Submittal of other test documentation, including "highlighted" wiring diagrams with field technician notes, are not acceptable substitutes for the formal test documentation.
- c. Each loop shall have a Loop Status sign-off form to organize and track its inspection, adjustment and calibration.
- d. Each active analog subsystem element shall have a Component Calibration form.

3. Programming

- a. Submit color copies of all graphic screens developed for this project for the LCP and MCP touchscreen panels. Graphics will be reviewed for approval by the Owner/Engineer.
- b. Submit Modbus TCP/IP memory maps and input/output lists for all PLCs provided for this project.

**E. Submittal Package No. 4 – Start-up Preparation Documents**

- 1. Schedule. This submittal package must be approved before the equipment start-up may take place.
- 2. Submittal Package Contents.
  - a. Initial operation and maintenance (O&M) manual.
  - b. Start-up request.
  - c. Training schedule.
  - d. Instructor qualifications.
  - e. Manufacturer's representative qualifications.
  - f. Instructional materials.

F. **Submittal Package No. 5 – Operational Demonstration Preparation Documents.**

1. Operation and Maintenance Manuals. Operation and maintenance (O&M) manuals shall be submitted to the Engineer/Architect in accordance with Sections 01 33 00 "Submittals" and 01 79 00 "Start-up, Demonstration, and Training" of these specifications. The initial review copy of the O&M manual and six revised copies shall be submitted prior to delivery of the equipment.
2. Operator Training Information. Operator training data, in accordance with Section 01 79 00 "Start-up, Demonstration, and Training," and operator training lesson plans, in accordance with Section 01 33 00 "Submittals," shall be submitted with the six revised copies of the O&M manuals.
3. Personnel Qualifications. Qualifications statements, in accordance with Section 01 33 00 "Submittals," of all manufacturer's representative personnel that will be servicing the equipment or conducting the operator training sessions shall be submitted with the six revised copies of the O&M manuals.

G. **Submittal Package No. 6 – Operational Demonstration Documents**

1. Pump Test Report. Pump test report in accordance with Section 01 33 00 "Submittals" shall be submitted with the motor test report prior to pump delivery at job site.
2. Motor Test Report. Motor test reports in accordance with Section 01 33 00 "Submittals" shall be submitted with the pump test report prior to pump delivery at job site.
3. Manufacturer's Representative Reports. Manufacturer's representative reports, in accordance with Section 01 79 00 "Start-up, Demonstration, and Training," shall be submitted after each site visit. Product and material certifications and inspection data as specified in Section 01 33 00 "Submittals" shall be include with this report.
4. Site Test Report. A test report in accordance with Section 01 79 00 "Start-up, Demonstration, and Training" shall be submitted.

H. **Submittal Package No. 7 – Extra Materials or Spare Parts**

1. Schedule. These must be submitted before the equipment can be considered substantially complete.
2. Submittal Package Contents. An upper and lower seal for each type of pump furnished.

1.5 **JOB CONDITIONS**

- A. **The pumps** shall be installed in an indoor location which will have temperature range of 45 to 110 degrees F (7 to 43 degrees C).

1.6 **DELIVERY, STORAGE, AND HANDLING**

- A. **In accordance with** Section 43 21 00 "Pumps Basic Requirements."

1.7 SPECIAL WARRANTY

Not used.

PART 2 - PRODUCTS

2.1 VERTICAL MULTI-STAGE CENTRIFUGAL PUMPS

- A. **Provide in accordance with Section 43 21 00 "Pumps Basic Requirements".**
- B. **Pumps.** Vertical multi-stage booster pumps shall be constructed with Type 304 stainless steel bodies and supplied with built-in thrust bearings.
  - 1. Pump Volute shall be Type 304 stainless steel with ANSI flanges.
  - 2. Impeller shall be 3D Laser welded AISI Type stainless steel.
  - 3. Shaft shall be Type 304 stainless steel.  
Mechanical seal shall be a sleeve of Type 316L with spring clips of Type 304 stainless steel.
- C. **Piping and Valves.** Pumps shall be interconnected with 4 inch (102 mm) Type 304 stainless steel suction and discharge headers, check valves (one per pump), and butterfly isolation valves (two per pump).
  - 1. Isolation valves shall be Type 304 stainless steel ball valves.
  - 2. Check valves shall be Type 316 stainless steel, non-slam, with EPDM seal.
- D. **Baseplate.** Pumps, piping, hydro-pneumatic tank, and control panel shall be secured to a baseplate, fabricated from Type 304 stainless steel, and suitable for bolting to a concrete equipment pad. Vibration isolators shall be neoprene and height-adjustable.
- E. **Electrical Connections.** All wiring between pumps, control panel, and all related pressure sensors and switches shall be completed by the system manufacturer. Site wiring shall consist of main power supply to the control panel and performed by the Contractor.
- F. **Manufacturer.** Provide the pumping system from the following approved manufacturer: Wilo USA of Rosemont, IL.

2.2 MOTORS

- A. **General.** In accordance with Section 43 21 00 "Pumps Basic Requirements," unless noted otherwise.
- B. **Motors** will be NEMA frame, TEFC design with insulation Class F, inverter duty type. Thermal overloads shall be integral for each motor.

2.3 CONTROL PANEL

- A. **Enclosure.** NEMA 3R Type 316 stainless steel.

- B. **Location.** Install control panel and supports on the baseplate in the location and orientation as shown on the drawings.
- C. **Components.** Each control panel shall contain the following in accordance with Division 26 and Division 40 of these specifications and NEC:
1. Circuit Breakers. Sized on motor nameplate data for each pump.
  2. Magnetic Starters. Sized on motor nameplate data for each pump.
  3. Control Transformers. Dry type single phase with fused primary and fused secondary. Voltage as shown.
  4. Control Relays. Control relays shall be Allen Bradley Bulletin 700, Type N, or equal, with 120 volt alternating current (Vac) operating coil and the number and type of 10 amp contacts required.
  5. Variable frequency drives shall be Danfoss FC-51 (1-10 HP for 208-23/460v $\sqrt{3}$ ).
  6. PLC shall have the following features and shall be equipped with Ethernet ports for remote monitoring via Modbus TCP/IP from the plant SCADA system. If the supplied PLC does not support Modbus TCP/IP protocol, provide and configure a gateway protocol converter connected through a separate PLC Ethernet network module for interface with the plant SCADA system.
    - a. User interface. 7 inch diagonal color LCD touchscreen with display resolution of 800 x 480 pixels.
    - b. Number of Analog Inputs. 9.
    - c. Number of Analog Outputs. 2.
    - d. Number of Digital Inputs. 18.
    - e. Number of Digital Outputs. 17.
    - f. Onboard Communications. Modbus TCP/IP Protocol.
    - g. Ethernet Port. RJ45 port capable of transmitting data 10/100Mbps via Modbus TCP/IP.
    - h. Additional Ports. 2.0 USB Port; Micro-SD Port.
    - i. Controls for the sodium hypochlorite metering pump and drum tank system for disinfection treatment of the non-potable water system.
  7. The PLC shall provide the following parameters for remote monitoring and control by the plant SCADA system via Modbus TCP/IP:
    - a. Pump Run Status (each pump, NPW and chemical)
    - b. Pump Fail Alarm (each pump, NPW and chemical)
    - c. Low Pressure Alarm
    - d. Low Tote Tank Level Alarm
    - e. System in Automatic Mode Status
    - f. Remote SCADA Enable/Disable Signal
  8. Uninterruptible Power Supply (UPS) unit that supplies battery backup and power conditioning for the PLC, HMI and network devices within the system. UPS shall be sized for a minimum of 30 minutes of runtime at full load.

9. Elapsed Time Meters. Provide one elapsed time meter for each pump. The meter shall be six digit, nonresettable, recording in hours and tenths.
10. Heater. Provide heater with thermostat to control condensate in enclosure.
11. Duplex Receptacle. Provide one duplex receptacle internal to control panel.
12. Lightning Arresters. Lightning arrester shall be Westinghouse MV or equal and shall be three phase.
13. Wiring.
  - a. Wire all components within the control panel enclosure together.
  - b. All wiring within the panel shall be XXHW.
  - c. Group and tag all wires to provide a neat appearance and for ease of identification.
  - d. Provide terminal blocks for all incoming leads.
14. Permit all conduit penetrations only through the bottom of the control panel enclosure.
15. Provide adjustable low suction pressure switch.
16. Provide automatic transfer on lag pumps in the event of a failure.

**D. Control Description**

1. Off Position. Pump unit not operating.
2. Hand Position. Lead pump runs continuously.  
Automatic Position.
  - a. Control, Operation and Diagnostics. The system shall provide a constant discharge pressure over the entire flow range of the system. Lead Pump P-12-1 shall operate under VFD control, where pump shall ramp up and down to meet capacity while maintaining system pressure. When run to maximum speed at highest flow demand for one pump, P-12-1 continues to run at full speed and First Lag Pump P-12-2 becomes the VFD-controlled pump. This operation repeats for Second Lag Pump P-12-3. Backup P-12-4 Pump is a reserve pump in the event of the lead or lag pumps' failure.
  - b. Operator shall have the ability to manually select which pump shall be Lead Pump and two lag and one backup pump shall operate sequentially.
  - c. Power Outage. Upon return of power following a power outage, the pumps that were operating previously shall automatically restart and stop by activation of the level switch or operator shut-off from the control panel.

**2.4 ACCESSORY COMPONENTS**

- A. **Pressure Gauge.** Provide pressure gauge on pump discharge piping per Section 43 21 00 "Pumps Basic Requirements". Gauge shall have a range of 0 to 100



psi, in increments of 1 psi, and shall be furnished with solids-excluding diaphragm seal.

**2.5 FINISHES**

- A. **Exterior Pump Surfaces.** Shop prime and field finish all surfaces exposed after installation in accordance with Section 09 90 00 "Painting," under "Exposed Equipment and Ferrous Metals."

**2.6 SOURCE QUALITY CONTROL**

- A. **Pump Test**
  - 1. Perform a routine production test on each pump.
  - 2. Submit a written test report for each pump at time of shipment.

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. **In accordance with** Section 43 21 00 "Pumps Basic Requirements."

**3.2 INSTALLATION**

- A. **Install per pump manufacturer's recommendations.**

**3.3 FIELD QUALITY CONTROL**

- A. **Verify that pumping system operates properly** within required non-potable water flow ranges and pressures with one, two, and three pumps operating.
- B. **Perform manufacturer's field service** and start-up for each pump, and overall non-potable water supply skid.

**3.4 CLOSEOUT ACTIVITIES**

- A. **Perform a 7 day operational demonstration** of the pumping system.
- B. **Provide a total of 8 hours of training**, which can be divided into as many as two different sessions on two different days as directed by the Owner.

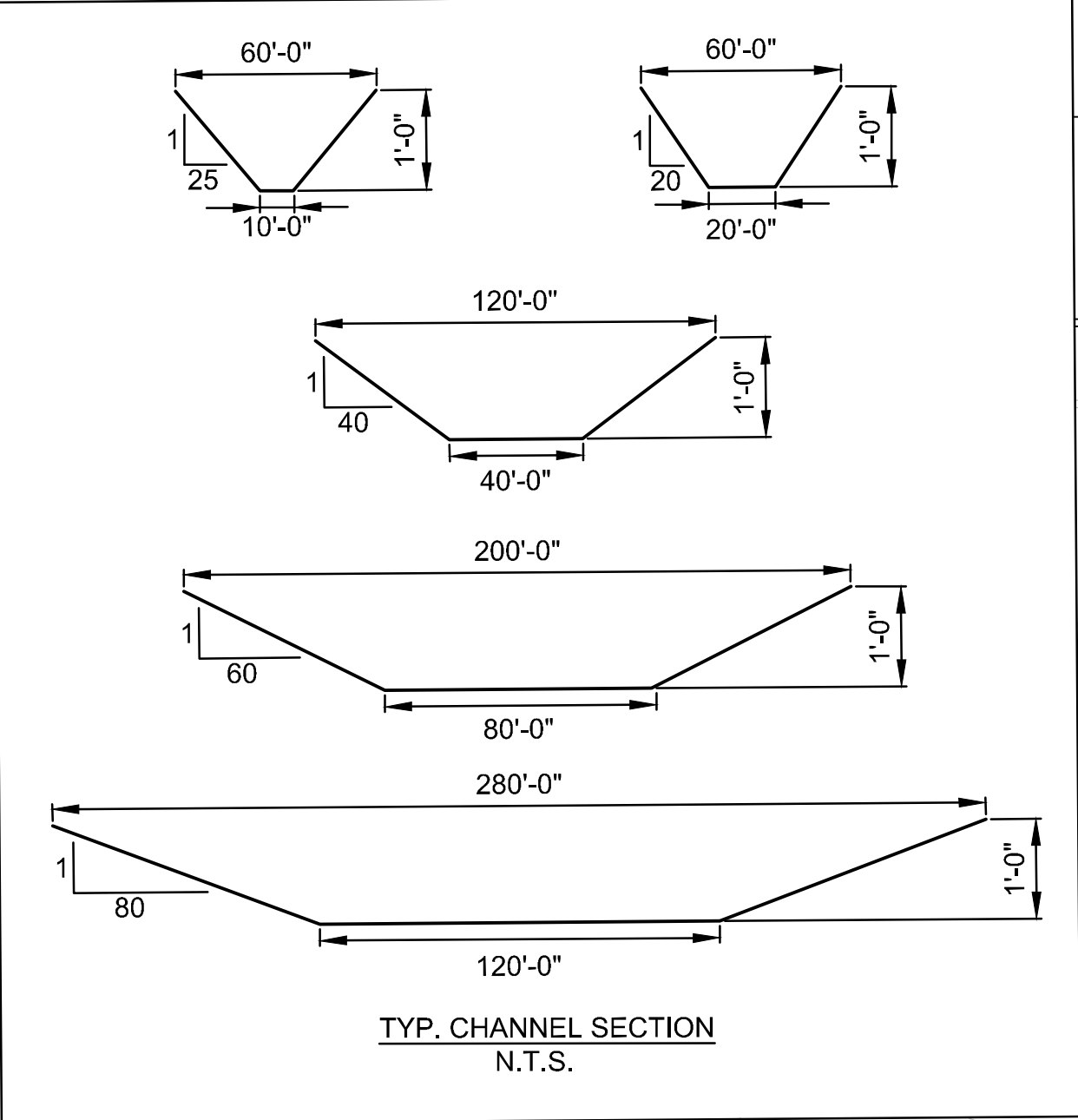
3.5 PUMP SCHEDULE

<b>System Name</b>	<b>Non-Potable Water Pumping System</b>
Quantity	4 Pumps
Location	Tertiary Treatment Facility
Minimum Piping Connection Size (in)	4
Minimum Peak Pump Efficiency at Maximum Speed (%)	65
Liquid Being Pumped	Disinfected Wastewater
NEC Area Classification	Unclassified
Percent Solids in Liquid	Trace
Environment	Indoors
Maximum Operating Speed (rpm)	3600
Maximum Motor Horsepower per Pump	10
Motor Voltage (volts)	460
Phase	3
Duty	Variable Speed
Motor Enclosure Type	TEFC
Capacity (gpm) @ Condition 1	125
Head (ft) @ Condition 1	185
3-Pump Capacity (gpm)	375
Head (ft) with 3-Pumps Operating	185

Conditions are defined in paragraph 2.1 A.1.b of Section 43 21 00, "Pumps Basic Requirements."

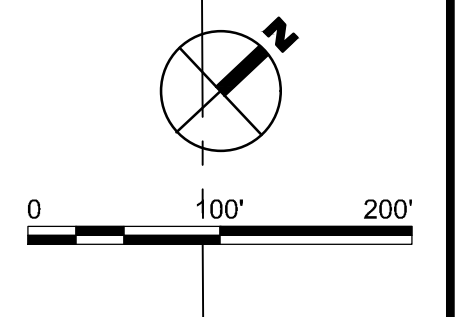
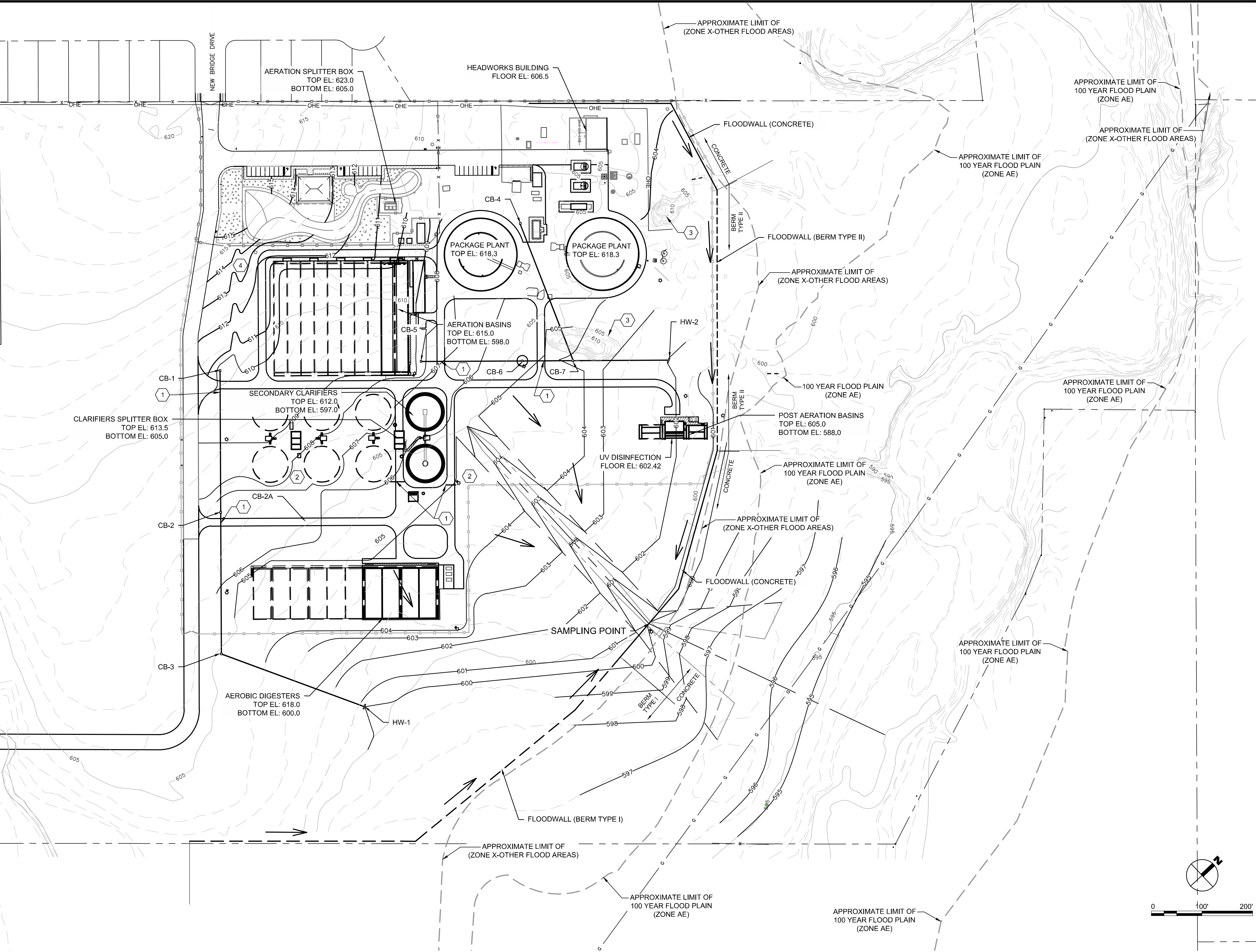
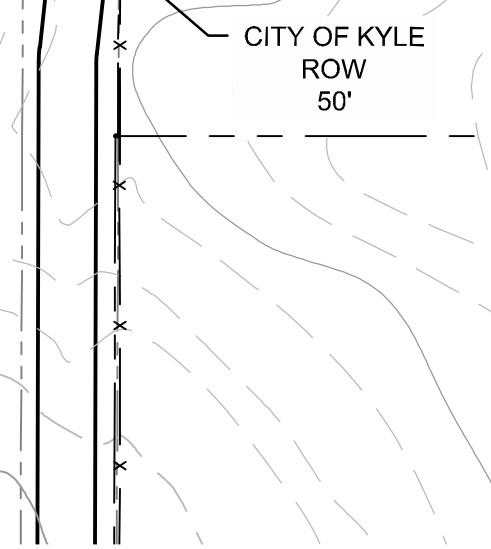
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STORM SEWER SCHEDULE		
DESIGNATION	TOP OF GRATE ELEVATION	INVERT ELEVATION
CB-1	609.70	12" OUT 607.70
CB-2	607.80	12" IN 606.30 12" OUT 606.20
CB-2A	606.25	12" OUT 604.5
CB-3	604.70	12" IN 602.80 12" OUT 602.70
HW-1	-	12" OUT 600.00
CB-4	606.20	12" OUT 604.20
CB-5	606.80	12" OUT 604.80
CB-6	604.80	12" IN 602.90 12" OUT 602.80
CB-7	603.80	12" IN 601.90 12" OUT 601.80
HW-2	-	12" OUT 601.00

- CODED NOTES:**
1. PROVIDE CONCRETE ENCASMENT FOR 12" STORM SEWER SEGMENT UNDER PAVEMENT AND 5 FT. EACH SIDE.
  2. PROVIDE SWALE ALONG NORTH EDGE OF PAVEMENT AND CONTINUE TO CHANNEL.
  3. CONTRACTOR TO REMOVE AND RELOCATE SOIL PILE. STORE PER SHEET 14 LOCATION.
  4. GRADE SWALE TO CATCH BASIN FROM BIOSWALE OVERFLOW OUTLET.



NO.	REVISIONS	DATE	BY	CHK.
2	ADDENDUM 2 DRAWING REVISIONS	10/31	CKD	SWS

**BURGESS & NIPLE**  
 4029 CAPITAL OF TEXAS HIGHWAY, SUITE 220  
 AUSTIN, TEXAS 78704  
 PHONE: (512) 306-9266  
 TBPE FIRM REGISTRATION NO. 10834



CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

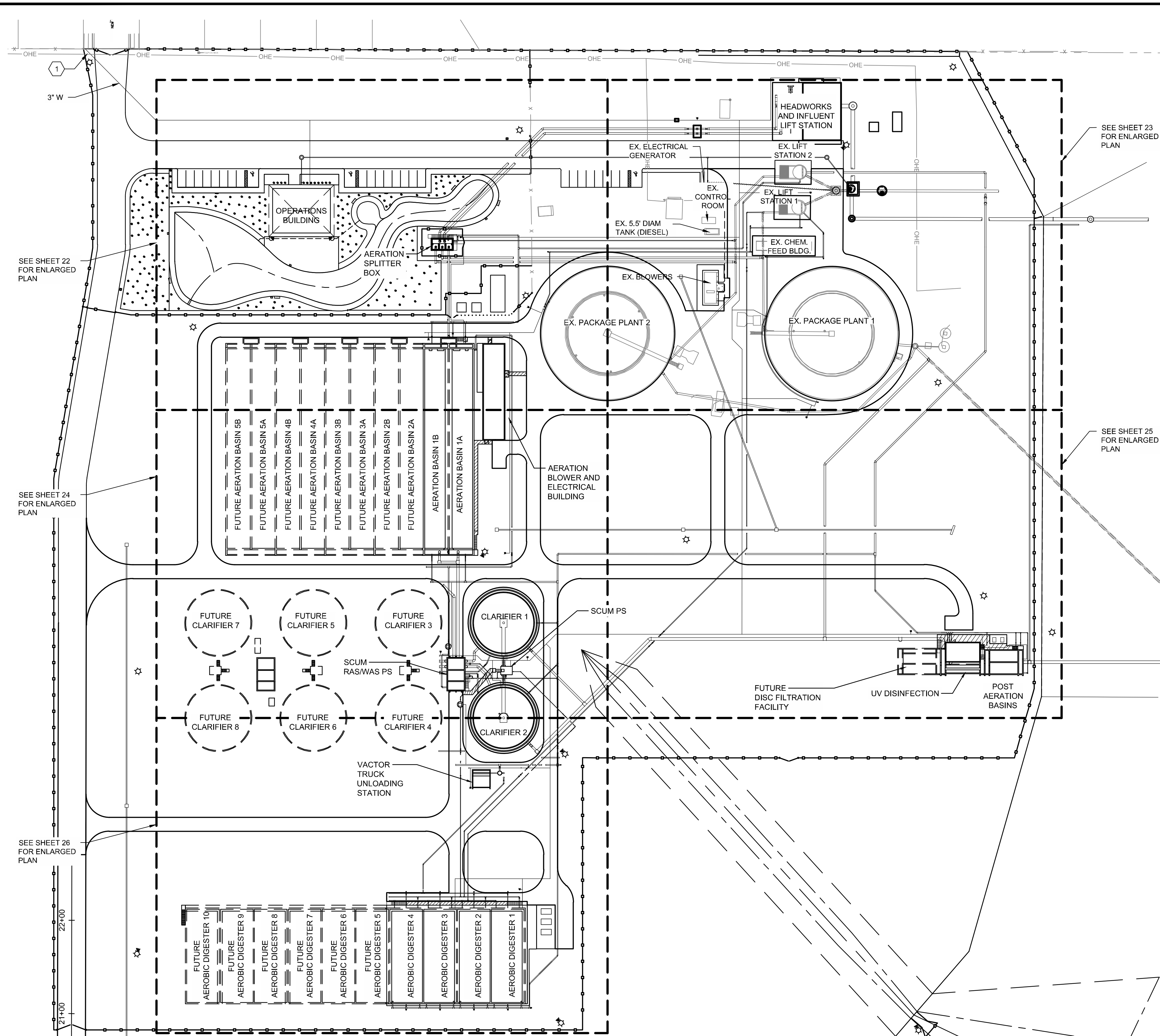
SITE GRADING PLAN

CHECKED BY:	LAC
DRAWN BY:	BAN
DESIGNED BY:	DEK
APPROVED BY:	DEK
DATE:	OCTOBER 2019
SCALE:	1"=100'
	PR55768
SHEET NO.	OF
18	282

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P:\PR55768\68\Cadd\Sheets\21 YARD PIPING KEY PLAN PH2.dwg 11/6/2019 10:15:52 AM Doss, Colleen



BURIED PIPING SCHEDULE									
PIPE ID	DESIGNATION/ USE	DIAMETER (IN)	MATERIAL/CLASS/ DESIGN	BURIED JOINT	BURIED FITTING	RESTRAINED JOINT LENGTH (FT)		OPERATING PRESSURE (PSI)	TEST PRESSURE (PSI)
						HORIZ.	VERT.		
DR	Drain	2	PVC/SCHEDULE 80	SW	SWJ	-	-	20	30
		8, 12, 14, 16, 20	DIP PC 250/350	PO	MJ	-	-		
W NPW	Potable Water, Non-Potable Water	2, 4, 6	PVC/SCHEDULE 80	SW	SWJ	60	45	90	135
WAS	Waste Activated Sludge	4, 8	DIP PC 350	PO	MJ	20	20	15	25
WAS/ SCUM	WAS and Scum	8	DIP PC 350	PO	MJ	-	-	20	30
RAS	Return Activated Sludge	12	DIP PC 350	PO	MJ	25	25	15	25
SE	Secondary Effluent	14, 24, 36	DIP PC 250	PO	MJ	-	-	10	25
SSM	Scum	4, 6	DIP PC350	PO	MJ	15	15	20	30
ML	Mixed Liquor	24, 30	DIP PC 250	PO	MJ	-	-	10	25
DE	Disinfected Effluent	24, 36	DIP PC 250	PO	MJ	-	-	10	25
FE	Filter Effluent	36	DIP PC 250	PO	MJ	-	-	10	25
DS	Digested Sludge	8	DIP PC 350	PO	MJ	20	20	10	25
SPD	Sump Pump Drain	4	DIP PC 350	PO	MJ	15	15	10	25
DEC	Decant	8	DIP PC350	PO	MJ	-	-	10	25
SSL	Settled Sludge	10	DIP PC 350	PO	MJ	-	-	10	25
ST	Storm Sewer	12	RCP IV	BS	-	-	-	-	25
SS	Sanitary Sewer	42, 48	PVC/CLOSED PROFILE	PO	PO	-	-	10	25
SW	Screened Wastewater	12, 18, 24	DIP PC 250/350	PO	MJ	25 <sup>6</sup>	25 <sup>6</sup>	25 <sup>7</sup> , 10 <sup>8</sup>	40 <sup>7</sup> , 25 <sup>8</sup>
OSS	Onsite Sanitary Sewer	8	PVC/SDR 35	PO	PO	-	-	10	25

ABBREVIATIONS: DIP = DUCTILE IRON PIPE, PVC = POLYVINYL CHLORIDE PIPE, PC = PRESSURE CLASS, DR = DIMENSION RATION, PO = PUSH ON JOINT, MJ = MECHANICAL JOINT, SWJ = SOLVENT WELDED JOINT, RCP = REINFORCED CONCRETE PIPE, BS = BELL AND SPIGOT

NOTES:

- WHERE MULTIPLE DIP PRESSURE CLASSES ARE LISTED, USE PC 350 FOR 12" AND SMALLER DIAMETER LINES AND PC 250 FOR 14" AND LARGER DIAMETER LINES.
- PROVIDE RESTRAINED JOINT FITTINGS ON ALL BURIED PIPE, INCLUDING THOSE BACKED, ENCASED, OR BLOCKED WITH CONCRETE.
- PROVIDE RESTRAINED PUSH-ON JOINTS, SUCH AS AMERICAN FASTITE WITH FASTGRIP GASKETS OR FLEX-RING, ON ALL PIPE JOINTS WITHIN THE RESTRAINED JOINT LENGTH DEFINED IN THE PIPE SCHEDULE IN BOTH THE UPSTREAM AND DOWNSTREAM DIRECTIONS FROM EACH FITTING.
- UNLESS NOTED OTHERWISE, ALL PIPING SHALL BE DUCTILE IRON. PIPE MATERIAL FOR ALL EXPOSED PIPING (ABOVE GRADE OR INSIDE STRUCTURES) INCLUDING PLUMBING PIPING, AIR PIPING, AND PROCESS PIPING IS DEFINED ON INDIVIDUAL PROCESS SHEETS.
- PIPING SHALL BE TESTED AT 150 PERCENT OF NORMAL OPERATING PRESSURE OR 25 PSI, WHICHEVER IS GREATER.
- INFLUENT LIFT STATION (ILS) TO AERATION SPLITTER BOX (ASB) SEGMENTS (HORIZONTAL AND VERTICAL).
- ILS TO ASB SEGMENTS.
- ILS TO PACKAGE PLANT SEGMENTS.
- FOR 4" AND 6" NPW LINES, C900 OR DR14 WITH PO/MJ JOINTS AND FITTINGS ARE ALLOWABLE.

CODED NOTES:

- EXTEND NEW 3" WATER LINE AND INTERCONNECT WITH EXISTING METER PER CITY WATER DEPARTMENT STANDARDS.

SEE SHEET 22 FOR ENLARGED PLAN

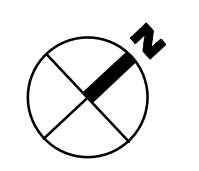
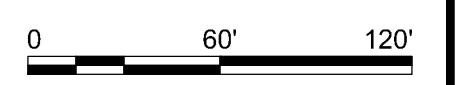
SEE SHEET 24 FOR ENLARGED PLAN

SEE SHEET 26 FOR ENLARGED PLAN

SEE SHEET 23 FOR ENLARGED PLAN

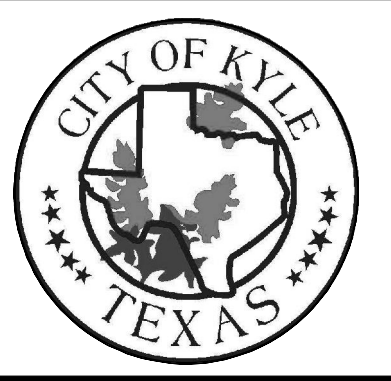
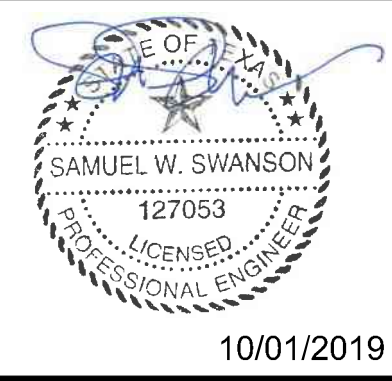
SEE SHEET 25 FOR ENLARGED PLAN

SEE SHEET 25 FOR ENLARGED PLAN



NO.	REVISIONS	DATE	BY	CHK.
2	ADDENDUM 2 DRAWING REVISIONS	10/31	CKD	SWS

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 AUSTIN, TEXAS 78704  
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 TBPE FIRM REGISTRATION NO. 10834



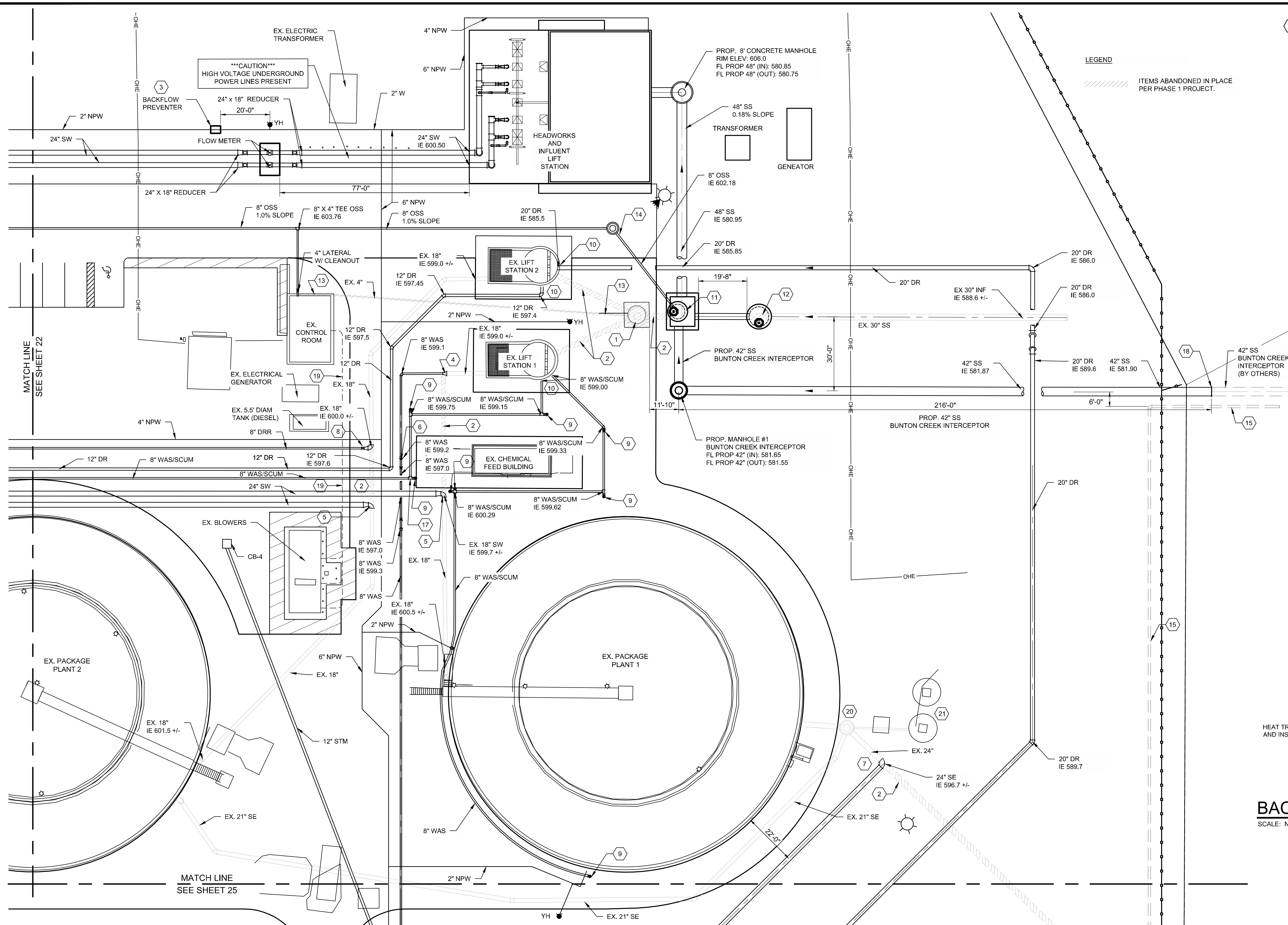
CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

YARD PIPING  
 KEY PLAN

CHECKED BY: DES	DRAWN BY: CKD
DESIGNED BY: SWS	APPROVED BY: SWS
DATE: OCTOBER 2019	SCALE: AS NOTED
PR55768	
SHEET NO. 21	OF 282

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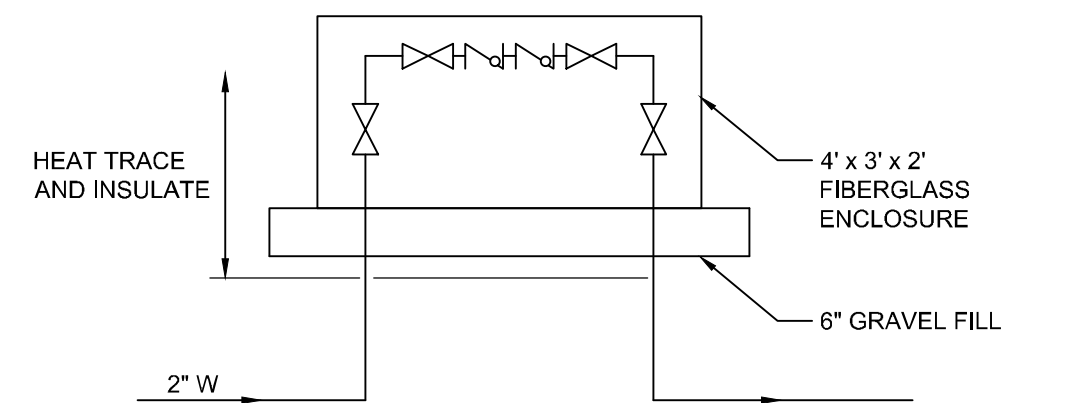
P:\PR55768\Cadd\Sheets\23 YARD PIPING ENLARGED PLAN 2 PH2.dwg 10/31/2019 9:42:39 AM Doss, Colleen



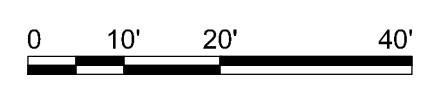
- CODED NOTES:**
- EX. SPLITTER MANHOLE TO BE ABANDONED IN PLACE BY FILLING WITH CONCRETE.
  - EX. PIPE TO BE REMOVED FROM SERVICE. CUT 2 FEET FROM EXISTING STRUCTURE INTERCONNECTION AND FILL ABANDONED PIPE ENDS WITH CONCRETE. PROPERLY DISPOSE OF ALL REMOVED PIPE AND MATERIALS OFF WWTP SITE.
  - INSTALL ABOVE-GRADE BACKFLOW PREVENTER PER DETAIL THIS SHEET.
  - REMOVE 90° BEND ON EX. 18" LINE AND INSTALL 18"x8" REDUCER.
  - CONNECT PROP. 24" SW LINE TO EX. 18" LINE WITH A 90° BEND AND 24"x18" REDUCER.
  - INSTALL 22.5" BENDS ON 8" WAS LINE TO CLEAR 18" SW LINE.
  - CONNECT EX. 24" LINE TO PROP. 24" SE LINE WITH A 90° BEND.
  - INSTALL 18" ELBOW, 18" x 8" REDUCER, AND 8" PLUG VALVE. PROVIDE VALVE WITH VALVE BOX AND OPERATING NUT.
  - INSTALL CLEANOUT AT BEND ON 8" WAS/SCUM LINE..
  - CORE DRILL EXISTING CONCRETE WALL AND INSTALL NEW PIPE INTO WET WELL FLUSH WITH INTERIOR WALL FACE. FILL SPACE BETWEEN WALL HOLE AND NEW PIPE WITH ONE CENTERED LINK SEAL AND NON-SHRINK GROUT AND PLACED FLUSH WITH BOTH WALL FACES (TYP OF 4).
  - INSTALL INFLUENT JUNCTION BOX PER PLANS AND SECTIONS ON SHEET 31. COORDINATE INSTALLATION WITH KYLE OPERATING STAFF AND INSTALLATION SUBMITTAL SHOULD BYPASS PUMPING OR OTHER INFLUENT FLOW MANAGEMENT OR TRANSFER BE REQUIRED. PROPERLY DISPOSE OF ALL REMOVED PIPE AND MATERIALS OFF WWTP SITE.
  - INSTALL ENERGY DISSIPATION MANHOLE PER PLANS AND SECTIONS ON SHEET 30. COORDINATE INSTALLATION WITH KYLE OPERATING STAFF AND INSTALLATION SUBMITTAL SHOULD BYPASS PUMPING OR OTHER INFLUENT FLOW MANAGEMENT OR TRANSFER BE REQUIRED. PROPERLY DISPOSE OF ALL REMOVED PIPE AND MATERIALS OFF WWTP SITE.
  - ABANDON EX. 4" SS UPON ACCEPTANCE OF NEW LINE.
  - PROP. 4" CONCRETE MANHOLE RIM ELEV: 606.0 (MATCH PAVEMENT) FL PROP 8" (IN): 602.45 FL PROP 8" (OUT): 602.35
  - KEEP AREA CLEAR FOR 12" NON-POTABLE REUSE LINE (TO BE CONSTRUCTED BY OTHERS).
  - NOT USED.
  - INSTALL 8" WAS/SCUM TEE AT IE 602.45.
  - TERMINATE 42" BUNTON CREEK INTERCEPTOR AT APPROXIMATELY STATION 2+10.77 AND INVERT ELEVATION 581.96± (OR INTERCONNECT WITH EXISTING INTERCEPTOR SHOULD ITS CONSTRUCTION PROCEED WWTP WORK).
  - COORDINATE YARD PIPING WITH EXISTING RECENTLY OWNER INSTALLED ELECTRICAL DUCT BANK.
  - BOLT DOWN LID OF EXISTING MANHOLE WITH TYPE 316 SST BOLTS AND NEW GASKET.
  - EXISTING REUSE PUMP STATION TO REMAIN INTACT.

**LEGEND**

ITEMS ABANDONED IN PLACE PER PHASE 1 PROJECT.



**BACKFLOW PREVENTER DETAIL**  
SCALE: NONE



NO.	REVISIONS	DATE	BY	CHK.
2	ADDENDUM 2 DRAWING REVISIONS	10/31	CKD	SWS

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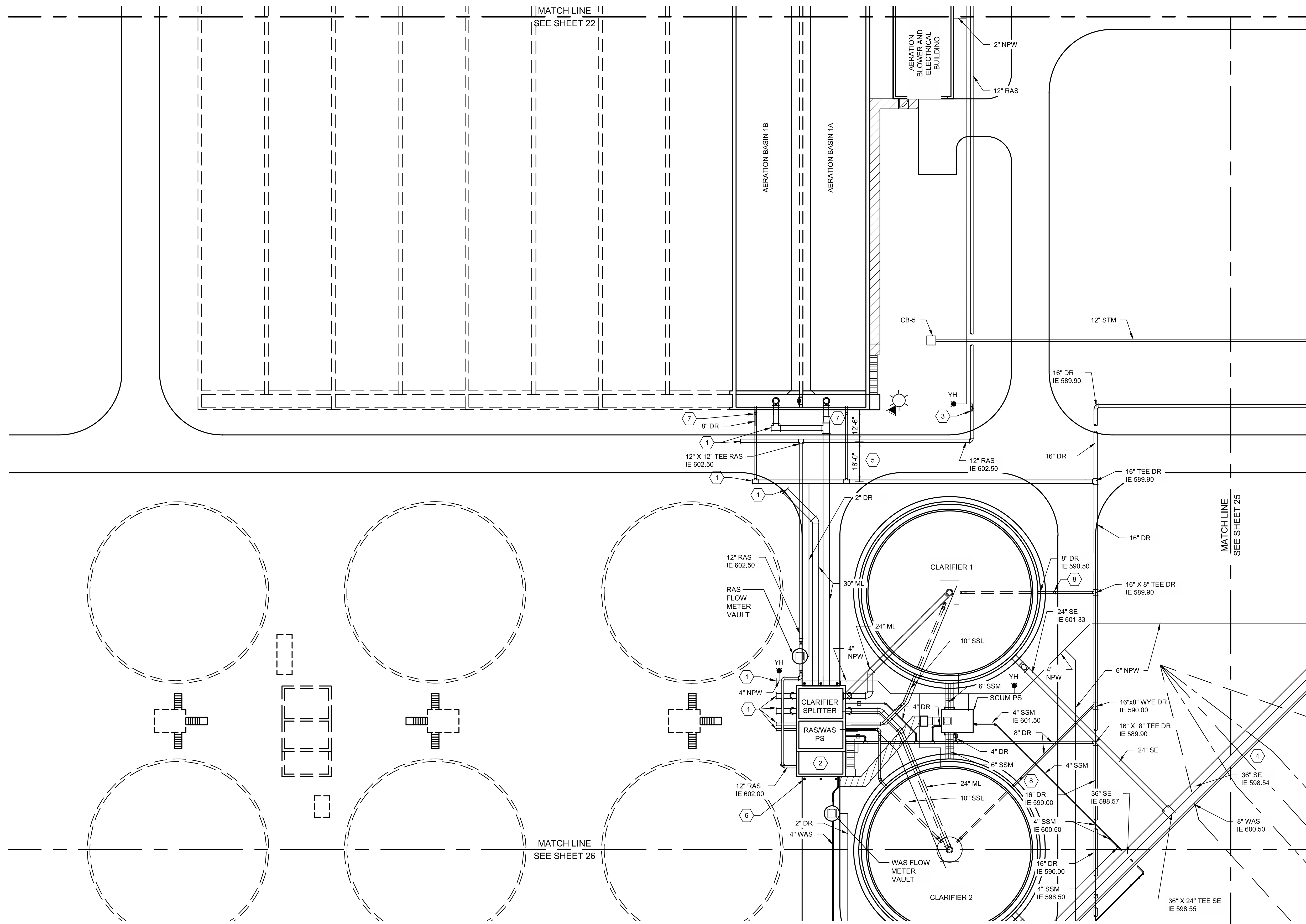
CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

YARD PIPING  
 ENLARGED PLAN 2

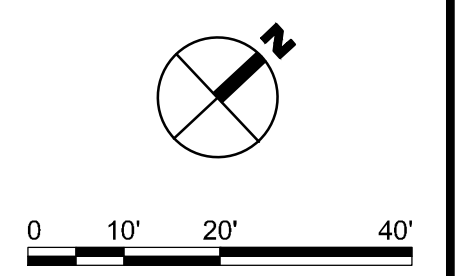
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SHEET NO.	OF
23	282

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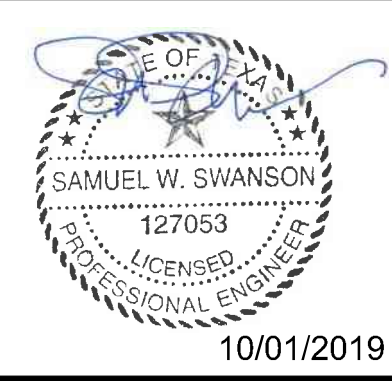


- CODED NOTES:**
1. STUB AND CAP PIPE END WITH RESTRAINED PLUG.
  2. SEE SHEET 68 FOR ENLARGED PIPING AROUND RAS/WAS PUMP STATION .
  3. INSTALL SLUDGE CLEANOUT PER STANDARD DETAIL.
  4. MAINTAIN 3-FT OF COVER (MINIMUM) OVER CROWN OF PIPE.
  5. MAINTAIN THIS SPACING BETWEEN PIPING AND KEEP CLEAR TO ACCOMMODATE FUTURE PIPING.
  6. INSTALL BOLLARD POSTS PER STANDARD DETAIL (TYP OF 6).
  7. PROVIDE AERATION BASIN 8" DR PLUG VALVE 5'-0" FROM WALL EXTERIOR (TYP OF 2).
  8. PROVIDE CLARIFIER 8" DR PLUG VALVE 5'-0" FROM WALL EXTERIOR (TYP OF 2).



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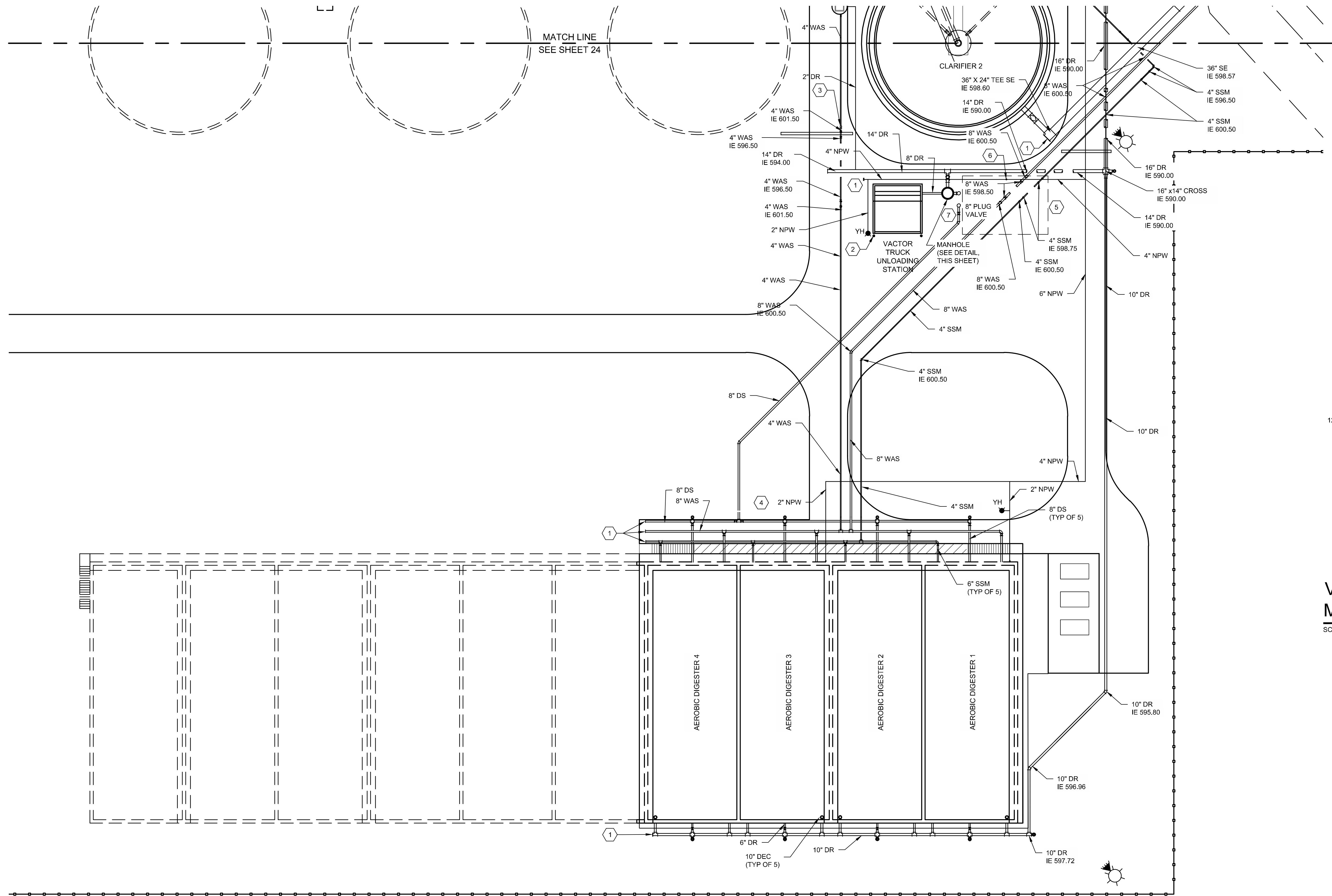
CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

YARD PIPING  
 ENLARGED PLAN 3

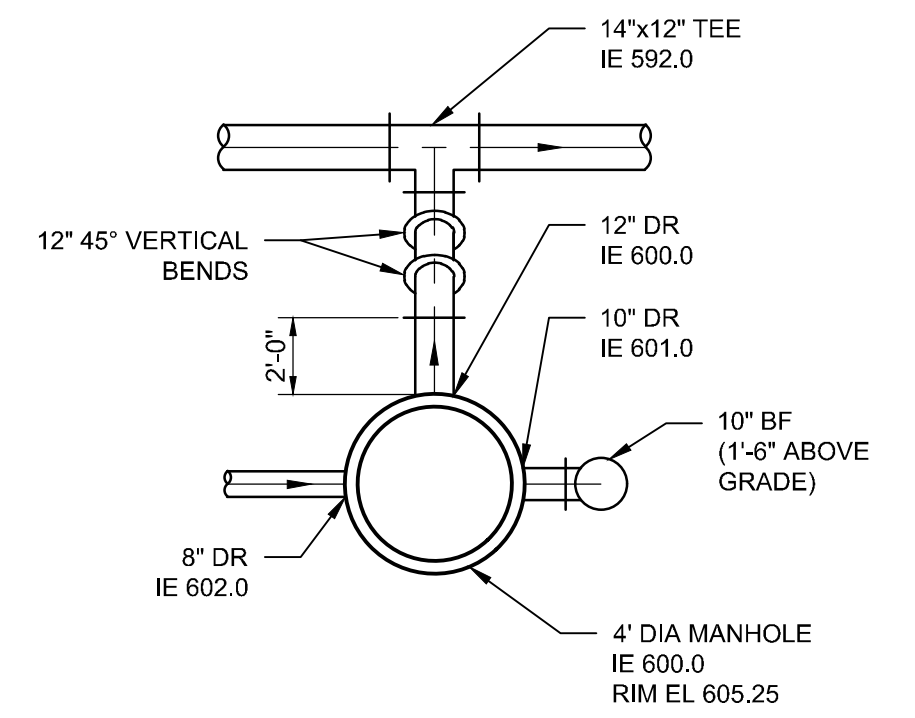
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SHEET NO.	OF
24	282

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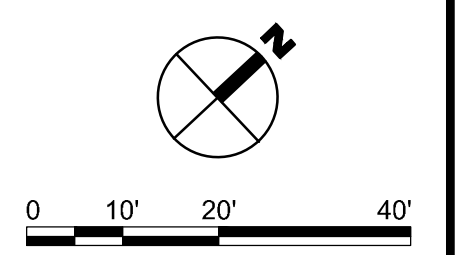
P:\PR55768\Cadd\Sheets\26 YARD PIPING ENLARGED PLAN 5 FH2.dwg 10/31/2019 9:42:20 AM Doss, Colleen



- CODED NOTES:**
1. STUB AND CAP PIPE END WITH RESTRAINED PLUG AND MARK WITH LABELED STAKE AFTER FINAL GRADING.
  2. PROVIDE GUARD POSTS (TYP OF 2) PER STANDARD DETAIL.
  3. INSTALL SLUDGE CLEANOUT PER STANDARD DETAIL.
  4. SEE AEROBIC DIGESTER PLAN SHEETS FOR VALVES IN THIS AREA.
  5. AREA RESERVED FOR CONTRACT DEWATERING EQUIPMENT. ELECTRICAL REQUIREMENTS TO BE PROVIDED BY DEWATERING COMPANY AND INSTALLED BY CONTRACTOR.
  6. TERMINATE 4" NPW LINE ABOVE GRADE WITH BALL VALVE 10'-0" FROM 8" WAS LINE.
  7. TERMINATE 8" DS LINE WITH VERTICAL SEGMENT 12" ABOVE GRADE.

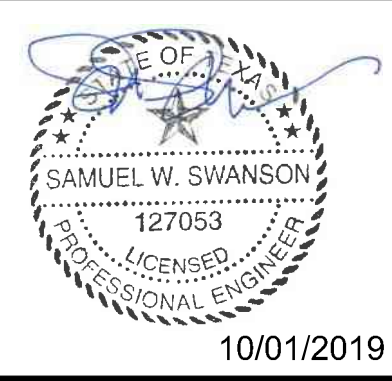


**VACTOR/DEWATERING MANHOLE DETAIL**  
SCALE: 1" = 5'



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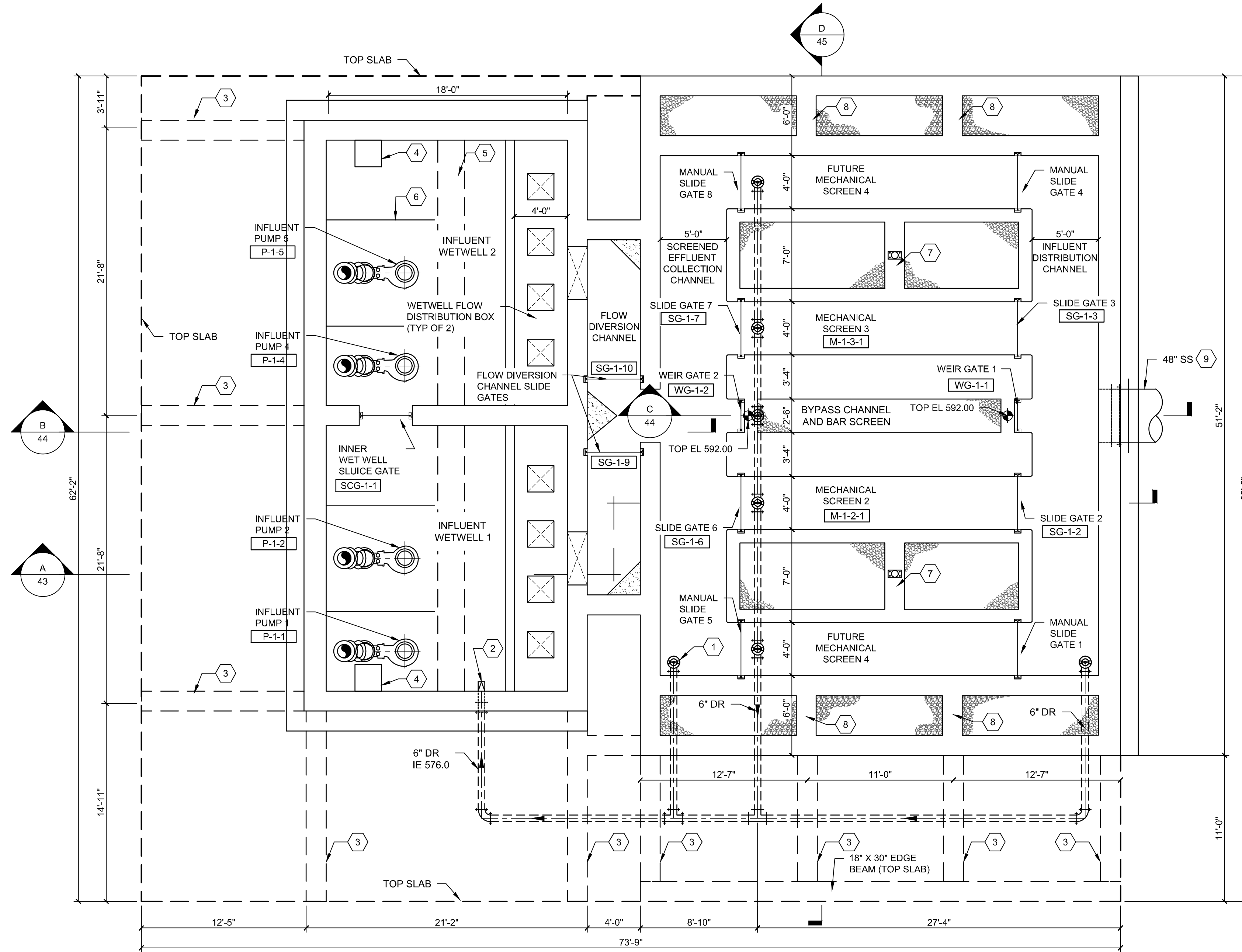
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CITY OF KYLE, TEXAS  
WASTEWATER TREATMENT PLANT EXPANSION

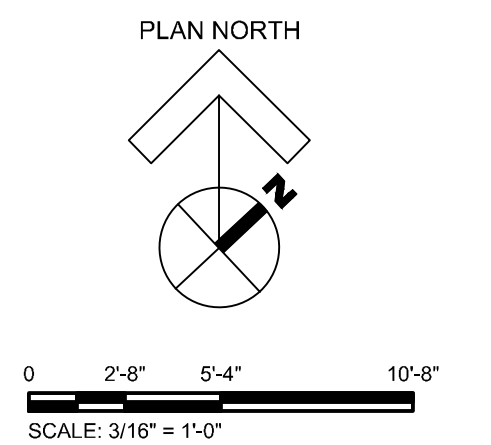
YARD PIPING  
ENLARGED PLAN 5

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26	282



- CODED NOTES:**
1. PROVIDE MANUAL MUD VALVE DRAIN (TYP OF 6)
  2. PROVIDE 6" DUCKBILL VALVE
  3. 6' DEEP CANTILEVER BEAM
  4. 2X2X6" SUMP
  5. WET WELL BEAM (TOP SLAB)
  6. ANTI-VORTEX BAFFLE WALL (TYP OF 4)
  7. 18" INTERMEDIATE BRACING WALL
  8. 18" INTERMEDIATE BRACING WALL
  9. FOR CONTINUATION, SEE YARD PIPING SHEETS.

**CHANNEL LEVEL PLAN**  
3/16"=1'-0"



NO.	REVISIONS	DATE	BY	CHK.
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10/01/2019



CITY OF KYLE, TEXAS  
WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS AND INFLUENT LIFT STATION  
PROCESS  
CHANNEL LEVEL PLAN

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DATE:	OCTOBER 2019
SCALE:	3/16"=1'-0"
	PR55768

SHEET NO.	OF
41	282

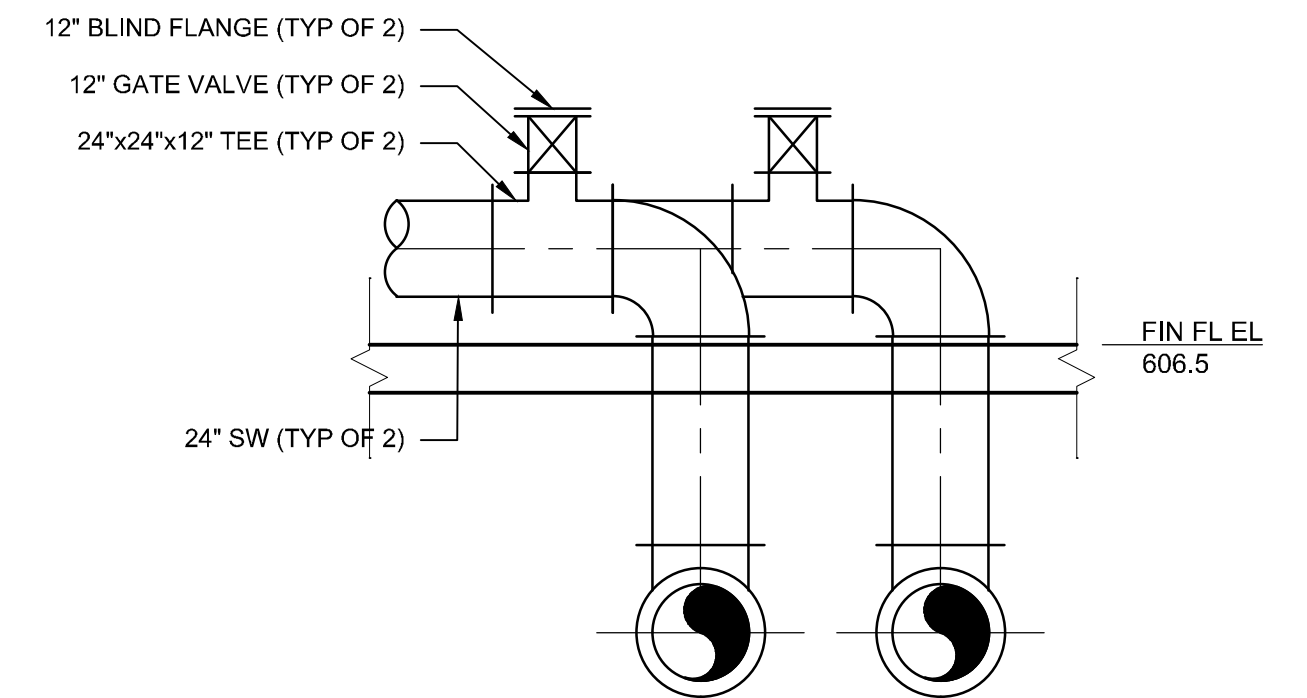
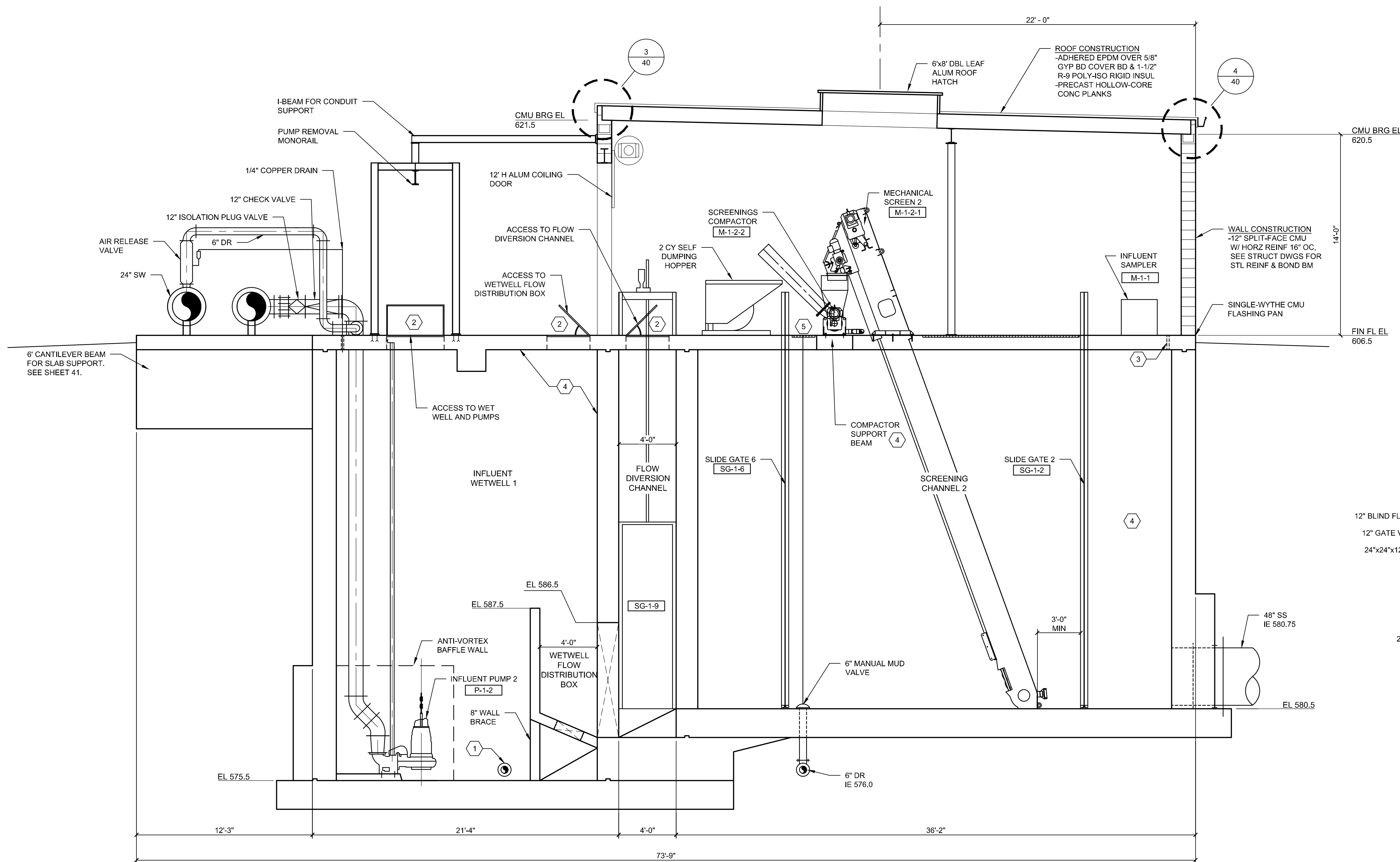


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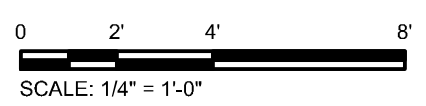
**CODED NOTES**

- 6" DRAIN IE 576.0 (SHOWN FOR CLARITY, NOT IN TRUE SECTION).
- 3'x4' TRAFFIC RATED ALUMINUM ACCESS HATCH.
- PROVIDE 2" PVC FLOOR SLEEVE FOR SAMPLER TUBING AND STRAINER, 2" FROM CONCRETE WALL.
- PROVIDE INTERIOR CONCRETE CORROSION-RESISTANT COATING PER SPECIFICATIONS.
- TERMINATE OPERATING NUT FLUSH WITH TOP OF OPERATING FLOOR GRATING.



**A SECTION**  
1/4"=1'-0"

**E SECTION**  
1/4"=1'-0"



NO.	REVISIONS	DATE	BY	CHK.
2	ADDENDUM 2 DRAWING REVISIONS	10/31	CKD	SWS

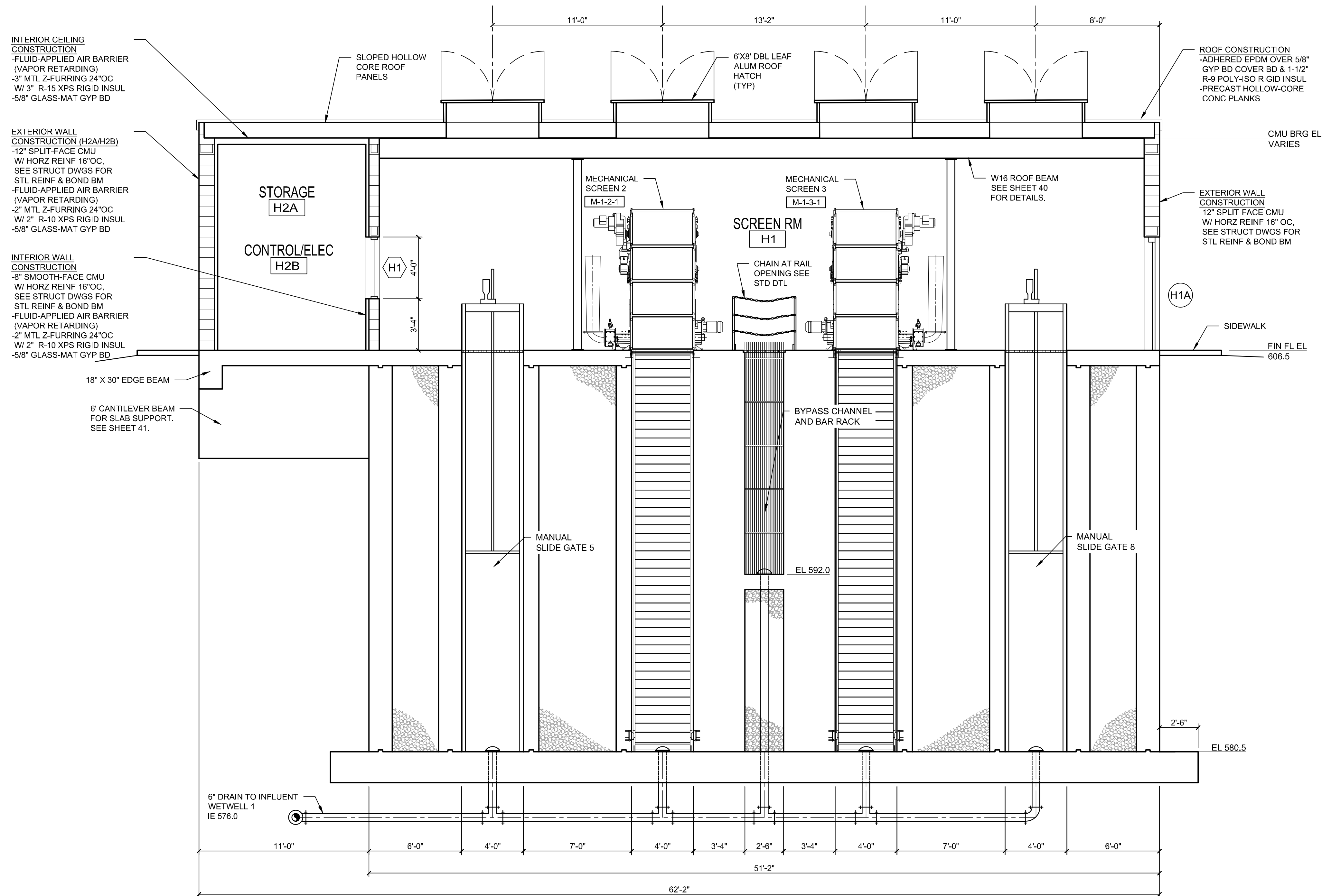
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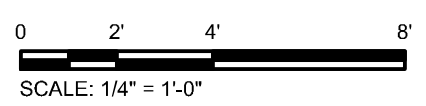
CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS AND INFLUENT LIFT STATION  
 PROCESS - ARCHITECTURAL  
 SECTION A

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DATE:	OCTOBER 2019
SCALE:	1/4"=1'-0"
	PR55768
SHEET NO.	OF
43	282

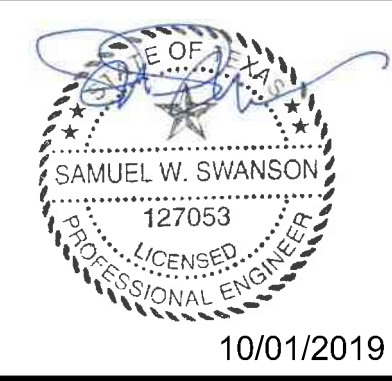


**D SECTION**  
1/4" = 1'-0"



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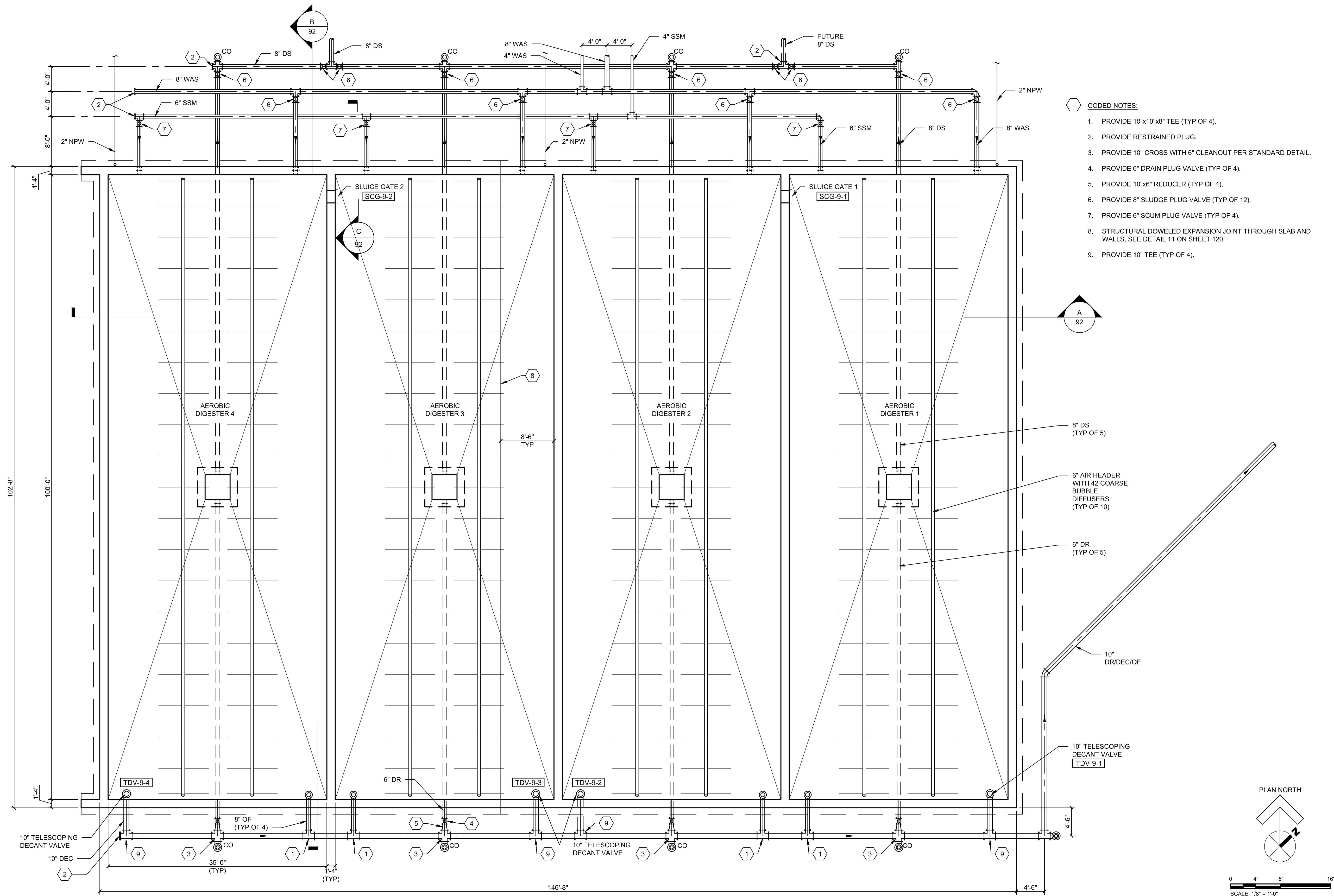
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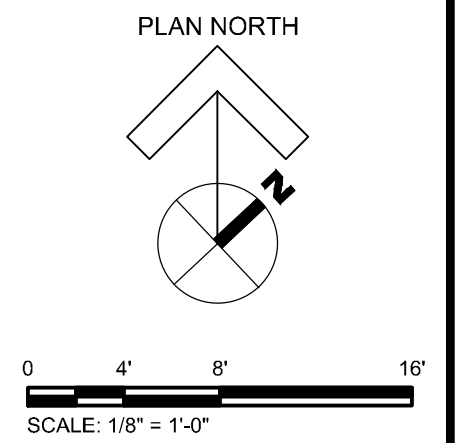
CITY OF KYLE, TEXAS  
WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS AND INFLUENT LIFT STATION  
PROCESS - ARCHITECTURAL  
SECTION D

CHECKED BY:	DES
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APPROVED BY:	SWS
DATE:	OCTOBER 2019
SCALE:	1/4" = 1'-0"
	PR55768
SHEET NO.	OF
45	282



- CODED NOTES:**
1. PROVIDE 10"x10"x8" TEE (TYP OF 4).
  2. PROVIDE RESTRAINED PLUG.
  3. PROVIDE 10" CROSS WITH 6" CLEANOUT PER STANDARD DETAIL.
  4. PROVIDE 6" DRAIN PLUG VALVE (TYP OF 4).
  5. PROVIDE 10"x6" REDUCER (TYP OF 4).
  6. PROVIDE 8" SLUDGE PLUG VALVE (TYP OF 12).
  7. PROVIDE 6" SCUM PLUG VALVE (TYP OF 4).
  8. STRUCTURAL DOWELED EXPANSION JOINT THROUGH SLAB AND WALLS. SEE DETAIL 11 ON SHEET 120.
  9. PROVIDE 10" TEE (TYP OF 4).



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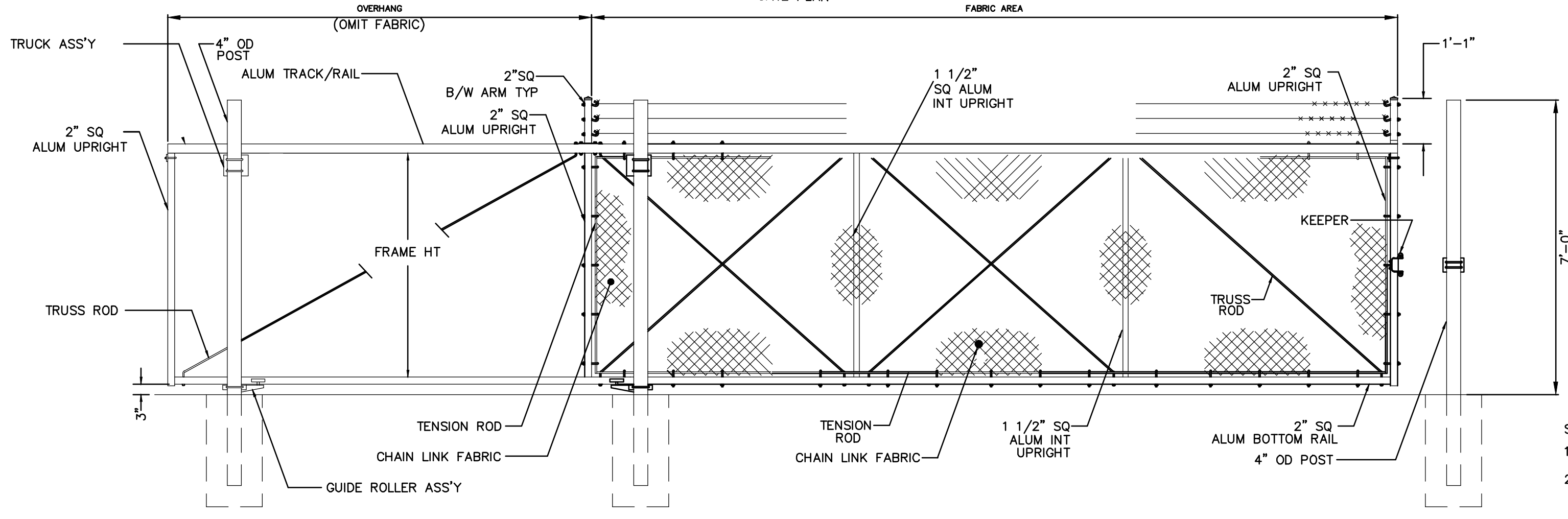
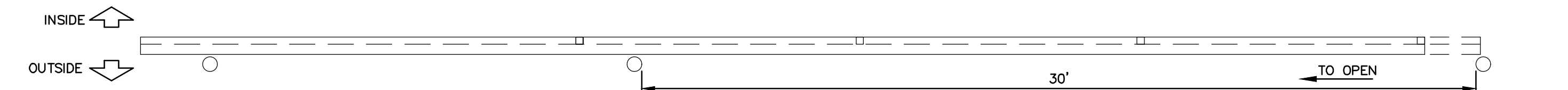
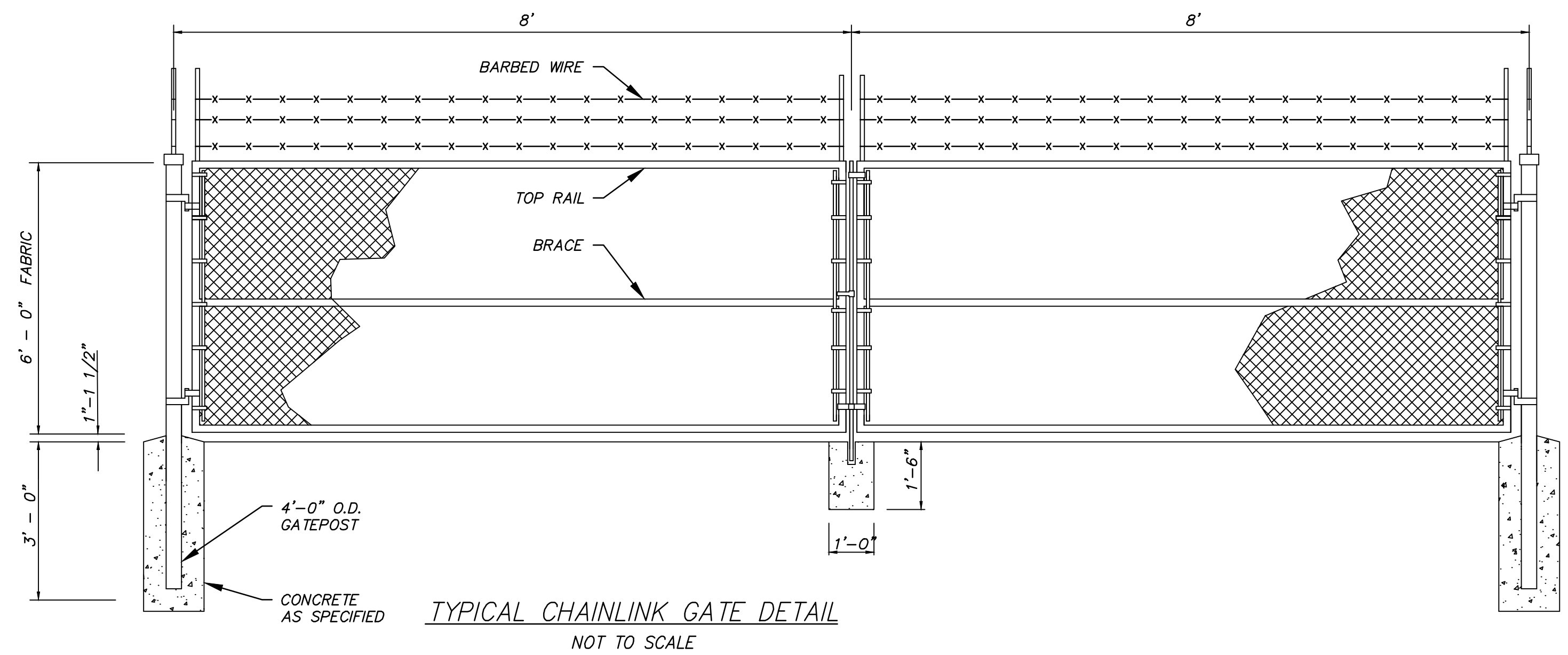


CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

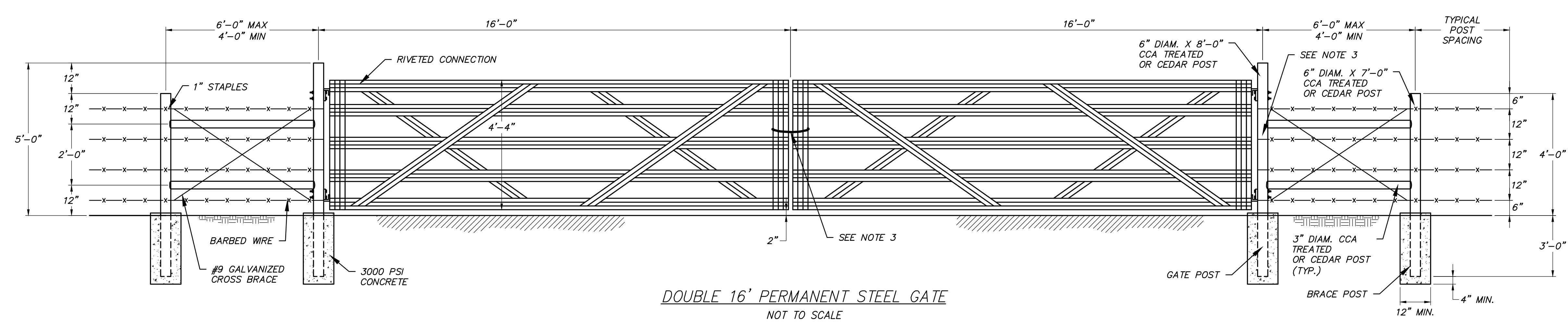
AEROBIC DIGESTERS  
 PROCESS - STRUCTURAL  
 LOWER PLAN

CHECKED BY:	DES
DRAWN BY:	CKD
DESIGNED BY:	SWS
APPROVED BY:	SWS
DATE:	OCTOBER 2019
SCALE:	1/8" = 1'-0"
	PR55768
SHEET NO.	OF
90	282

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- SLIDING GATE NOTES:
1. FOOTING WIDTH TO BE (4)X POST WIDTH. MIN DEPTH TO BE 36".
  2. GATE TO BE ELECTRICALLY OPERATED. HARDWARE WILL VARY FOR ELECTRICALLY OPERATED GATES.

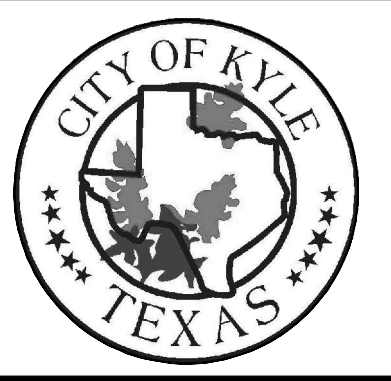
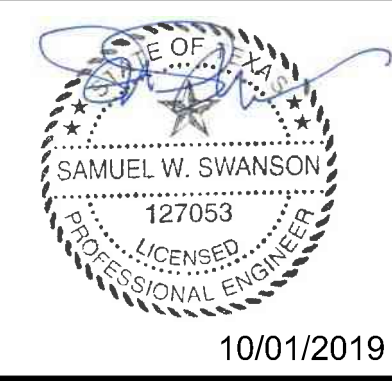


- BARBED WIRE FENCE AND STEEL GATE NOTES:
1. GATE MANUFACTURER SHALL FURNISH GALVANIZED HINGES AND HINGE BOLTS.
  2. GATE MANUFACTURER SHALL FURNISH GALVANIZED SLIDING LATCHES FOR GATES LOCATED IN FIELD FENCES.
  3. CONTRACTOR SHALL FURNISH GALVANIZED CHAIN AND PADLOCK FOR GATES. LOCKS AND KEY CODES SHALL BE IDENTICAL FOR ALL GATES. MASTER LOCK KEY SHALL BE GIVEN TO THE CITY OF KYLE. USE MASTER LOCK NUMBER SPECIFIED BY THE CITY OF KYLE.
  4. WHERE EXISTING ADJACENT POST IS MORE THAN 6'-0" FROM NEW GATE POST, CONTRACTOR SHALL INSTALL NEW LINE POST 6'-0" MAX. FROM GATE POST.

P:\PR55768\Cadd\Sheets\112 SECURITY FENCE DETAILS 2 PH2.dwg 10/14/2019 9:21:07 AM Doss, Colleen

NO.	REVISIONS	DATE	BY	CHK.
2	ADDENDUM 2 DRAWING REVISIONS	10/31	CKD	SWS

**BURGESS & NIPLE**  
 4029 CAPITAL OF TEXAS HIGHWAY, SUITE 220  
 AUSTIN, TEXAS 78704  
 PHONE: (512) 306-9266  
 TBPE FIRM REGISTRATION NO. 10834



CITY OF KYLE, TEXAS  
 WASTEWATER TREATMENT PLANT EXPANSION

SECURITY FENCE DETAILS 2

CHECKED BY:	LAC
DRAWN BY:	BAN
DESIGNED BY:	DEK
APPROVED BY:	DEK
DATE:	OCTOBER 2019
SCALE:	AS NOTED
	PR55768
SHEET NO.	OF
112	282