



**Proposal for the
Forsyth County Water Treatment Plant
Phase 3 Expansion
Trains 9, 10 and 11**

ZeeWeed* Ultrafiltration Water Treatment System

SUEZ Proposal Number: 411832 Revision 3

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1 Commercial Offer

1.1 System Price

Pricing for the proposed equipment and services is summarized in the table below. All pricing is based on the operating conditions and influent analysis that are described in this proposal.

Price: Equipment and Services as described herein:

ZeeWeed 1000 System Proposal Price	\$2,295,000 USD
Adder for Spare Parts Allowance	\$50,000 USD

Please note that the presented pricing does not include any provision for any procurement restrictions imposed on Seller by Buyer's funding parties. Should these restrictions be required, such as "Buy America", Seller reserves the right to adjust the pricing herein upon review of the restrictions.

1.2 Price Validity

The quoted system price will be valid for ninety (90) days from date of Proposal. If a formal Purchase Order or Procurement Agreement is not received and accepted within this Validity Period, both the pricing and delivery schedule are subject to review and adjustment.

The proposed system pricing is based upon receipt of a Notice to Proceed (NTP) for Manufacturing/Equipment Procurement being provided by **April 1, 2023**. In the event the NTP for Manufacturing/Equipment Procurement is not received before this date, the equipment and service prices contained herein will be subject to adjustment for any increase in the North American Consumer Price Index (CPI) + 1.0%. This adjustment will be from the date of the proposal to the date the NTP for Manufacturing/Equipment Procurement is received.

If a formal NTP for Manufacturing/Equipment Procurement is not received and accepted within one week of the NTP date referenced above, Seller will be afforded the right to review and adjust the scope of supply, pricing and delivery schedule offered herein.

1.3 Taxes

Buyer shall be directly responsible, and reimburse Seller, for the gross amount of any present, or future sales, use, excise, value-added, environmental, or other similar tax or duty applicable to the price, sale or delivery of any equipment or services furnished under this proposal. Unless Buyer has furnished Seller with evidence of tax exemption or direct pay permit acceptable to taxing authorities prior to the execution of any Purchase Order / Agreement or Seller's acceptance of Buyer's Purchase Order (as applicable), Buyer shall pay all taxes as invoiced by Seller and Seller is relieved of any

obligation to (i) apply any tax exemption or direct pay permit, and/or (ii) refund the Buyer any tax paid by the Seller.

Seller's price and schedule shall be based on applicable Federal and State laws, local ordinances, codes, and standards as well as duties, sales or use taxes in effect as of the date of Seller's proposal. Should such laws, codes, taxes and standards change and increase the cost of performing the work or impact the schedule, Seller shall, upon notice to Buyer of such, be entitled to an equitable adjustment of price and /or schedule. Similarly, should such laws, codes, taxes and standards change and decrease the cost of performing the work, Buyer shall be entitled to an equitable adjustment of price.

1.4 Order Confirmation Centre

In order to facilitate efficient order handling, Seller has instituted an Order Confirmation Centre (OCC). All Purchase Orders or Contracts being issued to Seller are to be directed to OCC following the methods indicated below:

- Via e-mail: WTS.equipmentpo@suez.com
- Via courier: **SUEZ WTS Systems USA, Inc.**
3239 Dundas Street West
Oakville, Ontario L6M 4B2
Attn: OCC

1.5 Delivery

The following freight terms for delivery of equipment used are as defined by INCOTERMS 2020.

All pricing is CIP Forsyth County, Antioch Water Treatment Plant, GA, USA. Delivery to the project site is conditional upon provision of access roads of a nature that will permit access by tractor-trailers. Off-loading and positioning of equipment at the job-site is not included.

Upon acceptance of Buyer's Purchase Order or, alternatively, where specified in the Purchase Order, upon receipt of Buyer's Notification to Proceed with Manufacturing/Equipment Procurement that satisfies Seller's requirements for meeting the delivery schedule, Seller shall commence fabrication of equipment. The place of delivery specified therein shall be firm and fixed, provided that Buyer may notify Seller no later than forty-five (45) days prior to the scheduled shipment date of the equipment of an alternate point of delivery. Provided the parties agree to a change order to take into account any additional cost or delay incurred by Seller in implementing this change, the alternate place of delivery shall become the agreed place of delivery for all purposes under such Purchase Order. Failure by Buyer to take delivery of the equipment shall be a material breach of such Purchase Order.

1.6 Bonds

A Performance Bond is not included in the system price. This bond can be purchased on request but will be at additional cost.

1.7 Payment Terms

The pricing quoted in this proposal is based upon the following payment terms, subject to approval of Buyer credit (all payments are net 30 days):

- 15% with Purchase Order;
- 15% on approval of Shop Drawings;
- 40% on shipment of equipment (partial shipments permitted);
- 25% on shipment of membranes;
- 5% on completion of commissioning, or net 90 days from equipment shipment whichever occurs first.

No financial allowance has been made for any Holdbacks on submitted invoices. Seller shall only proceed with preparation of Engineering Drawings upon receipt of a formal Purchase Order and a written Notice to Proceed with Engineering Drawings from the Buyer. If, as of the date Engineering Drawings are submitted, the Buyer terminates Seller's Contract, then the Buyer shall pay Seller the milestone price for Engineering Drawings, or Seller's actual costs plus 10% for drawing preparation to the date of notice of termination, whichever is greater.

Seller shall only proceed with procurement and production of equipment and materials receipt of a formal Purchase Order and a written Notice to Proceed with Manufacturing/Equipment Procurement from the Buyer.

1.8 Proposed Project Schedule

SUEZ has provided a timeline for the major milestones below. The buyer and seller will arrange a kick-off meeting after contract acceptance to develop a firm shipment schedule.

- Seller: Shop Drawing Package – 12-16 weeks after the PO is accepted
 - Partial submittals allowed
 - P&IDs
 - Mechanical (includes Bill of Material, cut sheets, membrane tank GA)
 - Electrical
- Seller: Shipment of Equipment – **30-60 weeks** from NTP with Manufacture of Equipment (partial shipments allowed)

- Seller: Shipment of Membranes – Membranes are available 68 weeks from PO date. Membranes will ship immediately prior to their installation on-site and commissioning

SWTS would like to note that under the current exceptional circumstances under the COVID 19 Pandemic situation, SWTS may not be in a position to guarantee and comply with the planned schedule for project delivery or performance and that should there be any new measures taken by any governmental authority which may impede or delay the said schedule or performance, SWTS reserves the right to modify the schedule /contract accordingly. SWTS will promptly inform you of any changes which may impact the contract or the project.

1.9 Terms and Conditions

By accepting our proposal, the Buyer agrees to include Seller's proposal as a Contract document in any Purchase Order or Procurement Agreement.

Seller's proposal has been prepared and is submitted based on Seller's General Terms and Conditions of Sale as attached in **Appendix B**. All of the Terms and Conditions that are listed within this proposal shall remain in place and cannot be changed or modified by the Buyer for the Price stated herein.

It should be noted that should any additional Buyer's Terms and Conditions be required, these additional Terms and Conditions can be negotiated to the mutual agreement of Seller and the Buyer. Additional Buyer's Terms & Conditions may typically include specific bonding requirements, liquidated damages, Certificates of Insurance, termination clauses and other contractual liabilities for which Seller has made no provision in the pricing or schedules provided herein. Seller therefore reserves the right to adjust the pricing and schedules contained in Seller's proposal due to any agreed upon additional Buyer supplied Terms and Conditions.

There are no liquidated damages that are required of the Seller at this time. If the Buyer requires the Seller to be responsible for such liquidated damages which are imposed on the Buyer by the Owner, but only to the extent that such delay was caused by the Seller, then the liquidated damages shall constitute the Buyer's sole and exclusive remedy for delay by Seller in achieving of the work within the time specified. The Seller's obligation to pay liquidated damages shall be limited to ten percent of the Seller's contract price. Seller shall not be obligated to pay such liquidated damages if the delay is caused by the Buyer or the Owner, or in the event that Buyer experiences a schedule delay for reasons other than Seller's failure, such that Buyer is not ready or able to begin the installation work for Seller's equipment upon delivery, and such delay in Seller's shipment or delivery therefore does not cause delay of Buyer's schedule.

2 Technical and Engineering Details

This proposal reflects SUEZ supplying a ZeeWeed ultrafiltration water treatment system for the Forsyth County Water Treatment Plant (WTP) Phase 3 expansion project. The proposal is based on the original design of the Forsyth County WTP plant expansion, with each train having a net maximum hydraulic capacity of 2.4 MGD at 15°C.

This proposal reflects a design which includes the addition of three (3) membrane trains (Trains 9 to 11).

An additional third (3rd) blower and an upgrade to Ethernet from ControlNet has also been included and described. No upgrades to the CIP or backwash system have been included in this proposal.

2.1 Proposed System Configuration

The proposal includes the following configuration:

Three (3) Train Expansion – Addition of Trains 9, 10 and 11

Parameter	Quantity
Type of Membrane	ZeeWeed 1000
Module Surface Area	550 ft ²
Number of Trains	3
Number of Cassettes per Train	2
Number of Installed Modules per Cassette	60/60

3 Scope of Supply

3.1 Scope of Supply by SUEZ

SUEZ's scope of supply for a ZeeWeed 1000 ultrafiltration water treatment system, for the Forsyth County Phase 3 expansion project is as follows:

- Electrical rating on all motors is 460V / 3ph / 60 Hz. Single phase power requirement is 120V.
- Please note that the proposed equipment and instrumentation quoted is to be installed in a NFPA 820 non classified area.
- To ensure the equipment will fit into the existing facility the proposed equipment will be supplied based on past specifications. Any changes to the proposed equipment to meet any new specifications, including custom tag numbering, will require re-evaluation.
- Equipment will be supplied loose shipped unless otherwise noted.

Tags in the table below refer to the P&IDs that can be found in **Appendix A**. In the P&IDs, color is used to delineate between existing equipment (**blue**), scope by others as part of the Phase 3 expansion (**green**), and scope by SUEZ as part of this proposal (**magenta**).

In case of conflict between the P&IDs and the scope table, the P&IDs take precedence for SUEZ-supplied equipment and devices.

Other items included in SUEZ's scope of supply but not shown on the P&IDs include:

- 304 SS equipment tags for all valves and instruments in SUEZ's scope of supply
- Electrical and control equipment – see description below
- Two (2) year equipment warranty – **see Section 4 - Warranty**
- Ten (10) year membrane warranty – **see Section 4 - Warranty**
- Engineering design services – **see Section 5.1 – Engineering Design Services**
- Commissioning services – **see Section 5.2 – Commissioning Services**
- After-market services – **see Section 5.3 – After-Market Services**
- Operation & Maintenance Manuals

Electrical and Control Equipment

The electrical and control equipment included in the Proposal Price is described below:

- One remote I/O panel for trains 9 to 11

SUEZ has proposed to supply one (1) NEMA 12, painted carbon steel panel housing the I/O required for expansion trains 9 to 11. It has been proposed that one (1) triple door

panel that would look the same as the panel previously supplied for trains 1-3 and 4-6 would be supplied. Alternatively, this panel could be split up into multiple smaller panels.

- Existing panel upgrades from ControlNet to Ethernet

SUEZ to supply and replace ControlNet communication interface modules with the equivalent Ethernet communication module (1756-EN2TR module). Note this includes (4) modules in CP-01 and one (1) module in each existing remote I/O panel. SUEZ will supply the parts, but site work to install the parts in the existing control panel falls in the scope of supply by others (including the supply of any labels and internal wiring as required). Please note that it may require a short shutdown to make the swap. SUEZ Field Service Representative should be present onsite during this change.

- License Renewal on HMI

SUEZ will require this during start up and commissioning, so has included a basic IGS update/renewal as part of this proposal.

Tag #	Quantity	Description
Positive Displacement Blowers & Associated Equipment		
B-8500C PSV-8582C PI-8500C HV-8540C CV-8585C	1	membrane air scour blower (VFD required – scope of VFD is by others), supplied loose, complete with required motor and appurtenances, to match existing blowers
FSL-8500C	1	membrane air scour blower flow switch
HV-8580C	1	membrane air scour blower isolation valve
FV-8580C	1	actuator for existing HV-8580C
ZeeWeed Membranes & Associated Equipment		
no tag	6	sets of membrane cassette support brackets
no tag	360	ZeeWeed 1000 modules
no tag	6	ZeeWeed 1000 membrane cassettes with Straub couplings for air and permeate connections
HV-3482A-9/10/11 HV-3482B-9/10/11	6	ZeeWeed 1000 membrane cassette permeate isolation valves
HV-3484A-9/10/11 HV-3484B-9/10/11	6	ZeeWeed 1000 membrane cassette air isolation valves
FV-3473A-9/10/11 FV-3473B-9/10/11	6	air header isolation valves
FV-3473B-1/2/3/4/5/6/7/8	8	actuators for existing valves HV-3473B
LE/LIT-3426-9/10/11	3	membrane tank level transmitters
HV-3426-9/10/11	3	membrane tank level transmitter isolation valves
HV-3463-9/10/11	3	membrane tank inlet isolation valves
FCV-3463-9/10/11	3	membrane tank inlet flow control valves
FCV-3863-9/10/11	3	membrane tank drain flow control valves

FV-9761A-9/10/11 FV-9761B-9/10/11 FV-9761C-9/10/11	3	sets of block and bleed valves (three (3) valves per set) on cleaning solution line to/from CIP pump
HV-3466-9/10/11 FV-3467-9/10/11	3	sets of MIT valves (two (2) valves per set) on MIT line
P-9200-9/10/11 FV-9267-9/10/11 HV-9291-9/10/11 HV-9292-9/10/11	3	ejector assemblies, complete with required isolation valves
FV-9267-9/10/11 F-9200-9/10/11 HV-9290-9/10/11	3	ejector air supply assemblies, complete with required isolation valves
Process Pump & Associated Equipment		
PSH-8807-9/10/11	3	high pressure switches
PE/PIT-3523-9/10/11	3	transmembrane pressure transmitters
P-3500-9/10/11	3	process pumps (VFDs required – scope of VFD is by others), supplied loose, complete with required motor, to match existing pumps
FV-3561-9/10/11	3	permeate suction valves
FV-3560-9/10/11	3	permeate discharge valves
FV-8861-9/10/11	3	backpulse suction valves
FV-8860-9/10/11	3	backpulse discharge valves

HV-3586-9/10/11 HV-3587-9/10/11	3	sets of sample/drain valves surrounding process pump (two (2) valves per set)
PI-3541-9/10/11	3	suction pressure gauges
HV-3541-9/10/11	3	suction pressure gauge isolation valves
PI-3540-9/10/11	3	discharge pressure gauges
HV-3540-9/10/11	3	discharge pressure gauge isolation valves
CV-3585-9/10/11	3	permeate pump discharge check valves
FE/FIT-3520-9/10/11	3	permeate flowmeters
HV-3588-9/10/11	3	permeate turbidimeter isolation valve
Turbidimeter		
AE/AIT-3537-9/10/11 UK-3537-9/10/11 FE-3537-9/10/11 HCV-3537A-9/10/11 HCV-3537B-9/10/11 FV-3537A-9/10/11 FV-3537B-9/10/11	3	permeate turbidimeter panels panel is supplied loose with instrument, auto cleaner, flow element, isolation valves, and needle valves installed on the panel
TK-3537-9/10/11 HV-3537-9/10/11	3	permeate turbidimeter degassing column degassing column and degassing column drain valve supplied loose

Note 1: Pre-screens are by others.

Note 2: MCC, VFDs and SCADA by others.

Note 3: Upon review, there is enough I/O in the Master Control Panel (CP-01) to add the third blower and three (3) new process pumps. Some relays are required and are included. Site work by others will be required to modify the existing Master Control Panel for the additional train and blower equipment.

3.2 Scope of Supply by Others

All delivery or services not specified in the SUEZ's scope of supply are included in the Buyer's scope of supply. For example, for this project the following items are the responsibility of Buyer:

3.2.1 Safety and Environmental

- First aid, emergency medical response, eyewash and safety showers in the water treatment area. Chemical spill response, security and fire protection systems per local codes.
- Environmental use and discharge permits for all chemicals at the Buyer's facility either listed in this document or proposed for use at a later date
- Any special permits required for Seller's or Buyer's employees to perform work related to the water treatment system at the facility. All site testing, including soil, ground and surface water, and air emissions, etc.
- Disposal of all solid and liquid waste from Seller's system including waste materials generated during construction, startup and operation
- Provide appropriate protection of the environment and local community, the health and safety of all workers and visitors at the site and the security of the facility. Provide safety related equipment and services such as site security, fire systems, lifting equipment and its operation, fall protection, adequate floor grating, ventilation, and safe access to equipment and electrical systems areas.
- Equipment and trained support personnel for any confined space entry required during equipment installation/startup/commissioning/servicing. For permit-required confined space entry, a qualified rescue team on stand-by and available to respond within 4 minutes of an emergency.
- The Buyer will identify and inform Seller's personnel of any hazards present in the work place that could impact the delivery of Seller's scope of supply and agrees to work with Seller to remove, monitor, and control the hazards to a practical level
- The Buyer will provide training to Seller's personnel on all relevant and standard company operating procedures and practices for performing work on site. Such training programs may include, but are not limited to, general environmental health & safety (EHS), HAZOP, fire protection, drug testing, incident notice, site conduct, standard first aid, chemical receiving, electrical safety, etc. Buyer will provide a certificate of training for Seller's personnel. This program will be fully documented, training materials will be provided, and attendance list will be kept.

3.2.2 Jobsite and Installation Review

- Review of Seller's supplied equipment drawings and specifications
- All easements, licenses and permits required by governmental or regulatory authorities in connection with the supply, erection and operation of the system

- Overall plant design, detail drawings of all termination points where Seller's equipment or materials tie into equipment or materials supplied by others
- Stamping, signing or sealing of general drawings as per State or local regulations or codes except for membrane cassette and process pump
- All applicable civil design and works, including any building, site preparation, grading, excavations, piping supports, structural steel, foundations and trenches and accessories. For ergonomic design, Seller assumes that the bottom of free-standing equipment will not be elevated (by any combination of leveling devices and housekeeping pads) to more than 6 inches above the floor adjacent to the equipment.
- Installation of all Seller-supplied equipment
- All electrical labor and supplies leading up to the jobsite and interconnecting between all supplied-loose components including fittings, conduit, supports, cable trays, wire and hardware, and air-conditioning of panels as required for installation and ongoing operations
- All labor and supplies leading up to the jobsite and interconnecting between all supplied loose components including fittings, conduit, supports, cable trays, wire and hardware, required to appropriately ground / earth the equipment as required for installation and ongoing operations
- All mechanical labor and supplies leading up to the jobsite and interconnecting between all supplied loose components including interconnecting piping, heat tracing (if required), fittings, conduit, pipe supports, structural steel, and hardware as required for installation and ongoing operations
- All instrumentation and automatic pneumatic valves including but not limited to; air/sample line tubing, fittings, conduit, supports, isolating valves as required for installation and ongoing operations
- Loading, unloading and transportation of the equipment and materials required for Seller to perform the duties outlined in the Seller's scope of supply to the jobsite and/or warehouse
- The Buyer will provide all access structures (scaffolding) and mechanical lifting equipment (cranes, forklifts and scissor lifts)
- Providing a suitable site/shelter for the placement of the proposed equipment, either inside appropriate housing, or outdoors. Note: electrical equipment may require air-conditioned rooms to prevent overheating of sensitive electronic equipment depending on climatic conditions.
- Storage of cassettes with UF membranes on site must meet Seller's requirements. These must be stored in a sheltered area, protected from freezing, direct sunlight or extreme heat, and sealed as shipped until ready for use. Storage should be in a dark, dry, level area, out of direct sunlight and at a temperature of 5-30°C (39-86°F). It is recommended that the membranes not be stored longer than necessary prior to installation.

- The Buyer will receive, off-load, log, and store all chemical and materials in accordance with Manufacturer's recommendation that are shipped to the site
- Compressed instrument air for pneumatic valves and instruments (from existing air compressor)
- Design, supply and installation of all equipment anchor bolts
- Any on-site painting or touch-up painting of equipment supplied
- Disposal of membrane preservative
- Variable Frequency Drives (VFD), starters, and Motor Control Centre (MCC) for Seller supplied equipment
- SCADA/DCS to control Seller's supplied equipment. Seller shall supply a functional logic description (control narrative).
- Configuration of instrument and PLC signals from the water treatment system to the plant PLC or DCS

3.2.3 Start-Up and Commissioning

- Installation and removal of temporary screens (0.5 mm mesh or punch hole) on all process lines feeding the new membrane trains 9,10, and 11 to prevent membrane damage if the existing screens are by-passed.
- Flushing and disinfection of all piping and tanks (including process equipment tanks) and verification of removal of all residual debris from construction
- Any temporary piping or connections if needed for glycerin flushing
- Removal and installation of cassettes in existing tanks as needed for the glycerin flushing procedure since one of the current trains may be used for ease of flushing
- Leveling of cassettes
- Alignments and required materials for rotating equipment
- MEG testing of all field motor power wiring (as required)
- Continuity checks for all electrical field wiring per installation checklist
- Hydro-testing of all field installed piping
- Supply raw materials, oils/lubricants chemicals and utilities during start-up and operation
- Supply of telephone/fax/modem access while Seller's staff members are on-site
- Laboratory services, operating and maintenance personnel during equipment checkout, start-up and operation
- Electrical and mechanical support labor for commissioning activities
- Loading of cassettes into membrane tanks.

3.2.4 Facility Management

- The Buyer will provide such warehouse storage space and facilities, as are available at the site, and are reasonably appropriate to store parts, consumables, tools, etc. in accordance with manufacturers' recommendations. Such warehouse storage space will be a segregated area, secured and protected from adverse climate as may reasonably be required. Buyer will be responsible for risk of loss of Seller's parts while in storage at the site. Buyer will maintain Seller's parts stored at the site free and clear of any and all liens of Buyer and Buyer's lenders, bondholders, contractors, and other creditors of any nature.
- The Buyer will afford Seller's personnel free access and egress of the facility for all authorized work
- The Buyer will provide workshop facilities with standard workshop tools and equipment, as is reasonably appropriate, that are necessary to meet the repair and maintenance requirements of the system. Such equipment includes, but is not limited to, benches, vices, drill press, electric saws, hand tools, power tools, pneumatic tools, etc.
- The Buyer will provide adequate illumination and emergency lighting for all areas in which the Seller will be executing the scope of supply
- The Buyer will identify a Buyer project contact person to be available to Seller's personnel to address any issues related to Seller's execution of Seller's scope of work
- The Buyer will provide all site utilities such as pre-treated feed water, instrument quality air, potable water and power required for operation of the proposed equipment included in this scope of supply

4 Warranty

The Seller offers a comprehensive two-part warranty for the Forsyth County Water Treatment Plant Phase 3 expansion project as follows:

- **Mechanical Warranty:** The Seller will repair or replace any device or part thereof that was supplied by the Seller that proves to be defective. This warranty excludes the membrane modules.
- **Membrane Warranty:** This warranty provides protection and assurances to the Buyer/Owner with respect to the membrane modules.

4.1 Warranty Provisions

In addition to the membrane warranty limitations as defined in the **Membrane Module Warranty** document (attached to the end of this section), all of the warranties are subject to the following provisions:

General

- The equipment is operated and maintained at all times in accordance with the Seller's Operations & Maintenance manual;
- The Seller has, until performance of its obligation herein is met, reasonable access to the equipment and the operational data relating thereto;
- The Buyer/Owner furnishes adequate and competent operating, supervisory and maintenance staff, and necessary laboratory facilities with test equipment and personnel;
- The Buyer/Owner utilizes the services of the Seller until its performance obligations are met;
- The Buyer/Owner supplies all necessary raw materials and services of a quantity and of a quality specified by the Seller; and
- An adequate and continuous power supply is available that will enable operation of all required equipment.

Screening

- Screening is required upstream of the membrane system. The opening size for the screens in any dimension must be 500 microns or less.
- Pre-screening must use mesh, punched hole or disc filter type screens. Wedge wire screens are not acceptable, nor is any unscreened bypass (even temporary).
- All tanks, clarifiers, settlers, channels, etc. following the screens are to be covered and protected from the outside elements such that no leaves, twigs or any foreign materials can enter the membrane train.

Process Parameters and Water Quality

- The use of any chemicals added to the treatment process (e.g. polymers, flocculants, coagulants, coagulant aids, oxidants, acids, bases...) that may come in contact with the ZeeWeed membranes must be approved by the Seller prior to use. This includes, but is not limited to, chemicals used in the feed water to the membranes, and chemicals used in processes outside of the Seller's system, streams which may be recycled or transferred directly or indirectly to the Seller's system (e.g. treated backwash waste water recycle). Pretreatment chemical dosages must be properly optimized by the Buyer/Owner based on feed water quality and membrane requirements.
- The membrane system is guaranteed to perform its contractual obligations under the water quality parameters outlined in **Table 1**. Any value above or below the ranges stated may impact the system performance.
- Any compound not listed in **Table 1** and for which analytical data has not been supplied by the Buyer is assumed to be in such a concentration that it does not require removal by the treatment process, does not affect membrane performance, and will not need to be targeted by chemical cleanings to restore performance (e.g. algae, oil & grease).
- The system's operation is warranted under the original membrane system design, and pre and post treatment designs as described in this proposal. Any changes such as, but not limited to, the design or operation of the membrane system, the configuration of the upstream or downstream unit operations, equipment sizing, chemical types and dosing rates must be reviewed and assessed by the Seller to determine their feasibility and potential impact on the system performance and warranty.

Process Waste Water Recycle

- The plant is designed assuming that no streams such as backwash or chemical wastes from the membrane system or any other unit operations in other parts of the plant are recycled directly ahead of the membrane system. All chemical wastes from the membrane system flow to the Backwash Recovery Basins or to the Gravity Thickener. Pre-screen and backwash waste from the membrane system flows to Backwash Recovery Basins. Decant recycle pumps transfer decant from the Backwash Recovery Basins to the 20 million gallon raw water storage tank upstream of the plant. Flow from the bottom of the Backwash Recovery Basins is pumped to the Gravity Thickener where it is combined with waste from the upstream flocculation/sedimentation basins, conventional system Super Pulsators, and conventional system media filter backwash waste. Decant recycle pumps pump the gravity thickener effluent (overflow) to the 20 million gallon raw water storage tank upstream of the plant. The recycle stream is monitored such that if water quality parameters of the recycle stream degrade the contents of the gravity thickener may be completely emptied and pumped to the residual lagoon.

Table 1 presents the water quality on which the design of the membrane system is based.

The proposed water treatment system will treat raw water from Lake Lanier, which has been treated through a pre-treatment system consisting of clarification and settling. This process includes dosing of the pre-treatment chemicals alum (6 – 12 mg/L as alum), sodium hydroxide, sodium hypochlorite (seasonal), and chlorine dioxide (up to 1.25 mg/L), and results in settled water which feeds the membrane system. In addition to the water quality described in **Table 1**, the pre-treatment system must be designed and optimized in such a way as to minimize floc/coagulant carry-over to the membrane system.

Table 1: Membrane System Feed (Settled) Water Quality

Parameter	Specified or Assumed Note 1	Units	Average	Minimum	Maximum
Alkalinity	Specified	mg/L as CaCO ₃	10	5	50
Total Hardness	Specified	mg/L as CaCO ₃	10	5	50
pH ^{Note 2}	Assumed	-	7	6	8
Temperature	Specified	°C	19	2	30
Total Organic Carbon (TOC)	Specified	mg/L	-	-	3
Dissolved Organic Carbon (DOC)	Specified	mg/L	-	-	2
Turbidity ^{Note 3}	Specified	NTU	< 2.0 95% of the time	-	5
Suspended Solids ^{Note 4}	Assumed	mg/L	2	-	5
Total Dissolved Solids	Assumed	mg/L	150	-	180
Calcium	Assumed	mg/L	20	-	25
Magnesium	Assumed	mg/L	7	-	8
Barium	Assumed	mg/L	0.01	BDL	0.02
Strontium	Assumed	mg/L	0.01	BDL	0.02
Dissolved Iron ^{Note 5}	Specified	mg/L	-	-	0.3
Sulfate	Assumed	mg/L	20	-	25
Dissolved Aluminum	Specified	mg/L	-	-	0.1
Dissolved Manganese ^{Note 5}	Specified	mg/L	-	-	0.05
Total Silica (SiO ₂)	Assumed	mg/L	0.5	BDL	2
Langelier Saturation Index (LSI)	Assumed	-	Negative	Negative	Negative

Note 1: This column identifies whether the parameters listed in each row are assumed values because they were not supplied to the Seller, or if the values listed specify information provided to the Seller by the Buyer.

Note 2: The pH must be controlled through the pre-treatment process to minimize solubility of the metal-based coagulant, specified as alum for this site.

Note 3: If the feed (settled) water exceeds a maximum turbidity of 6.0 NTU, or maximum TOC of 3.0 mg/L, guaranteed performance criteria in the membrane warranty below (**Section 4.3**), with the exception the Water Quality Guarantee (**Section 4.3.2**), may be adjusted as appropriate around the time of the excursion.

Note 4: The pre-treatment process contributes to the total suspended solids in the feed to the membrane system. The expected alum dose is 6-12 mg/L as alum, as stated above.

Note 5: Oxidant dosing in the pre-treatment process must be optimized to ensure the dissolved iron and manganese are oxidized without overdosing of oxidant, and that the reaction is completed upstream of the membranes. Additional care and monitoring of iron and manganese levels should be performed during the summer months, when high levels are typical.

4.2 Mechanical Warranty

The mechanical warranty is only applicable to equipment supplied by the Seller. The Seller's obligation under this warranty is to repair or replace, at its factory, any device or part thereof, which shall prove to have been thus defective. The mechanical warranty period on all equipment supplied, unless otherwise noted, is twenty-four (24) months from the date of substantial completion (successful completion of the performance test) or thirty (30) months from equipment delivery, whichever occurs first. Warranty repair, replacement or re-performance by Seller shall not extend or renew the applicable warranty period.

The Seller assumes no liability for any damage to the equipment caused by inadequate storage or handling per manufacturer's recommendations in supplied technical literature, or by defective or sub-standard workmanship of materials provided by the Buyer/Owner or any other third party responsible for handling, storing or installing the equipment.

The Buyer/Owner undertakes to give immediate notice to the Seller if goods or performance appear defective and to provide the Seller with reasonable opportunity to make inspections and tests. If the Seller is not at fault, the Buyer/Owner shall pay the Seller the costs and expenses associated with the inspections and tests.

Goods shall not be returned to the Seller without the Seller's permission. The Seller will provide the Buyer/Owner with a "Return Goods Authorization" (RGA) number to use for returned goods. All returns are F.C.A. – Oakville, Ontario, Canada. All costs associated with the removal and shipment of the defective part from the Buyer/Owner's facility to the Seller's factory and all costs related to return shipment to the Buyer/Owner's facility and installation of a repaired or replacement part shall be the Buyer/Owner's responsibility.

Implied warranties, including but not limited to warranties of fitness for particular purpose, use or application, and all other obligations or liabilities on the part of the Seller, unless such warranties, obligations or liabilities are expressly agreed to in writing by the Seller, are null and void.

4.3 Membrane Warranty

A warranty is offered on the membrane modules with the first twenty-four (24) months offered as a full replacement warranty and the remaining ninety-six (96) months as a prorated warranty. The membrane warranty shall begin at the date of substantial completion (successful completion of the performance test) or three (3) months from the date the membranes are delivered to site, whichever occurs earliest. Refer to the **Membrane Module Warranty** document (attached to the end of this section) for a detailed description of the membrane warranty offered.

The parameters outlined in the subsections below are covered by the membrane warranty.

4.3.1 Capacity Guarantee

The Seller warrants, subject to the provisions set forth herein, that after stable operation of the system has been attained and operators have acquired reasonable skills, the membrane modules supplied for this project will be capable of producing the results set forth in **Table 2**.

Table 2: Guaranteed Membrane Filtration System Performance - Capacity

Parameter	Guaranteed Values
Design Daily Net Capacity Per Train at a Temperature $\geq 15^{\circ}\text{C}$	2.4 MGD

Note 1: The membrane filtration trains proposed as part of this offer are designed to provide their rated capacity on a net daily basis. Instantaneous permeate flows will vary as trains cycle through required automatically triggered sequences, such as backwashes, maintenance cleans and integrity tests. The feed flow rate to the membrane trains will be varied as trains cycle through backwashes, maintenance cleans, and integrity tests.

Note 2: Each membrane filtration train is intended to provide 2.4 MGD additional net capacity for the existing 8-train membrane system. The three membrane trains are not designed for additional redundancy, but on a plant level, the firm capacity of the plant has been hydraulically designed for 24 MGD (= 10 trains x 2.4 MGD).

Note 3: The membrane filtration train capacity above is dependent on regular maintenance and recovery cleaning operations as outlined in **Section 4.3.6** below. Deviation from this cleaning protocol may impact the trains' ability to meet guaranteed capacity.

4.3.2 Water Quality Guarantee

The Seller warrants, subject to the provisions set forth above, that after stable operation of the trains have been attained and operators have acquired reasonable skills, the membrane modules supplied for this project will be capable of producing the results set forth in **Table 3**.

Table 3: Guaranteed Membrane Filtration System Performance – Water Quality

Parameter	Guaranteed Values
Turbidity (NTU) ^{Note 2}	≤ 0.1 NTU 99.5% of the time

Log Removal Value (LRV) for <i>Giardia</i> and <i>Crypto</i> ^{Notes 3 and 4}	<p>≥ 4.0 log, during the first two years of the membrane warranty</p> <p>≥ 3.5 log, during years three to ten of the membrane warranty</p>
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Note 1: All guarantees are contingent upon proper maintenance, calibration and service of instruments and other related equipment as per Seller's and original equipment manufacturers instruction.

Note 2: Guaranteed values are as measured by online instrumentation on the permeate for each train.

Note 3: The Membrane Integrity Test (MIT) and LRV calculation will be performed in accordance with the latest versions of the USEPA's Long Term 2 Enhanced Surface Water Treatment Rule and the Membrane Filtration Guidance Manual, as outlined in SUEZ's LRV FAQ document.

Note 4: The LRV guarantee stated in the table is relevant to the membrane system only and does not account for the concentration effects of any recycle flows outside of the membrane system.

4.3.3 Membrane TMP Warranty

Table 4 defines the maximum trans-membrane pressure (TMP) above which the membrane module warranty will be triggered.

Table 4: Guaranteed Membrane Filtration System Performance – Membrane Trans-Membrane Pressure

Parameter	Guaranteed
Maximum Trans-Membrane Pressure	13 psi

Note 1: TMP measurement is to take place during the production cycle, when the membrane filtration train is actively permeating water in the forward direction.

Note 2: The maximum TMP stated above is the design terminal TMP, and is determined based on the standard product properties and limits.

4.3.4 Membrane Permeability Warranty

Table 5 defines the minimum permeability below which the membrane module warranty will be triggered.

Table 5: Guaranteed Membrane Filtration System Performance – Membrane Permeability

Parameter	Guaranteed Values
Minimum Membrane Permeability at 15°C	3.5 gfd/psi

Note 1: The membrane permeability is to be measured following an effective heated recovery clean using both cleaning chemicals, and one complete production cycle including a backwash.

Note 2: The membrane permeability must be shown to be below the guaranteed value following three (3) effective recovery cleans, and the Seller shall have the opportunity to assist with optimizing the cleaning strategies for possible improvements before the modules can be replaced under the membrane warranty.

Note 3: The membrane permeability above is the minimum required for producing the permeate capacity defined in **Section 4.3.1**. Operation at lower permeabilities may be permissible when the plant demand is lower, however this minimum permeability must be demonstrated in order to meet full guaranteed capacity.

4.3.5 Guaranteed Recovery

The Seller warrants, subject to the provisions set forth above, that after stable operation of the system has been attained and operators have acquired reasonable skills, the membrane system supplied for this project will be capable of producing the results set forth in **Table 6**.

Table 6: Guaranteed Membrane Filtration System Performance - Recovery

Parameter	Guaranteed Values
Design Daily Plant Recovery	≥ 95%

Note 1: The recovery objective of the system can be achieved during steady state operation over the course of a 24-hour period and may be affected by repeated standby events. The recovery objective is to be met at the design capacity 2.4 MGD per train. Operation under low flow scenarios increases the proportion of chemical waste over backwash waste, which under certain conditions may impact the ability of the system to meet its recovery objective.

4.3.6 Cleaning Interval Guarantee

The Seller warrants, subject to the provisions set forth above, that after stable operation of the trains have been attained and operators have acquired reasonable skills, the membrane trains supplied for this project will be capable of producing the results set forth in **Table 7**.

Table 7: Guaranteed Membrane Filtration System Performance – Cleaning Frequency

Parameter	Guaranteed Values
Maintenance Clean Frequency	≤ one (1) per day
Recovery Clean Frequency	≤ one (1) per 11 days of operation

Note 1: Cleaning shall be performed in accordance with the Operations & Maintenance Manual. A Maintenance Clean is defined as a clean with one type of chemical. A Recovery Clean is defined as cleans with both cleaning chemicals, in series.

Note 2: The recovery cleaning interval must be shown to be below the guaranteed value following three (3) effective cleans, and the Seller shall have the opportunity to assist with optimizing the cleaning strategies for possible improvements before a warranty claim can be made.

Note 3: The recovery cleaning frequency stated above incorporates historical demonstrated performance of the existing membrane trains with the current pretreatment operation. The true cleaning frequency that is required for the new trains may be found to be less, for example, at lower capacities, higher temperatures or improved pretreatment, however those cannot be guaranteed.

4.4 Performance Test

A 30-day performance test will be completed to demonstrate the ability of the Seller system to meet the required performance. Within thirty (30) days of completion of the functional test, the Buyer/Owner shall start-up the equipment based on a performance test plan previously submitted by the Seller and agreed upon by both parties.

Thereafter, the Buyer/Owner shall use its reasonable best efforts to maintain continuous and stable operation of the system until the Seller's obligation under this performance guarantee has been discharged. The Buyer/Owner shall notify the Seller that the system is ready for the performance test or advise why the system is not ready, and the party responsible for the lack of readiness shall promptly take the appropriate remedial action.

The performance test will only apply to the three (3) newly installed and commissioned trains, trains 9 to 11.

The Buyer/Owner shall afford the Seller full access to the system and to all operating data pertaining to system performance until discharge of the latter's obligations hereunder. The performance test shall be conducted by the Buyer/Owner in accordance with mutually agreeable applicable standard techniques and operating procedures specified by the Seller in the Operating & Maintenance Manual. Pre-treatment must be performing based on feed water quality and chemical doses within the design range (if applicable).

On-line instrumentation provided and grab sample testing performed is included as indications of the performance of the plant and to assist in the proper operation and control of the system. These results may include values beyond the stated warranty values (during process upsets or if instrument poorly/not calibrated, etc.) and additional composite testing as above must be performed to establish that the plant is not meeting performance requirements. All analytical work shall be carried out by the Buyer/Owner.

During the performance test, the system operation should be according to the Seller Operations & Maintenance Manual and the operating parameters specified.

During the performance test the system will demonstrate the following guaranteed performance criteria. The proposed guaranteed performance criteria shall be met on a daily basis calculated as an arithmetic mean of values over a 24-hour period (midnight to midnight):

- Permeate production capacity as per **Table 2** above;
- Permeate water quality and LRV as per **Table 3** above;
- Membrane TMP as per **Table 4** above;
- Membrane permeability as per **Table 5** above;
- Membrane system recovery as per **Table 6** above;
- Cleaning interval as per **Table 7** above;

In the event of an interruption during the performance test due to any of the following events beyond the control of the Seller, the test shall be extended by the period of the

interruption plus the time required to re-attain operating conditions in effect at the time of the interruption and data recorded during that period shall not be included:

- 1) Power interruption in excess of sixty (60) minutes per day.
- 2) Mechanical or electrical failure outside of the Seller's system for more than twelve (12) hours.
- 3) Any influent or operating parameter outside the accepted operating ranges defined in this section.

Upon successful completion of the performance test, the Seller shall give written notice to the Buyer/Owner to that effect. Within two (2) weeks immediately following receipt of such notice, the Buyer/Owner shall notify the Seller in writing that it accepts the system, or that it does not accept the system, in which latter case the Buyer/Owner shall state the specific reason for non-acceptance. In the absence of such reply from the Buyer/Owner within the two (2) week period, the system shall be deemed to have been accepted and the Seller's obligation under this performance warranty shall be discharged.

If, based on the results obtained at the completion of the performance test, it becomes apparent that the system performance does not meet the guaranteed performance, then additional performance tests of the system shall be conducted by the Buyer/Owner at a time mutually agreed between the Seller and the Buyer/Owner. In such event, the Seller shall be responsible to undertake all necessary reasonable corrective measures in an effort, consistent with commercial and technical reasonableness, to bring the system up to the guaranteed performance levels.

If for any reason outside the Seller's control, the performance test cannot be performed within ninety (90) days following completion of the functional test, then Seller's obligation with regard to performance testing will be deemed fulfilled.

Once a satisfactory performance test has been completed or fulfilled, substantial completion is triggered, and the mechanical and membrane warranties begin.

4.5 Membrane Module Replacement Price

The price of replacement ZeeWeed 1000 membrane modules for this project is **\$1,240.00 USD** per module. Seller will guarantee this price for ten (10) years from contract execution, subject to adjustment for inflation according to the US Production Price Index (PPI) or a maximum equivalent price per gallon of treatment capacity in the event that the module area/permeability etc. changes such that the same amount of feed water can be treated with fewer modules of the next generation design.

With respect to membrane modules replaced by Seller, the membrane replacement price quoted refers to replacement of installed membranes under the following two scenarios;

- Replacement of membrane modules under warranty,
- Replacement of membrane modules no longer under warranty per the original terms and conditions of sale.

Under the first scenario, membrane modules replaced under warranty shall assume the remainder of the warranty for the membrane modules being replaced, with such warranty to be not less than a two (2) year full replacement warranty from the date of replacement with a new membrane module.

Under the second scenario, unless specified otherwise, membrane modules purchased to replace a membrane module whose warranty has expired shall be provided with a standard two (2) year full replacement warranty.

The membrane module replacement price is not applicable for membrane modules purchased for any non-warranty purposes, such as for flux reduction or hydraulic capacity increase. Modules purchased under these scenarios will be purchased at the list price at the time of order.

Membrane module replacement price does not include bagging, boxing, crating, and will be shipped on the basis of INCOTERMS 2020 FCA SUEZ Manufacturing Facility. Membrane module replacement price is quoted without taxes.

Membrane Module Warranty

No other warranties, expressed or implied are made in connection with the sale of these products, including, without limitation, warranties as to fitness for any purpose or use or merchantability of these products. The warranty provided herein will be the exclusive and sole remedy of Buyer. This warranty is not transferable.

1 Definitions

The follow terms shall have the meaning set forth below when used in the warranty document:

- a. “Buyer” means **Forsyth County**
- b. “Seller” means a business component of, or legal entity within the SUEZ Water Technologies & Solutions business which is selling the ZeeWeed membranes.
- c. “Full replacement” means that in the case of a valid warranty claim for a membrane module failure, Buyer receives a replacement membrane module and does not pay for the value of use of the membrane module prior to failure.
- d. “Prorated replacement” means Buyer pays for actual use of a membrane module from which Buyer has derived value over time. Prorated replacement allows the Seller to pay reasonable compensation under warranty for any product use not enjoyed by Buyer due to premature failure.

2 Warranty Product

This warranty applies to only the membrane modules supplied under the contract of sale. Membrane module means the hollow fiber ultrafiltration membranes and the potted plastic headers. This warranty does not cover air piping to the membrane module, permeate piping from the membrane module, piping connection fittings, connecting hardware and cassette frames with their associated components including but not limited to spacers, aerator tubes, aerator assemblies, screen, module dummies or module blanks.

3 Scope of Warranty

The Seller warrants that its membrane module(s) will be free of defects due to faulty materials or errors in manufacturing workmanship.

Regular membrane module inspection and normal fiber repair shall be the responsibility of Buyer.

All replacement membrane modules will be shipped on the basis of INCOTERMS 2020 FCA SUEZ manufacturing facility.

All ancillary costs including but not limited to bagging, boxing, crating, freight, freight insurance, applicable taxes, import duties, certifications, brokerage, receiving, forklift services, storage at site, reattachment hardware, hose/clamp/camlock replacement, crane services, installation, fiber repair materials, glycerin flushing, commissioning and waste disposal are the responsibility of Buyer.

4 Warranty Start Date

Membrane warranty will start on the earlier of:

- a. The date that installation of the original membrane module(s) has been substantially completed (successful completion of the performance test), or
- b. Three (3) months from the date of delivery of the original membrane module(s) to Buyer.

5 Warranty Duration

Total Warranty Duration: a total of **120** months composed of a full replacement period and an extended prorated replacement period.

Full Replacement Warranty Duration: **24** months of full replacement warranty coverage.

Extended Prorated Replacement Warranty Duration: 96 months following the full replacement warranty period.

Membrane modules replaced under warranty shall assume the remainder of the warranty for the original membrane modules being replaced, with such warranty to be not less than a **24** month full replacement warranty from the date of replacement with a new membrane module.

Replacement membrane modules are covered by warranty only to the extent of the warranty of the original membrane module which has been replaced. At all events, this warranty shall expire and be of no force or effect **24** months following the warranty start date.

6 Membrane Module Replacement Price – Prorated Replacement

The base Membrane Module Replacement Price (MMRP) used to calculate the prorated amount to be paid by the Buyer to replace defective membrane modules under warranty shall be **\$1,240 USD + adjustment for inflation**. The inflation adjustment will be calculated according to changes in the US Production Price Index (PPI) for the period from date Seller receives Notice to Proceed With Manufacturing/Procurement (NTP) through to the latest available PPI index report.

For membrane modules supplied under valid warranty claims, the prorated share that the Buyer will pay is calculated as follows:

$$\text{Prorated Share of Price} = \frac{\text{Number of Whole Months Elapsed Between the Membrane Modules Claim Date and the Warranty Start Date}}{\text{Total Warranty Duration in Months}} \times \text{MMRP} \times \frac{\text{Changes in PPI index}}{\text{index}}$$

Note that this Membrane Module Replacement Price (MMRP) is not applicable for membrane modules requested for purchase by Buyer for any non-warranty or other purposes, including but not limited to flux reduction, or plant hydraulic capacity increases. Modules purchased under these or other scenario’s will be sold to Buyer by Seller at the list price in effect at the time of order.

7 Notification of Claim

All claims filed under this warranty shall be made in writing by Buyer within 30 days of identifying a defect. Buyer shall provide the following information:

- a. A description of the defect giving rise to the claim;
- b. Photographs showing the manufacturing defect;
- c. The serial number(s) of the membrane module(s) which is (are) the subject of the warranty claim; and
- d. Operating data and repair history for the life of membrane modules which are the subject of a warranty claim.

8 Verification of Claim

After receipt of written notification of a defect, the Seller will promptly undertake such investigations as, in the Seller's opinion, are necessary to verify whether a defect exists. The Seller reserves the right to require additional data as necessary to validate claims. Buyer may, in the course of these investigations, be requested to return membrane module(s) to the Seller for examination (see section 12). The Seller may also conduct reasonable tests and inspections at Buyer’s plant or premises. If the results of the investigation do not validate the defect claimed, Buyer will reimburse the Seller for all reasonable expenses associated with said investigation, including expenses for all tests, inspections, and associated travel.

9 Satisfaction of Claims

The Seller will have the right to satisfy claims under this warranty in a flexible manner. Such flexibility may include the repair of existing membrane modules or changes in operating protocols or membrane module replacement or by upgrading failed membrane modules with newer membrane module(s) that may embody design and efficiency improvements. Buyer consents to the supply of replacement membrane modules which may be of a different design than original membrane modules.

10 Operating Information

To maintain the membrane module warranty, membrane system operation records from initial start-up date until claim must be maintained by Buyer and made available to the Seller upon request. Records must be provided in sufficient detail as applicable to verify the subject of a warranty claim and can include but is not limited to, operation data including information on feed water quality, temperatures, flows, trans-membrane pressures, aeration rates, permeate quality, cleaning intervals, cleaning chemical concentrations, elapsed time since start-up, relevant analytical data and reporting of any screen bypass events.

Buyer shall maintain and share access to a single reference copy in electronic form of a membrane module map containing the history of activity by membrane module and the serial number for each module. Buyer shall log its procedures performed related to a membrane module including relocation of membrane modules, repairs, replacements and any other noteworthy events.

Buyer authorizes the Seller to conduct any reasonable review of operation and maintenance records or to inspect facilities where membrane modules are installed, upon reasonable notice to Buyer. Such reviews and/or inspections are intended to also assist the Seller and Buyer in detection of membrane system faults and to optimize the care and operation of the membrane modules.

11 Limitation of Warranties

Occurrence of any of the following as reasonably determined by the Seller will void this warranty:

- a. A material failure to operate the membrane system in accordance with Seller's operations and maintenance manual supplied to Buyer as part of the contract, including material failure to adhere to the Seller's specified membrane module cleaning procedures and the use of anything other than Seller-approved membrane module cleaning agents.
- b. Failure to adhere to the preventive maintenance program as presented in the Seller's operations and maintenance manual, in published product manuals and in specifications.
- c. Failure to adhere to all transportation and storage requirements. ZeeWeed membrane modules may be stored up to 12 months from date of receipt and must be transported and stored in original intact packaging out of direct sunlight in ambient temperatures between 5-35 Degrees Celsius. Storage beyond 12 months from date of receipt requires a written request to SUEZ to maintain membrane module warranties.
- d. Introduction of destructive foreign materials and chemical agents into the membrane module.
- e. Failure to maintain and provide system operating data and repair history for the life of membrane modules which are the subject of a warranty claim.
- f. Physical abuse or misuse, incorrect removal or installation of membrane modules by non-Seller personnel including fiber damage caused by operator error in handling of membrane modules or cassettes.
- g. Unauthorized alteration of any components or parts originally supplied by the Seller.
- h. Intentional damage.

12 Return Procedure

In the event that the return of a membrane module is required pursuant to this warranty, Buyer will first obtain a Return Goods Authorization (RGA) number from the Seller. Membrane module(s) shipped to the Seller for warranty examination must be shipped freight prepaid in environmentally controlled freight and storage with ambient air temperature between 5-35 Degree Celsius. If Buyer desires temporary replacement membrane module(s) to replace those alleged to be defective and returned to the Seller for warranty examination, Buyer shall be responsible for the cost associated with any such replacements until examination of the returned membrane modules pursuant to this warranty is complete. Any membrane module examined by Seller as part of a warranty claim where the membrane module is subsequently found to be performing as warranted or where a membrane module failure is not covered under the warranty will be returned to Buyer, freight collect or disposed of by Seller and the cost associated with any membrane analysis and diagnostic work will be levied against the Buyer based on SUEZ standard labor rates.

13 Disclaimer and Limitation on Liability

To the maximum extent permitted by law, in no event shall Seller be liable for any loss of profit or revenues, loss of production, loss of use of equipment or services or any associated equipment, interruption of business, cost of capital, cost of replacement water or power, downtime costs, increased operating costs, claims of Buyer's customers for such damages, or for any special, consequential, incidental, indirect, punitive or exemplary damages arising out of or relating to the performance or actual or alleged breach of the agreement, regardless of whether a claim is based in contract (including warranty or indemnity), extra-contractual liability, tort (including negligence or strict liability), statute, equity or any other legal theory.

5 Services

5.1 Engineering Design Services

SUEZ approaches the design of its facilities as a collaborative effort, and believes that partnering with the County, engineer, and construction contractor are essential to ensure that both the needs of the SUEZ process are met, but also the expectations of the County are exceeded. The engineering design services included in the Proposal Price:

- Submission of the Engineering Submittal package
- Programming modifications for the addition of three (3) new membrane trains
- Programming modifications for the additional blower
- Integration into the SUEZ-supplied HMI (located on CP-02) and the SUEZ-supplied computer workstation (located in the control room)

Additionally, the table below summarizes the allocations that have been included in the Proposal Price for an on-site design meeting/workshop, which is to occur at the County's office or at the office of the engineer during the design phase of the project. (The cost of transportation to and from site, lodging and meals is included for the meeting described below.)

Task	SUEZ Personnel	Total No. of Trips
Design Meeting/Workshop	Project Manager Project Engineer Controls Engineer	One (1) 8-Hour Day On-Site Each

5.2 Commissioning Services

With over 700 full scale membrane based wastewater and water treatment plants commissioned and in operation, the Commissioning group has developed a powerful infrastructure that provides timely support and management of all commissioning activities.

Throughout commissioning, testing and start-up, we will assign an internal Field Service Supervisor that will support the Field Service Representative (FSR) to ensure rapid response to any on-site issues that may arise.

During the commissioning phase of the project, regular updates will be provided to document site progress. Potential delay issues, site issues and planning for future activities will be highlighted within these reports.

The following is a summary of the onsite Technical Support Services provided by SUEZ for the Forsyth County Water Treatment Plant Phase 3 expansion project. Services will be provided by trained SUEZ FSRs.

Task	No. of Person Days ^{Note 1}	No. of Trips
Assistance with SUEZ equipment installation inspection	2	1
Commissioning assistance which includes: functional testing, assistance with membrane installation, and assistance with commissioning and start-up of the membrane system	90	6
Operator training	3	
Performance testing	6	1
Total	101	8

Note 1: No. of person days is based on a not-to-exceed 10-hour workday.

Note 2: The cost of transportation to and from site, lodging, and meals has been included.

5.2.1 Equipment Acceptance and Installation Visit

A SUEZ representative will meet with the Owner and Contractor to assist in the following ways:

- Identification of all SUEZ supplied equipment;
- Ensuring all SUEZ supplied equipment has been delivered in good order and that no damage has occurred during delivery;
- Identification of any discrepancies between the shipping lists and the equipment received;
- Inspection of all SUEZ supplied equipment;
- Inspection of equipment by others (providing it is necessary for the correct operation of the SUEZ system).

5.2.2 Commissioning Assistance

The Contractor will complete “Installation Checklists” provided by SUEZ to ensure that all equipment has been installed properly for commissioning of the membrane system to begin. Following the initial inspection by SUEZ, the Contractor will make any necessary field adjustments to installed equipment to ensure the system complies with the design specifications.

During the later stages of equipment installation, SUEZ will provide the services of a factory trained FSR. Upon arrival at site, the SUEZ FSR will advise the Contractor on equipment readiness, confirm that all field installed piping systems and connections to and from the membrane treatment system have been made correctly and will verify that all field installed instrumentation is wired correctly to the PLC system. The FSR will work

closely with the Project and Process Engineers to confirm that all components meet the design specifications.

Following the completion of the equipment installation, the FSR will assist with the process of starting up the SUEZ system. Commissioning and start-up assistance includes:

- Flushing glycerin solution from the membranes;
- Testing the SUEZ system operation on feed water;
- Running chemical and cleaning systems;
- Tuning SUEZ system operation;
- Function test of the entire system;

Once the plant is operating on feed water and meets the design treated water quality, the treated water is suitable for discharge. This effectively completes the installation and commissioning of the equipment.

5.2.3 Operator Training

The SUEZ FSR will provide training pertaining to the programming modifications for the additional trains, blower and screens.

5.2.4 Performance Testing

Requirements for the performance test can be found in **Section 4.4** of this proposal. Following the commissioning of the membrane filtration system, Forsyth County's operations team will conduct the performance test to ensure that treated water meets the design quantity and quality. The County's operations staff will be responsible for the full operation of the treatment system during the performance test.

During the performance test, SUEZ will monitor system performance collecting data using InSight or the County's SCADA system. 24/7 emergency telephone technical support will be initiated during this time to ensure that round-the-clock support is available.

5.2.5 Additional Commissioning Services

Additional Services required, beyond what has been included in the table above, are chargeable at the rates indicated in SUEZ's prevailing field service labor rates sheet (see 2023 rates below).

North America On-Site Hourly Rates – \$USD/hr

Field Service Representative		In-office Rate	On-site Rate
field service representative	product support representative	N/A	\$210
Engineer Level			
lead engineer	electrical/controls engineer		
process engineer	application engineer	\$190	\$230
mechanical engineer	field engineer		
design engineer	operator training		
Management			
project manager	senior engineer	\$225	\$265

Scheduling & Technical Support contact services at +1 (866) 271-5425 to schedule service. Support is available by phone M-F 8:30am to 5:00pm Eastern time (GMT-5).

Conditions

1. On-site rates are inclusive of travel and living expenses in Canada and the lower US. Remote sites, or those requiring special or urgent travel or accommodations, may incur additional charges.
2. For multiple scheduled or recurring site visits, please request a firm service proposal.
3. In times of special circumstances (i.e. pandemic/national emergencies) additional costs may be incurred.
4. A minimum booking of 40 hours (one working week) is required for on-site commissioning, startup or training services on capital projects or additional charges may be applied.
5. Travel time is charged at the applicable service rate. Travel hours begin at the Veolia representative's residence or airport and end at arrival to the hotel or work site, and vice versa.
6. Hours exceeding a 10-hour day or a 40-hour work week may be considered overtime at 1.5 times the above rates. Holiday rates, at 2 times above rates, apply based on US/Canada holidays and/or holidays observed in the country where the work is performed.
7. For extended duration assignments, staff rotations are scheduled on a monthly basis. Site-specific training required by customer will be billed as time worked.
8. Supplies, materials, consumables or services purchased for direct use during service will be charged separately.
9. State/provincial taxes, use taxes, withholding taxes and all other taxes are extra where applicable. Buyer is responsible to provide any applicable tax exemption certificates with its purchase order or work order.
10. All services provided are governed by Veolia Water Technologies & Solutions general term and conditions. Additional or conflicting terms contained in purchase orders which authorize work are prohibited and shall not apply except where agreed to in writing.
11. These rates are valid through December 31, 2023.

5.3 After Market Services

The following services are included in the Proposal Price for the entire eleven (11) train system:

- **24/7 Emergency Telephone Technical Support:**
 - Calls during business hours – included for the life of the membrane system
 - Calls after hours – emergency telephone support - for a period of two (2) years
- **InSight - knowledge management solution:**
 - InSight pro – process consulting service – for a period of two (2) years
Includes monthly reports and an annual summary report, regular conference calls with a process engineer and a process analyst
- **Scheduled plant checkup site visits:**
 - Four (4) visits during the first two (2) years of membrane system operation of the expansion trains 9 to 11. Each service visit includes five (5) days of on-site time.
- **ModuleTrac**
 - ModuleTrac – membrane tracking service – for a period of two (2) years
- **Fiber Autopsy and Cleaning Study**
 - Perform a fiber SEM analysis and a cleaning study
- **Partnership Communication:** included for the life of the membrane system
 - Regional Lifecycle Manager (RLM);
 - ZeeWeed Users Group participation;
 - warranty support.

Note: conference fee for the user's group has been included for two (2) years for two (2) people from Forsyth County or their operations team to attend.

5.3.1 24/7 Telephone Technical Support

SUEZ's 24/7 telephone technical support provides a team of specialists available to help keep your system online and in production in the event of the membrane system operating outside of specified conditions.

Calls During Business Hours

Plant operators have telephone access to a skilled SUEZ technical support specialist who will assist plant operators in troubleshooting of system problems such as electrical (PLC/HMI), mechanical and process control issues.

Plant operators can call the daytime hours telephone number at any time during business hours and ask for technical support.

Calls After-Hours - Emergency Telephone Technical Support

Our technical support team is always on call and is equipped with system information to effectively talk a plant operator through an emergency, potentially averting loss of plant production and expensive call outs. The telephone technical support group maintains access to all plant drawings for rapid reference during 24/7 support calls. The telephone technical support group has portable computers equipped to access the plant control system remotely, in order to gain a better understanding of the situation, and to make any necessary adjustments to control set-points or software. Remote access requires a high-speed internet connection at your facility and requires that you have permissions set up in advance. The technical support specialist will manage the resources needed within SUEZ to assist you in resolving your plant issues. All client issues are tracked through to resolution using SUEZ's state-of-the-art issue tracking software.

5.3.2 InSight

InSight captures and transforms your plant data into meaningful and actionable information, ultimately providing the knowledge you need to maximize performance, avoid operational interruptions, optimize your processes, and reduce the total cost of operation. InSight provides:

- **Analytics:** InSight allows review of historical and current plant performance against success criteria. InSight can also predict the trajectory of future performance; where the plant is on track and weaknesses that need improvement.
- **Early detection and alarming:** InSight helps operators detect emerging problems, so that action can be taken before a failure is experienced in the future.
- **Optimization:** InSight helps operators identify opportunities to optimize and extend the life of membranes and equipment, lowering total cost of operations without sacrificing performance.
- **Productivity:** InSight's automated data collection reduces the tedious work of entering and reporting operator-collected data, including data required for membrane warranties. InSight helps staff get more done with tools that enhance their personal productivity, enabling them to see and do more.
- **Reporting:** InSight's automated performance reports highlight operational details for key performance indicators and their impact on business objectives.
- **Membrane replacement strategy:** InSight data provides the information needed to plan a cost effective strategy for membrane replacement and upgrades with a deep understanding of factors affecting membrane performance.

Features Of Insight

- **Simplicity:** InSight makes it easy to see how well your applications are performing over a specified time horizon.
- **Reports:** InSight provides regular scheduled performance reports and summaries.
- **Alerts:** InSight provides alerts if any process parameters fall outside their normal operating range.
- **Mobility:** InSight provides smartphone or tablet access allowing the user the same abilities to see system health, current data, trends, reports and even enter operational data and notes as within the control room.
- **Security:** InSight can archive all plant data securely in an off-site central database. Data is password protected.
- **Data sources:** InSight allows for data to be acquired from a wide range of sources and modes of capture – including automatic (wired and wireless) and direct manual data entry.

Key Benefits

- InSight allows you to consolidate all your data to pull out valuable information to drive better business results.
- InSight helps to drive safety, reliability, accountability and increased throughput in your plant.
- InSight digitizes data and tools to liberate your operations and service teams to do their jobs more effectively.
- InSight provides peace of mind by having another level of surveillance which allows you to redefine operational excellence.

Insight Pro – Process Consulting Service

InSight pro puts a professional SUEZ process expert onto your team, collaborating to empower your operating team to apply the power of InSight to continuously improve their treatment processes.

The process expert is specifically assigned to your plant and will monitor key parameters on a regular rhythm using the InSight platform. The process expert will be in frequent contact with the key members of your operations team to discuss and resolve performance, process and operational issues. While supporting your operations team with day-to-day issues, the process expert will also use InSight to bring attention to long term trends and provide recommendations that will help increase membrane and equipment life and reduce costs.

As part of InSight pro, the process expert provides monthly process reports with analysis of key trends and recommendations to improve plant operation, membrane cleaning and overall performance. In addition, an annual summary performance report is provided.

If the need for troubleshooting does arise, your SUEZ process expert is accessible, familiar with your system and empowered with accurate information to assist.

5.3.3 Service Visits

SUEZ and Forsyth County will cooperatively plan the time allotted to service visits to complete priority activities identified by Forsyth County and their operations team or selected from the scope of service below and produce maximum value from the service visit. Not all items in this scope or checklist are necessarily performed on every visit. The SUEZ Field Service Representative (FSR) and the plant operators will initially define priority deliverables and jointly revise these priorities as required.

Process Monitoring

- Inspect and confirm proper operation of the membrane system in accordance with the SUEZ operation & maintenance manual.
- Review operating logs, analytical tests and InSight data with the operator(s).
- Discuss operator concerns and SUEZ issues emerging from this review.
- Discuss imminent seasonal shifts. Plan and implement forward looking adjustments.
- Advise the operations manager of technical updates as they become available from SUEZ.

Membrane Integrity

- Assess pressure decay test or bubble test data as it correlates to the membrane condition and/or permeate water quality. Assist plant operators to repair membrane fibers as required.
- Assess the effectiveness of on-going membrane cleaning procedures (recovery cleaning, maintenance cleaning, backwashing) and provide recommendations to the plant operators as necessary.

Controls

- Review system alarm history, discuss any related issues with operator(s) and recommend appropriate actions to be taken.
- Perform limited PLC code modifications as planned in advance, secured by proper documentation, dial-in capabilities and file backup precautions.
- Verify operation of all safety interlock/controllers, pressure switches and temperature switches.

Verification Of Instrument Calibration

- Review set points, verify the condition of all control instruments, sensors, probes, and transmitters, including switching action and output. Assist operators with re-calibration, as necessary.
- Collaborate with the plant operator in maintaining a log of calibration activities.

Preventive Maintenance Planning

- Develop a preventive maintenance plan with the plant operator.

- Review the spare parts provisions with the plant operator and identify any additional parts to provide the desired level of security, including spares related to non-SUEZ equipment.

Training

During scheduled site visits, the SUEZ service representative can provide operators with informal training on any areas of concern; to explain the operation, process, maintenance or troubleshooting activities and, in general, to enhance operator ability and confidence.

Reporting

SUEZ will provide a report to record membrane condition, tasks accomplished during the visit and identify key operating and maintenance issues.

Spares

The SUEZ service representative will review the spares provisions (if any) with the plant operator to identify any additional spare parts which should be brought into inventory to provide the desired level of security to the plant including spares related to non-SUEZ equipment.

5.3.4 ModuleTrac

ModuleTrac, SUEZ's new mobile application for iOS and Android devices, offers a simplified, streamlined way to manage data collection and record-keeping for your ZeeWeed ultrafiltration membranes. ModuleTrac scans and organizes ZeeWeed membrane data, including location, repair and maintenance history, using a barcode located on each module.

The app is also linked with InSight, our powerful Asset Performance Management system, to help you:

- Organize and archive information into one, easy-to-use application;
- View historical data to understand the best and least-performing modules;
- Run reports and build graphs, charts and other visualizations;
- Uncover the root cause of issues and their location relationships.

5.3.5 Fiber Autopsy And Cleaning Study

Fiber Autopsy

Membrane surface condition is one of the most important factors affecting permeability. Development of the fouling layer should be closely monitored in order to adjust/change the site cleaning regimen.

In the standard autopsy, comparisons between your plant's membrane and pristine specimens will be made.

The surface morphology will be analyzed with help of scanning electron microscopy (SEM). Any changes in membrane topography upon exposure to the environment will be visible in the SEM image.

Organic foulant analysis will be conducted by means of Fourier Transform Infrared Spectroscopy (FTIR) utilizing PerkinElmer Frontier, equipped in a total reflectance element with a germanium crystal. By interpreting the infrared absorption spectrum, the chemical bonds in a molecule can be determined. FTIR spectra of pure compounds are unique, and are often referred to as the molecular "fingerprint". Organic compounds have detailed spectra. The spectrum of an unknown can be identified by comparison to a library of known compounds.

Inorganic foulant analysis will be conducted by means of energy dispersive spectroscopy (EDS) utilizing INCA OXFORD EDX system optimized with elemental copper. The beam of electrons at a pre-defined energy excites the atoms in the sample. The atoms subsequently emit energy to return to the original state. X-rays produced in the process are characteristic to the atoms that produced them. Energy bands in the EDS spectrum correspond to specific elements. The presence of elements can be confirmed by the presence or absence of peaks in the EDS spectrum. The EDS spectrum can be quantified for elements heavier than C.

Fiber Cleaning Study

The fiber cleaning study will undertake a series of cleaning trials on individual ZeeWeed fibers to determine the most effective cleaning procedures to employ to regain permeability from a fouled membrane.

An optimized cleaning protocol helps maintain membrane permeability throughout the life of the membrane and optimizes cleaning chemical usage.

This proposed cleaning study requires eleven (11) cleaning trials.

Activities

- Fouled fiber autopsy;
- Testing set-up: work plan, loop and chemical solution preparation;
- Soaking in cleaning solutions (tracking of permeability with time);
- Re-test of best cleaning solution;
- Membrane fiber autopsy after cleaning;
- Final report – summary, recommendations, graphs and calculations.

Report and Recommendations

A final report will be presented to Forsyth County that will summarize the findings of the fiber autopsy and cleaning study results. It will include recommendations to improve plant performance and recommendations for the membrane cleaning protocol to be tested at full-scale at the plant. The analyst will be available to discuss the results if requested by the County.

Proviso – Post-study report and recommendations provided by SUEZ offer recommendations and suggested changes to membrane cleaning protocol only, to be tested at full-scale at the County's discretion, and do not constitute any form of guaranteed performance improvements.

Preparations By Forsyth County Fiber Harvesting

- **For the fiber cleaning study-** harvest 50 full length fibers from the most fouled cassette. Samples should be taken from a representative selection of modules within a cassette, and from a representative selection of fibers within a module including samples from the left, middle and right sections of the modules. Fibers from different locations within a module, and fibers from different modules should all be packaged in separate in Ziploc bags and labeled accordingly (see below). Preserve fiber samples in wet, lint-free paper and encapsulate to eliminate drying.
- **For the fiber autopsy:** preserve eleven (11) fibers in wet, lint-free paper and encapsulate to eliminate drying. Alternatively, the sample can be shipped immersed in RO/distilled water in an appropriate container. Label the container to indicate these fibers are intended for autopsy.
- Knot the fiber to indicate orientation in the module – e.g. knot will indicate top header.
- All membrane samples must be kept moist, wrapped in wet paper towel and sealed in a Ziploc bag.
- Plug the ends of all cut fibers that remain on membrane modules with silicone.
- Samples held at the plant should be kept cool until being shipped to SUEZ to prevent bio-growth during transit. Cooling is not required during transit. Do not add any preservatives or disinfectants.

Fiber Identification

Clearly mark each package of fibers or module with:

- Plant name;
- Contact name;
- Date of fiber harvesting;
- Cassette number;
- Cassette location;
- Module number;
- Module location;
- Position of sample taken (left, right or center of module).

Process Information

Process information will be needed prior to starting the fiber autopsy and cleaning studies. SUEZ's process analyst will contact Forsyth County with a form to discuss and complete that will provide the required process parameters. Generally, SUEZ will need information about:

- The feed water source and pretreatment;
- Cleaning strategies currently employed, and;

- Operating conditions of the plant.

Submitting the Samples

Once fibers have been harvested, Forsyth County will ship samples to:

SUEZ Water Technologies & Solutions
3239 Dundas Street West, Oakville, Ontario, L6M 4B2
Canada

Shipping Package should be marked:
ZeeWeed fiber sample for analytical purposes

5.3.6 Partnership Communication

SUEZ knows the importance and long term implications involved in selecting a membrane supplier. SUEZ is committed to building a partnership with Forsyth County and believes communication is the essential ingredient to achieve this. SUEZ invests in the partnership through the following communication mechanisms:

- Access to a Regional Lifecycle Manager (RLM);
- Participation in the ZeeWeed users group;
- Dedicated warranty coordinator.

Regional Lifecycle Manager

The regional lifecycle manager (RLM) will act as the SUEZ “quarterback”, engaging in frequent communication with plant staff, ensuring timely access to all the technical resources provided by SUEZ. The RLM will also design a schedule and package of services suited to your needs and budget, including:

- Additional years of 24/7 telephone technical support coverage;
- Additional years of InSight;
- Greater frequency of site visits and or special provisions for emergency site visits;
- Plant optimization & plant upgrades;
- Membrane replacement planning/budgeting;
- Membrane cleaning studies.

ZeeWeed Users Group

As an on-going support to ZeeWeed plants, an annual, two day ZeeWeed users group meeting is organized by SUEZ consisting of formal meetings and a tour of the hosting ZeeWeed plant. New technologies are introduced, current issues are tabled, and roundtable discussions ensue. The users group has become an excellent forum for experienced operators to keep current, to renew old acquaintances, to exchange the “tricks of the trade” with each other, and to impart their hard won knowledge to newer ZeeWeed operators. Generous hospitality combines with informal experiences and exercises to enhance the esprit de corps between domestic and international plant operators.

All ZeeWeed plants are invited to send operators representing the plant. SUEZ covers conference, food, and hospitality expenses. The plant must cover the operator's travel and hotel expenses, and a small conference fee. SUEZ supports this forum to facilitate interaction between ZeeWeed plant operators and to provide a forum for real-world feedback to SUEZ's management, design and operations staff.



ZeeWeed Users Group in Bonita Springs, Florida

Warranty support

To promptly manage warranty claims, SUEZ lifecycle services has a warranty coordinator dedicated to that function and that function only. Our warranty coordinator has access to all SUEZ resources to ensure timely resolution of problems that may occur.

Appendix A – Piping & Instrumentation Diagrams

The main equipment included for the supply of the Forsyth Water Treatment Plant Phase 3 Expansion project is listed in a table found in **Section 3**. This table should be read in conjunction with the piping and instrumentation diagrams (P&IDs).

The P&IDs define SUEZ's scope of supply and that provided by the General Contractor or Owner (by others). In case of conflict, the P&IDs take precedence for SUEZ supplied equipment and devices. On the P&IDs, items within SUEZ's scope of supply are shown in **magenta**, items that are required to be provided and installed by others as part of the Phase 3 Expansion are shown in **green**, and existing structures/equipment/lines are shown in **blue**.

Piping shown as dotted are to be furnished by the General Contractor (by others). The sizes of all pipes are depicted on the P&IDs. Valves are typically the same size as the pipe on which they are located.

The P&ID package includes:

510283-WTS-PR-SYS-EN21-DS-000 sheet 1 of 1: Title Page

510283-WTS-PR-SYS-EN21-DS-001 sheet 1 of 2: Legend & Symbols

510283-WTS-PR-SYS-EN21-DS-001 sheet 2 of 2: Legend & Symbols

510283-WTS-PR-SYS-EN21-DI-001 sheet 1 of 1: Process Flow Diagram

510283-WTS-PR-SYS-EN21-DS-101 sheet 1 of 2: Pre-Treatment

510283-WTS-PR-SYS-EN21-DS-101 sheet 2 of 2: Distribution Channel

510283-WTS-PR-SYS-EN21-DS-102 sheet 1 of 1: P.D. Blowers & Assoc. Equip.

510283-WTS-PR-SYS-EN21-DS-103 sheet 1 of 1: Membranes & Assoc. Eq

510283-WTS-PR-SYS-EN21-DS-105 sheet 1 of 1: Process Pump & Assoc. Eq.

510283-WTS-PR-SYS-EN21-DS-107 sheet 1 of 1: Backpulse & Assoc. Eq

510283-WTS-PR-SYS-EN21-DS-110 sheet 1 of 2: Cleaning System TK-9700-1

510283-WTS-PR-SYS-EN21-DS-110 sheet 2 of 2: Cleaning System TK-9700-2

510283-WTS-PR-SYS-EN21-DS-111 sheet 1 of 3: Cleaning Chemicals

510283-WTS-PR-SYS-EN21-DS-111 sheet 2 of 3: Neutralization Chemicals

510283-WTS-PR-SYS-EN21-DS-111 sheet 3 of 3: Cleaning Chemicals

510283-WTS-PR-SYS-EN21-DS-112 sheet 1 of 1: Air System for PDT Equipment & Valves

510283-WTS-PR-SYS-EN21-DS-113 sheet 1 of 1: Permeate Storage Tank

510283-WTS-PR-SYS-EN21-DS-115 sheet 1 of 1: Turbidimeter



THE FORSYTH COUNTY WATER TREATMENT PLANT ZEEWEED 1000 PHASE 3 EXPANSION

PIPING & INSTRUMENTATION DIAGRAM

VEOLIA WTS
CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE	-	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED
DECIMALS
ANGLES
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CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP PHASE 3 EXPANSION

TITLE PAGE

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VALVE & GATE SYMBOLS

NORMALLY CLOSED	NORMALLY OPEN	
		DIAPHRAGM
		BUTTERFLY
		BALL
		BALL (MANUAL)
		GATE OR OTHER IN-LINE TYPE NOT OTHERWISE IDENTIFIED
		GLOBE
		PLUG OR ANGLE SEAT
		NEEDLE
		PINCH
		KNIFE GATE
		SLIDING GATE
		SOLENOID VALVE
		SAMPLE VALVE

	CHECK
	BACKFLOW PREVENTER
	INJECTION QUILL
	THREE WAY
	FOUR WAY
	RUPTURE DISC (PRESSURE)
	RUPTURE DISC (VACUUM)
	VACUUM BREAKER
	AUTOMATIC AIR VENT
	PRESSURE REGULATOR
	BACK PRESSURE REGULATOR
	PRESSURE RELIEF/MULTI FUNCTION VALVE
	MUD

EQUIPMENT SYMBOLS

	COMPRESSOR PISTON		BLOWER (GENERIC)		PUMP (GENERIC)		DIAPHRAGM PUMP
	COMPRESSOR ROTARY SCREW		LOBE BLOWER		CENTRIFUGAL PUMP		METERING PUMP
	TURBINE		CENTRIFUGAL BLOWER		POSITIVE DISPLACEMENT PUMP		VACUUM PUMP (WET OR DRY)
	AIR DRYER		REGENERATIVE BLOWER		TURBINE PUMP		AXIAL FLOW PUMP
	DESICCANT DRYER		CAN PUMP		SUBMERSIBLE PUMP		
	WATER SOFTENER		PORTABLE EXCHANGE TANK		GRANULAR ACTIVATED CARBON FILTER (GAC) OR MULTI MEDIA FILTER (MMF)		UV STERILIZER
			MEMBRANE MODULES & HOUSING (IF REQ'D)				

	HEAT EXCHANGER		HEATER		HEATING/COOLING COIL
	PADDLEWHEEL FLOWMETER		POSITIVE-DISPLACEMENT-TYPE FLOW TOTALIZING INDICATOR		FLUME
	VENTURI FLOWMETER		ORIFICE PLATE IN QUICK-CHANGE FITTING		CALIBRATION COLUMN
	FLOWMETER VORTEX OR MAGNETIC (TYPE INDICATED)		ORIFICE PLATE		FLOW STRAIGHTENING DEVICE
	ROTAMETER (VARIABLE AREA FLOWMETERS)		ROTAMETER WITH BUILT-IN HAND CONTROL VALVE		

	STATIC MIXER		MUFFLER		VENT AND FILTER		FIXED SCREEN		DIFFUSER GRID
	DIAPHRAGM SEAL		MIXER		SILENCER OR FILTER		CARTRIDGE FILTER		
	PULSATION DAMPENER		EDUCTOR/EJECTOR		PERFORATED TRAVELLING BAND SCREEN		BASKET STRAINER (MOTOR OPTIONAL)		
	WASHFACTOR		GRIT WASHER/CLASSIFIER						

LINE SYMBOLS & MISC.

P&ID LINE TYPES	INSTRUMENTATION LINES	MISC.

LINE DESIGNATION

(SIZE, SCHEDULE, MATERIAL)

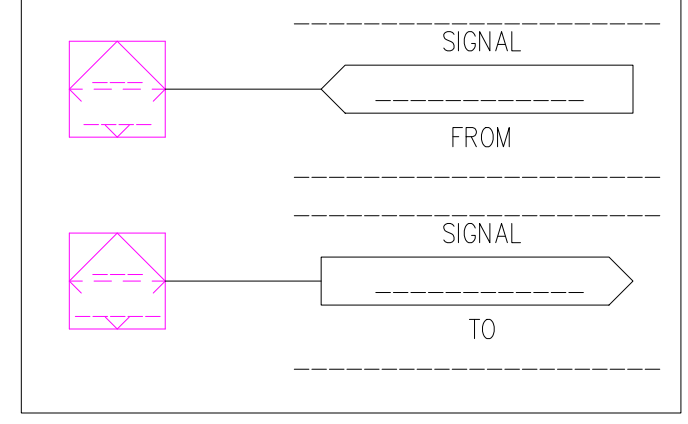
EX: 4", SCH.80, PVC

MOST COMMON MATERIALS

SCH.80, PVC	SCH.40, C.S.
SCH.80, CPVC	P.E. TUBING
SCH.10, 316L SS	SS TUBING
SCH.40, 316L SS	NYLON TUBING
SCH.10, 304L SS	
SCH.40, 304L SS	

CLIENT INTERFACE SIGNALS

OTHER COMBINATIONS OF ANALOG/DIGITAL & DATA HIGHWAY COMMUNICATION MUST ALSO BE SHOWN AS REQUIRED



COMMON ABBREVIATIONS

IAS	INSTRUMENT AIR SUPPLY
SP	SET POINT
MCC	MOTOR CONTROL CENTER
MAG	MAGNETIC
HOA	HAND-OFF AUTO
LOR	LOCAL-OFF REMOTE
E-STOP	EMERGENCY STOP
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
FF	FOUNDATION FIELD BUS
D.NET	DEVICE NET

GENERAL INSTRUMENT AND FUNCTION SYMBOLS

	LOCATED ON SKID CONTROL PANEL	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR		
DISCRETE INSTRUMENTS					PLC ALARM FUNCTION WITH MULTIPLE TRIGGER POINTS SEE INSTRUMENT LETTERS
HUMAN MACHINE INTERFACE HMI					INSTRUMENTS SHARING COMMON HOUSING
COMPUTER/DCS FUNCTION					PILOT LIGHT
PROGRAMMABLE LOGIC CONTROL					UNDEFINED INTERLOCK LOGIC
					SYSTEMS WITH MULTIPLE PLC'S
					SUMMING
					AVERAGING
					LOW SELECTING
					HIGH SELECTING
					UNSPECIFIED FUNCTION

VALVE & GATE ACTUATOR SYMBOLS

NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC, ELECTRICAL OR HYDRAULIC)
 XX: FC = FAIL CLOSED
 FO = FAIL OPEN
 FL = FAIL TO LAST POSITION
 IF NOT SPECIFIED ASSUME FC.

	PNEUMATIC DIAPHRAGM		TRAVEL STOP
	DOUBLE ACTING PNEUMATIC CYLINDER (INST. AIR LINES NOT ALWAYS SHOWN)		VALVE POSITIONER
	SPRING CLOSE PNEUMATIC CYLINDER (INST. AIR LINES NOT ALWAYS SHOWN)		HAND OVERRIDE
	SPRING OPEN PNEUMATIC CYLINDER (INST. AIR LINES NOT ALWAYS SHOWN)		ACTUATOR WITH TRAVEL STOP
	SOLENOID		ELECTRIC MOTOR (ANALOG - CONTROL)
	ELECTRIC MOTOR (DIGITAL - OPEN/CLOSED)		

VEOLIA WTS CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE						15 NOV 22

TOLERANCES UNLESS NOTED

DECIMALS	ANGLES
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CUSTOMER INFORMATION

THE FORSYTH COUNTY WTP
 PHASE 3 EXPANSION

P&ID
 LEGENDS & SYMBOLS

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ISA TEXT ABBREVIATIONS

	MEASURED OR INDICATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USERS CHOICE	USERS CHOICE	USERS CHOICE
C	USERS CHOICE			CONTROL	
D	USERS CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USERS CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USERS CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	LOG REMOVAL		USERS CHOICE	USERS CHOICE	USERS CHOICE
O	USERS CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALISE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	AVERAGE	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENT	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

MECHANICAL OR INSTRUMENT DEVICE TAG IDENTIFICATION PREFIX

AV	AIR VENT
AC	AIR COMPRESSOR
AE/AIT	ANALYSIS ELEMENT WITH ANALYSIS INDICATING TRANSMITTER
AE/AT	ANALYSIS ELEMENT WITH ANALYSIS TRANSMITTER
B	BLOWER
BPV	BACK PRESSURE VALVE
CV	CHECK VALVE/INJECTION QUILL
DR	AIR DRIER
F	FILTER
FCV	FLOW CONTROL VALVE
FE/FIT	FLOW ELEMENT WITH FLOW INDICATING TRANSMITTER
FE/FT	FLOW ELEMENT WITH FLOW TRANSMITTER
FG	FLOW SIGHT GLASS
FI	FLOW INDICATOR
FO	ORIFICE PLATE
FV	AUTOMATIC VALVE
FX	FLOW STRAIGHTENING DEVICE
GWC	GRIT WASHER/CLASSIFIER
H	HEATER
HC	HEATING COIL
HCV	HAND CONTROL VALVE
HE	HEAT EXCHANGER
HV	HAND VALVE
LCV	LEVEL CONTROL VALVE
LE/LIT	LEVEL ELEMENT WITH LEVEL INDICATING TRANSMITTER
LE/LT	LEVEL ELEMENT WITH LEVEL TRANSMITTER
LG	LEVEL SIGHT GLASS
LI	LEVEL INDICATOR
LS*	LEVEL SWITCH
MFV	MULTI FUNCTION VALVE (COMBINATION RELIEF & BACKPRESSURE VALVE FOR METERING PUMPS)
MX	MIXER
MXS	STATIC MIXER
P	PUMP
PD	PULSATION DAMPENER
PE/PIT	PRESSURE ELEMENT WITH PRESSURE INDICATING TRANSMITTER
PE/PT	PRESSURE ELEMENT WITH PRESSURE TRANSMITTER
PI	PRESSURE INDICATOR
PRV	PRESSURE REGULATING VALVE
PS*	PRESSURE SWITCH
PSE	RUPTURE DISC
PSV	PRESSURE RELIEF VALVE
RT	RESIN TRAP
SCR	SCREEN
SG	SIGHT GLASS
STR	STRAINER
SV	SAMPLE VALVE
TCV	TEMPERATURE CONTROL VALVE
TE/TIT	TEMPERATURE ELEMENT WITH TEMPERATURE INDICATING TRANSMITTER
TE/TT	TEMPERATURE ELEMENT WITH TEMPERATURE TRANSMITTER
TI	TEMPERATURE INDICATOR
TK	TANK
TS*	TEMPERATURE SWITCH
TURB	TURBINE
UV	UV STERILIZER
VB	VACUUM BREAKER
VS*	VIBRATION SWITCH
WPR	WASHFACTOR
YY	SOLENOID FOR PNEUMATIC CONTROL OF AUTOMATIC VALVE

* ADD THE SUFFIX HH (HIGH HIGH), H (HIGH), L (LOW), LL (LOW LOW) AS REQUIRED FOR THESE ITEMS.

REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
A	INITIAL RELEASE	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED	
DECIMALS	ANGLES
.X	
.XX	
.XXX	
	FRAC

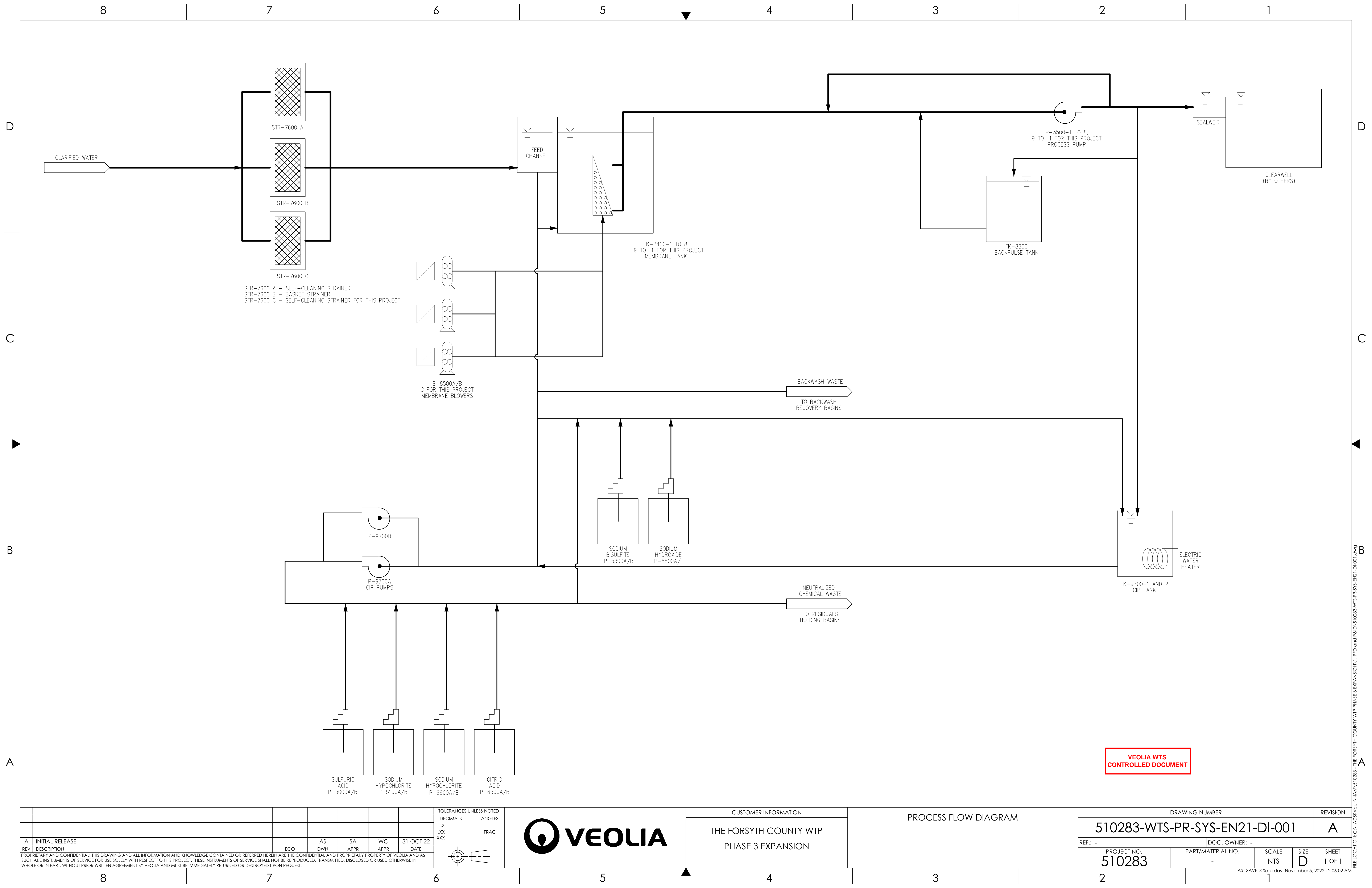


CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID
LEGENDS & SYMBOLS

DRAWING NUMBER				REVISION	
510283-WTS-PR-SYS-EN21-DS-001				A	
REF.: -	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
	510283	-	NTS	D	2 OF 2
LAST SAVED: Wednesday, November 9, 2022 2:23:50 AM					

FILE LOCATION: C:\ADSK\AutoCAD\10283 - THE FORSYTH COUNTY WTP PHASE 3 EXPANSION\1 - P&ID and P&ID\510283-WTS-PR-SYS-EN21-DS-001.dwg



STR-7600 A - SELF-CLEANING STRAINER
 STR-7600 B - BASKET STRAINER
 STR-7600 C - SELF-CLEANING STRAINER FOR THIS PROJECT

B-8500A/B
 C FOR THIS PROJECT
 MEMBRANE BLOWERS

BACKWASH WASTE
 TO BACKWASH
 RECOVERY BASINS

SODIUM
 BISULFITE
 P-5300A/B

SODIUM
 HYDROXIDE
 P-5500A/B

NEUTRALIZED
 CHEMICAL WASTE
 TO RESIDUALS
 HOLDING BASINS

SULFURIC
 ACID
 P-5000A/B

SODIUM
 HYPOCHLORITE
 P-5100A/B

SODIUM
 HYPOCHLORITE
 P-6600A/B

CITRIC
 ACID
 P-6500A/B

**VEOLIA WTS
 CONTROLLED DOCUMENT**

REV	DESCRIPTION	ECO	AS DWN	SA APPR	WC APPR	DATE
A	INITIAL RELEASE	-	AS	SA	WC	31 OCT 22



TOLERANCES UNLESS NOTED
 DECIMALS .X
 ANGLES .XX
 FRAC XXX

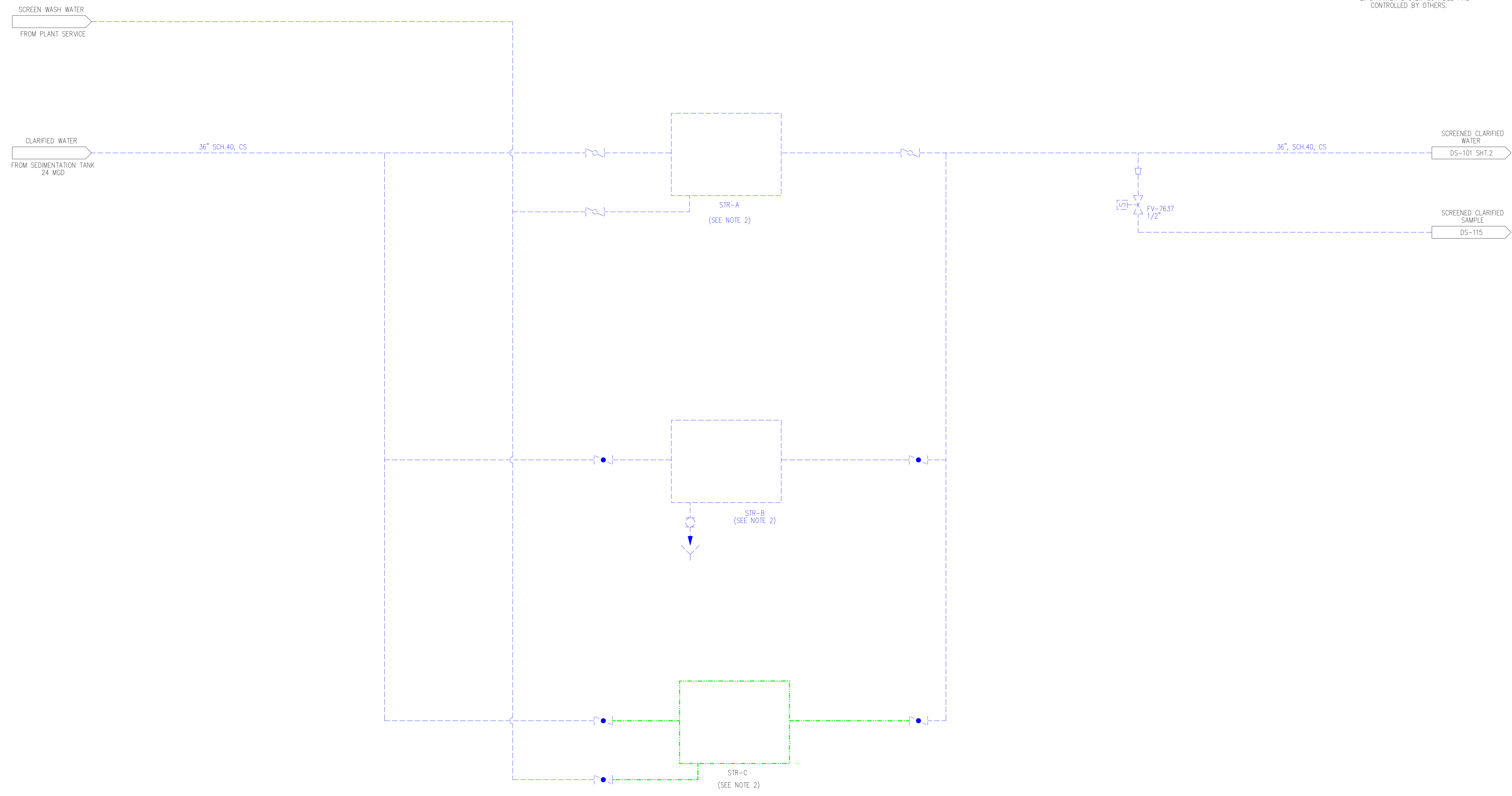


CUSTOMER INFORMATION
 THE FORSYTH COUNTY WTP
 PHASE 3 EXPANSION

PROCESS FLOW DIAGRAM

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DI-001					A
REF.: -	PROJECT NO. 510283	DOC. OWNER: -	PART/MATERIAL NO. -	SCALE NTS	SIZE D
			SHEET 1 OF 1	LAST SAVED: Saturday, November 5, 2022 12:06:02 AM	

- NOTES:
1. LINES/EQUIPMENT EXISTING.  LINES/EQUIPMENT BY OTHERS.  LINES/EQUIPMENT BY VEOLIA.
 2. STRAINER SYSTEM SUPPLIED AND CONTROLLED BY OTHERS.



VEOLIA WTS
CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
A	INITIAL RELEASE	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED
DECIMALS .X
ANGLES XXX
FRAC XXX



CUSTOMER INFORMATION

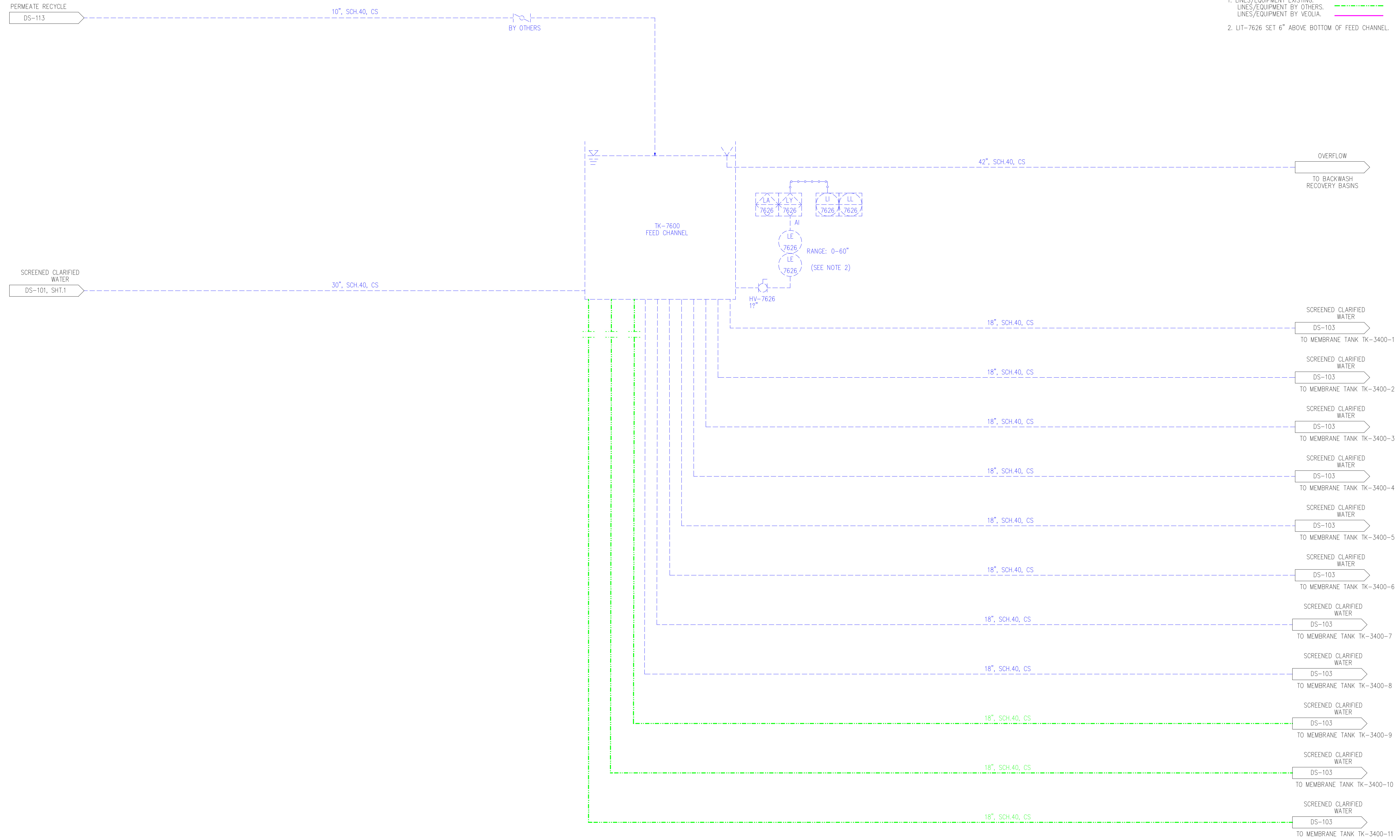
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
PRE-TREATMENT

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DS-101					A
REF.: -	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	1 OF 2
LAST SAVED: Wednesday, November 9, 2022 2:23:56 AM					

FILE LOCATION: C:\ADSK\user\NAMA\510283 - THE FORSYTH COUNTY WTP PHASE 3 EXPANSION\1 - P&ID and P&ID\510283-WTS-PR-SYS-EN21-DS-101.dwg

- NOTES:
1. LINES/EQUIPMENT EXISTING. ---
 LINES/EQUIPMENT BY OTHERS. ---
 LINES/EQUIPMENT BY VEOLIA. ---
 2. LIT-7626 SET 6" ABOVE BOTTOM OF FEED CHANNEL.



REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
A	INITIAL RELEASE	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED

DECIMALS	ANGLES
.X	XXX
.XX	FRAC
.XXX	



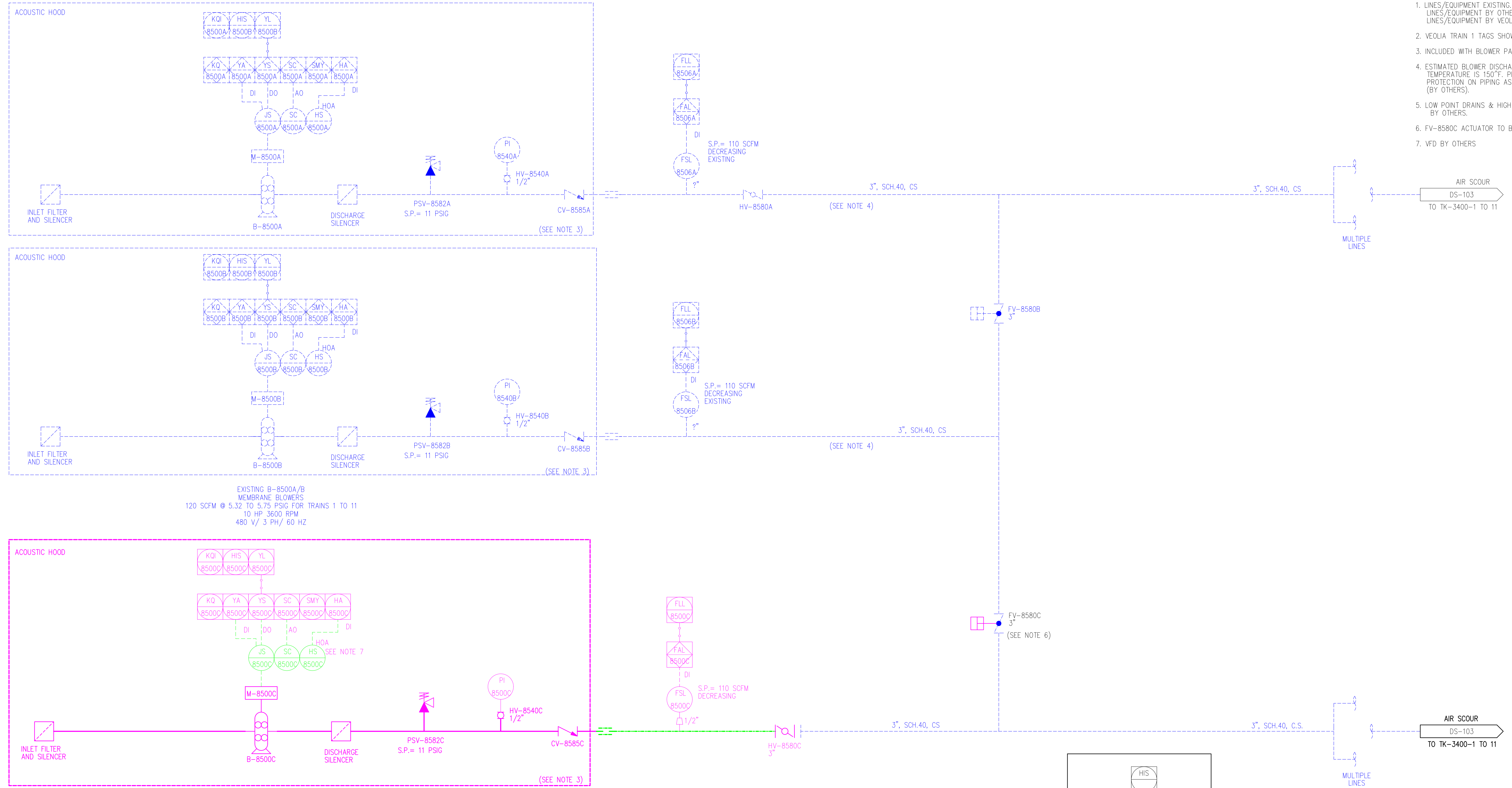
CUSTOMER INFORMATION
 THE FORSYTH COUNTY WTP
 PHASE 3 EXPANSION

P&ID
 DISTRIBUTION CHANNEL

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DS-101					A
REF.: -	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	2 OF 2
LAST SAVED: Wednesday, November 9, 2022 2:23:56 AM					

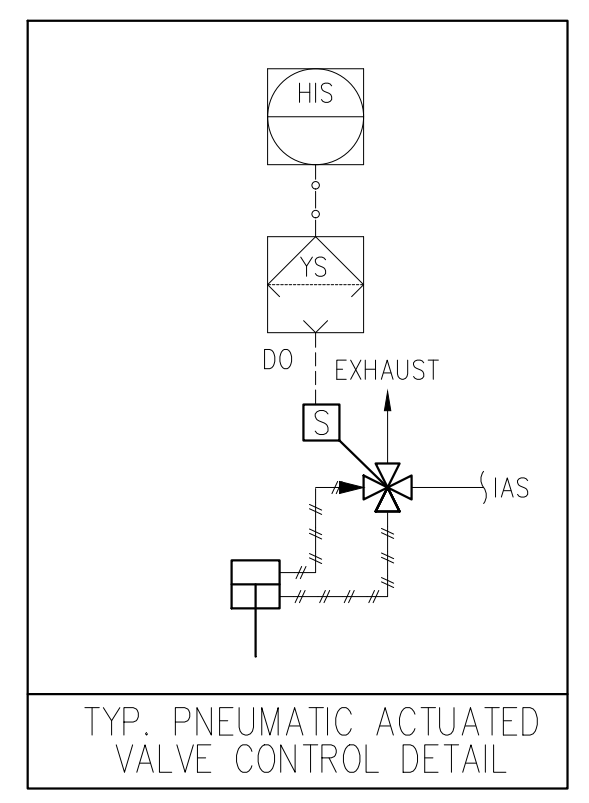
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- NOTES:
1. LINES/EQUIPMENT EXISTING. LINES/EQUIPMENT BY OTHERS. LINES/EQUIPMENT BY VEOLIA
 2. VEOLIA TRAIN 1 TAGS SHOWN.
 3. INCLUDED WITH BLOWER PACKAGE.
 4. ESTIMATED BLOWER DISCHARGE AIR TEMPERATURE IS 150°F. PROVIDE PROTECTION ON PIPING AS NECESSARY (BY OTHERS).
 5. LOW POINT DRAINS & HIGH VENT POINTS BY OTHERS.
 6. FV-8580C ACTUATOR TO BE ADDED FOR THIS PROJECT.
 7. VFD BY OTHERS



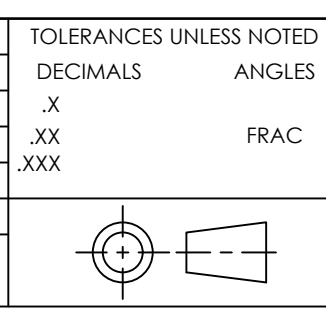
EXISTING B-8500A/B
MEMBRANE BLOWERS
120 SCFM @ 5.32 TO 5.75 PSIG FOR TRAINS 1 TO 11
10 HP 3600 RPM
480 V/ 3 PH/ 60 HZ

B-8500C
MEMBRANE BLOWER
120 SCFM @ 5.32 TO 5.75 PSIG FOR TRAINS 1 TO 11
10 HP 3600 RPM
480 V/ 3 PH/ 60 HZ



**VEOLIA WTS
CONTROLLED DOCUMENT**

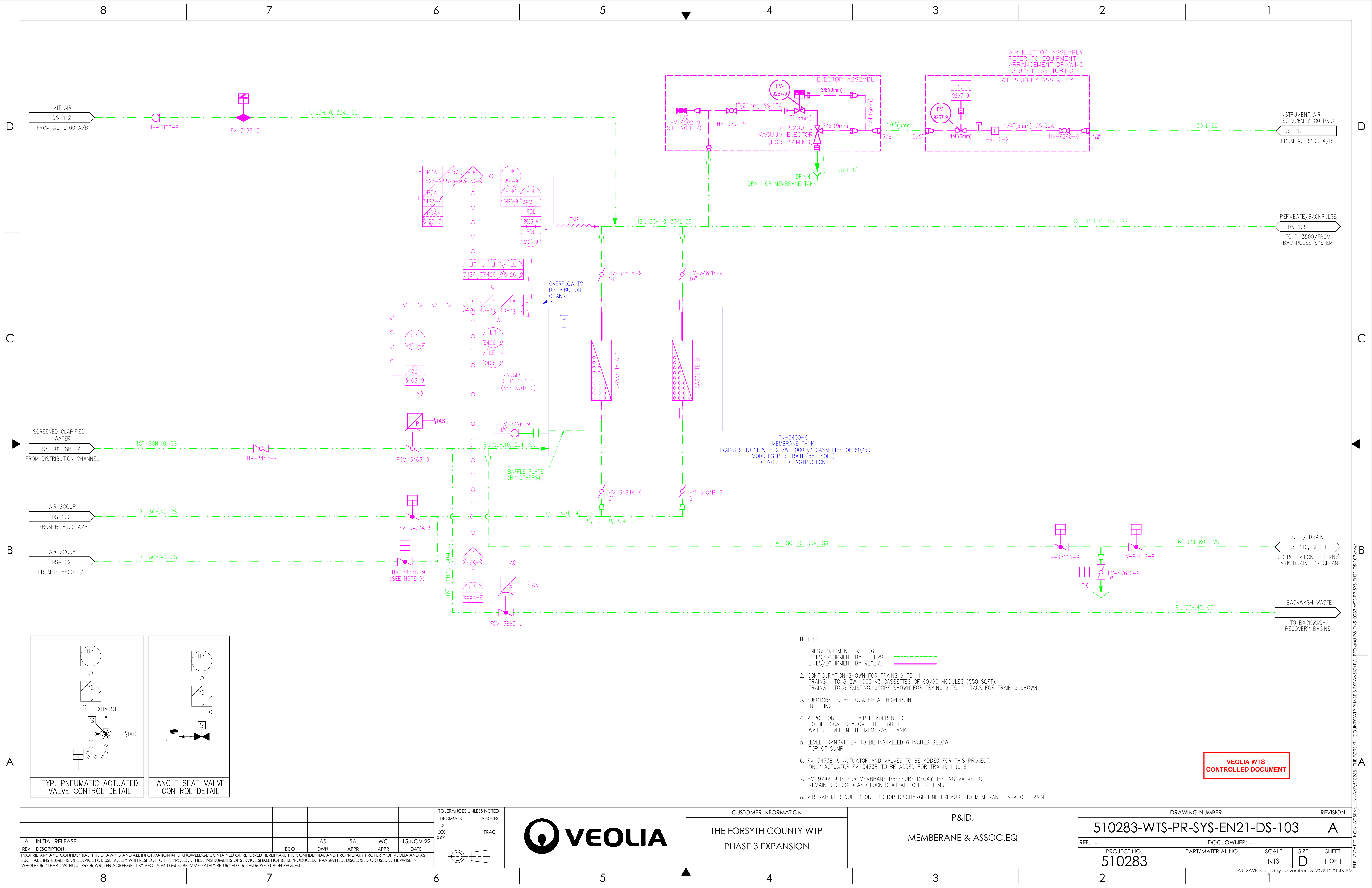
REV	DESCRIPTION	ECO	AS	SA	WC	DATE
A	INITIAL RELEASE		AS	SA	WC	15 NOV 22



CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

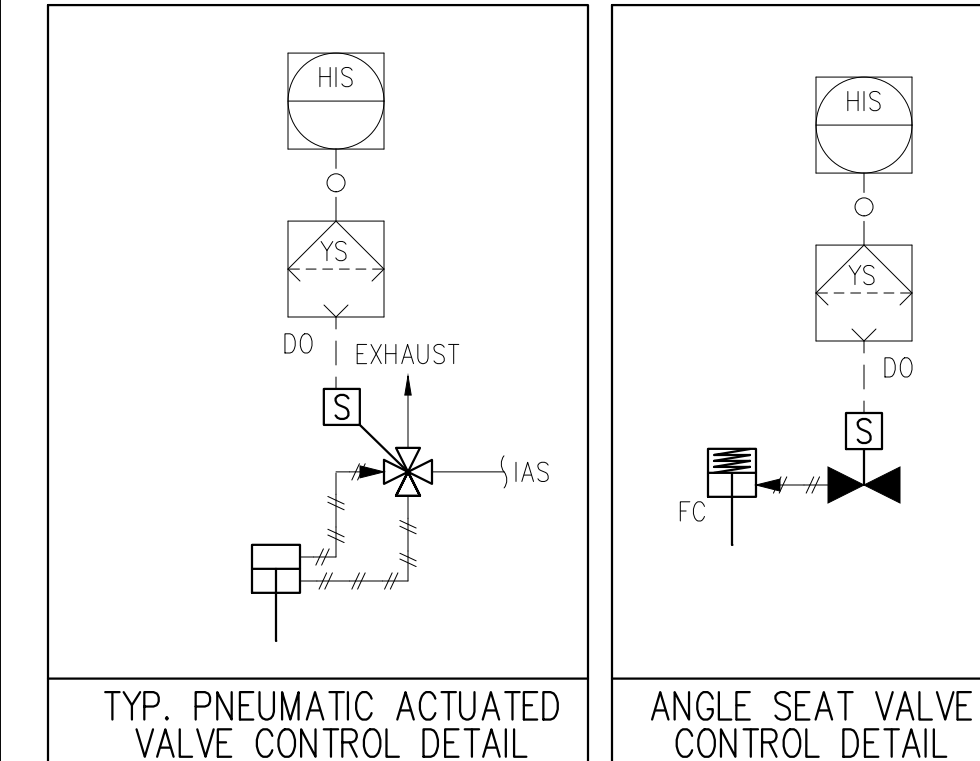
P&ID,
P.D. BLOWERS & ASSOC. EQUIP.

DRAWING NUMBER				REVISION	
510283-WTS-PR-SYS-EN21-DS-102				A	
PROJECT NO. 510283	PART/MATERIAL NO. -	SCALE NTS	SIZE D	SHEET 1 OF 1	



TK-3400-9
MEMBRANE TANK
TRAINS 9 TO 11 WITH 2 ZW-1000 v3 CASSETTES OF 60/60
MODULES PER TRAIN (550 SQFT)
CONCRETE CONSTRUCTION

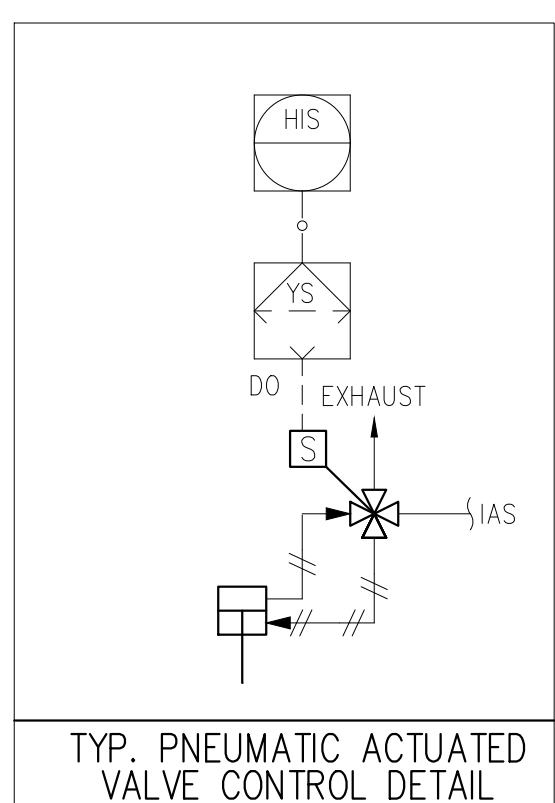
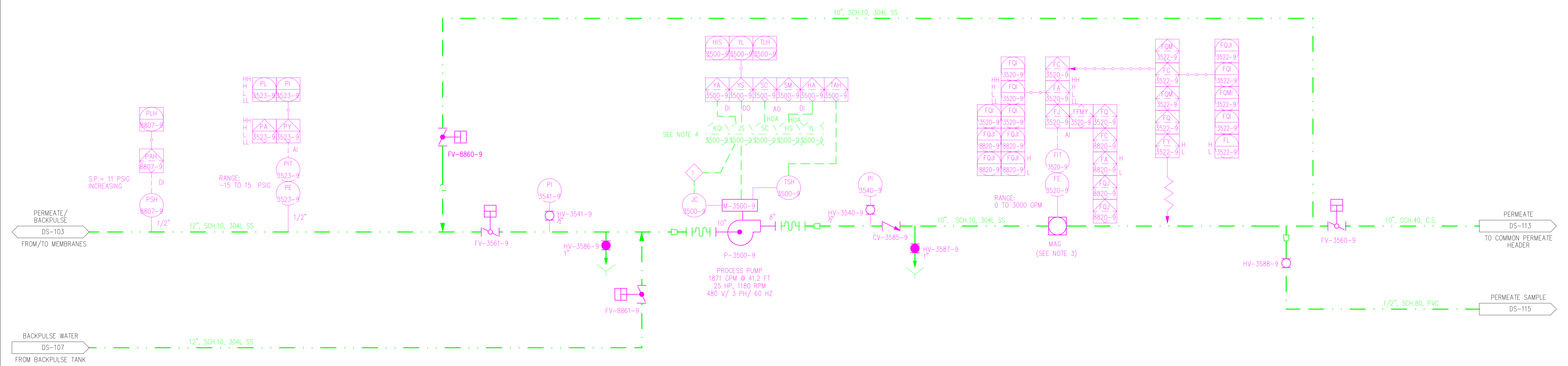
- NOTES:
1. LINES/EQUIPMENT EXISTING. ---
LINES/EQUIPMENT BY OTHERS. ---
LINES/EQUIPMENT BY VEOLIA. ---
 2. CONFIGURATION SHOWN FOR TRAINS 9 TO 11.
TRAINS 1 TO 8 ZW-1000 V3 CASSETTES OF 60/60 MODULES (550 SQFT).
TRAINS 1 TO 8 EXISTING. SCOPE SHOWN FOR TRAINS 9 TO 11. TAGS FOR TRAIN 9 SHOWN.
 3. EJECTORS TO BE LOCATED AT HIGH POINT
IN PIPING
 4. A PORTION OF THE AIR HEADER NEEDS
TO BE LOCATED ABOVE THE HIGHEST
WATER LEVEL IN THE MEMBRANE TANK.
 5. LEVEL TRANSMITTER TO BE INSTALLED 6 INCHES BELOW
TOP OF SUMP.
 6. FV-3473B-9 ACTUATOR AND VALVES TO BE ADDED FOR THIS PROJECT.
ONLY ACTUATOR FV-3473B TO BE ADDED FOR TRAINS 1 TO 8
 7. HV-9292-9 IS FOR MEMBRANE PRESSURE DECAY TESTING VALVE TO
REMAINED CLOSED AND LOCKED AT ALL OTHER ITEMS.
 8. AIR GAP IS REQUIRED ON EJECTOR DISCHARGE LINE EXHAUST TO MEMBRANE TANK OR DRAIN



VEOLIA WTS
CONTROLLED DOCUMENT

TOLERANCES UNLESS NOTED DECIMALS ANGLES .X .XX .XXX FRAC				CUSTOMER INFORMATION THE FORSYTH COUNTY WTP PHASE 3 EXPANSION		P&ID, MEMBRANE & ASSOC.EQ		DRAWING NUMBER 510283-WTS-PR-SYS-EN21-DS-103		REVISION A	
A INITIAL RELEASE		AS	SA	WC	15 NOV 22	PROJECT NO. 510283		DOC. OWNER: -		SCALE NTS	SHEET 1 OF 1
ECO		DWN	APPR	APPR	DATE	PART/MATERIAL NO.		SCALE		SIZE D	SHEET 1 OF 1
LAST SAVED: Tuesday, November 15, 2022 12:01:46 AM											

- NOTES:
1. LINES/EQUIPMENT EXISTING. ---
LINES/EQUIPMENT BY OTHERS. ---
LINES/EQUIPMENT BY VEOLIA. ---
 2. CONFIGURATION TYPICAL FOR ALL TRAINS (1 TO 11).
TRAINS 1 TO 8 EXISTING. SCOPE SHOWN FOR TRAINS 9 TO 11.
TAGS FOR TRAIN 9 SHOWN.
 3. 5 PIPE DIAMETERS UPSTREAM, 3 PIPE DIAMETERS DOWNSTREAM, STRAIGHT PIPE RUN RECOMMENDED FOR MAXIMUM ACCURACY.
 4. VFD BY OTHERS



VEOLIA WTS
CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	AS	SA	WC	DATE
A	INITIAL RELEASE	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED

DECIMALS	ANGLES
.X	XXX
.XX	XXX
.XXX	FRAC



CUSTOMER INFORMATION

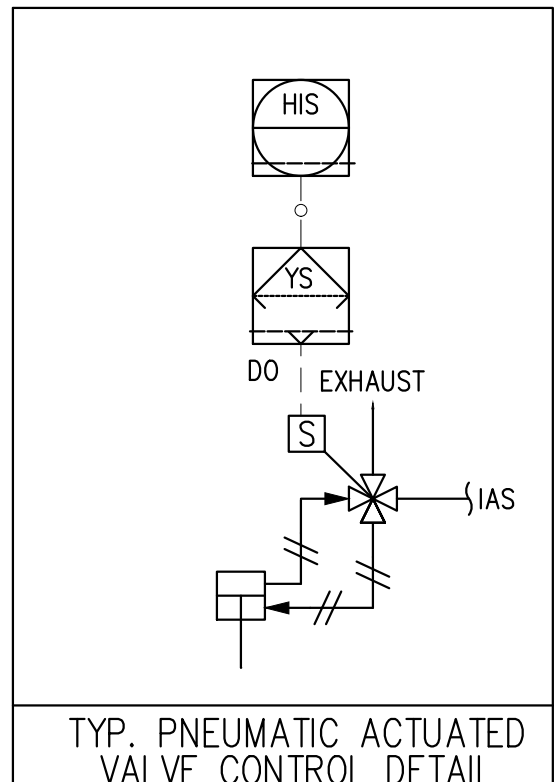
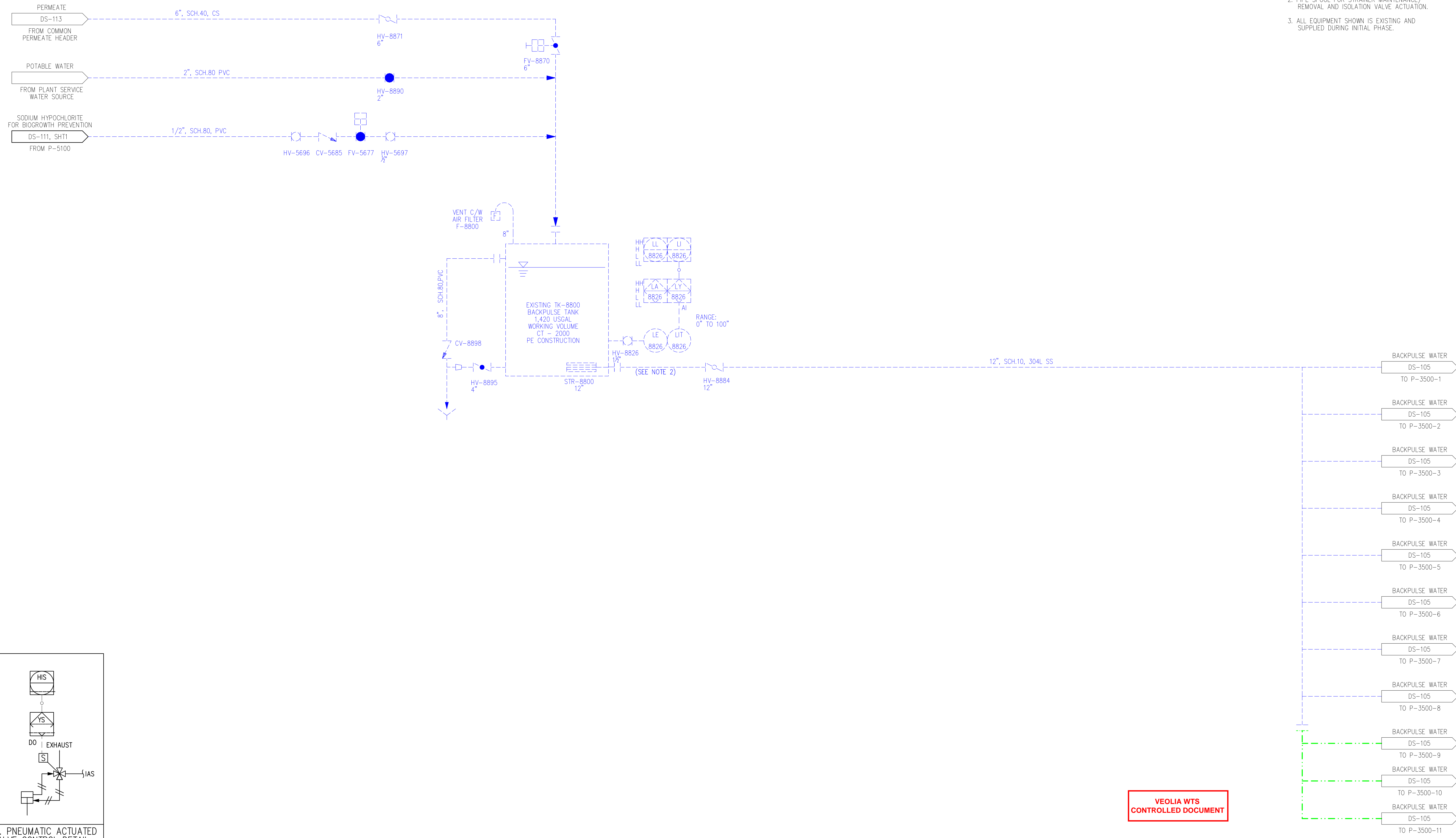
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
PROCESS PUMP & ASSOC. EQ.

DRAWING NUMBER				REVISION
510283-WTS-PR-SYS-EN21-DS-105				A
REF.:	PROJECT NO.	PART/MATERIAL NO.	SCALE	SHEET
-	510283	-	NTS	1 OF 1
LAST SAVED: Tuesday, November 15, 2022 12:01:45 AM				

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- NOTES:
1. LINES/EQUIPMENT EXISTING. ---
LINES/EQUIPMENT BY OTHERS. ---
LINES/EQUIPMENT BY VEOLIA. ---
 2. PIPE SPOOL FOR STRAINER MAINTENANCE/
REMOVAL AND ISOLATION VALVE ACTUATION.
 3. ALL EQUIPMENT SHOWN IS EXISTING AND
SUPPLIED DURING INITIAL PHASE.



REV	DESCRIPTION	ECO	AS	SA	WC	DATE
A	INITIAL RELEASE	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED
DECIMALS
ANGLES
FRAC



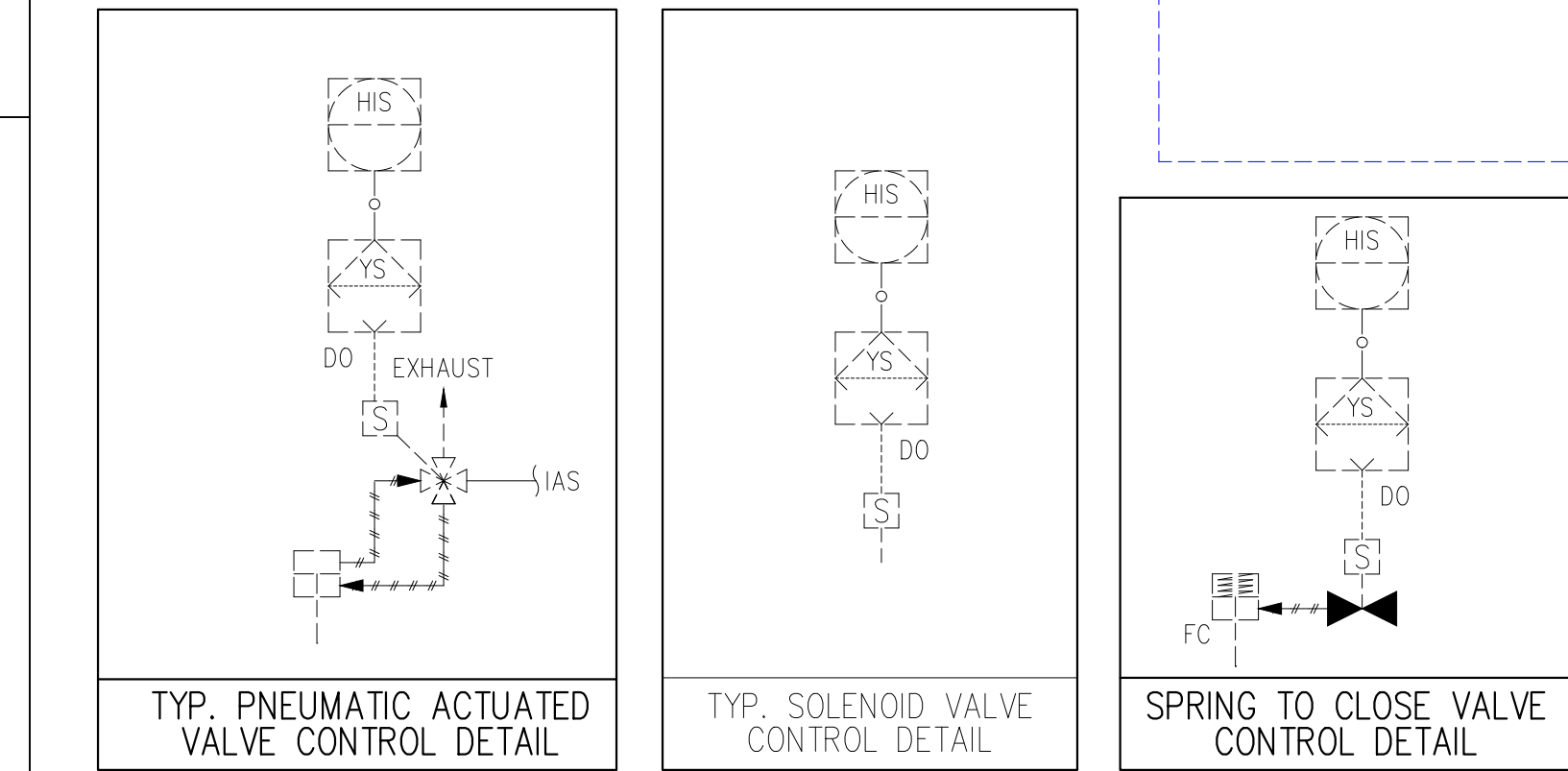
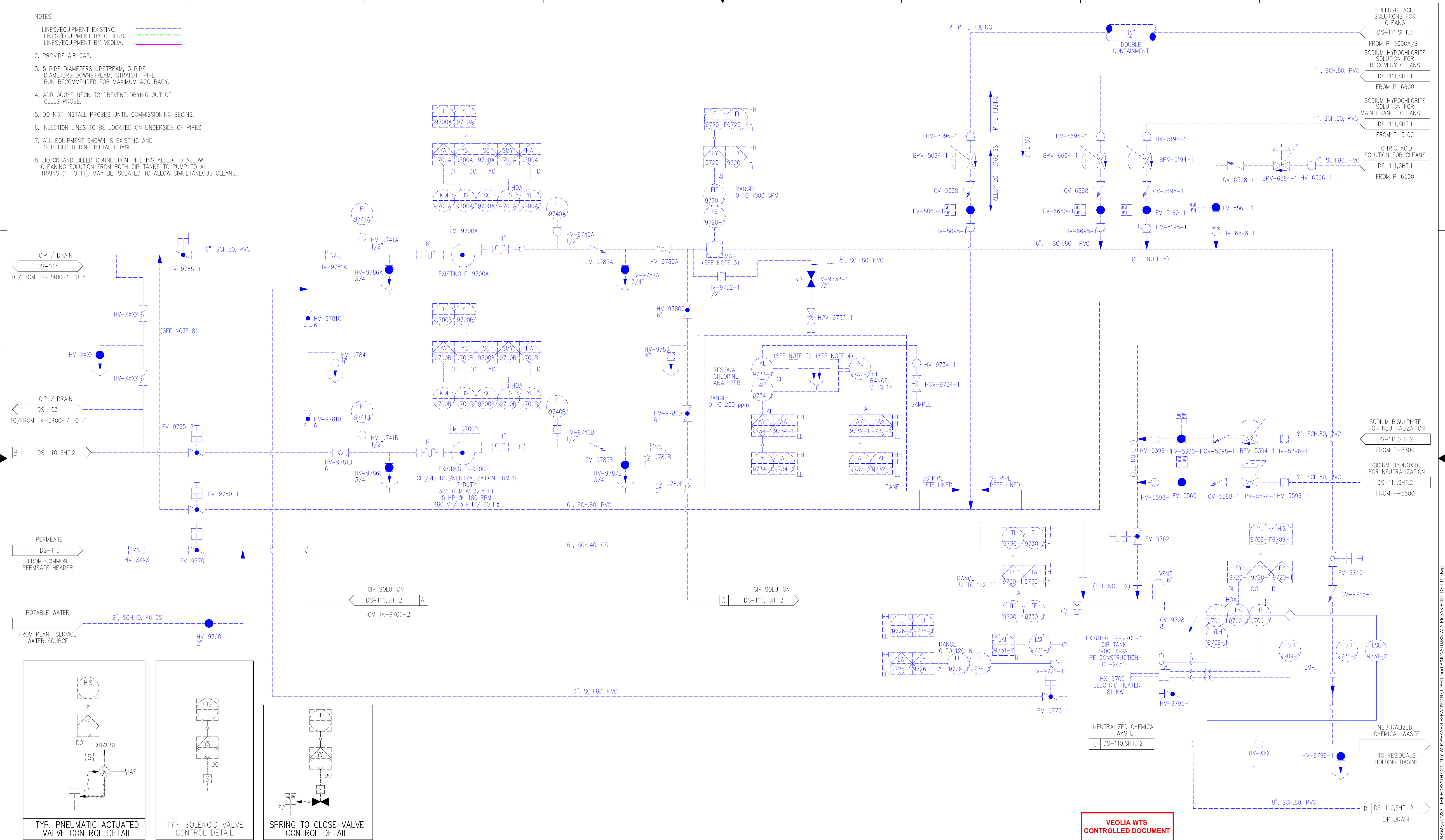
CUSTOMER INFORMATION
 THE FORSYTH COUNTY WTP
 PHASE 3 EXPANSION

P&ID,
 BACKPULSE & ASSOC. EQ

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DS-107					A
REF.:	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	1 OF 1
LAST SAVED: Tuesday, November 15, 2022 12:01:45 AM					

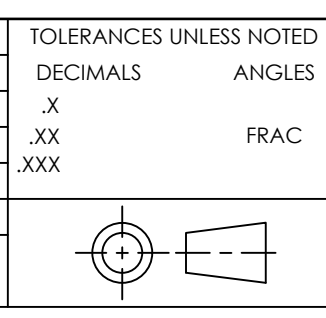
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- NOTES:
1. LINES/EQUIPMENT EXISTING.
LINES/EQUIPMENT BY OTHERS.
LINES/EQUIPMENT BY VEOLIA.
 2. PROVIDE AIR GAP.
 3. 5 PIPE DIAMETERS UPSTREAM, 3 PIPE DIAMETERS DOWNSTREAM, STRAIGHT PIPE RUN RECOMMENDED FOR MAXIMUM ACCURACY.
 4. ADD GOOSE NECK TO PREVENT DRYING OUT OF CELLS PROBE.
 5. DO NOT INSTALL PROBES UNTIL COMMISSIONING BEGINS.
 6. INJECTION LINES TO BE LOCATED ON UNDERSIDE OF PIPES.
 7. ALL EQUIPMENT SHOWN IS EXISTING AND SUPPLIED DURING INITIAL PHASE.
 8. BLOCK AND BLEED CONNECTION PIPE INSTALLED TO ALLOW CLEANING SOLUTION FROM BOTH CIP TANKS TO PUMP TO ALL TRAINS (1 TO 11). MAY BE ISOLATED TO ALLOW SIMULTANEOUS CLEANS.



VEOLIA WTS CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	AS DWN	SA APPR	WC APPR	DATE
A	INITIAL RELEASE					15 NOV 22

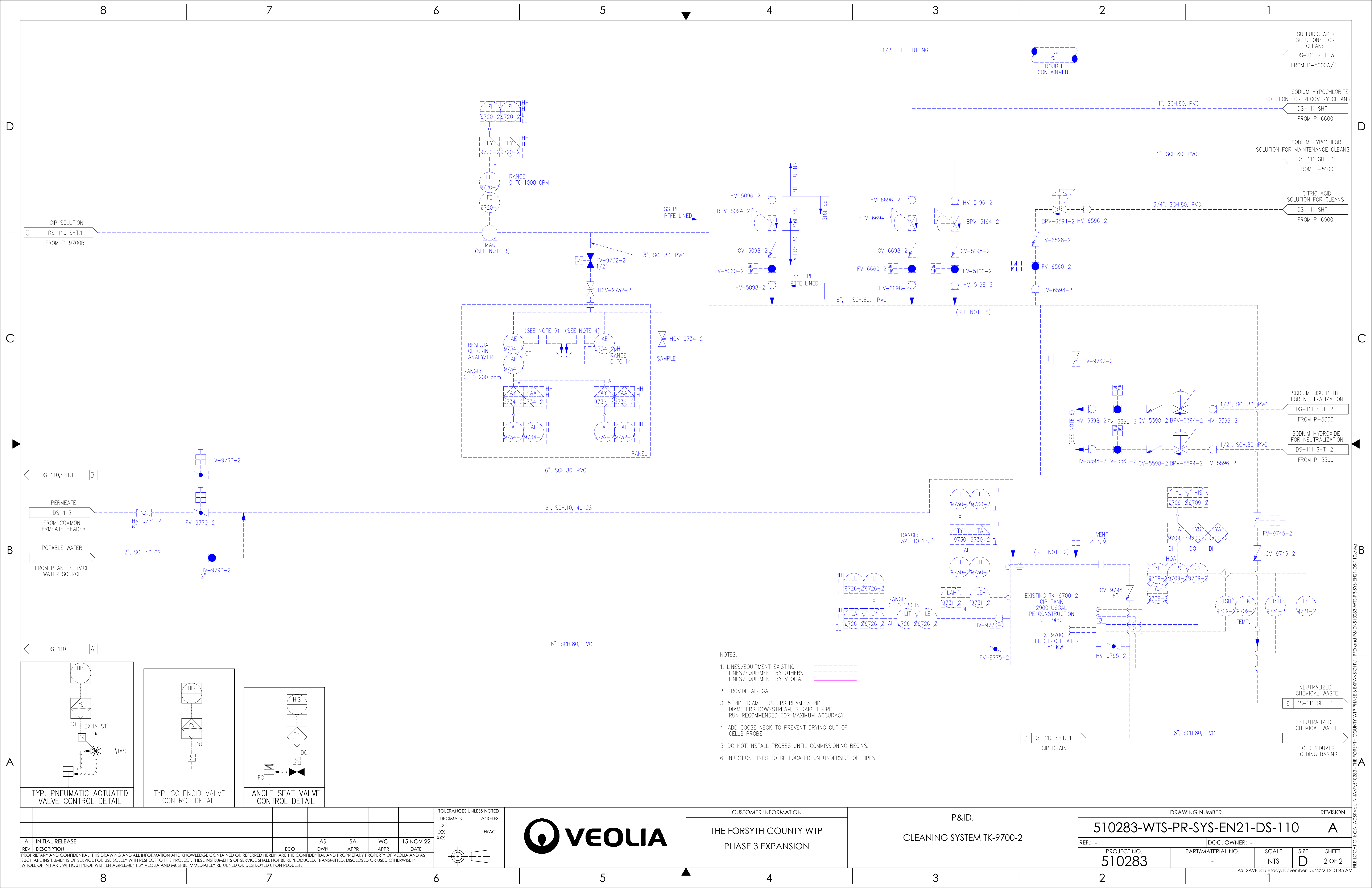


CUSTOMER INFORMATION
**THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION**

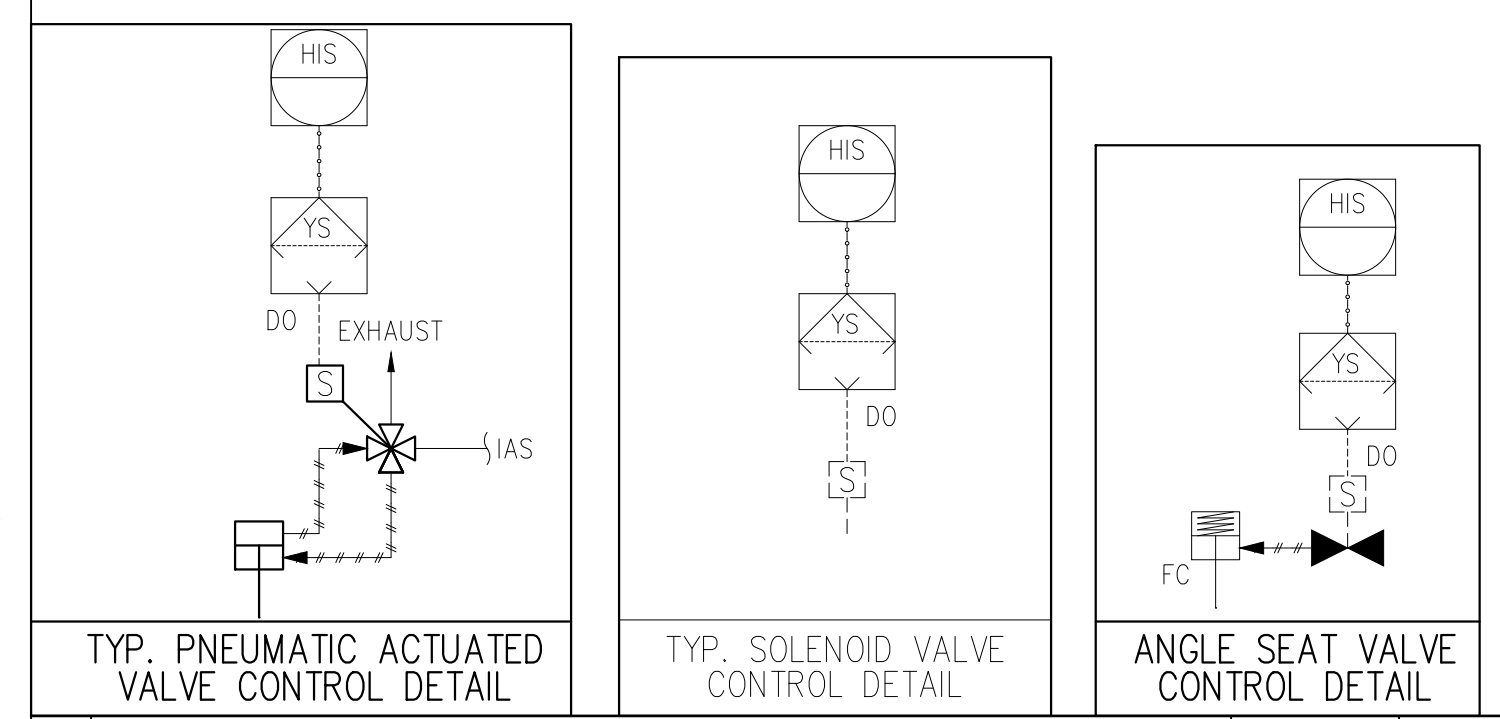
P&ID,
CLEANING SYSTEM TK-9700-1

DRAWING NUMBER				REVISION	
510283-WTS-PR-SYS-EN21-DS-110				A	
REF.:	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	1 OF 2

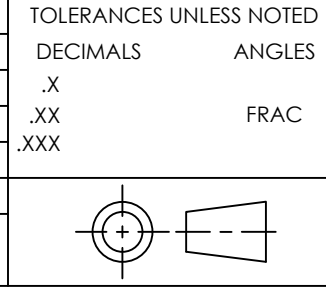
LAST SAVED: Tuesday, November 15, 2022 12:01:45 AM



- NOTES:
1. LINES/EQUIPMENT EXISTING. LINES/EQUIPMENT BY OTHERS. LINES/EQUIPMENT BY VEOLIA.
 2. PROVIDE AIR GAP.
 3. 5 PIPE DIAMETERS UPSTREAM, 3 PIPE DIAMETERS DOWNSTREAM, STRAIGHT PIPE RUN RECOMMENDED FOR MAXIMUM ACCURACY.
 4. ADD GOOSE NECK TO PREVENT DRYING OUT OF CELLS PROBE.
 5. DO NOT INSTALL PROBES UNTIL COMMISSIONING BEGINS.
 6. INJECTION LINES TO BE LOCATED ON UNDERSIDE OF PIPES.



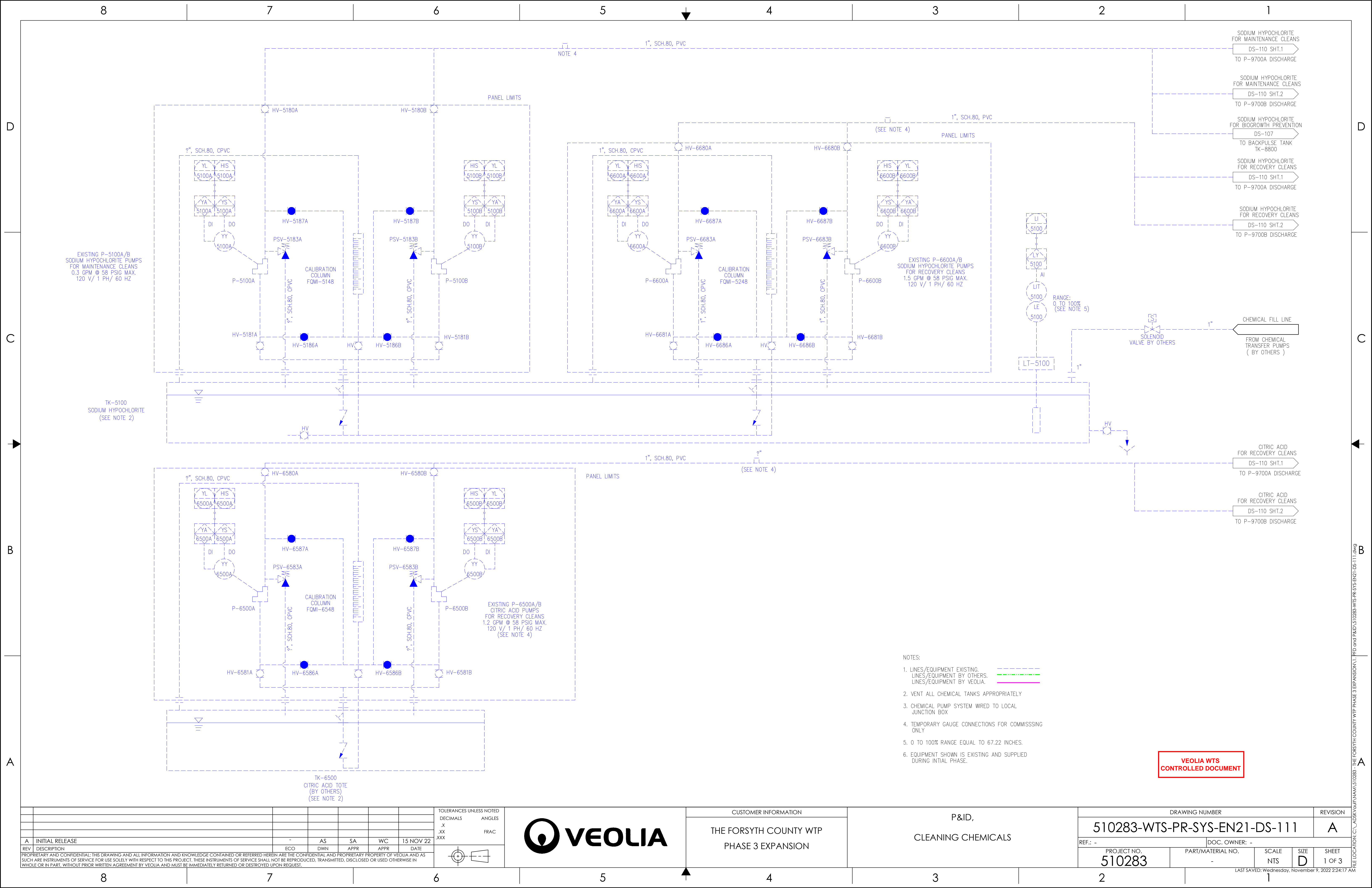
REV	DESCRIPTION	ECO	AS	SA	WC	DATE
A	INITIAL RELEASE					15 NOV 22



CUSTOMER INFORMATION
 THE FORSYTH COUNTY WTP
 PHASE 3 EXPANSION

P&ID,
 CLEANING SYSTEM TK-9700-2

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DS-110					A
REF.:	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	2 OF 2



EXISTING P-5100A/B
SODIUM HYPOCHLORITE PUMPS
FOR MAINTENANCE CLEANS
0.3 GPM @ 58 PSIG MAX.
120 V/ 1 PH/ 60 HZ

TK-5100
SODIUM HYPOCHLORITE
(SEE NOTE 2)

EXISTING P-6600A/B
SODIUM HYPOCHLORITE PUMPS
FOR RECOVERY CLEANS
1.5 GPM @ 58 PSIG MAX.
120 V/ 1 PH/ 60 HZ

EXISTING P-6500A/B
CITRIC ACID PUMPS
FOR RECOVERY CLEANS
1.2 GPM @ 58 PSIG MAX.
120 V/ 1 PH/ 60 HZ
(SEE NOTE 4)

TK-6500
CITRIC ACID TOTE
(BY OTHERS)
(SEE NOTE 2)

- NOTES:
1. LINES/EQUIPMENT EXISTING.
LINES/EQUIPMENT BY OTHERS.
LINES/EQUIPMENT BY VEOLIA.
 2. VENT ALL CHEMICAL TANKS APPROPRIATELY
 3. CHEMICAL PUMP SYSTEM WIRED TO LOCAL JUNCTION BOX
 4. TEMPORARY GAUGE CONNECTIONS FOR COMMISSING ONLY
 5. 0 TO 100% RANGE EQUAL TO 67.22 INCHES.
 6. EQUIPMENT SHOWN IS EXISTING AND SUPPLIED DURING INITIAL PHASE.

**VEOLIA WTS
CONTROLLED DOCUMENT**

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE						15 NOV 22

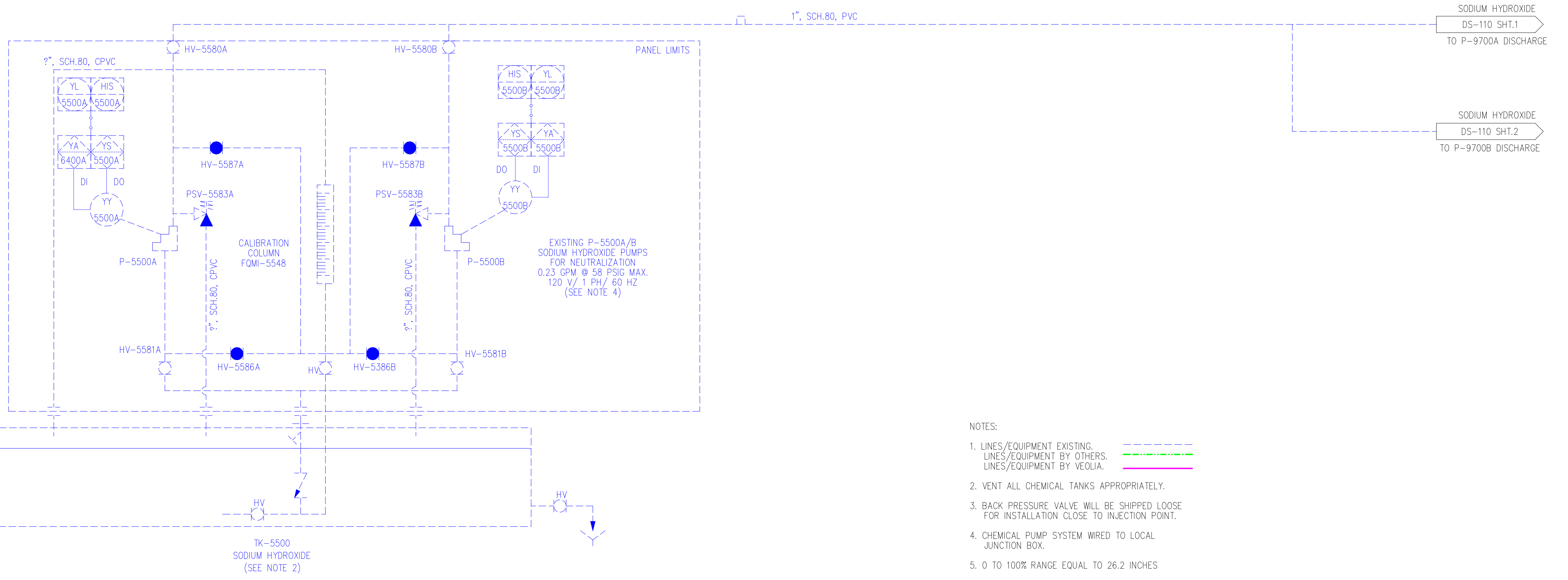
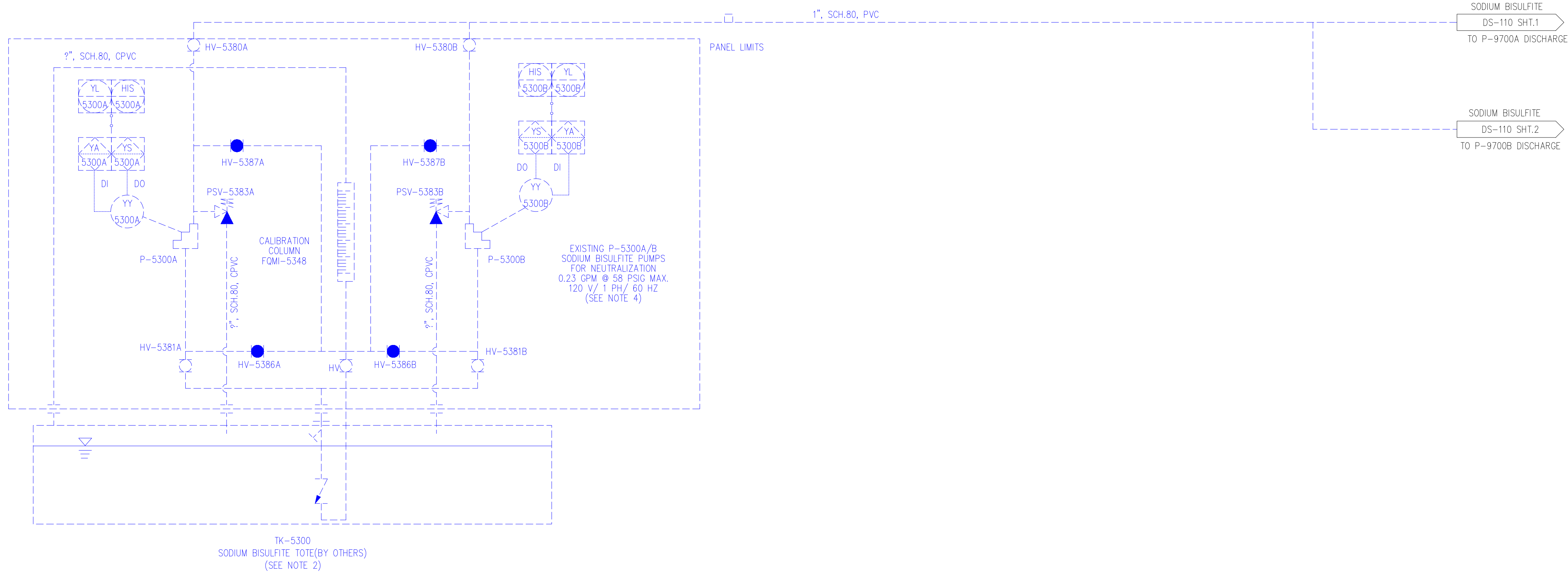
TOLERANCES UNLESS NOTED	
DECIMALS	ANGLES
.XX	FRAC
.XXX	



CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
CLEANING CHEMICALS

DRAWING NUMBER		REVISION	
510283-WTS-PR-SYS-EN21-DS-111		A	
PROJECT NO.	PART/MATERIAL NO.	SCALE	SHEET
510283	-	NTS	1 OF 3
DRAWING NUMBER		SCALE	SHEET
510283-WTS-PR-SYS-EN21-DS-111		NTS	1 OF 3



- NOTES:
1. LINES/EQUIPMENT EXISTING. LINES/EQUIPMENT BY OTHERS. LINES/EQUIPMENT BY VEOLIA.
 2. VENT ALL CHEMICAL TANKS APPROPRIATELY.
 3. BACK PRESSURE VALVE WILL BE SHIPPED LOOSE FOR INSTALLATION CLOSE TO INJECTION POINT.
 4. CHEMICAL PUMP SYSTEM WIRED TO LOCAL JUNCTION BOX.
 5. 0 TO 100% RANGE EQUAL TO 26.2 INCHES
 6. EQUIPMENT SHOWN IS EXISTING AND SUPPLIED DURING INTIAL PHASE

REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
A	INITIAL RELEASE		AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED
DECIMALS
ANGLES
.X
.XX
.XXX
FRAC



CUSTOMER INFORMATION

THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
NEUTRALIZATION CHEMICALS

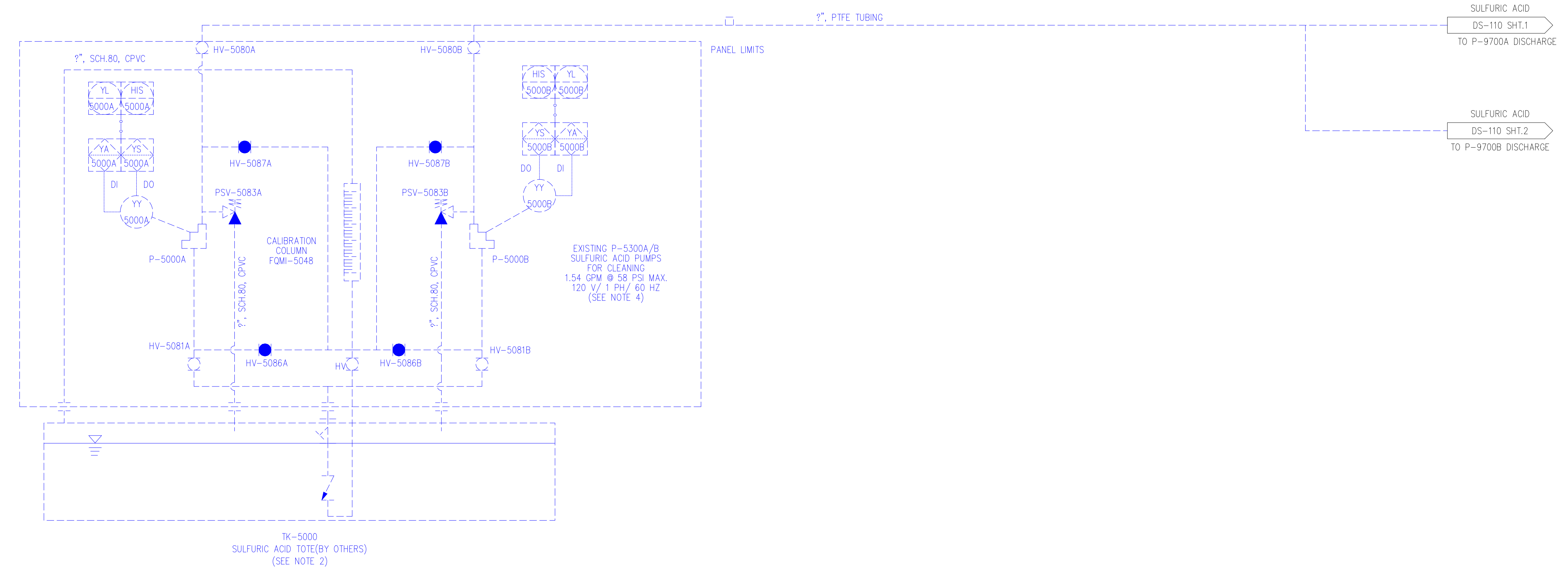
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510283-WTS-PR-SYS-EN21-DS-111					A
REF.:	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	1 OF 3
LAST SAVED: Wednesday, November 9, 2022 2:24:17 AM					

D


C

B

A



- NOTES:
1. LINES/EQUIPMENT EXISTING. ---
LINES/EQUIPMENT BY OTHERS. ---
LINES/EQUIPMENT BY VEOLIA. ---
 2. VENT ALL CHEMICAL TANKS APPROPRIATELY.
 3. BACK PRESSURE VALVE WILL BE SHIPPED LOOSE FOR INSTALLATION CLOSE TO INJECTION POINT.
 4. CHEMICAL PUMP SYSTEM WIRED TO LOCAL JUNCTION BOX.
 5. 0 TO 100% RANGE EQUAL TO 26.2 INCHES
 6. EQUIPMENT SHOWN IS EXISTING AND SUPPLIED DURING INTIAL PHASE



**REFERENCE ONLY
DO NOT USE FOR
CONSTRUCTION**

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE	-	-	AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED

DECIMALS	ANGLES
.X	XXX
.XX	XXX
.XXX	XXX

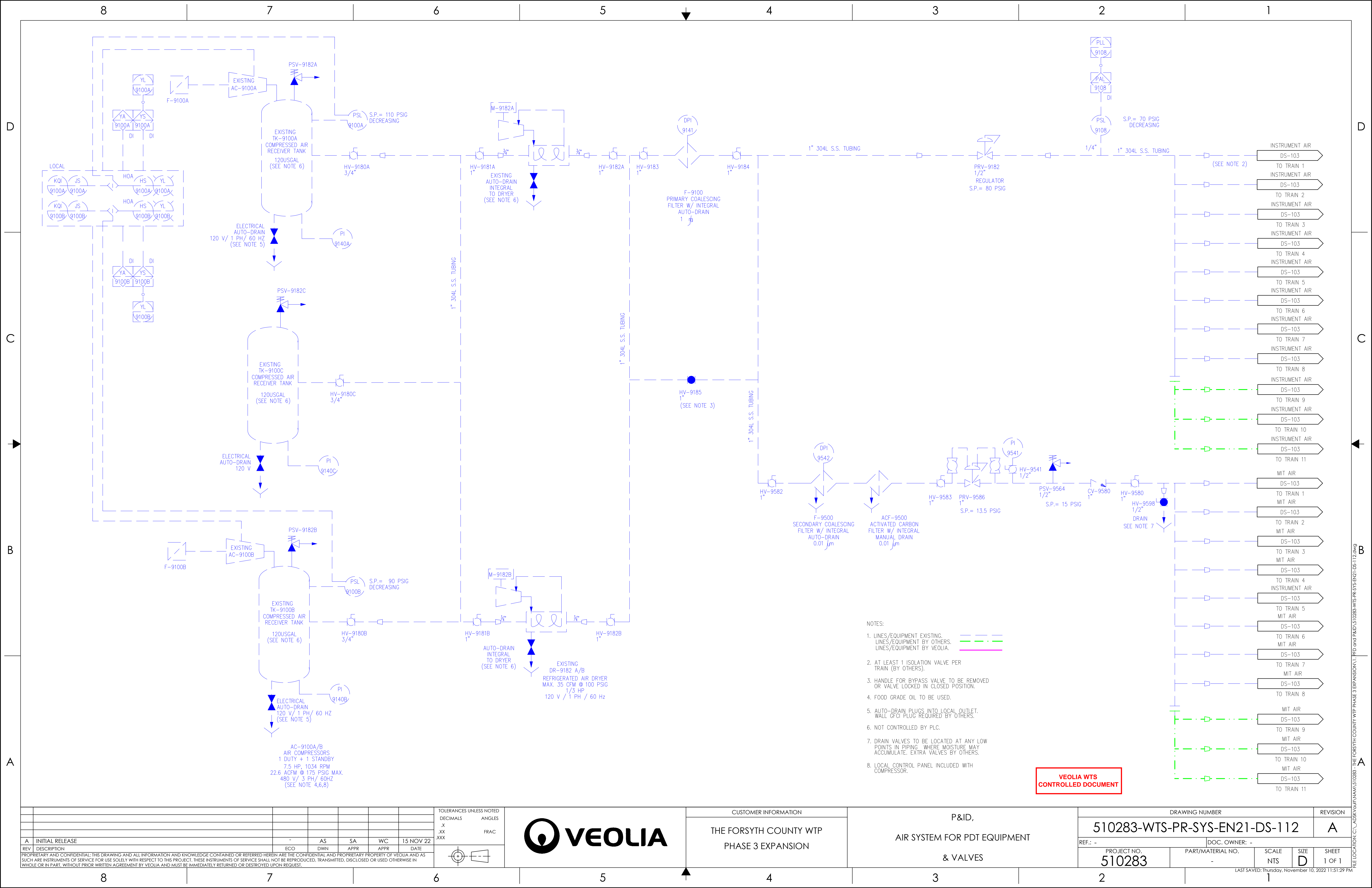


CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
CLEANING CHEMICALS

DRAWING NUMBER				REVISION	
510283-WTS-PR-SYS-EN21-DS-111				A	
REF.: -	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
-	510283	-	NTS	D	3 OF 3
LAST SAVED: Wednesday, November 9, 2022 2:24:17 AM					

FILE LOCATION: C:\ADSK\purn\NAMA\510283 - THE FORSYTH COUNTY WTP PHASE 3 EXPANSION\1 - P&ID and P&ID\510283-WTS-PR-SYS-EN21-DS-111.dwg



ELECTRICAL AUTO-DRAIN 120 V / 1 PH / 60 HZ (SEE NOTE 5)

ELECTRICAL AUTO-DRAIN 120 V

AC-9100A/B
AIR COMPRESSORS
1 DUTY + 1 STANDBY
7.5 HP, 1034 RPM
22.6 ACFM @ 175 PSIG MAX.
480 V / 3 PH / 60HZ
(SEE NOTE 4,6,8)

EXISTING DR-9182 A/B
REFRIGERATED AIR DRYER
MAX. 35 CFM @ 100 PSIG
1 1/3 HP
120 V / 1 PH / 60 Hz

- NOTES:
1. LINES/EQUIPMENT EXISTING. LINES/EQUIPMENT BY OTHERS. LINES/EQUIPMENT BY VEOLIA.
 2. AT LEAST 1 ISOLATION VALVE PER TRAIN (BY OTHERS).
 3. HANDLE FOR BYPASS VALVE TO BE REMOVED OR VALVE LOCKED IN CLOSED POSITION.
 4. FOOD GRADE OIL TO BE USED.
 5. AUTO-DRAIN PLUGS INTO LOCAL OUTLET. WALL GFCI PLUG REQUIRED BY OTHERS.
 6. NOT CONTROLLED BY PLC.
 7. DRAIN VALVES TO BE LOCATED AT ANY LOW POINTS IN PIPING WHERE MOISTURE MAY ACCUMULATE. EXTRA VALVES BY OTHERS.
 8. LOCAL CONTROL PANEL INCLUDED WITH COMPRESSOR.

VEOLIA WTS CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE			AS	SA	WC	15 NOV 22

TOLERANCES UNLESS NOTED
DECIMALS
ANGLES
.X
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FRAC

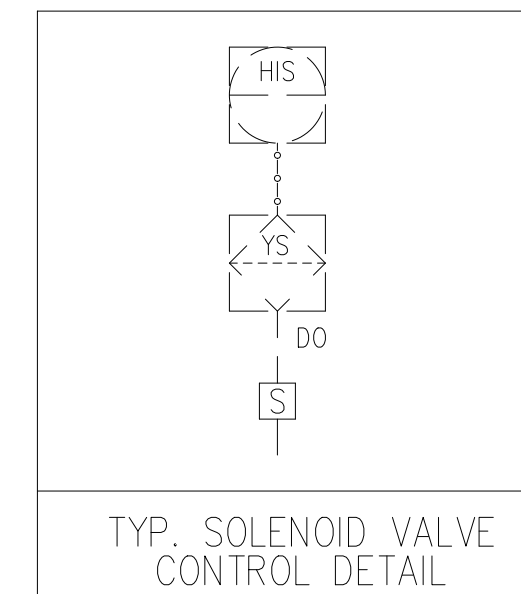
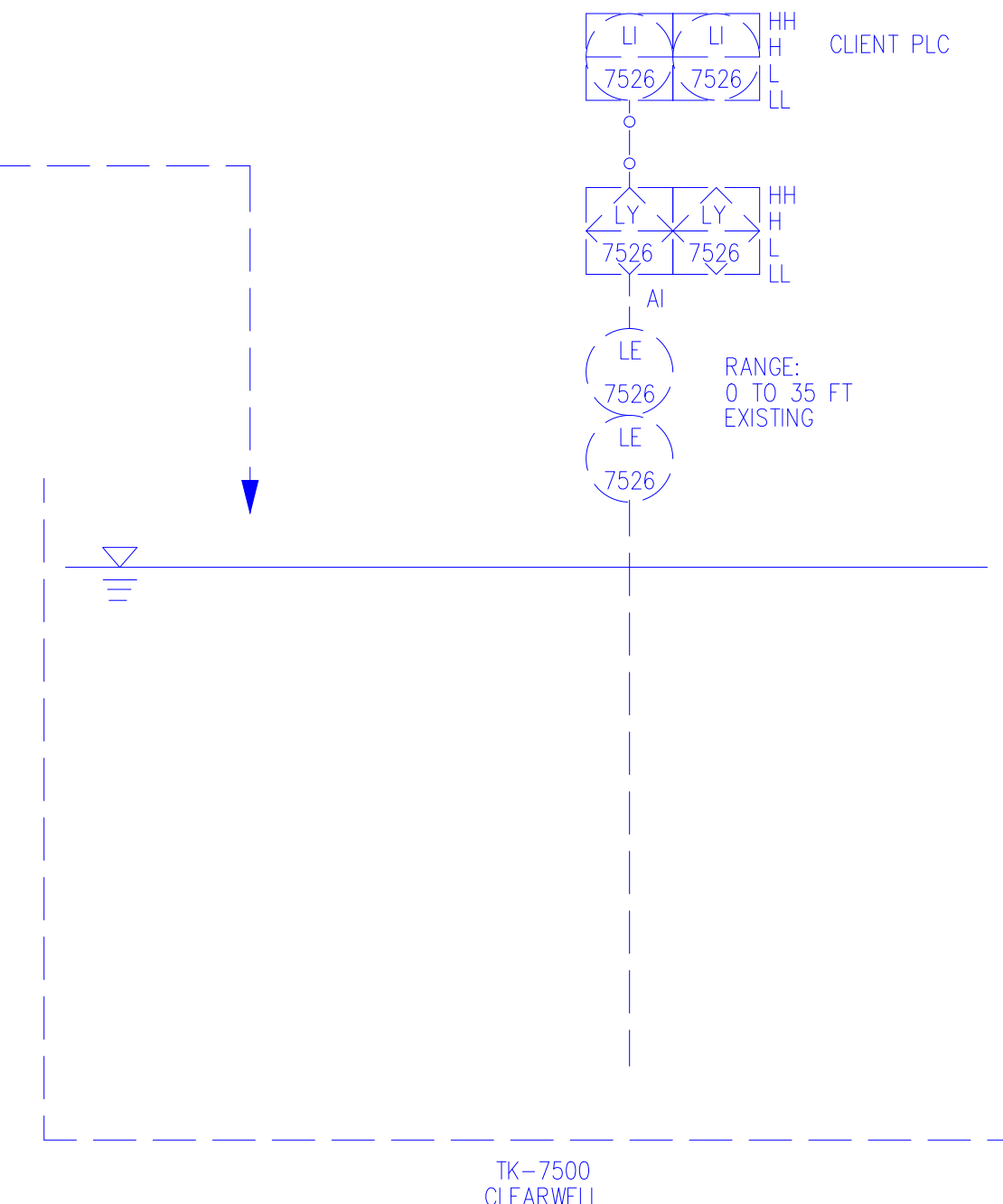
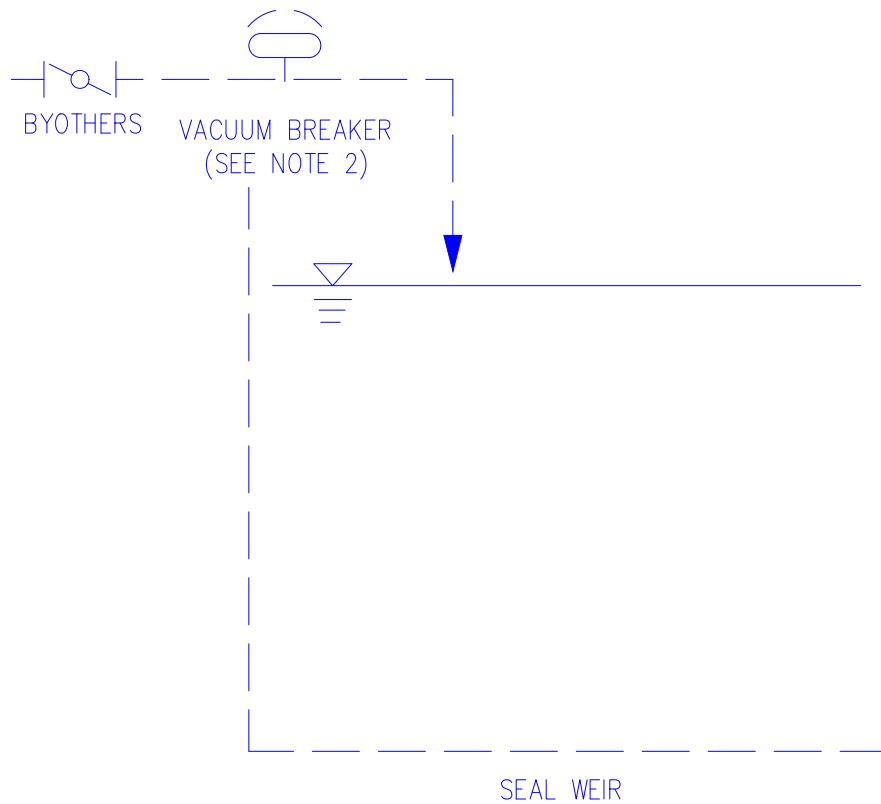
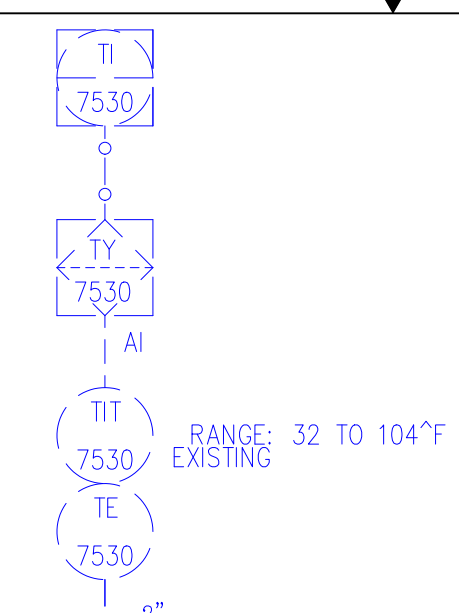
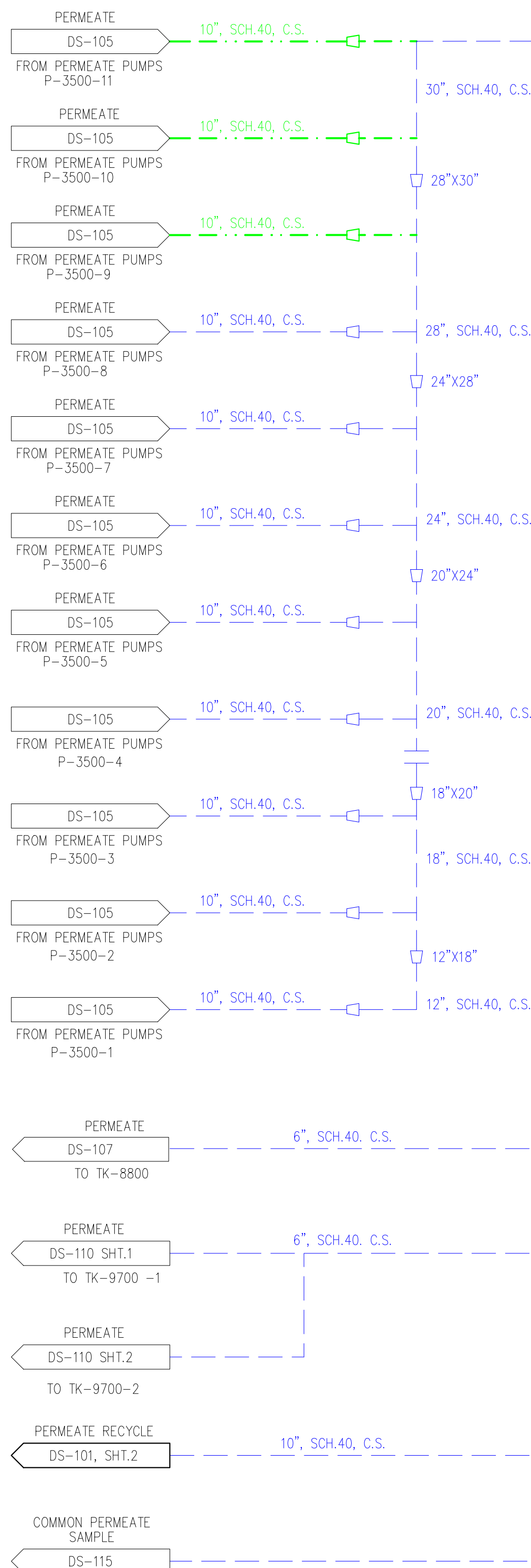


CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
AIR SYSTEM FOR PDT EQUIPMENT
& VALVES

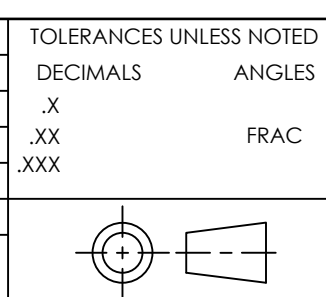
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510283-WTS-PR-SYS-EN21-DS-112				A
PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
510283	-	NTS	D	1 OF 1

- NOTES:
1. LINES/EQUIPMENT EXISTING.
LINES/EQUIPMENT BY OTHERS.
LINES/EQUIPMENT BY VEOLIA.
 2. VACUUM BREAKER TO BE INSTALLED AT HIGH POINT IN PIPING.



VEOLIA WTS CONTROLLED DOCUMENT

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE			AS	SA	WC	15 NOV 22



CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

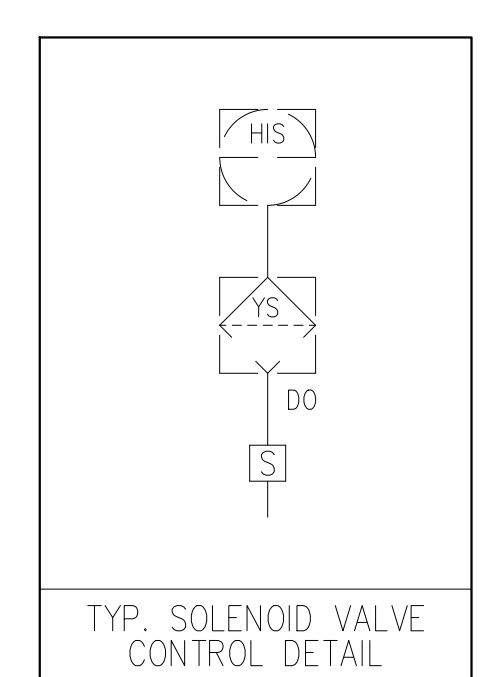
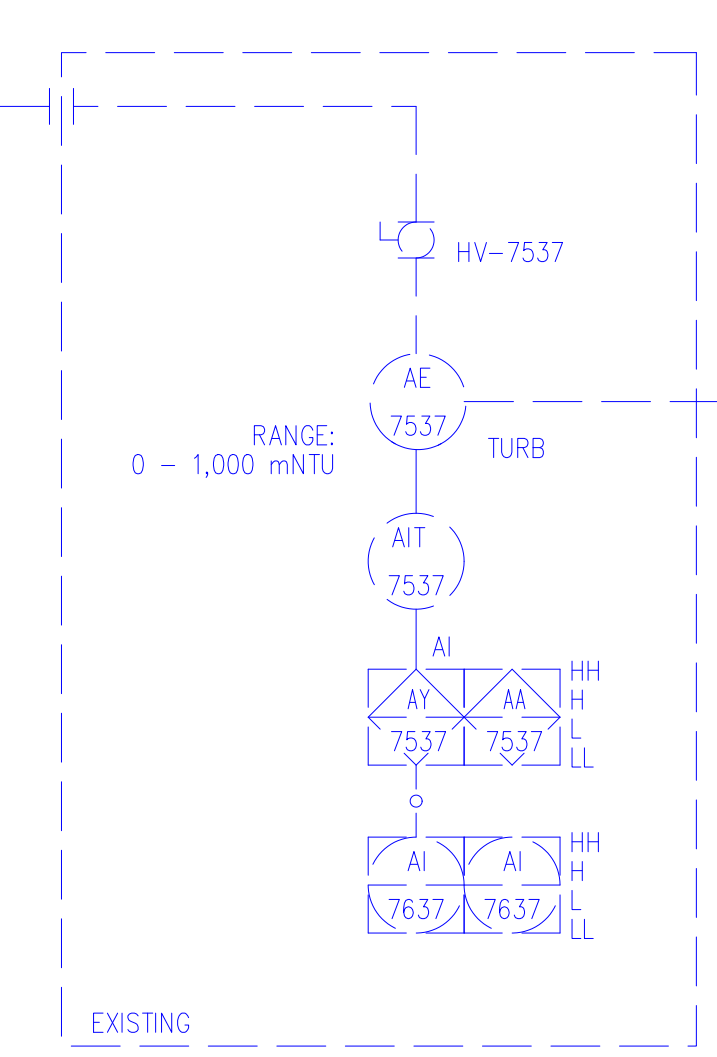
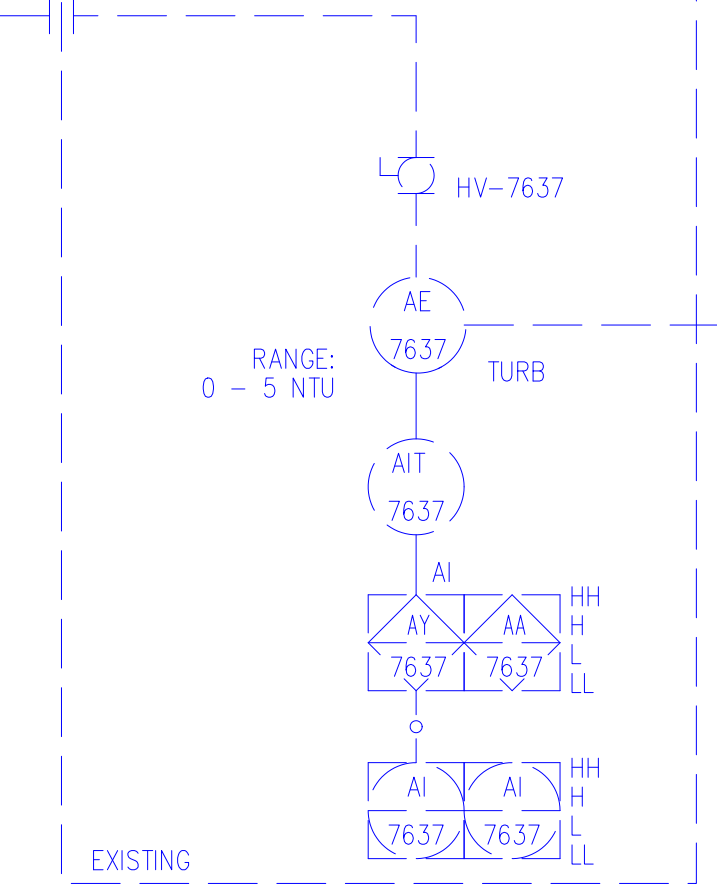
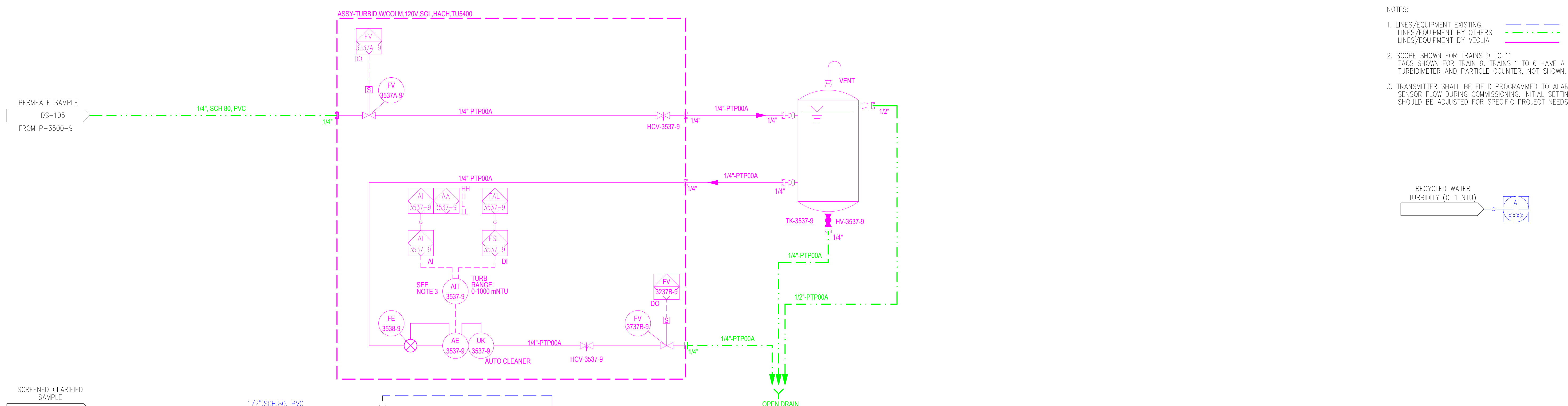
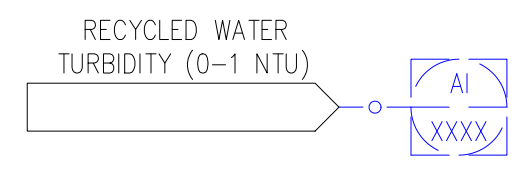
P&ID,
PERMEATE STORAGE TANK

DRAWING NUMBER					REVISION
510283-WTS-PR-SYS-EN21-DS-113					A
PROJECT NO. 510283	PART/MATERIAL NO. -	SCALE NTS	SIZE D	SHEET 1 OF 1	

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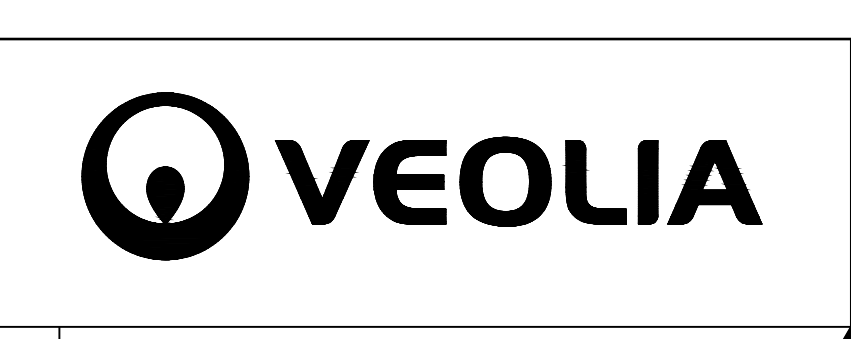
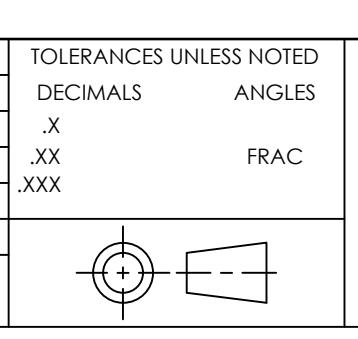
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- NOTES:
1. LINES/EQUIPMENT EXISTING. LINES/EQUIPMENT BY OTHERS. LINES/EQUIPMENT BY VEOLIA
 2. SCOPE SHOWN FOR TRAINS 9 TO 11 TAGS SHOWN FOR TRAIN 9. TRAINS 1 TO 6 HAVE A TURBIDIMETER AND PARTICLE COUNTER, NOT SHOWN.
 3. TRANSMITTER SHALL BE FIELD PROGRAMMED TO ALARM ON SENSOR FLOW DURING COMMISSIONING. INITIAL SETTING AND SHOULD BE ADJUSTED FOR SPECIFIC PROJECT NEEDS.



**VEOLIA WTS
CONTROLLED DOCUMENT**

REV	DESCRIPTION	ECO	DWN	AS	SA	WC	DATE
A	INITIAL RELEASE			AS	SA	WC	15 NOV 22



CUSTOMER INFORMATION
THE FORSYTH COUNTY WTP
PHASE 3 EXPANSION

P&ID,
TURBIDIMETER

DRAWING NUMBER				REVISION	
510283-WTS-PR-SYS-EN21-DS-115				A	
REF.: -	PROJECT NO.	PART/MATERIAL NO.	SCALE	SIZE	SHEET
	510283	-	NTS	D	1 OF 1

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Appendix B- General Terms and Conditions of Sale

General Terms and Conditions of Sale – Sale of Capital Equipment

1. Exclusive Terms and Conditions. Together with any other terms the Parties agree to in writing, these General Terms and Conditions – together with the last proposal in order of time issued by the Seller – form the exclusive terms (“Agreement”) whereby Buyer agrees to purchase, and Seller agrees to sell products and equipment (jointly “Equipment”) and to provide advice, instruction and other services in connection with the sale of that Equipment (“Services”). If Buyer sends to Seller other terms and conditions to which Seller may not respond, including but not limited to those contained in Buyer’s purchase order, such shall not apply. This Agreement may only be revised by a change order approved in writing by both Parties. All terms not defined herein shall be defined in Seller’s proposal.

2. Equipment and Services. The Equipment to be delivered and the Services to be provided shall be as set out in this Agreement. Unloading, handling, storage, installation, and operation of Buyer’s systems or the Equipment are the responsibility of Buyer. Buyer shall not require or permit Seller’s personnel to operate Buyer’s systems or the Equipment at Buyer’s site.

3. Prices and Payment. Buyer shall pay Seller for the Equipment and Services in accordance with the payment schedule (as set forth in Seller’s proposal or, if applicable, in any special conditions agreed to in writing by the Parties). Unless otherwise specified in writing, payment is due net thirty (30) days from the date of Seller’s invoice. Seller may require a Letter of Credit or other payment guarantee, in which case the stated amount of the guarantee will be adjusted by Buyer in the event of any currency-based adjustment to prices or payment amounts per the Payment Schedule, and Buyer shall deliver the adjusted guarantee within five (5) days of request by Seller. Buyer agrees to reimburse Seller for collection costs, including 2% (two per cent) interest per month (not to exceed the maximum amount permitted by applicable law), should Buyer fail to timely pay. Buyer shall have no rights to make any deduction, retention, withholding or setoff relating to any payments due under this Agreement.

4. Taxes and Duties Seller shall be responsible for all corporate taxes measured by net income due to performance of or payment for work under this Agreement (“Seller Taxes”). Buyer shall be responsible for all taxes, duties, fees, or other charges of any nature (including, but not limited to, consumption, gross receipts, import, property, sales, stamp, turnover, use, or value-added taxes, and all items of withholding, deficiency, penalty, addition to tax, interest, or assessment related thereto, imposed by any governmental authority on Buyer or Seller or its subcontractors) in relation to the Agreement or the performance of or payment for work under the Agreement other than Seller Taxes (“Buyer Taxes”). The Agreement prices do not include the amount of any Buyer Taxes. If Buyer deducts or withholds Buyer Taxes, Buyer shall pay additional amounts so that Seller receives the full Agreement price without reduction for Buyer Taxes. Buyer shall provide to Seller, within one month of payment, official receipts from the applicable governmental authority for deducted or withheld taxes. Buyer shall furnish Seller with evidence of tax exemption acceptable to taxing authorities if applicable, prior to execution of the Agreement by both Parties or issuance by the Seller of the order acceptance. Buyer’s failure to provide evidence of exemption at time of order will relieve Seller of any obligation to refund taxes paid by Seller.

5. Delivery, Title, Risk of Loss. Unless otherwise specified in this Agreement, Seller shall deliver all Equipment to Buyer FCA (Incoterms 2010) Seller’s facility. The time for delivery of the Equipment to Buyer shall be specified in this Agreement.

Seller’s sole liability for any delay in delivery of the Equipment shall be as expressly set out in this Agreement. The place of delivery specified herein shall be firm and fixed, provided that Buyer may notify Seller no later than forty-five (45) days prior to the scheduled shipment date of the Equipment of an alternate point of delivery, Buyer shall compensate Seller for any additional cost in implementing the change. If any part of the Equipment cannot be delivered when ready due to any cause not attributable to Seller, Buyer shall designate a climate-controlled storage location, and Seller shall ship such Equipment to storage. Title and risk of loss shall thereupon pass to Buyer, and amounts payable to Seller upon delivery or shipment shall be paid by Buyer along with expenses incurred by Seller. Services provided herein shall be charged at the rate prevailing at the time of actual use and Buyer shall pay any increase, and Buyer shall pay directly all costs for storage and subsequent transportation. Failure by Buyer to take delivery of the Equipment shall be a material breach of this Agreement.

Title and risk of loss to the Equipment shall be transferred from Seller to Buyer at the point of delivery upon handover in accordance with this Agreement. Title and risk of loss to the Services shall pass as they are performed.

6. Warranties and Remedies. Seller warrants that Equipment shall be delivered free from defects in material, workmanship and title and that Services shall be performed in a competent, diligent manner in accordance with any mutually agreed specifications. Seller’s warranty does not cover the results of improper handling, storage, installation, commissioning, operation or maintenance of the Equipment by Buyer or third parties, repairs or alterations made by Buyer without Seller’s written consent, influent water which does not comply with agreed parameters, or fair wear and tear.

Unless otherwise expressly provided in this Agreement, the foregoing warranties are valid for:

- (a) chemicals and Services, for six (6) months from their date of delivery or the provision of Services;
- (b) consumables, including filters and spiral wound membranes (other than spiral wound membranes for process treatment), the earlier of twelve (12) months from date of first use of fifteen (15) months from their date of delivery;
- (c) spiral wound membranes for process fluid treatment, ninety (90) days from their date of first use;
- (d) ultrafiltration membranes (ZW500, ZW700B, ZW1000, ZW1500), twelve (12) months from their date of delivery;
- (e) Equipment other than chemicals and consumables, the earlier of, fifteen (15) months from delivery or shipment to storage, or twelve (12) months from start-up/first use;
- (f) software, ninety (90) days from the date of receipt;
- (g) Equipment not manufactured by Seller, the warranty shall be the manufacturer’s transferable warranty only,

Any claim for breach of these warranties must be promptly notified in writing, and Buyer shall make the defective item available to the Seller, or the claim will be void. Seller’s sole responsibility and Buyer’s exclusive remedy arising out of or relating to the Equipment or Services or any breach of these warranties is limited to repair at Seller’s facility or (at Seller’s option) replace at Seller’s facility the defective item of Equipment, and re-perform defective Services. In performance of its obligations hereunder, Seller will not control the actual operation of either Buyer’s systems or the Equipment at the

Buyer's site.

Warranty repair, replacement or re-performance by Seller shall not extend or renew the applicable warranty period.

The warranties and remedies are conditioned upon (a) proper unloading, handling, storage, installation, use, operation, and maintenance of the Equipment and Buyer's facility and all related system in accordance with Seller's instructions and, in the absence, generally accepted industry practice, (b) Buyer keeping accurate and complete records of operation and maintenance during the warranty period and providing Seller access to those records, and (c) modification or repair of Equipment or Services only as authorized by Seller in writing. Failure to meet any such conditions renders the warranty null and void.

The Buyer will be entitled to assign to a subsequent owner of the Equipment the warranties of the Seller under this Agreement, provided that a prior written notification is sent to the Seller and the assignment agreement contains terms and conditions which provide the Seller with the protections of the warranties and limitations on liability contained in the Agreement. Subject to Buyer's compliance with the foregoing requirement, such warranty rights are expressly assignable by the Buyer to a subsequent owner of the Equipment. Except as provided herein, Buyer is not entitled to extend or transfer this warranty to any other party. The warranties and remedies set forth in this article are in lieu of and exclude all other warranties and remedies, statutory, express or implied, including any warranty of merchantability or of fitness for a particular purpose.

Unless otherwise expressly stipulated in this Agreement, Seller gives no warranty or guarantee as to process results or performance of the Equipment, including but not limited to product quality, flow, production, capacity, membrane life, chemical consumption, regulatory compliance or energy consumption.

7. General Indemnity. Seller shall indemnify and hold harmless Buyer from claims for physical damage to third party property or injury to persons, including death, to the extent caused by the negligence of Seller or its officers, agents, employees, and/or assigns while engaged in activities under this Agreement. Buyer shall likewise indemnify and hold harmless Seller from claims for physical damage to third party property or injury to persons, including death, to the extent caused by the negligence of the Buyer, its officers, agents, employees, and/or assigns. In the event such damage or injury is caused by the joint or concurrent negligence of Seller and Buyer, the loss shall be borne by each Party in proportion to its negligence. For the purposes of this article (i) "Third party" shall not include Buyer or any subsequent owner of the Equipment, their subsidiaries, parents, affiliates, agents, successors or assigns including any operation or maintenance contractor, or their insurer; and (ii) no portion of the Equipment is "third party property".

8. Compliance with Laws and Permits. All permits, authorisations, and licenses which are required to construct, install and/or operate Buyer's facility or equipment, to use the Equipment, or to manage and dispose of any wastes, discharges, and residues resulting from Buyer's use of the Equipment, shall be obtained and maintained by Buyer at Buyer's sole expense. Buyer is responsible for compliance with all laws and regulations applicable to the storage, use, handling, installation, maintenance, removal, registration, and labelling of all Equipment after delivery of the Equipment, as well as for the proper management and disposal of all wastes, discharges, and residues.

9. Buyer's Site Conditions. Buyer warrants that any data furnished to the Seller concerning conditions at Buyer's site (including but not limited to any existing Buyer facility,

equipment or processes, influent water or other substances to be treated or measured with the Equipment) is accurate and complete, and the Seller reserves the right to utilize the most appropriate design compatible with generally accepted engineering practices, and to make changes in details of design, manufacture and arrangement of Equipment unless precluded by any limitations specified in this Agreement. Seller shall notify Buyer of (1) any conditions at Buyer's site which materially differ from those indicated in the data furnished by Buyer, (2) any previously unknown physical conditions at Buyer's site of an unusual nature, not revealed by previous investigations and differing from those ordinarily encountered in the type of work provided for in this Agreement, and (3) the presence of any Hazardous Materials (as defined below), the existence of a contaminated soil, unexploded ordinance, or archaeological remains. If such conditions cause an increase in Seller's cost or in the time required for the performance of Seller's obligations, Seller shall be entitled to an equitable adjustment in the Agreement price and an extension in the time for performance.

10. Hazardous Materials and Wastes. In the event that Seller encounters any Hazardous Materials (meaning toxic substances, hazardous substances, pollutants, contaminants, regulated wastes, or hazardous wastes as such terms may be defined or classified in any law, statute, directive, ordinance or regulations promulgated by any applicable governmental entity) at Buyer's site, other than Hazardous Materials introduced by Seller or that are otherwise the express responsibility of Seller under this Agreement, Buyer shall immediately take whatever precautions are required to legally eliminate such Hazardous Materials so that the Seller's work under this Agreement may safely proceed. At no time shall Seller be deemed to have taken title to or the responsibility for the management or disposal of any wastes, Hazardous Materials, influent water, any resultant product streams, wastewater streams, discharges, cleaning materials, or any other materials or substances processed by the Equipment or otherwise located at Buyer's site. Seller does not take responsibility for and hereby expressly disclaims responsibility for the characterization or disposal of wastes, Hazardous Materials, or for the identification, selection, or management of disposal facilities for any wastes.

11. Excusable Delays. Seller shall not be liable nor in breach or default of its obligations under this Agreement to the extent performance of such obligations is delayed or prevented, directly or indirectly, due to causes beyond the reasonable control of Seller, including, but not limited to: acts of God, natural disasters, unusually severe weather, fire, terrorism, war (declared or undeclared) epidemics, material shortages, insurrection, act (or omissions) of Buyer or Buyer's contractors/suppliers or agents, any act (or omission) by any governmental authority, strikes, labour disputes, transportation shortages, or vendor non-performance. The delivery or performance date shall be extended for a period equal to the time lost by reason of delay or non-performance, plus such additional time as may be necessary to overcome the effect of the delay or non-performance. If delivery or performance is delayed for a period exceeding 180 (one hundred and eighty) days, either Party may terminate this Agreement without further liability provided that Seller shall be paid an amount equal to that which would be payable to Seller under the article entitled "Termination". If Seller is delayed by any acts (or omissions) of Buyer, or by the prerequisite work of Buyer's other contractors or suppliers, Seller shall be entitled to an equitable adjustment in schedule, price and/or performance, as applicable.

12. Emergencies. If the safety of Seller's personnel is threatened or likely to be threatened by circumstances outside the reasonable control of Seller, including but not limited to war, armed conflict, civil unrest, riots, terrorism, kidnapping, presence of or exposure to hazardous materials, unsafe working conditions, or by the threat of such circumstances or a lack of

adequate protections against such circumstances, Seller shall be entitled to take all necessary steps to ensure the security and safety of its personnel including the evacuation of personnel until such circumstances no longer apply. Any such occurrence shall be considered an excusable delay event. Buyer shall reasonably assist in the event of any such evacuation.

13. Confidentiality, Intellectual Property. Both Parties agree to keep confidential the other Party's proprietary non-public information, if any, which may be acquired in connection with this Agreement. Buyer will not, without Seller's advance written consent, subject Equipment to testing, analysis, or any type of reverse engineering. Seller retains all intellectual property rights including copyright which it has in all drawings and data or other deliverables (including the Equipment) supplied or developed under this Agreement. Buyer agrees that it will not file patent applications on the Equipment or any development or enhancement of the Equipment, or of processes and methods of using the Equipment, without Seller's express prior written permission. Buyer further agrees that in any event any such patents will not be asserted against Seller or its other buyers based upon purchase and use of such Equipment. Seller grants to Buyer a non-exclusive, non-terminable, royalty free license to use the intellectual property embedded in Equipment delivered to and paid for by the Buyer, as well as any drawings, design or data delivered to and paid for by the Buyer, for the purposes of owning, financing, using, operating and maintaining the relevant Equipment at Buyer's site. Such license may only be assigned to a subsequent owner of the Equipment or to an operations and maintenance subcontractor. Such license does not extend to the re-creation of the Equipment or the manufacture of spares or consumables by Buyer or third parties.

Any software Seller owns and provides pursuant to this Agreement shall remain Seller's property. Seller provides to Buyer a limited, non-exclusive and terminable royalty free project-specific license to such software for the use, operation or maintenance at Buyer's site of any Equipment purchased hereunder to which the software is a necessary component. Buyer agrees not to copy, sub-license, translate, transfer, reverse engineer, or decode the software.

Seller shall indemnify and hold harmless Buyer from any rightful claim of any third party that any Equipment or Service infringe a patent in effect in the USA, an EU member state or country of delivery (provided there is a corresponding patent issued by the USA or an EU member state), or USA copyright or copyright registered in the country of delivery. If the Buyer notifies the Seller promptly of the receipt of any such claim, does not take any position adverse to the Seller regarding such claim and gives the Seller information, assistance and exclusive authority to settle and defend the claim, the Seller shall, at its own expense and choice, either (i) settle or defend the claim and pay all damages and costs awarded in it against the Buyer, or (ii) procure for the Buyer the right to continue using the Equipment or Service, or (iii) modify or replace the Equipment or Service so that it becomes non-infringing, or (iv) remove the infringing Equipment and refund the price. The above paragraph shall not apply to any misuse of Equipment or Equipment which is manufactured to the Buyer's design, or to alleged infringement arising from the combination, operation, or use of any Equipment or Services with other equipment or services when such combination is part of any allegedly infringing subject matter. The foregoing list of sub-sections (i), (ii), (iii), and (iv) and related terms state the entire liability of the Seller for intellectual property infringement by any Equipment or Service.

14. Limitations on Liability. Notwithstanding anything else contained in this Agreement, to the maximum extent permitted by law, and regardless of whether a claim is based in contract (including warranty or indemnity), extra-contractual liability, tort (including negligence or strict liability), statute, equity or any

other legal theory:

- (a) THE TOTAL LIABILITY OF THE SELLER AND OF ITS INSURER FOR ALL CLAIMS ARISING OUT OF OR RELATING TO THE PERFORMANCE OR BREACH OF THIS AGREEMENT OR USE OF ANY EQUIPMENT OR SERVICES SHALL NOT EXCEED THE TOTAL PRICE PAID BY BUYER UNDER THIS AGREEMENT OR (IN THE CASE OF AN AGREEMENT FOR SERVICES WITH A TERM OF MORE THAN ONE YEAR) THE ANNUAL PRICE PAYABLE BY BUYER UNDER THIS AGREEMENT;
- (b) IN NO EVENT SHALL SELLER BE LIABLE FOR ANY LOSS OF PROFIT OR REVENUES, LOSS OF PRODUCTION, LOSS OF USE OF EQUIPMENT OR SERVICES OR ANY ASSOCIATED EQUIPMENT, INTERRUPTION OF BUSINESS, COST OF CAPITAL, COST OF REPLACEMENT WATER OR POWER, DOWNTIME COSTS, INCREASED OPERATING COSTS, CLAIMS OF BUYER'S CUSTOMERS FOR SUCH DAMAGES, OR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES;
- (c) SELLER'S LIABILITY SHALL END UPON EXPIRATION OF THE APPLICABLE WARRANTY PERIOD, PROVIDED THAT BUYER MAY CONTINUE TO ENFORCE A CLAIM FOR WHICH IT HAS GIVEN NOTICE PRIOR TO THAT DATE BY COMMENCING AN ACTION OR ARBITRATION, AS APPLICABLE UNDER THIS AGREEMENT, BEFORE EXPIRATION OF ANY STATUTE OF LIMITATIONS OR OTHER LEGAL TIME LIMITATION BUT IN NO EVENT – TO THE EXTENT PERMITTED BY APPLICABLE LAW – LATER THAN FIVE (5) MONTHS AFTER EXPIRATION OF SUCH WARRANTY PERIOD.

For the purposes of this article, "Seller" shall mean Seller, its affiliates, subcontractors and suppliers of any tier, and their respective agents and employees, individually or collectively. If Buyer is supplying Seller's Equipment or Services to a third party, Buyer shall require the third party to agree to be bound by this article. If Buyer does not obtain this agreement for Seller's benefit for any reason, Buyer shall indemnify and hold Seller harmless from all liability arising out of claims made by the third party in excess of the limitations and exclusion of this article.

15. Termination. This Agreement and any performance pursuant to it may be terminated by either Party, and the consequences of such termination shall be as set out in the next paragraph, if the other Party

- (a) becomes insolvent, makes an assignment for the benefit of its creditors, has a receiver or trustee appointed for the benefit of its creditors, or files for protection from creditors under any bankruptcy or insolvency laws; or
- (b) fails to make any payment when due or to establish any payment security required by this Agreement, or commits a material breach or defaults in its material obligations under this Agreement, and such default is not cured within thirty (30) days of written notice from the other Party.

Upon the termination of this Agreement by Buyer for cause (i) Seller shall reimburse Buyer the difference between that portion of the Agreement price allocable to the terminated scope and the actual amounts reasonably incurred by Buyer to complete that scope, and (ii) Buyer shall pay to Seller (a) the portion of the Agreement price allocable to Equipment completed, and (b) amounts for Services performed before the effective date of termination. Upon the termination of this Agreement by Seller for cause Buyer shall pay to Seller within thirty (30) days of receipt of invoice the price of all Equipment or Services delivered at the date of termination, plus an amount equal to all costs and expenses incurred in the engineering, sourcing, financing, procurement, manufacture, storage and

transportation of the Equipment including materials, work in progress and any cancellation charges assessed against Seller by Seller's suppliers including reasonable overhead and profit on all such costs and expenses. Alternatively, if any schedule of termination payments has been agreed between the Parties, Buyer shall pay to Seller within thirty (30) days of receipt of invoice the amounts set out in that schedule.

Seller shall have the right to suspend performance upon written notice to Buyer in any case where Seller would have the right to terminate the Agreement under this article, without prejudice to Seller's right to terminate this Agreement for cause. Any cost incurred by Seller in accordance with any such suspension (including storage costs) shall be payable by Buyer upon submission of the Seller's invoice(s). Performance of the Seller's obligations shall be extended for a period of time reasonably necessary to overcome the effects of such suspension.

16. Governing Law, Dispute Resolution. This Agreement shall be governed by the substantive laws of the State of New York. In the event of a dispute concerning this Agreement, the complaining Party shall notify the other Party in writing thereof. Management level representatives of both Parties shall meet at an agreed location to attempt to resolve the dispute in good faith. Should the dispute not be resolved within thirty (30) days after such notice, the complaining Party shall seek remedies exclusively through arbitration. The seat of arbitration shall be the federal district court in Philadelphia, PA, and the rules of the arbitration will be the Commercial Arbitration Rules of the American Arbitration Association, which are incorporated by reference into this article.

Notwithstanding the foregoing, each Party shall have the right to commence an action or proceeding in a court of competent jurisdiction, subject to the terms of this Agreement, in order to seek and obtain a restraining order or injunction to enforce the confidentiality intellectual property provisions set forth in the first two paragraphs of article 13; nuclear use restrictions set forth in article 17, or to seek interim or conservatory measures not involving monetary damages.

17. No Nuclear Use. Equipment and Services sold by Seller are not intended for use in connection with any nuclear facility or activity, the Buyer warrants that it shall not use or permit others to use the Equipment or Services for such purposes, without the advance written consent of Seller. If, in breach of this, any such use occurs, Seller (and its parent, affiliates, suppliers and subcontractors) disclaims all liability for any nuclear or other damage, injury or contamination, and, in addition to any other rights of Seller, Buyer shall indemnify and hold Seller (and its parent, affiliates, suppliers and subcontractors) harmless against all such liability.

18. Export Control. Seller's obligations are conditioned upon Buyer's compliance with all applicable trade control laws and regulations including those of the United States, European Union, and France. Additionally, Buyer shall not sell, distribute, disclose, release or otherwise transfer any item or technical data provided under this Agreement to: (i) any country designated as a "State Sponsor of Terrorism" by the U.S. Department of State including, for this Agreement, the countries of North Korea (ii) any entity located in, or owned by an entity located in, a "State Sponsor of Terrorism" country, North Korea, (iii) the region of Crimea or (iv) any person or entity listed on the "Entity List" or "Denied Persons List", the list of "Specifically Designated Nationals and Blocked Persons" maintained by any other applicable prohibited party list. The Buyer hereby certifies that the work, technical data, software or other information or assistance furnished by the Seller or its Affiliates under this contract will not be used in the design, development, production, stockpiling or use of chemical, biological or nuclear weapons either by the Buyer or by any entity acting on the Buyer's behalf.

The obligations of the parties to comply with all applicable trade control laws and regulations shall survive any termination or discharge of any other contract obligations.

19. Changes. Each Party may at any time propose changes in the schedule or scope of Equipment or Services. All changes to the Equipment or Services shall be subject to mutual agreement via a written change order or variation, which shall only become effective once signed by both Parties. The scope, Agreement price, schedule, and other provisions will be equitably adjusted to reflect additional costs or obligations incurred by Seller resulting from a change, after Seller's proposal date, in Buyer's site-specific requirements or procedures, or in industry specifications, codes, standards, applicable laws or regulations. It shall be acceptable and not considered a change if Seller delivers Equipment (including Equipment replacement under warranty) that bears a different, superseding or new part or version number compared to the part or version number listed in the Agreement, provided that in no circumstance shall this affect any other of Seller's obligations including those set forth in article 6.

20. Conflicts; Survival, Assignment. If there is any conflict between this Agreement and any written proposal or quotation provided by Seller, then the terms and conditions set forth in this Agreement shall prevail. If any term or condition of this Agreement or any accompanying terms and conditions are held invalid or illegal, then such terms and conditions shall be reformed to be made legal or valid, or deleted, but the remaining terms and conditions shall remain in full force and effect, and this Agreement shall be interpreted and implemented in a manner which best fulfills Parties' intended agreement. Those provisions which by their nature remain applicable after termination shall survive the termination of this Agreement for any reason. Seller may assign or novate its rights and obligations under the Agreement, in whole or in part, to any of its affiliates or may assign any of its accounts receivable under this Agreement to any party without Buyer's consent, and the Buyer hereby agrees, by signing this Agreement, to such assignment and to execute any document that may be necessary to complete Seller's assignment or novation. This Agreement shall not otherwise be assigned by either Party without the other Party's prior written consent, and any assignment without such consent shall be void.

Seller may (i) manufacture and source the Equipment and any part thereof globally in the country or countries of its choosing; and (ii) subcontract portions of the Services, so long as Seller remains responsible for such.

21. No third party beneficiary. Except as specifically set forth in the article entitled "Limitations on Liability" and "No Nuclear Use", this Agreement is not intended to, and does not, give to any person who is not a party to this Agreement any rights to enforce any provisions contained in this Agreement.

22. Entire Agreement. This Agreement embodies the entire agreement between Buyer and Seller and supersedes any previous documents, correspondence or agreements between them. No modification, amendment, revision, waiver, or other change shall be binding on either Party unless agreed in writing by the Party's authorized representative. Any oral or written representation, warranty, course of dealing, or trade usage not specified herein shall not be binding on either Party. Each Party agrees that it has not relied on, or been induced by, any representations of the other Party not contained in this Agreement

Additional clauses

***** Insurance.** Buyer shall maintain all risk property and boiler and machinery breakdown insurance covering the full replacement value of Buyer's site, systems and related equipment, together with business interruption coverage, which includes a waiver of subrogation in favour of Seller and its affiliates. Prior to commencement of any work under this Agreement, and not less than annually thereafter during the term of this Agreement, Buyer shall deliver to Seller a certificate(s) of insurance and copy of waiver of subrogation endorsement evidencing that the foregoing insurance is in full force and effect. Seller shall maintain types and amounts of insurance against loss or damage and such other risks as customarily insured against by businesses whose operations are comparable to those of the Seller. Seller shall not be obliged to add Buyer or any other third party as an additional insured under Seller's insurance policies.

***** Inspection and Factory Tests.** Seller will apply its normal quality control procedures in manufacturing the Equipment. Seller shall attempt to accommodate requests by Buyer to witness Seller's factory tests of Equipment, subject to appropriate access restrictions, if such witnessing can be arranged without delaying the work.

***** Change control.** Buyer shall notify Seller immediately upon any change in ownership of more than fifty per cent (50%) of Buyer's voting rights or of any controlling interest in Buyer. If Buyer fails to do so or Seller objects to the change, Seller may (a) terminate the Agreement, (b) require Buyer to provide adequate assurance of performance (including but not limited to payment), and/or (c) put in place special controls regarding Seller's Confidential Information.

***** Assignment of Contract**

A. Buyer has the right to assign this Contract for furnishing Goods and Special Services, but only to a person or entity with sufficient ability to satisfy all of Buyer's obligations under this Contract, and Seller hereby consents to such assignment. Buyer and Seller agree to the following terms and conditions regarding assignment of Seller's Contract to a General Contractor retained by the Buyer:

1. that the General Contractor shall provide the Buyer with a Labor and Material Payment Bond in the full amount of the general contract, including Seller's contract amount;
2. that Seller's contract shall be assigned 'as is', with no new or additional terms and conditions being imposed upon Seller by the General Contractor;
3. that the General Contractor shall not have the right to re-assign Seller's Contract, other than to re-assign it back to the Buyer, without Seller's prior written approval, such approval may be withheld at Seller's sole discretion; and
4. Notwithstanding the assignment of the payment obligations of the Supply Contract to the General Contractor, the Owner shall be liable to the Seller for any payments which the General Contractor has defaulted on under the Supply Contract.


B. The Contract will be executed in the name of Buyer initially and will be assigned to a construction contractor designated by Buyer. Such construction contractor's responsibilities will include the installation of the Goods. The assignment will occur on the effective date of the agreement between Buyer and the construction contractor. As of the date of acceptance of assignment by the construction contractor, all references in the Contract Documents to Buyer shall mean the designated construction contractor.

The assignment of the Contract shall relieve the assignor from all further obligations and liabilities under this Contract. After assignment, Seller shall become a subcontractor or supplier to the assignee and, except as noted herein, all rights, duties, and obligations of Buyer under the Contract shall become the rights, duties and obligations of the assignee.

C. No other assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound. Specifically, but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by Laws and Regulations). Unless specifically stated to the contrary in any written consent to such an assignment, such an assignment will not release or discharge the assignor from any duty or responsibility under the Contract Documents.

In witness whereof, the parties hereto have executed this Proposal.

FORSYTH COUNTY, GEORGIA

By:  Date: January 24, 2023
January 24, 2023

David McKee,

County Manager

SUEZ WTS Systems USA, Inc.

By:  Date: 1.12.2023

Print Name: Ryan Hess

Title: NAM Application Engineering Team Leader