

# INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES

## ALBEMARLE COUNTY, VIRGINIA

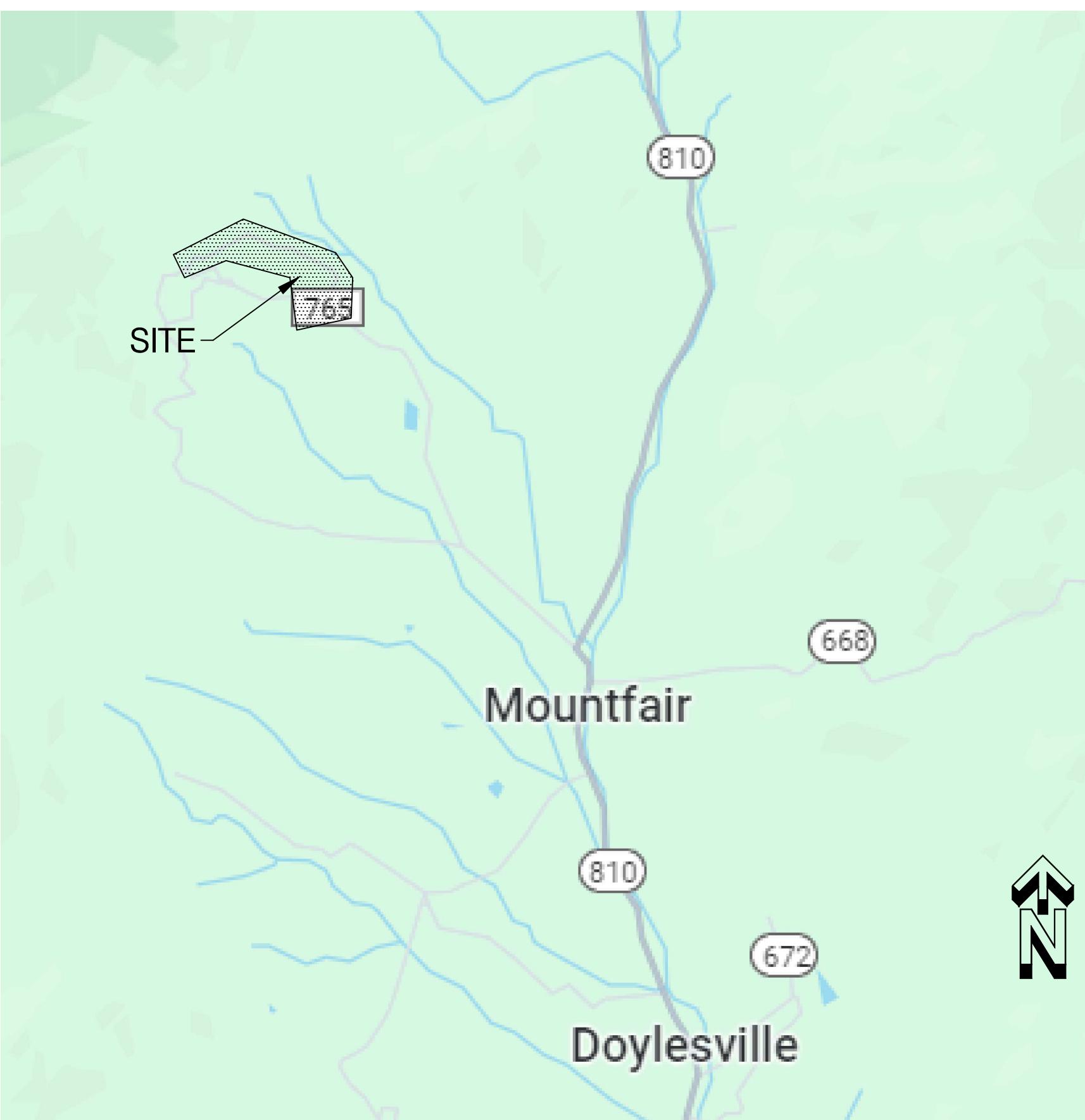
### STANDARD PROJECT LEGEND:

— COMM	COMMUNICATIONS LINE
— ELEC OH	OVERHEAD POWER
— UE	UNDERGROUND POWER
— FO	FIBER OPTIC LINE
— GAS	GAS LINE
— GEOTHERMAL	GEOTHERMAL LINE
— SS	SANITARY SEWER LINE
— SS FM	SANITARY SEWER FORCE MAIN
— TELE OH	OVERHEAD TELEPHONE
— TELE UG	UNDERGROUND TELEPHONE
— W	WATER LINE
—	STORM SEWER
— X	WATER GATE VALVE
— ARV	AIR RELEASE VALVE
— O	FIRE HYDRANT
—	PIPE PLUG OR CAP
— CO	SANITARY SEWER CLEANOUT
— ●	UTILITY POLE
— X	POST
— 1400—	EXISTING CONTOURS
— 1400—	PROPOSED CONTOURS
— O—O—	FENCE/GUARDRAIL
— S—	SIGN

NOTE:  
1. ANY SYMBOL NOT CALLED OUT IN LEGEND WILL BE LABELED ON PLAN.  
2. NOT ALL SYMBOLS IN LEGEND APPLY TO THIS PLAN.  
3. NUMBERS ON A UTILITY LINE INDICATES LINE SIZE.

### ABBREVIATIONS:

C-C	CENTER TO CENTER
CL	CENTER LINE
CO	CLEAN OUT
CONC.	CONCRETE
DWV	DRAIN, WASTE, VENT
ESMT	EASEMENT
ELEV	ELEVATION
EX.	EXISTING
FF	FINISH FLOOR
FM	FORCE MAIN
FNPT	FEMALE NATIONAL PIPE THREAD
MNPT	MALE NATIONAL PIPE THREAD
HDPE	HIGH-DENSITY POLYETHYLENE
INV	INVERT
FT.	US FEET
IN.	US INCH
LF	LINEAR FEET
NTS	NOT TO SCALE
O-C	ON CENTER
EX.	EXISTING
PROP.	PROPOSED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
ROW	RIGHT-OF-WAY
RSV	RECIRCULATING SPLITTER VALVE
RPZ	REDUCED PRESSURE ZONE (VALVE)
STEP	SEPTIC TANK EFFLUENT PUMP
STEG	SEPTIC TANK EFFLUENT GRAVITY
SOC	SOCKET (PIPE CONNECTION TYPE)
SCH	SCHEDULE
SS	SANITARY SEWER
SPD	SOIL PROFILE DESCRIPTION
Ksat	SATURATED SOIL HYDRAULIC CONDUCTIVITY
TYP.	TYPICAL



### PLANS PREPARED BY:

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CALL MISS UTILITY PRIOR TO EXCAVATION 811 OR 1.800.552.7001  
SUBCONTRACTORS MAY NOT WORK UNDER ANOTHER COMPANY'S TICKET UNLESS THEY ARE UNDER THE DIRECT SUPERVISION OF THE COMPANY THAT PROVIDED THE NOTICE OF EXCAVATION. ALLOW REAONSABLE TIME FOR MARKING AND BEIN EXCAVATED ONLY AFTER THE TICKET HAS BEEN POSITIVE RESPONSE SYSTEM. EXCAVATION MAY BEGIN WHEN ALL NOTIFIED UTILITIES HAVE EITHER MARKED THEIR LINES OR REPORTED THAT THEY HAVE NO FACILITIES IN THE AREA OF EXCAVATION OR THE MARKING PERIOD HAS EXPIRED (AFTER 7:00 AM ON THE THIRD WORKING DAY AFTER NOTICE TO THE CENTER.) OR MISS UTILITY INFORMS YOU THAT NO MEMBER OPERATORS NEED TO BE NOTIFIED OF THE EXCAVATION. YOU WILL STILL GET A TICKET NUMBER! RESPECT THE MARKS - PROTECT AND PRESERVE THE MARKINGS FROM THE TIME EXCAVATION BEGINS UNTIL THE WORK IS COMPLETED. CALL MISS UTILITY TO UPDATE THE TICKET IF WORK WILL CONTINUE PAST 15 DAYS OR IF THE MARKS BECOME ILLEGIBLE DUE TO TIME, WEATHER, CONSTRUCTION OR ANY OTHER CAUSE. EXCAVATE CAREFULLY - IF THE EXCAVATION IS WITHIN 2 FEET OF A MARKED UTILITY LINE, EXPOSE THE UTILITY LINE BY HAND DIGGING AND KEEP ALL MECHANIZED EQUIPMENT AT LEAST 2 FEET AWAY FROM THE EXTREMITIES OF THE UTILITY.

### OWNER:

INNISFREE VILLAGE  
CONTACT: RORIE HUTTER  
OFFICE: 434-823-5400  
Rorie@InnisfreeVillage.org

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PROJECT NAME:	INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES	
PROJECT LOCATION:	ALBEMARLE COUNTY, VA	
DATE:	11/26/2024	DRAWING SCALE: AS NOTED
DRAWN BY:	CBH	
DESIGNED BY:	DJM	
CHECKED BY:	DJM	
SHEET TITLE:	COVER	
C		



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01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
<b>General notes</b>																													
1. The AOSS installation contractor (Contractor) shall provide a complete and operational system that substantially complies with the construction drawings and any revisions. All work shall be completed in a manner consistent with drawings and established standards for on-site wastewater treatment and subsurface dispersal of effluent.																													
2. In addition to the requirements set in these plans and specifications, the contractor shall complete the work in accordance with all permit conditions as well as any federal, state or local regulations, codes, standards and guidelines.																													
3. Any discrepancies found between the drawings and specifications and site conditions or any inconsistencies or ambiguities in drawings or specifications shall be immediately reported to the Design engineer (Engineer) or Owner's construction manager, in writing, who shall promptly address such problems. Work done by the contractor after his or her discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the Contractor's risk.																													
4. A pre-construction conference shall be held prior to the start of construction with the owner and Engineer. The contractor shall arrange the meeting prior to ordering materials																													
5. Contractors shall review installation manuals for components prior to installation and shall follow all manufacturer installation instructions. If there is a discrepancy between Construction Documents and manufacturer's instructions, Contractor shall notify the Engineer or Construction Manager to resolve discrepancy before proceeding.																													
6. The locations, size, and types of existing utilities are shown based upon readily available information and are shown as an approximate representation only. The Engineer, owner, or any other representative have not independently, or jointly, verified this information as shown on the plans. The utility information shown does not guarantee the actual existence, serviceability, or other data concerning the utilities, nor does it guarantee against the possibility that additional utilities may be present that are not shown on the plans. Prior to ordering materials and beginning construction, the contractor shall verify the determine the exact locations, sizes, and elevations of the point of connections to existing utilities and shall confirm that there are no interferences with existing utilities and the proposed utility routes, including routes within any public right-of-way.																													
7. Where an existing utility is found to conflict with the proposed work, or existing conditions differ from the from those shown such that the work cannot be completed as intended, the contractor shall, without delay, accurately determine the location, elevation, and size of the utility. This information shall be provided, in writing, to the engineer and owner's representative to determine corrective measures. Any work completed by the contractor prior to this resolution will result in any claim by the contractor not being considered.																													
8. Symbols and legends of project components and features are graphic representations of proposed features and are not necessarily scaled to their actual dimensions or locations. The contractor shall refer to the details provided, manufacturers' literatures, shop drawings, and field measurements of supplied products for layout information.																													
9. To ensure compatibility with finished grades, Contractor shall make arrangements for the alteration and adjustment of gas, electric, telephone, fire alarm, and any other private utilities where required site conditions. This shall apply whether work was completed by contractor or other entity.																													
10. Pressure pipes that remain full shall have minimum of 2 feet cover or other freeze protection method approved by the engineer.																													
11. See Collection System Schematic and Process Diagram to confirm pipe sizing and connection, flow direction, and termination.																													
12. In the course of excavation shallow bedrock may be encountered. Contractor shall coordinate with owner and project engineer to minimize rock removal and/or additional excavation. The placement of pipe and structures shall be revised, as necessary, to facilitate ease of installation.																													
13. Contractor shall minimize damage to existing pavement and make all necessary repairs.																													
14. Site grading shall direct runoff away from the treatment area prevent saturated soil conditions and/or tank flotation. Final grading shall direct runoff away from access risers and tanks.																													
15. All areas exposed during construction shall be protected in accordance with the standards published by the Virginia erosion and sediment control law. Permanent vegetation and erosion control structures shall be established immediately after construction has been completed.																													
16. General contractor shall coordinate with electrical contractor and shall, if requested by electrical contractor, provide the following: excavation, installation, and backfill of finished sitework related to items such as pull boxes, conduits, duct banks, light pole bases, and concrete pads. Contractor to furnish concrete encasement of duct banks if required by the utility company and as indicated on the drawings.																													
17. All excavation, including trenches, shall be kept dry or allowed to dry to a sufficient level such that the integrity of the subsoil is suitable for placement of bedding material, pipe, tanks or other components.																													
18. All areas not built or paved upon shall be landscaped in accordance with Construction Documents or supplemental instructions.																													
19. All materials used for fill or back fill shall be free of wood, roots, rocks, boulders or any other non-compactable soil type materials. Unsatisfactory materials also include manmade fills and refuse debris derived from any source.																													
20. Embankment fill and back fill shall be placed in lifts at a maximum un-compacted depth of 8-inches and 6-inches, respectively. Density tests shall be conducted at the following frequencies, unless otherwise directed by Engineer:																													
a. Embankments for roads, streets, dams, etc.: one test per lift per 10,000 sf of lift.																													
b. Back fill in trenches: one test per lift per 500 lineal feet of trench.																													
c. Back fill around structures: one test per lift per 2,500 sf of lift.																													
21. The disposal of any construction related debris shall be in accordance with all applicable regulations and be legally completed in an authorized disposal area. Trash and debris generated on site shall be regularly gathered to prevent material from blowing off-site.																													
22. Unless specifically provided, the engineer has not prepared designs for, and shall have no responsibility for, the presence, discovery, removal, abatement or disposal of any hazardous materials, toxic waste, or pollutants at the project site. The engineer and owner shall not be responsible for any claims of loss, damage, expense, delay, injury, or death arising from the presence of hazardous materials. If found, the contractor shall indemnify and hold harmless the engineer and owner from any claims made in connection with any such material. The engineer shall have no administrative obligations of any type with regard to any contractor amendment involving the issues of presence, discovery, removal, abatement or disposal of asbestos or other hazardous material.																													
23. Traffic control and temporary closures on streets shall be in conformance with the manual of uniform traffic control devices.																													
24. Any survey monument or property corner disturbed by the contractor shall be replaced by a licensed land surveyor at the contractor's expense.																													
25. Prior to the start of construction, the contractor shall verify existing elevations ensure proper transition between existing and proposed piping.																													
26. Contractor shall not solely rely on electronic copies of the final design, specifications, and data files that are obtained from the engineer, but shall verify the location of any feature in accordance with paper copies of the plans and specifications that are part of the contract documents.																													
<b>Erosion &amp; Sedimentation Control - General Instruction and Standards</b>																													
1. Prior to the commencement of any work on this site, the contractor shall notify the appropriate agencies and shall install all erosion control measures as shown on the approved construction documents relating to this project. If Construction Documents do not specify erosion control measures, the general instructions and standards listed below shall be followed.																													
2. Contractor shall take all reasonable measures to minimize erosion and transport of sediment and damage to drainageways and streams.																													
3. Contractor shall be responsible for the control of the construction activities to ensure that sediment shall not affect regulatory protected areas, regardless of transport means, i.e. air, water, or any other means of transport.																													
4. Contractor shall schedule construction activities such that disturbed areas are left unstabilized for a minimum amount of time before they are covered, permanently or temporarily stabilized, or otherwise stabilized to prevent erosion.																													
5. Crushed stone or other appropriate means shall be used to protect construction entrances. If a construction entrance has been covered with soil or has been pushed into the soil by construction traffic, it shall be replaced with a depth of stone equal to that of the original application or restored by other acceptable means.																													
6. Upon completion of construction activities and the establishment of appropriate stabilization, the contractor shall remove all erosion control measures and provide any additional stabilization measures, and shall clean all sediment and debris from the site and installed piping.																													
7. Any drain inlets shall be protected from siltation. Ineffective protection devices shall be replaced and the inlet cleaned. Flushing is not an acceptable means of cleaning.																													
8. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.																													
9. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.																													
10. During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The contractor is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.																													
11. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.																													
12. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.		</																											



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# WASIEVLA MANAGEMENT SYSTEM UPGRADES

INSTITUTE OF MANAGEMENT

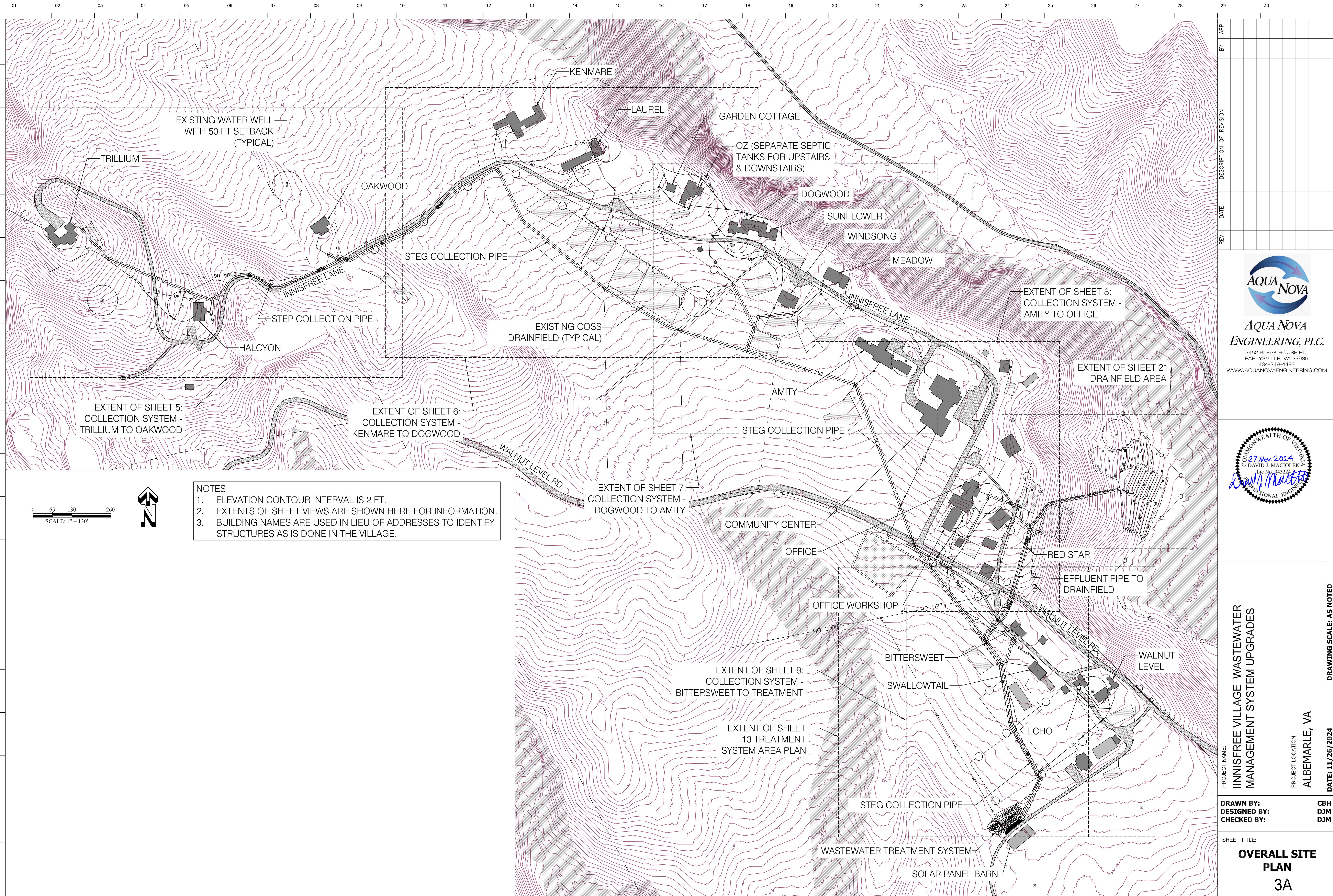
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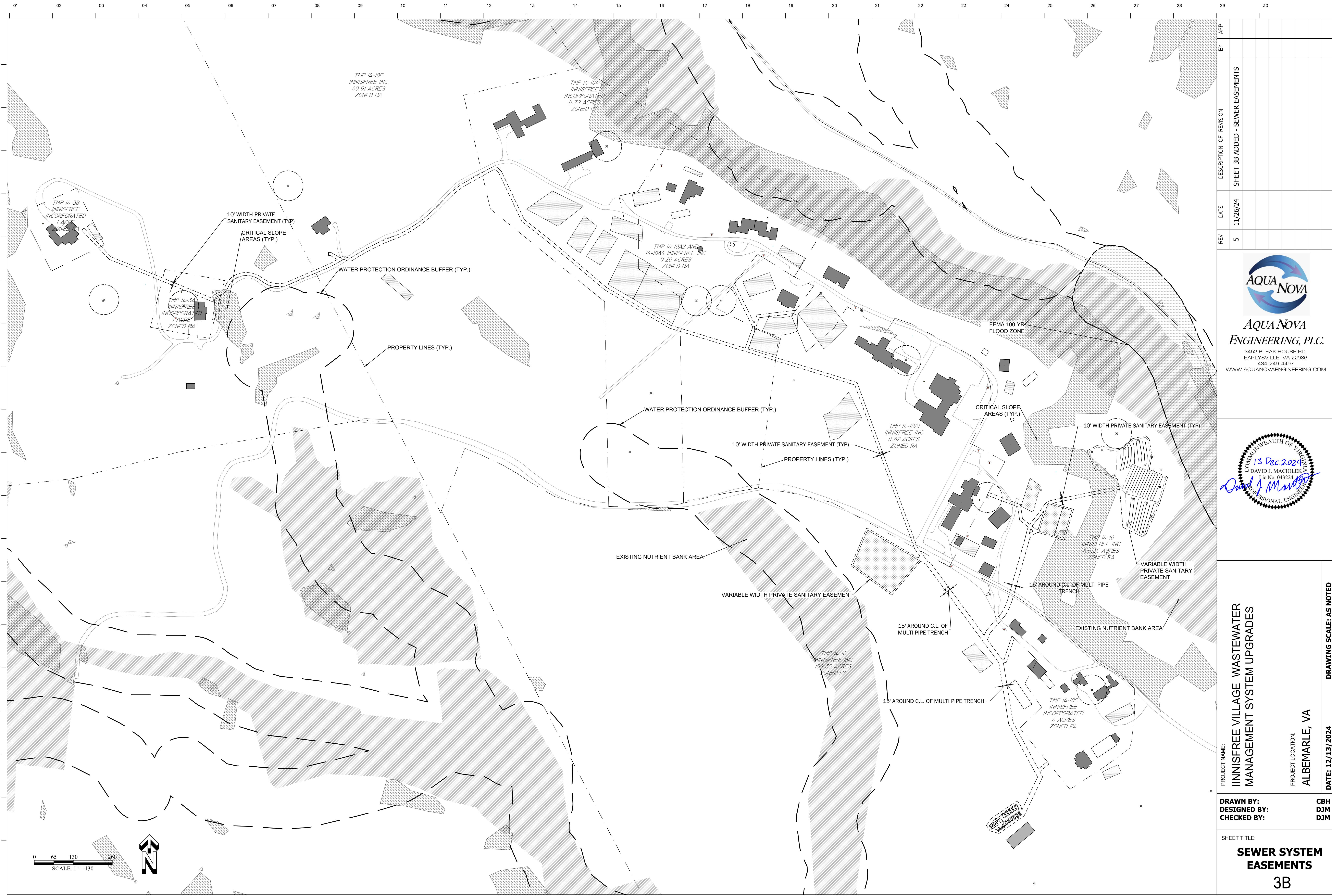
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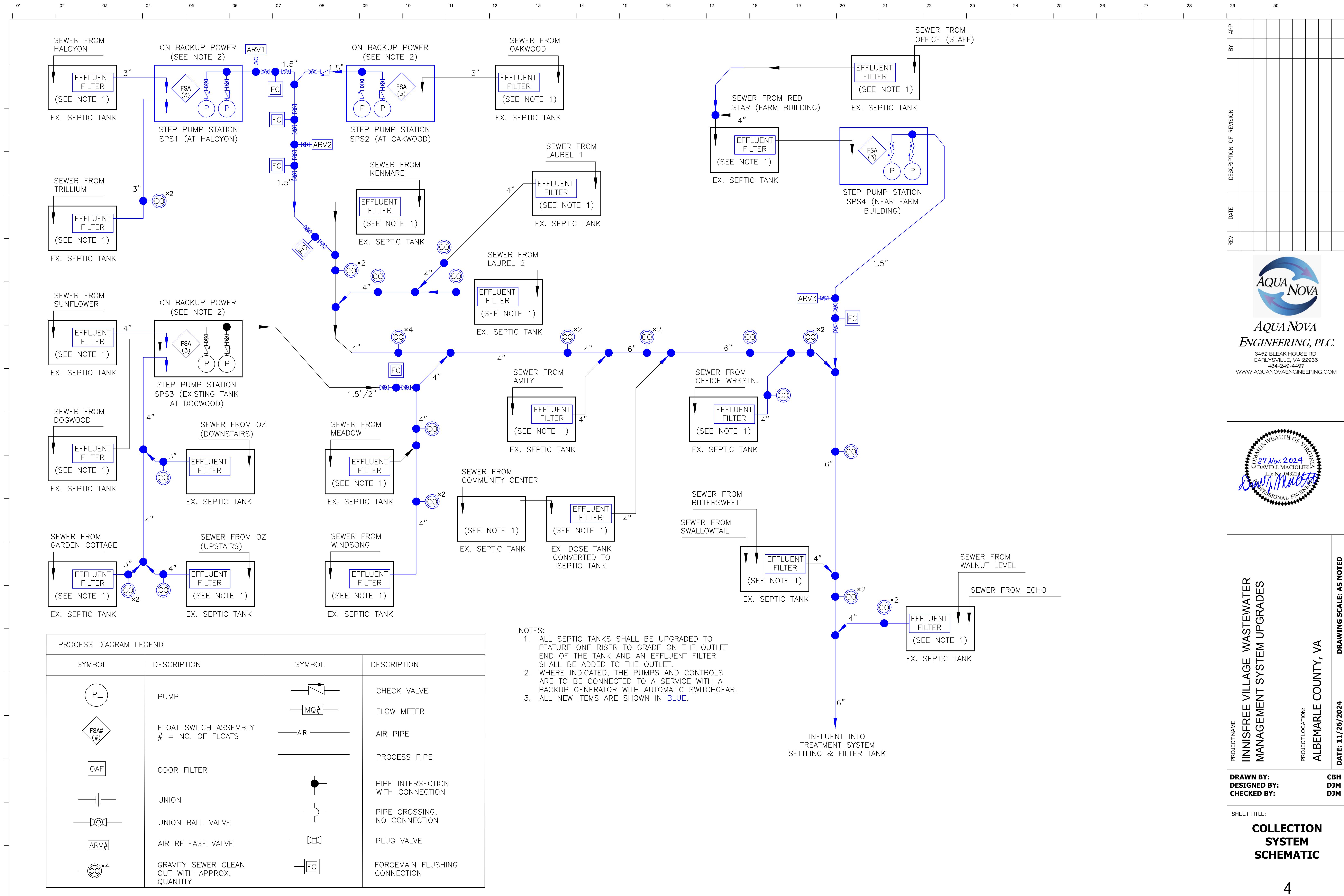
## GENERAL NOTES

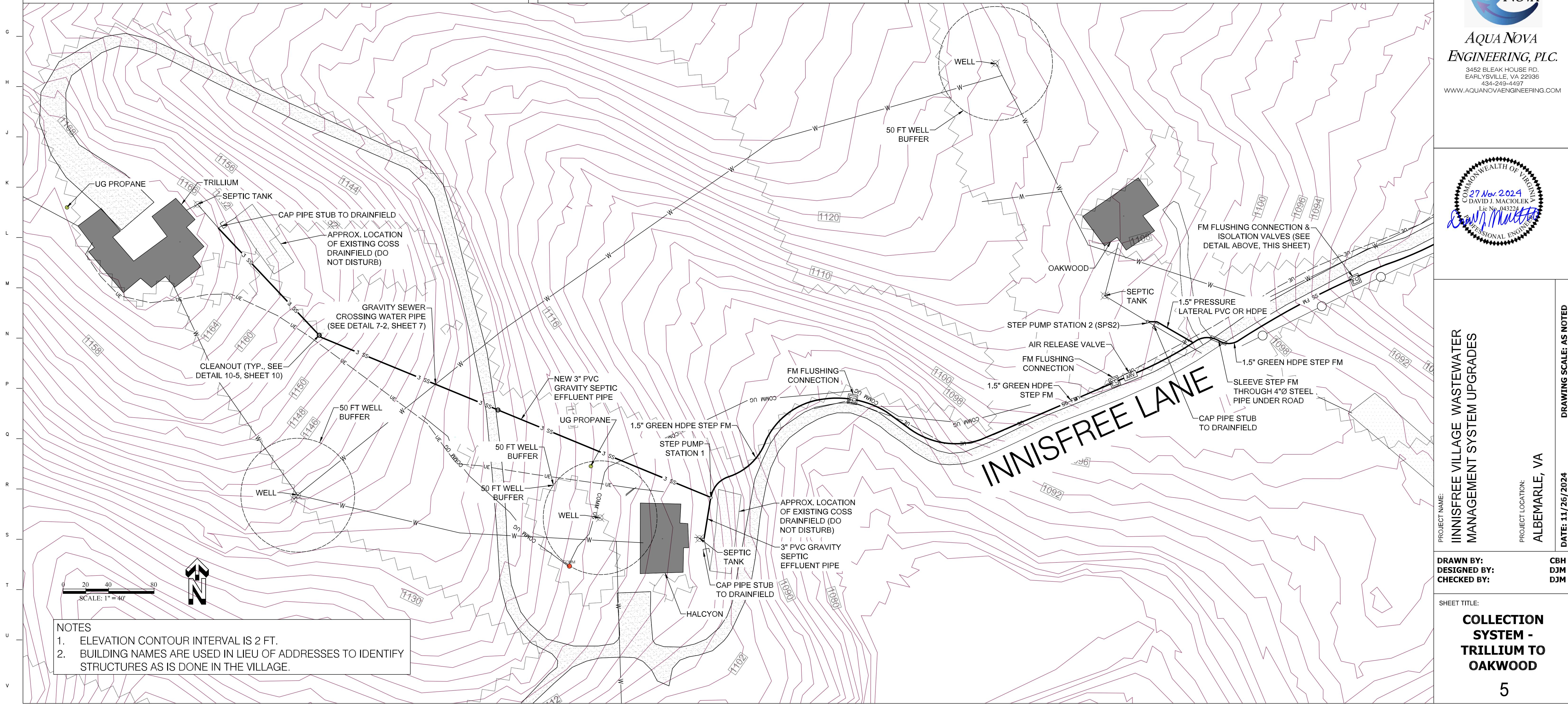
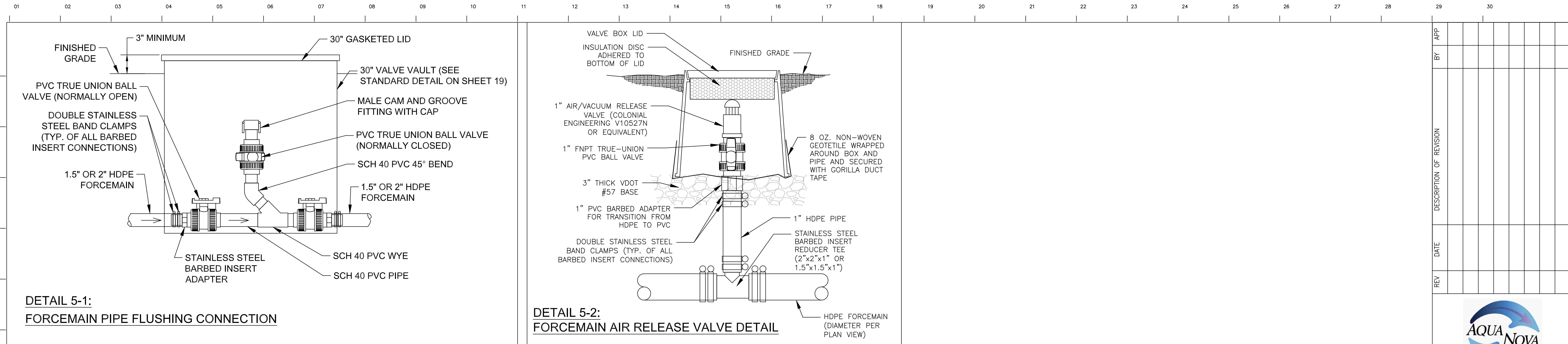


		APP BY	DATE	REV	DESCRIPTION OF REVISION
3. Line voltage wiring (120 VAC or greater) and signal voltage (e.g. 24 VDC) wiring shall be run in separate conduit.					E. Contractor shall furnish and install all site access, water connection, force main connection, plant, plant control building, electrical service, outfall line and outfall structure, etc.
4. Treatment Control panel shall be wired to main breaker panel and connected to all devices that are controlled and powered by the control panel.					F. Sewer Piping installation
5. Backup generator shall be wired to control panel, with other components (e.g. auto-transfer switch, battery charger) connected to main power source as appropriate.					1. Building sewers. Sewerage service lines from buildings (sewers) shall be constructed in accordance with the Uniform Statewide Building Code of Virginia
6. Device cords shall be routed through tank or access riser wall in liquid-tight conduit. Conduit termination inside tank or access riser shall be equipped with liquid-tight cable glands (cord grips). Multiple cords can be routed through a single cable gland.					2. Trench construction. Class A, B, or C bedding (American Society of Civil Engineers (ASCE) Manuals and Reports on Engineering Practice—No. 36, 1974, Water Pollution Control Federation (WPCF) Manual of Practice—No. 9, 1970, and American Waterworks Association (AWWA) for Installation of Ductile-Iron Water Mains and their Appurtenances (ANSI/AWWA C600-82), 1982. Bedding class shall be provided for rigid pipe, and appropriate installation shall be provided for flexible pipe material in accordance with recognized standards and manufacturers' recommendations.
K. Control Building	4.02				3. Trenches shall be carefully backfilled with excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand and gravel, soft shale, or other approved materials free from large clods of earth or stones larger than one inch in diameter, deposited in six inch layers, and thoroughly and carefully tamped until the pipe has a cover of not less than one foot. The remainder of the backfill shall be placed in the trench in layers not exceeding two feet and thoroughly tamped. No stone or rock larger than five inches in its greatest dimension shall be used in backfilling.
1. A control building with dimensions shown on the Construction Drawings shall be provided and installed. Building shall conform to the following requirements.					4. Trenches in public roadways shall be excavated, backfilled and compacted in accordance with the standards specified in the Virginia Department of Transportation's Road and Bridge Specifications or other acceptable criteria.
a. Building shall be pre-engineered for intended use and site conditions. Building shall be designed to withstand all applicable wind and snow loads and all other local building code requirements.					
b. To the extent practicable, building shall be fabricated and assembled off-site for simple installation on site					
c. Contractor shall submit design criteria, fabrication/building plans and schedule of materials and finishes (including color scheme) for the Engineer's and owner's approval prior to construction.					
2. Insulation					
a. The Control Building insulation shall be minimum R-15 for walls and ceiling.					
b. All exposed piping shall include appropriate insulation for personnel protection and/or freeze protection.					
3. Doors shall be sized and located per the Construction Drawings and shall be insulated exterior metal or composite door with deadbolt lock and door closer.					
4. Building shall be constructed on a concrete slab sloping to floor drains with a minimum 6" tall stem wall. Building sill plates shall be mounted to stem wall with recommended fastening system.					
5. Building shall be connected to potable water supply system with a RPZ backflow preventer located inside of the building and upstream of all fixtures.					
6. The building shall include a work space with sink, eyewash station, work bench, GFCI electrical receptacles, wet-location LED lighting, a floor drain, an outdoor hose bib and all other items shown in the Construction Drawings.					
a. Eyewash station shall comply with OSHA Standard 1910.151					
b. Hose bib shall be freeze-resistant type.					
c. Indoor sink and hose bib shall be marked with aluminum signs as "Non-potable".					
7. Building shall include any ventilation and insulation requirements to meet applicable building codes.					
L. Fencing and landscaping					
1. New fencing if desired shall be installed by owner					
2. Trees, shrubs, and other landscaping beyond the grading, soil stabilization, cover and surfacing treatments stipulating in the plans shall be installed by the owner.					
M. General equipment and piping					
1. Pressure gauges shall be stainless steel, glycerin-filled with minimum 2.5" face. Pressure range shall be as indicated in the plans. If not specified, contractor shall secure clarification from the engineer of record.					
2. All hardware in wet locations shall be minimum 304 stainless steel or other suitable corrosion resistant materials.					
3. Wastewater valves and fittings shall be constructed from PVC, Glass-filled polypropylene, Stainless Steel, epoxy-coated cast or ductile iron, or bronze.					
4. All valves shall be equipped with unions, flanges, or shall have unions or flanges located to allow reasonably easy valve removal and replacement.					
5. Pressure liquid piping shall be minimum Sch. 40 PVC or DR-17 HDPE.					
6. Low Pressure air piping shall be Sch. 80 PVC or Sch. 40 galvanized steel.					
7. Gravity liquid and ventilation piping shall be minimum Sch. 40 DWV PVC. Foam core shall not be accepted.					
8. Valve/meter vaults shall be minimum 30" in diameter with a stone and geotextile base to prevent entry of soil and subsidence.					
9. All exterior hose bibbs and hydrants shall have "Non-Potable" signs mounted on or near the hydrant or hose bibb.					
N. Backup Generator					
1. Contractor shall furnish and install LP Gas engine driven backup generator.					
2. System shall include UL 142 sub-base tank sized for 24-hour operation at full load.					
3. System shall be designed to fully power the entire plant in the event of loss of primary power.					
4. System shall include a sound attenuated enclosure.					
5. System shall include block heater and other accessory items appropriate for the climate at the site.					
6. System shall include foundation and all auxiliary or periphery equipment for a fully functional generator system.					
7. Alarm (s) status shall be communicated to the plant PLC.					
a. Generator run status and fault condition shall be reported to PLC for monitoring and alarm.					
8. Contractor shall furnish full tank of fuel prior to startup.					
<b>PART 4 - EFFLUENT DISPERAL SYSTEM</b>					
<b>4.01 GENERAL CONDITIONS</b>					
Furnish and install the piping, equipment, instrumentation, and ancillaries as specified herein, and as needed to meet the requirements of the Construction Documents.					
Provide all labor, materials, equipment, and services necessary to perform work in this section which includes, but may not be limited to, installation of the following:					
	4.02				
1. Low Pressure Dosed (LPD) effluent dispersal system including effluent pumps, float switches, assembly, zone solenoid valve arrays, zone valve control relay panel, flowmeters, transfer pipes, air/vacuum relief valves, flushing connection.					
2. Signal wire and conduit from Control Panel for control of zone valves via the Zone Valve Control Relay Panel					
3. Electrical conduit and wiring between Zone Valve Control Relay panel and the zone solenoid valves and the drainfield flow meter (MQ3).					
4. Programming of control of LPD dispersal zone valves shall be included in the Wastewater Control Panel programming.					
<b>EQUIPMENT DESCRIPTION</b>					
A. Product data and/or samples from the manufacturer or fabricator, in accordance with General Conditions, shall be provided for all major components and as requested by the engineer.					
B. Piping					
1. Piping shall be Schedule 40 or 80 PVC with sizes and connections as shown on the drawings					
2. Pipe shall conform to ASTM standard D 1785 Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe Schedules 40, 80 and 120, latest version.					
3. Fittings shall conform to ASTM D4264 Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 and ASTM D2464 Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, latest versions.					
4. Piping shall be HDPE tubing designed for pressure piping application conforming to ASTM D 2737-12a Standard Specification for Polyethylene (PE) Plastic Tubing and/or ASTM D 3350 Standard Specification for Polyethylene Plastic Pipe and Fitting Materials, latest version.					
5. Minimum pressure rating shall be 125 PSI at 73 deg. F.					
6. Fittings shall have a minimum pressure rating equal to or exceeding rating of the pipe.					
C. LPD Dispersal System shall utilize components specifically intended for wastewater applications and shall be as follows.					
1. Manual drainfield area valve array					
2. Magnetic Flow meter shall be IFM Ejector SM-series with the diameter and location as indicated in the plans. Flow meter body shall be grounded locally.					
3. Automated zone valve arrays as shown in the plans.					
4. Zone valves shall be solenoid type valve, 24 VAC operations, normally closed, with glass reinforced nylon body, SS metal parts and natural rubber diaphragm. Geoflow, Model SVLVB-150, or approved equal.					
5. Air/Vacuum Relief Valves shall be Geoflow, model ARV100 for 1" size or ARV200 for 2" size.					
6. Zone valve control relay control panel shall be supplied with 120 VAC power from the Red Star Farm Building. The enclosure shall be NEMA 4 rated and contain the following:					
a. Terminal block for landing 24 VDC control outputs for each solenoid valve.					
b. Circuit breaker for power supplies.					
c. One 24 VDC coil, 24 VAC contact relay for each solenoid valve.					
d. One Hand-Off-Auto (HOA) switch for each solenoid valve.					
e. One 24 VDC power supply for the drainfield flow meter (MQ3).					
f. Terminal block for landing 24 VAC wire to each solenoid valve.					
1.1 Piping					
A. Piping shall be installed as shown on the drawings and as required by the latest installation standards for the piping system					
B. PVC Pipe installation shall conform to ASTM Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems, and ASTM D2855 Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings, latest version.					
C. Polyethylene Piping shall be joined using fittings specifically designed for the pipe material and classification.					
D. All clamps and hardware used in the fittings shall be stainless steel or similarly corrosion resistant.					
1.2 Documentation					
A. Contractor shall document testing procedures including day, time and all flow rates and pressures					
B. Testing documents shall be included with record documents submitted to the Architect.					
<b>PART 2 - EXECUTION</b>					
<b>2.01 PRELIMINARY SCHEDULE</b>					
A. Contractor shall prepare and furnish to Innisfree a preliminary schedule. Schedule items shall include, at a minimum: expected date of order to manufacturers/suppliers for major components; expected date of delivery of major shop drawings or other critical submittals to the Engineer for review; expected date of groundbreaking; expected date of substantial completion; and expected date of project completion.					
<b>2.02 INSTALLATION</b>					
A. Contractor shall install all components in accordance with manufacturer's recommendations.					
B. Below-grade structures shall be rated to perform a minimum of 50 years of Expected Useful Life.					
C. All tanks shall be installed with the top of the tank at grade, or rim of access risers and hatches 3" above grade, or per manufacturer's requirements.					
D. Contractor shall furnish and install all components necessary to complete the system and provide Innisfree with complete and fully functioning wastewater collection, treatment, and subsurface dispersal systems.					
<b>2.03 MANUFACTURER'S FIELD SERVICE AND STARTUP ASSISTANCE</b>					
A. The AdvanTex system manufacturer or supplier shall provide up to five days of on-site support for commissioning, startup, and training. These days may be non-consecutive as required to give time to perform tests and correct any deficiencies or defects.					
B. The AdvanTex system manufacturer/Supplier shall provide an additional five days of remote assistance for commissioning and troubleshooting. This time shall be in addition to time spent correcting any issues with the PLC or HMI programming.					
<b>2.04 CLEANING and FIELD TESTING</b>					
A. CLEANING: All Tanks, basins, piping systems, and devices that contain or transport wastewater or effluent shall be cleaned before is intentionally allowed to flow into or through them. Dirt, debris, and fouled water or liquids must be removed, or they could harm the pumps, clog pipe orifices or damage sensors. This applies especially to PVC shavings or drill cuttings which shall be captured and disposed of properly.					
B. Installation testing: Contractor shall perform field testing during installation (prior to Clean Water Testing) for the following: Field tests shall include all pipe pressure testing, leak testing, electrical checkout, instrument check out, PLC communication verification, material and compaction testing where required.					
C. Clean Water Testing. Clean Water Testing: Contractor shall work with the engineer of record to perform checks of all system components using clean water prior to introduction of wastewater.					
D. Contractor shall coordinate with manufacturers' representatives as required to inspect installation, configure equipment, and validate compliance with warranty terms.					
<b>2.05 PIPE PRESSURE TESTING</b>					
A. For low pressure PVC sewer piping within the treatment system area, hydrostatic testing shall be performed in accordance with AWWA C605-13 –Underground Installation Of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVC) Pressure Pipe And Fittings					
1. The design pressure for all wastewater process piping shall be considered to be 30 PSI.					
2. The design pressure for low-pressure process air piping (from linear piston air pump) shall be 15 psi. Water shall be blown from the line after testing using compressed air.					
3. The design pressure for clean (potable) water piping shall be 70 PSI.					
4. Pneumatic (air) testing shall not be performed for safety reasons.					
B. For HDPE pressure pipe, testing shall be performed in accordance with ASTM F2164-21 –Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure					
1. The design pressure for wastewater pipe shall be 40 PSI.					
2. The design pressure for clean (potable) water piping shall be 70 PSI.					
3. Pneumatic (air) testing shall not be performed for safety reasons.					
C. For gravity sewer PVC piping within the treatment system area, testing shall be performed in conformance with ASTM F1417-11A(2019)e1 –Standard Practice for Installation Acceptance of Plastic Non-pressure Sewer Lines Using Low-Pressure Air					
<b>2.06 WARRANTY</b>					
A. Contractor shall warranty all components for at least 1 year from date of acceptance by Engineer.					
B. If component manufacturer warranty is not sufficient to meet the above requirements, Contractor shall provide, at Contractor's own expense, such warranty.					
<b>2.07 PERFORMANCE ASSURANCE</b>					
A. Manufacturer/Supplier shall assure the final constructed plant conforms to the plans, specifications, accepted submittals, supplements and other construction documents provided by the engineer of record.					
<b>PROJECT LOCATION: INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES</b>					
<b>PROJECT NAME: ALBEMARLE COUNTY, VA</b>					
<b>DATE: 11/26/2024</b>					
<b>DRAWN BY: DJM</b>					
<b>DESIGNED BY: DJM</b>					
<b>CHECKED BY: DJM</b>					
<b>SHEET TITLE: SPECIFICATIONS CONTINUED</b>					
<b>APP BY</b>					
<b>DATE</b>					
<b>REV</b>					
<b>DESCRIPTION OF REVISION</b>					









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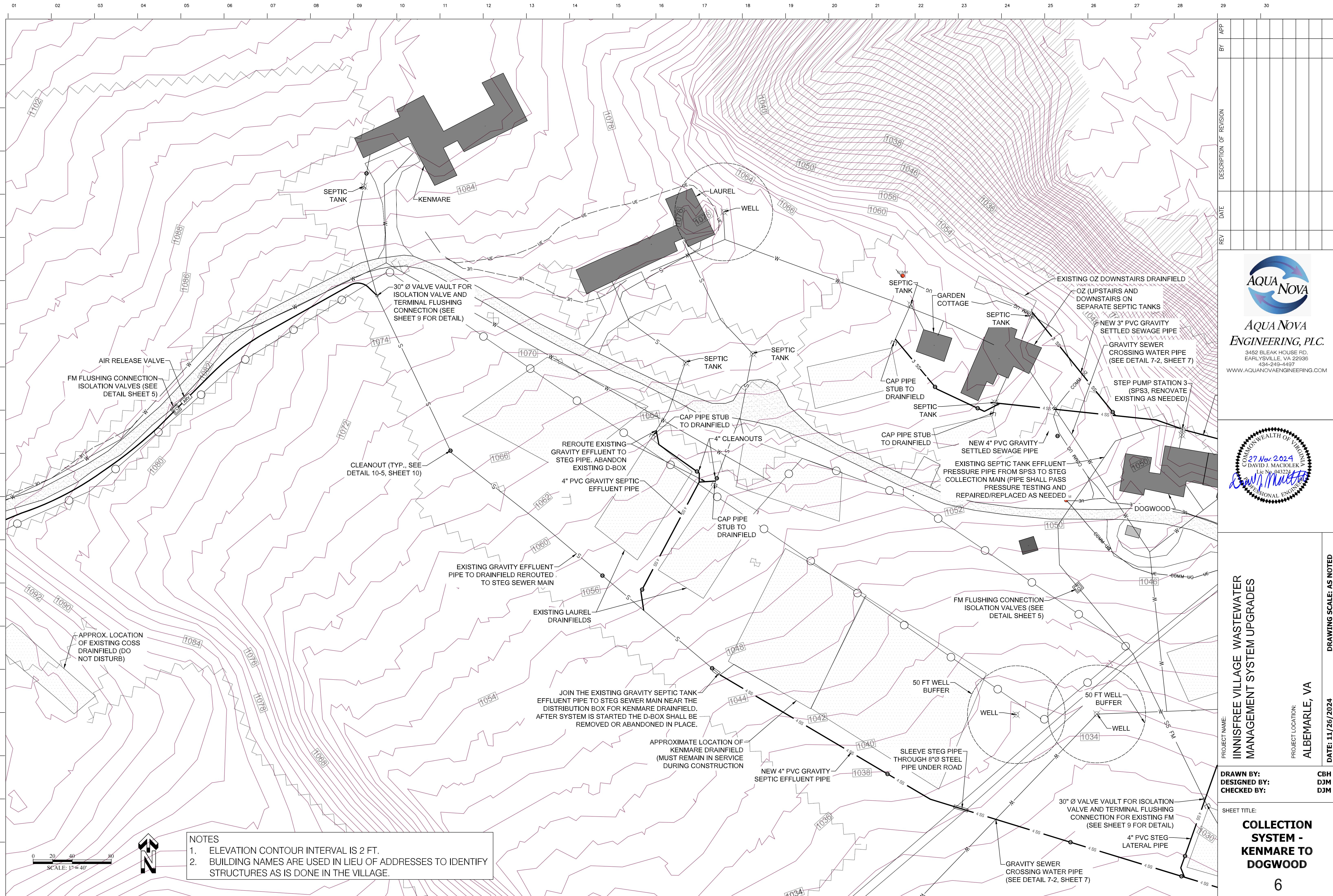
# MANAGEMENT SYSTEM UPGRADES

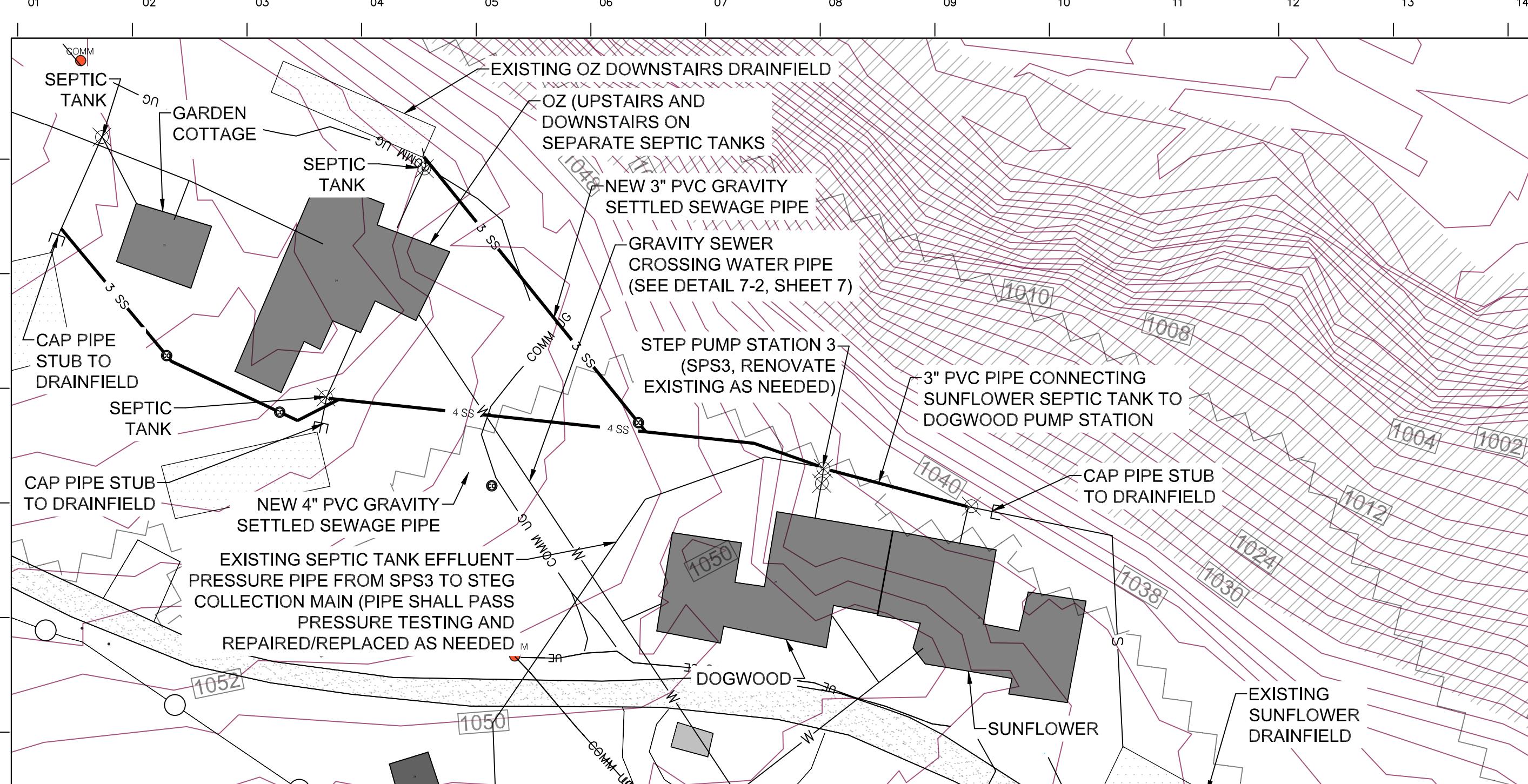
PROJECT LOCATION: **AI REMARI F VA**

DRAWING SCALE: AS NOTED

**CBH**  
**DJM**  
**DJM**

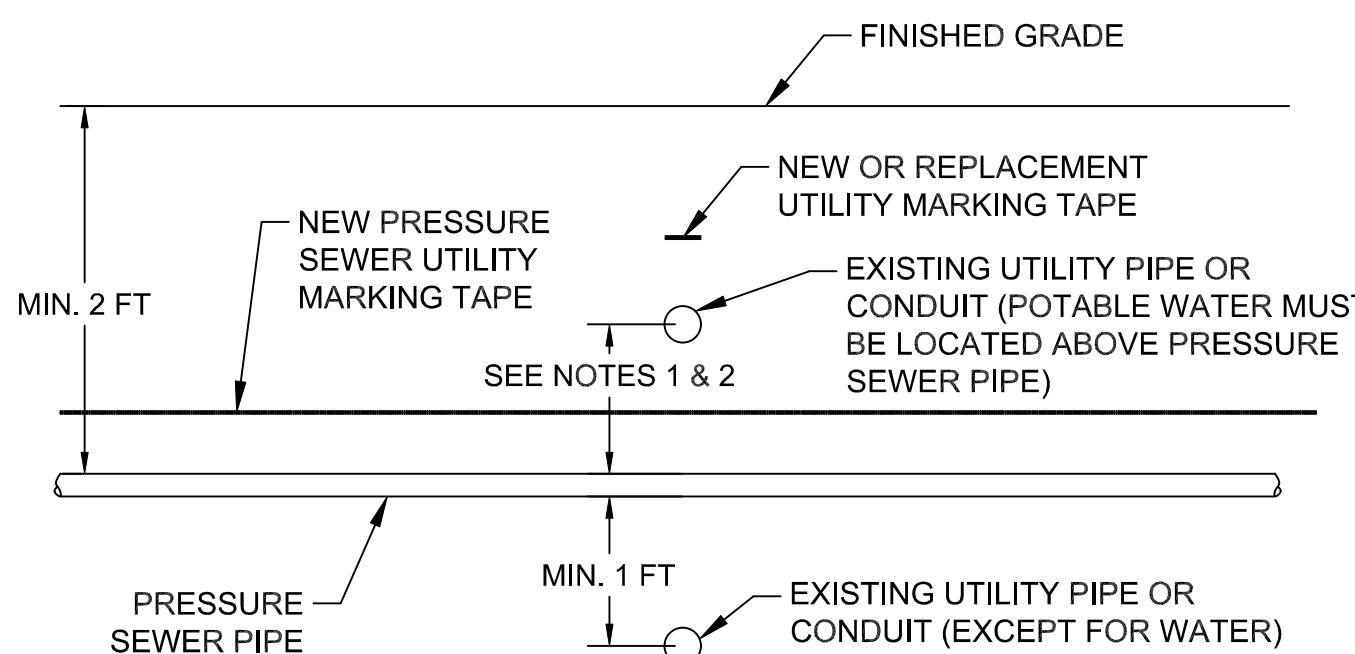
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**NOTES:**

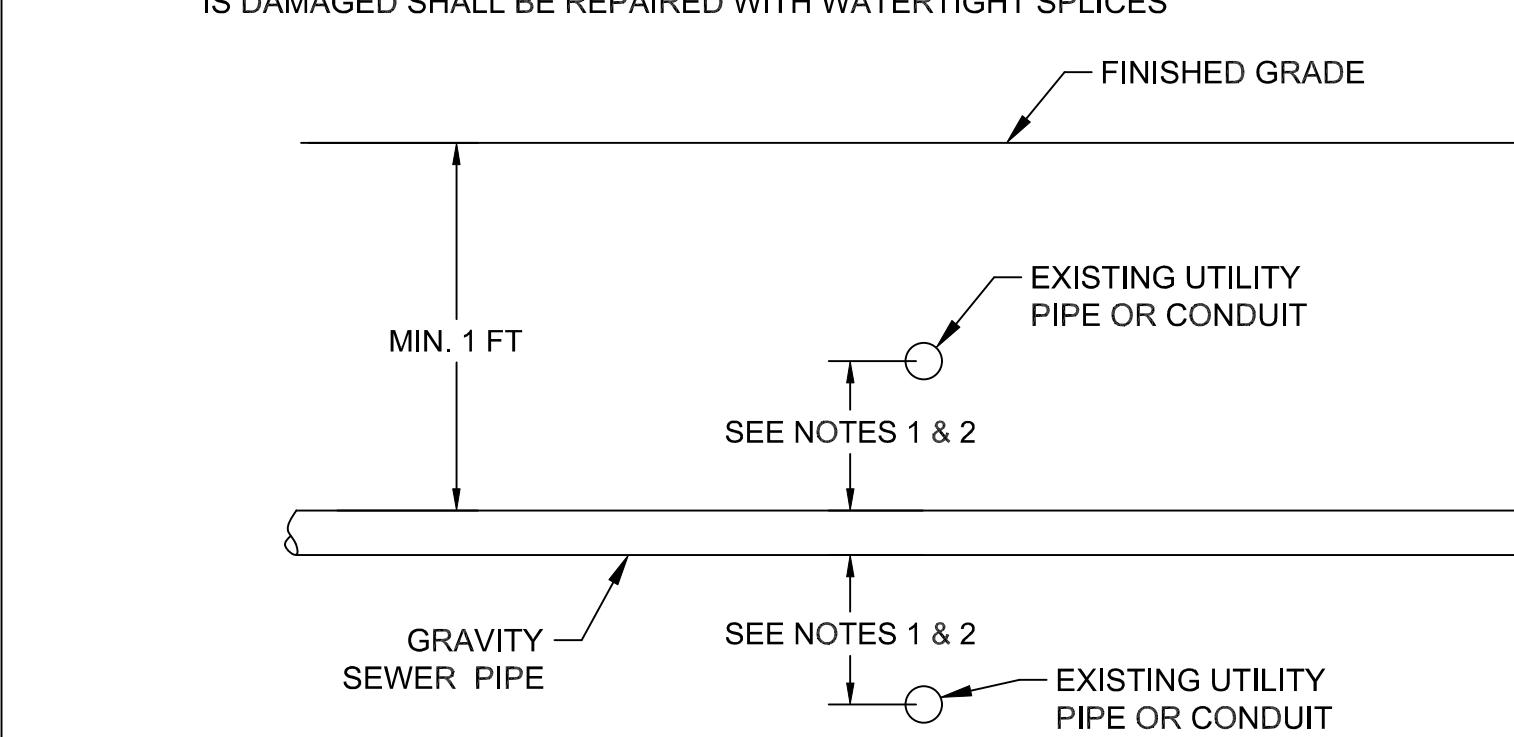
1. POTABLE WATER PIPE CROSSINGS SHALL BE MADE BY ROUTING THE TOP OF THE PRESSURE SEWER PIPE AT LEAST 18 INCHES BELOW THE WATER PIPE. NO PIPE JOINTS OR OTHER FITTINGS SHALL BE PLACED WITHIN AT LEAST 10 FT ON EITHER OF THE WATER PIPE.
2. OTHER UTILITIES MAY PASS BELOW OR UNDER THE NEW PRESSURE SEWER PIPE WITHIN 1 FT.
3. WHERE EXISTING UTILITIES ARE EXCAVATED FOR THE CROSSING, APPROPRIATE UTILITY MARKING TAPE SHALL BE REPLACED OR PLACED 6" ABOVE THE EXCAVATED SECTION OF PIPE AND CONDUIT. ANY EXISTING TRACER WIRE THAT IS DAMAGED SHALL BE REPAIRED WITH WATERTIGHT SPLICES



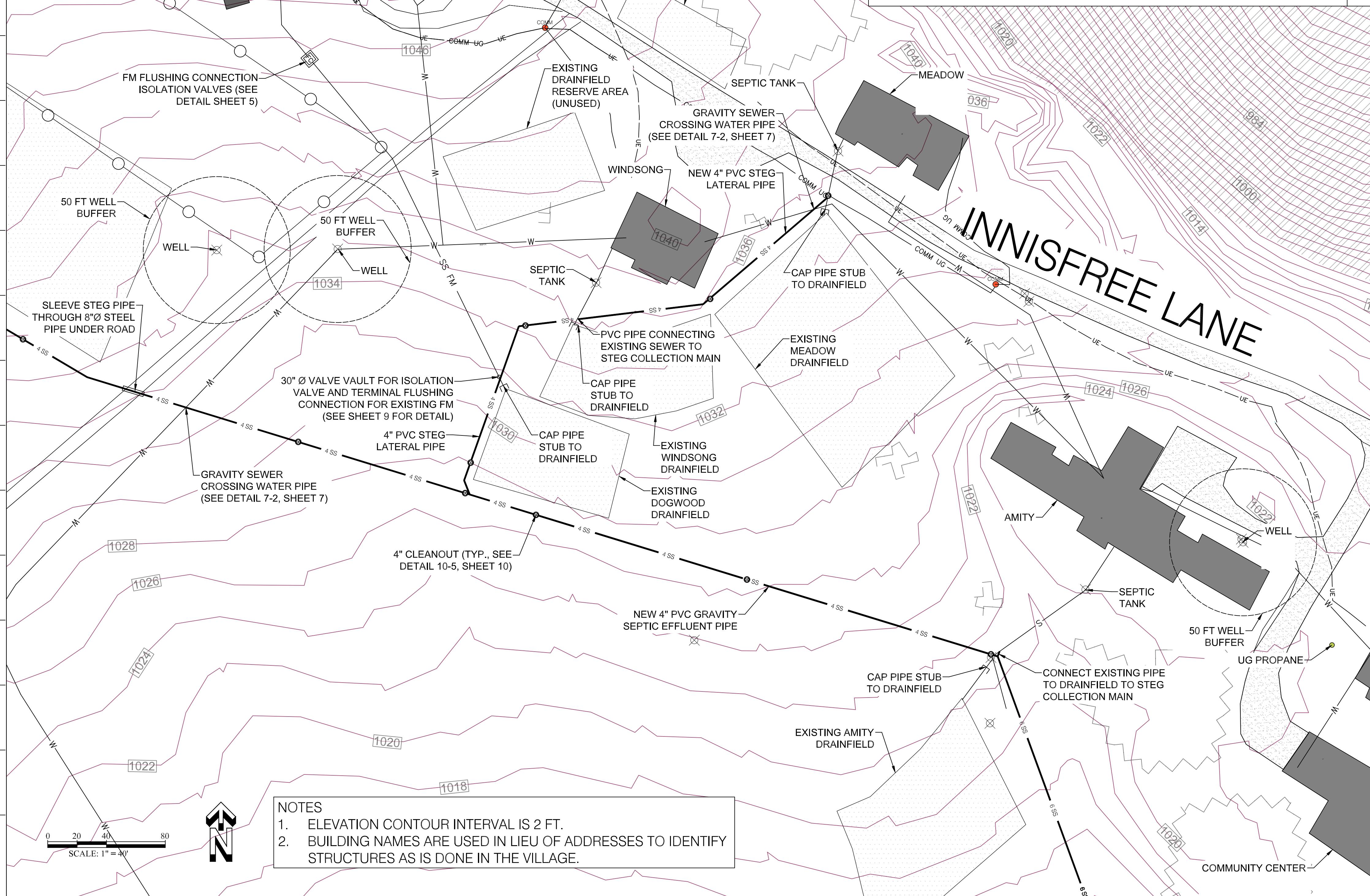
**DETAIL 7-1:**  
**PRESSURE SEWER PIPE UTILITY CROSSING**

**NOTES:**

1. POTABLE WATER PIPE CROSSINGS SHALL BE MADE BY ROUTING THE GRAVITY SEWER AT LEAST 18 INCHES ABOVE OR BELOW THE WATER PIPE. NO PIPE JOINTS OR OTHER FITTINGS SHALL BE PLACED WITHIN AT LEAST 10 FT ON EITHER OF THE WATER PIPE. IF REQUIRED THE WATER PIPE MAY BE RE-ROUTED, IN COORDINATION WITH THE ENGINEER OF RECORD.
2. OTHER UTILITIES MAY PASS BELOW OR UNDER THE NEW PRESSURE SEWER PIPE WITHIN 1 FT.
3. WHERE EXISTING UTILITIES ARE EXCAVATED FOR THE CROSSING, APPROPRIATE UTILITY MARKING TAPE SHALL BE REPLACED OR PLACED 6" ABOVE THE EXCAVATED SECTION OF PIPE AND CONDUIT. ANY EXISTING TRACER WIRE THAT IS DAMAGED SHALL BE REPAIRED WITH WATERTIGHT SPLICES



## DETAIL 7-2 GRAVITY SEWER PIPE UTILITY CROSSING



# INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES

# INNISFREE VILLAGE MANAGEMENT S.

GROUP N.V.M.L.

DRAWN BY:  
DESIGNED BY:  
CHECKED BY:

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**BUCKET TITLE**

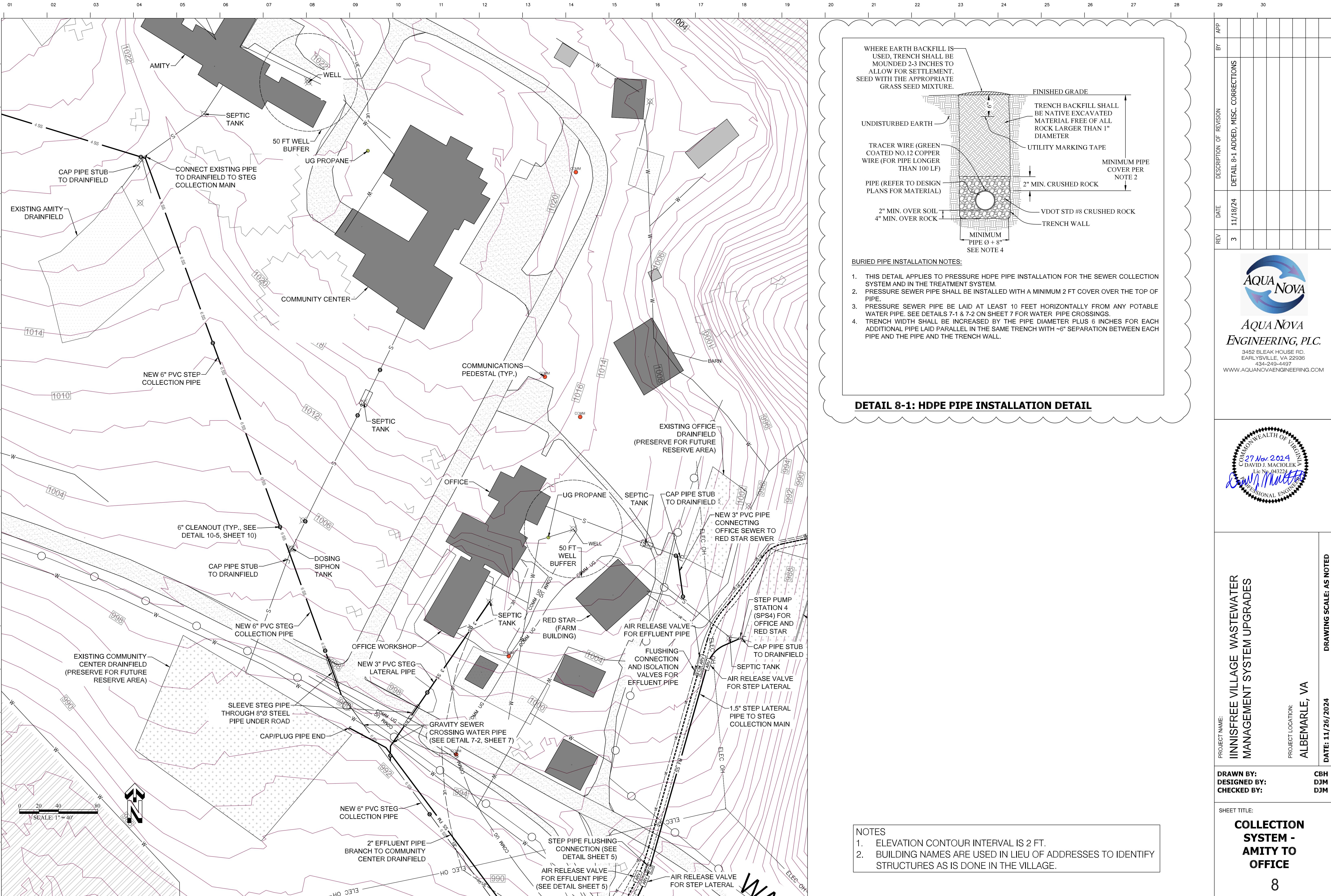
11 of 11

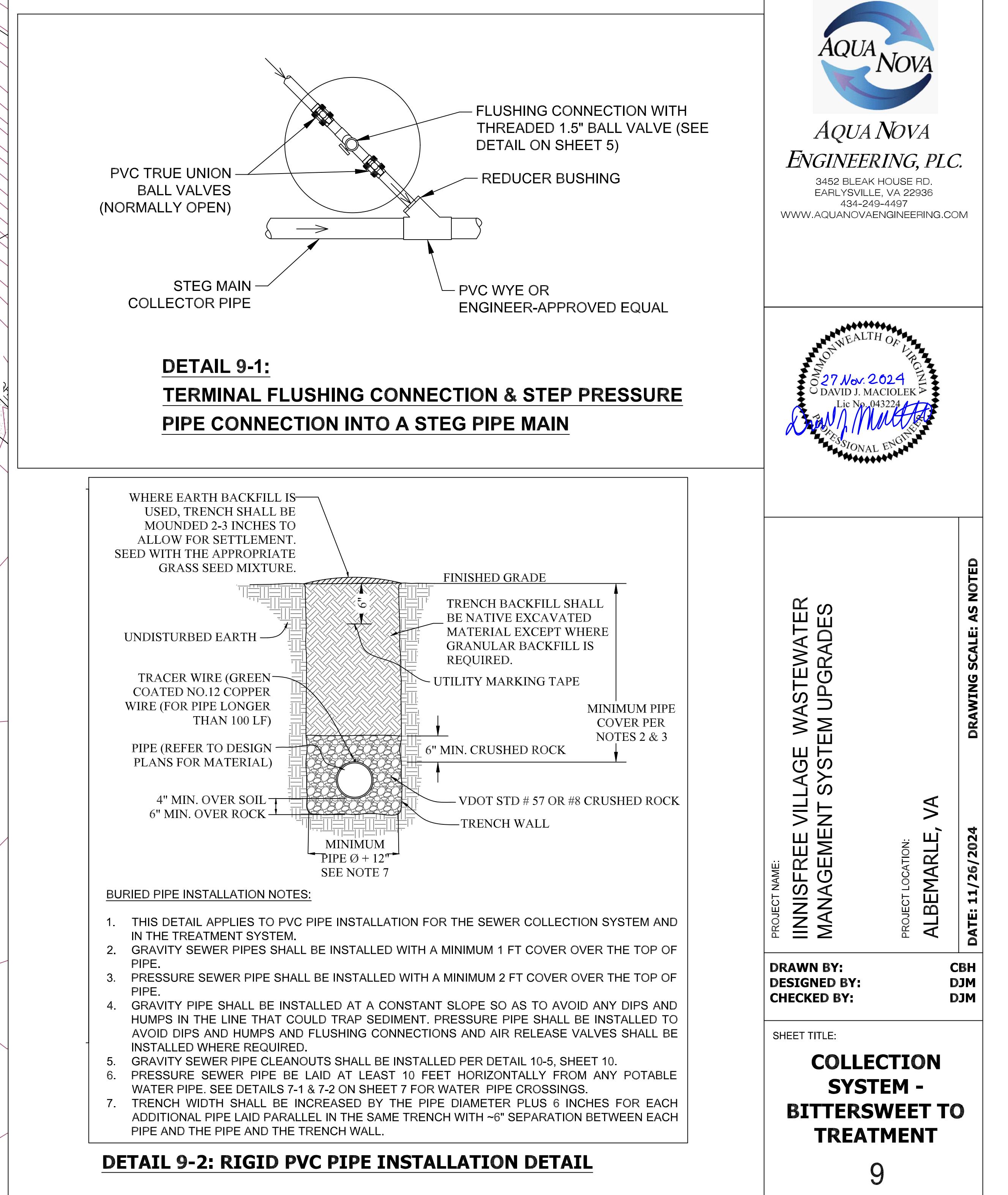
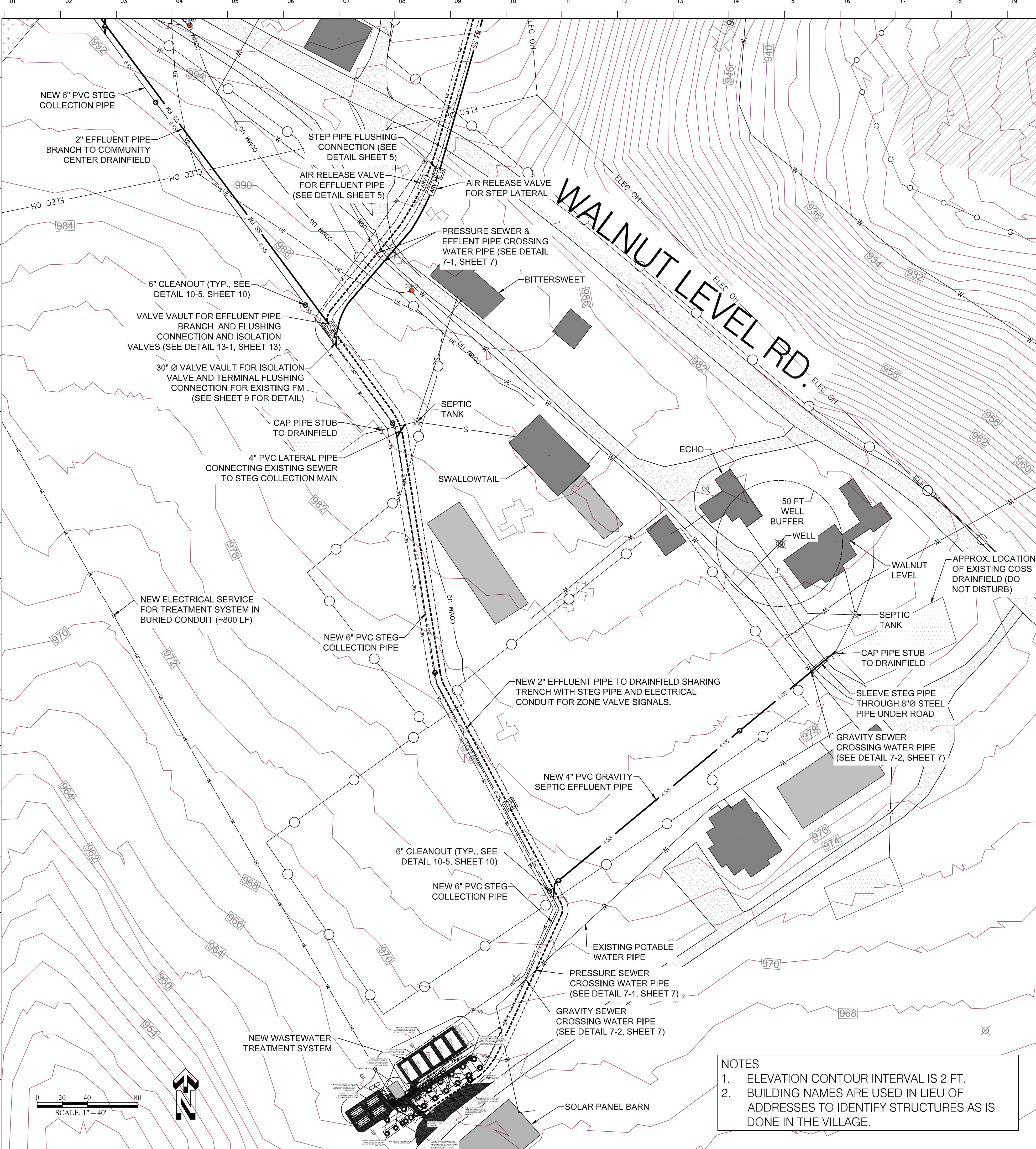
PROJECT LOCATION: **ALBEMARLE VA**

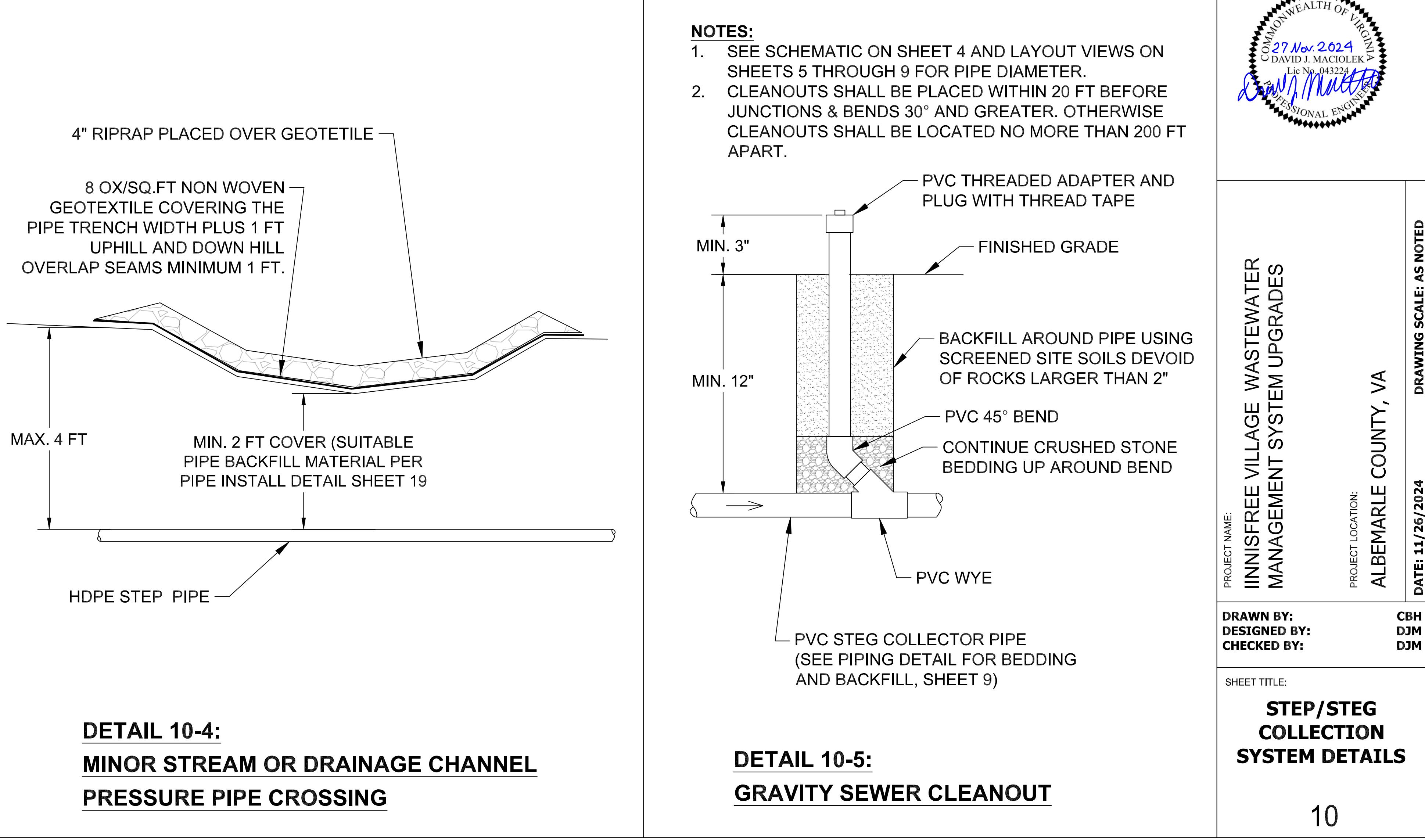
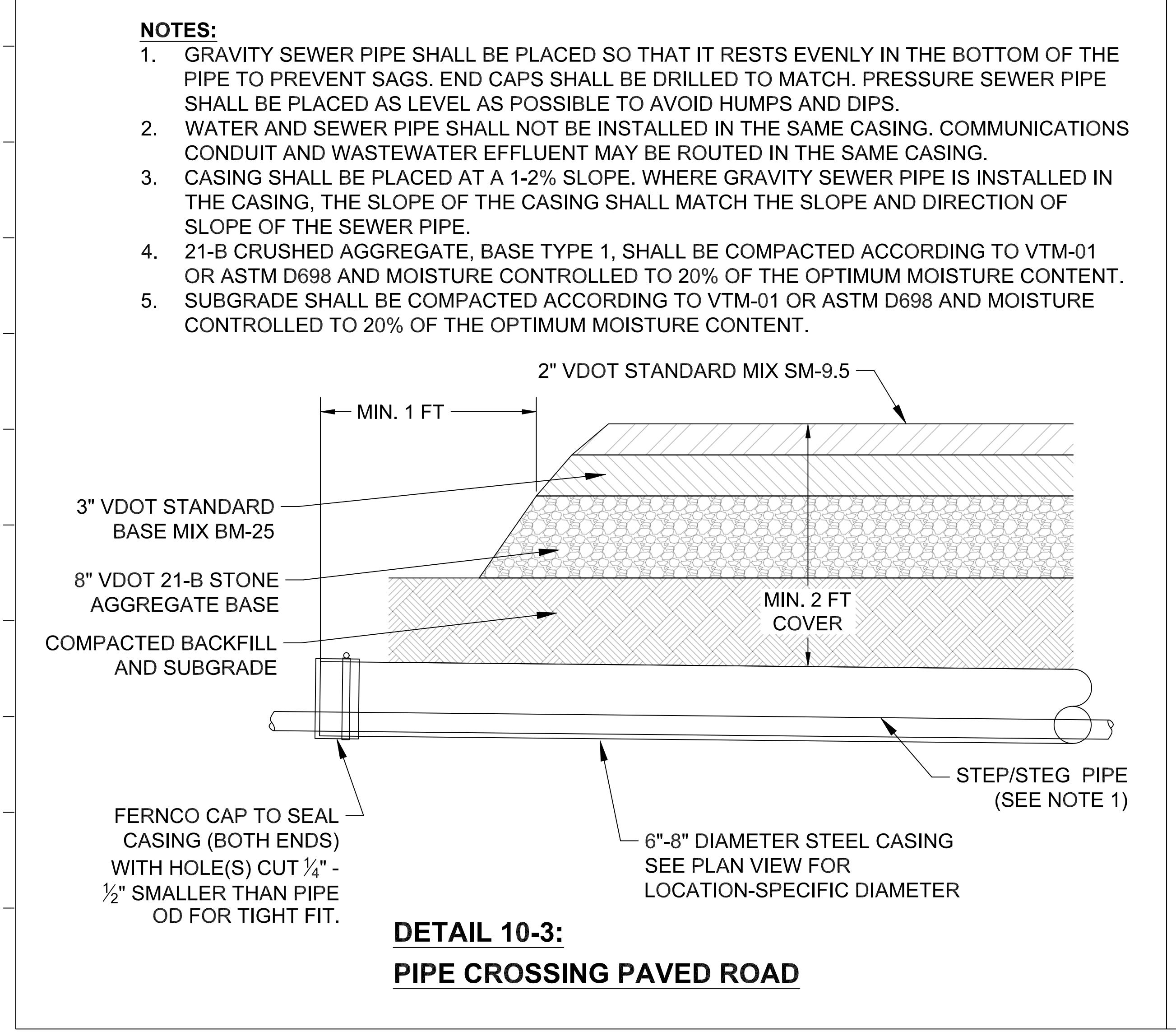
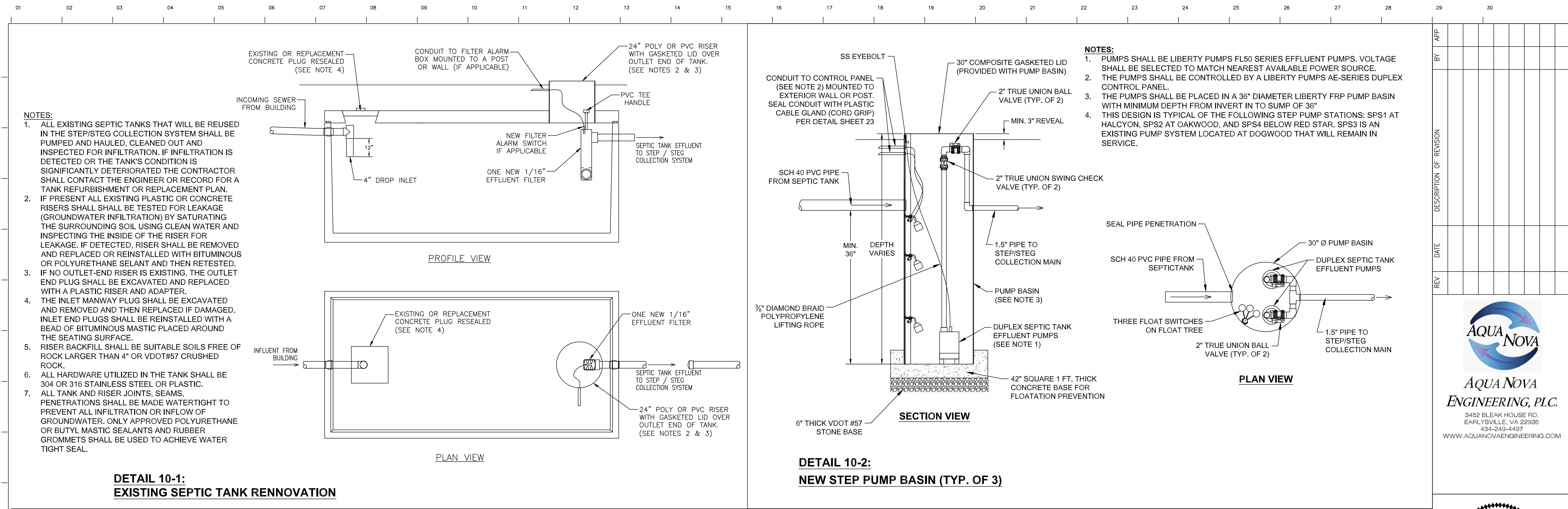
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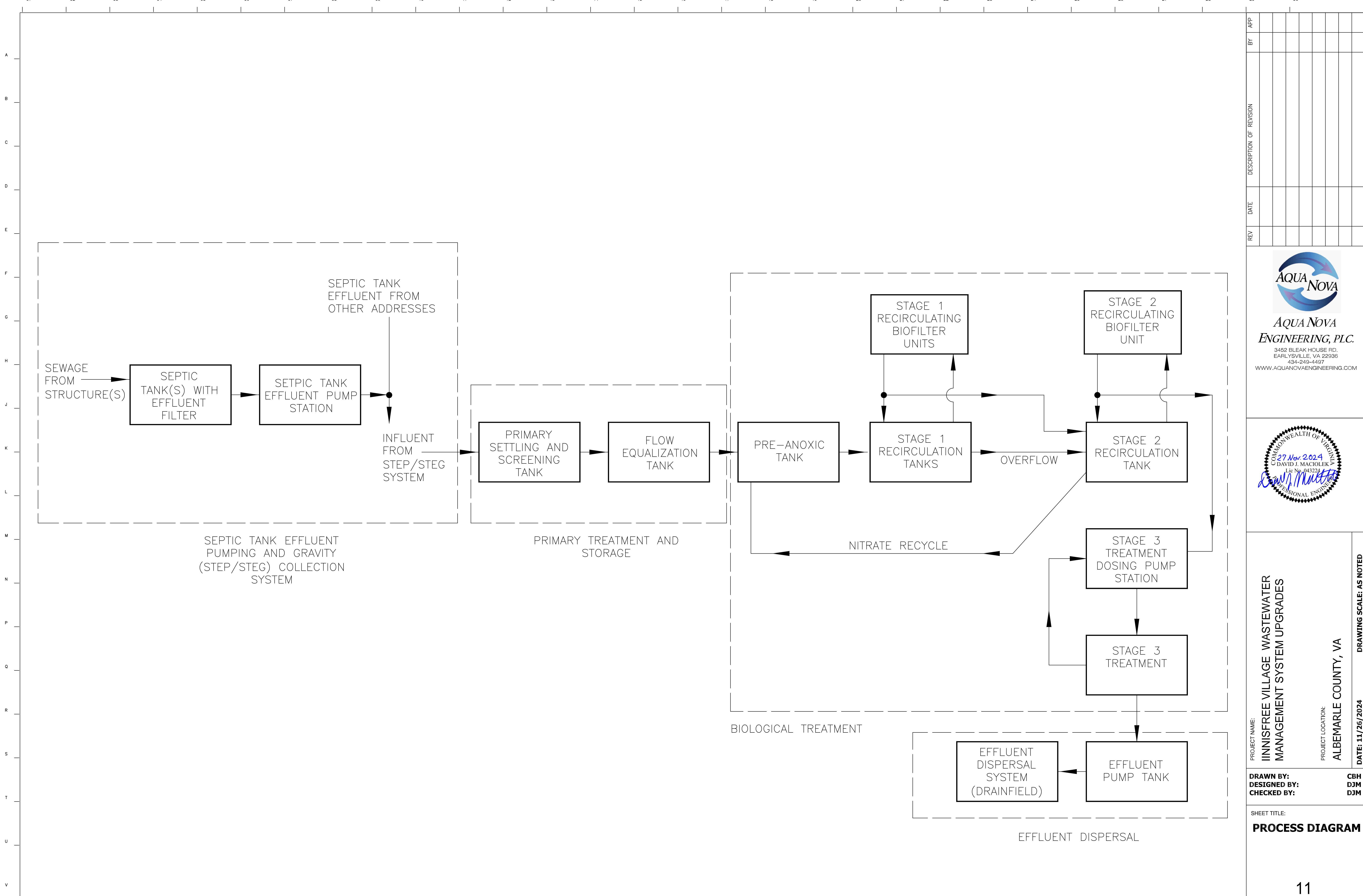
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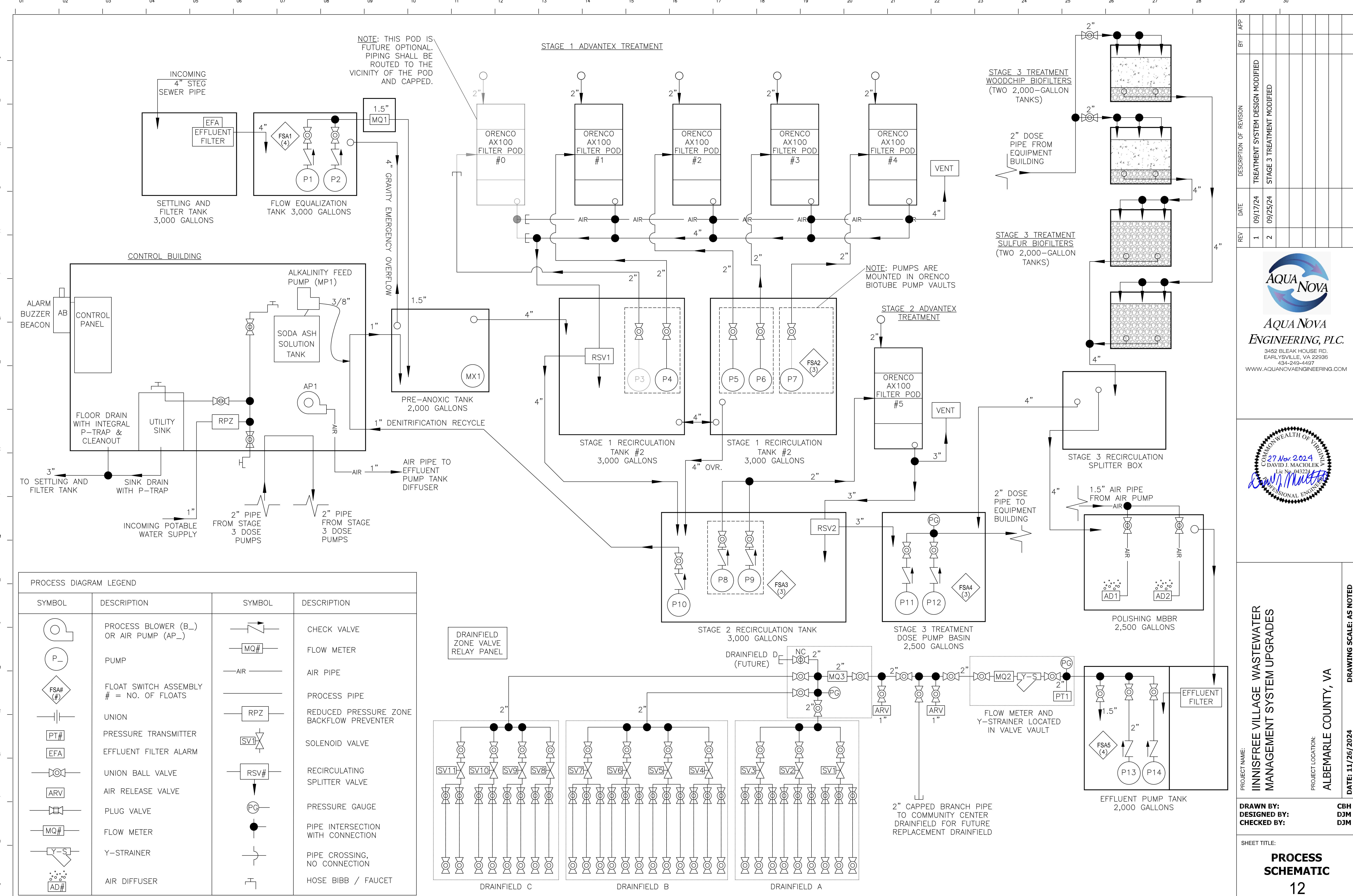
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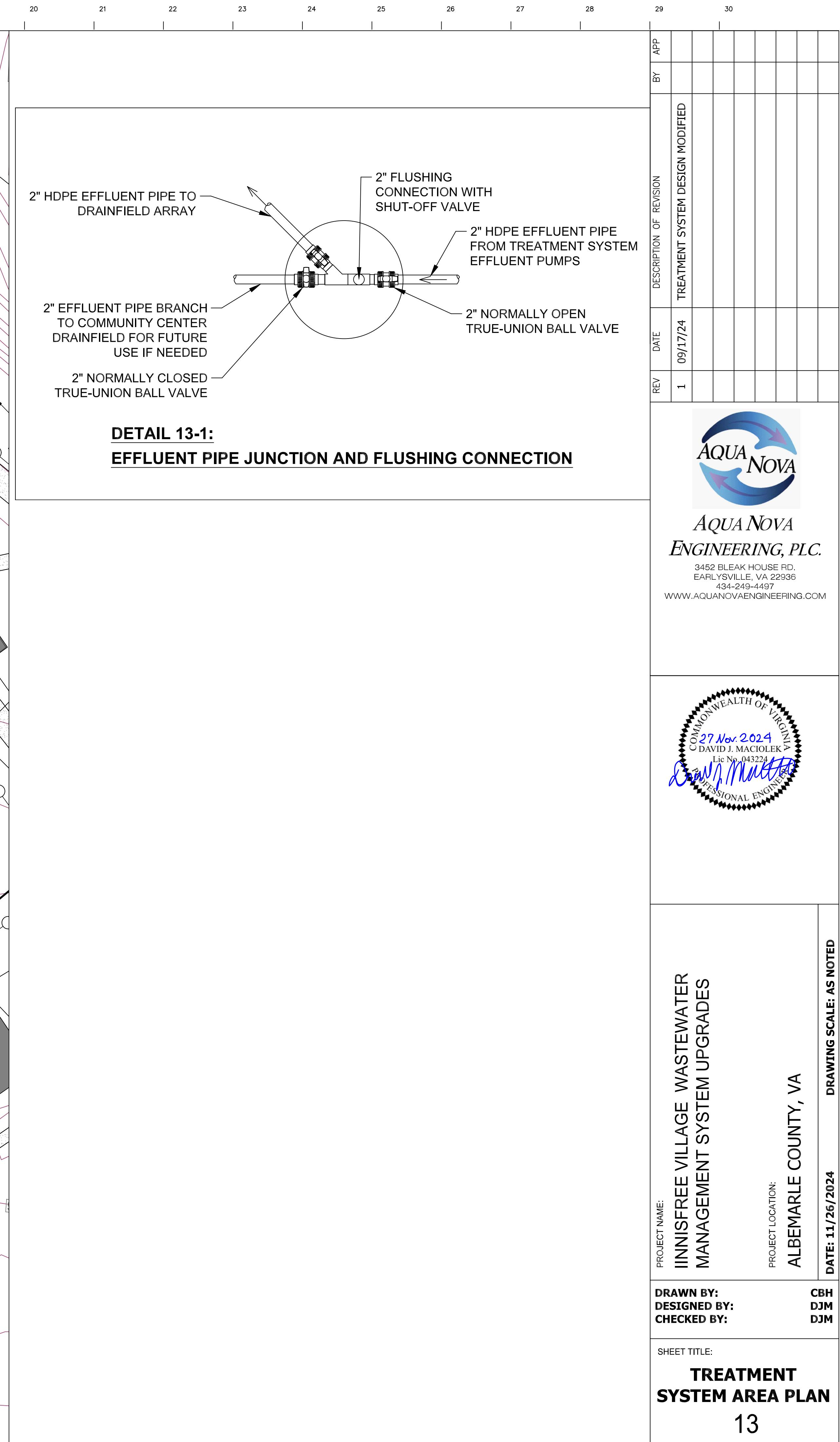
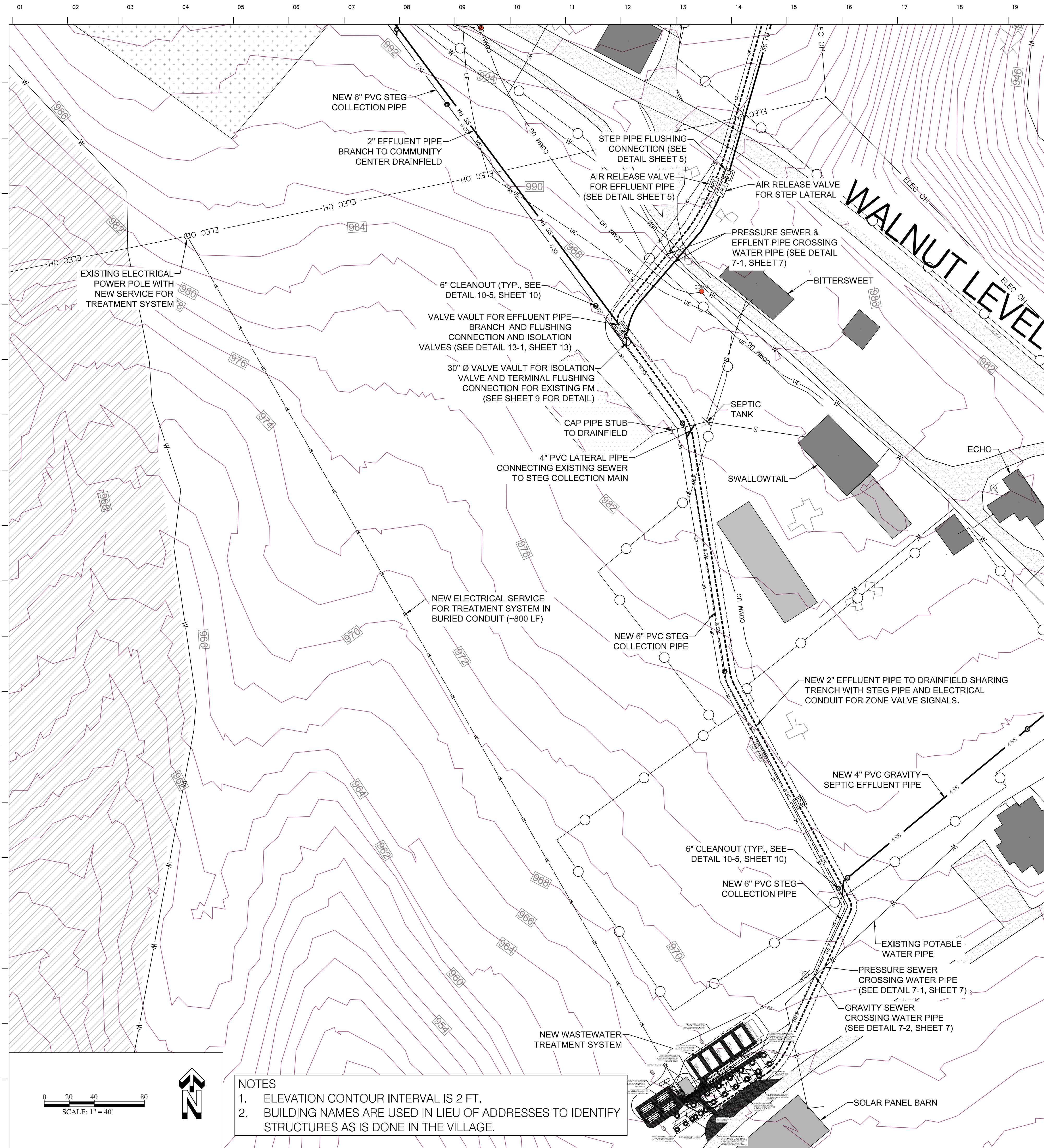


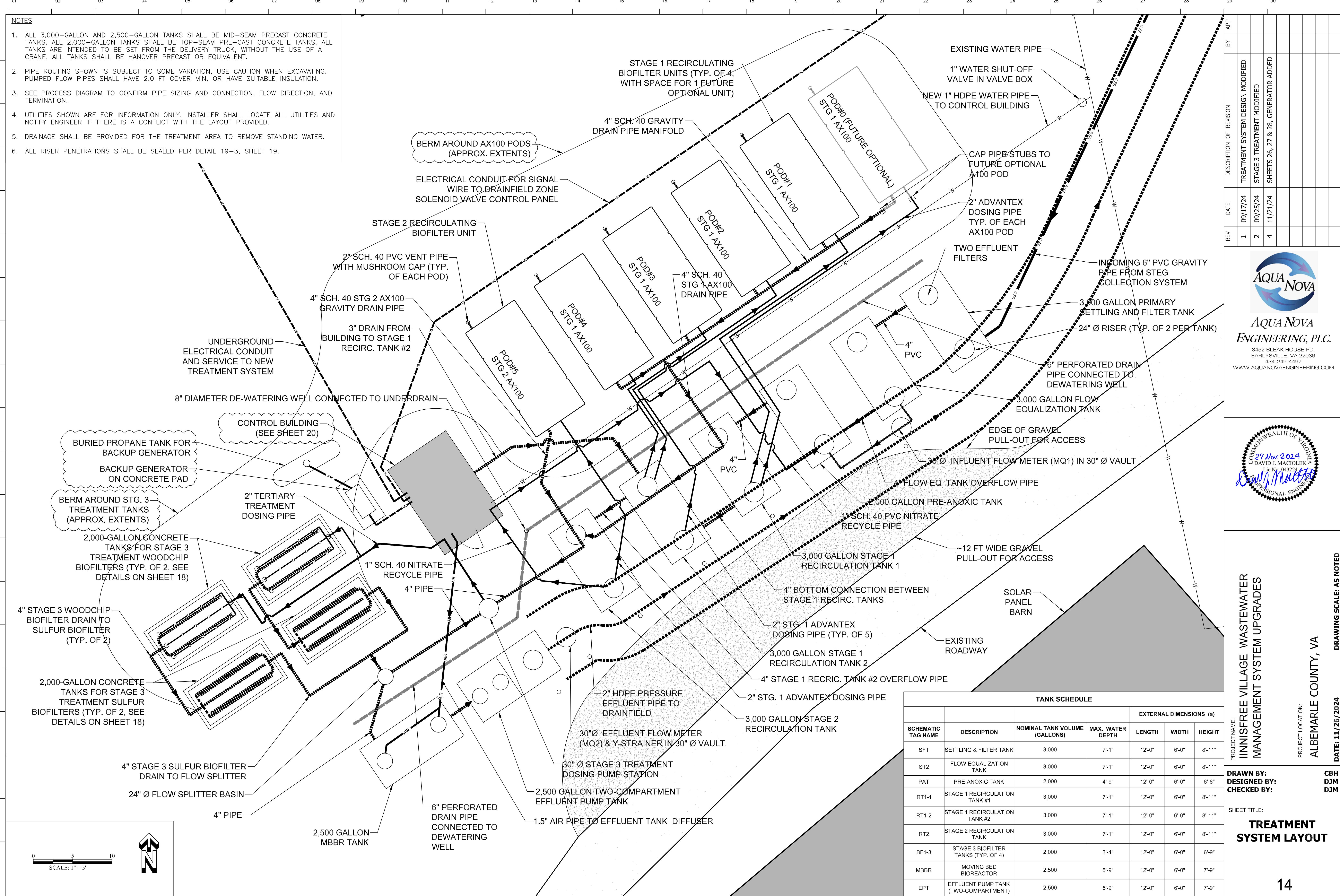




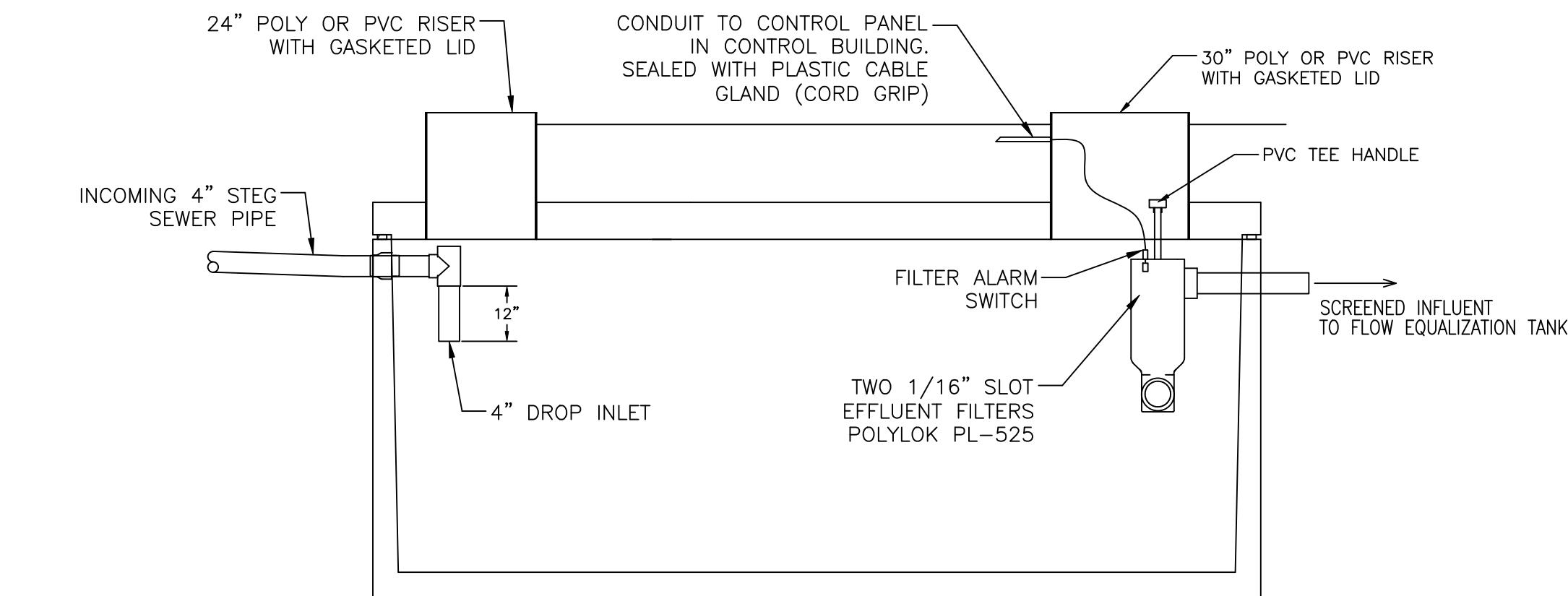
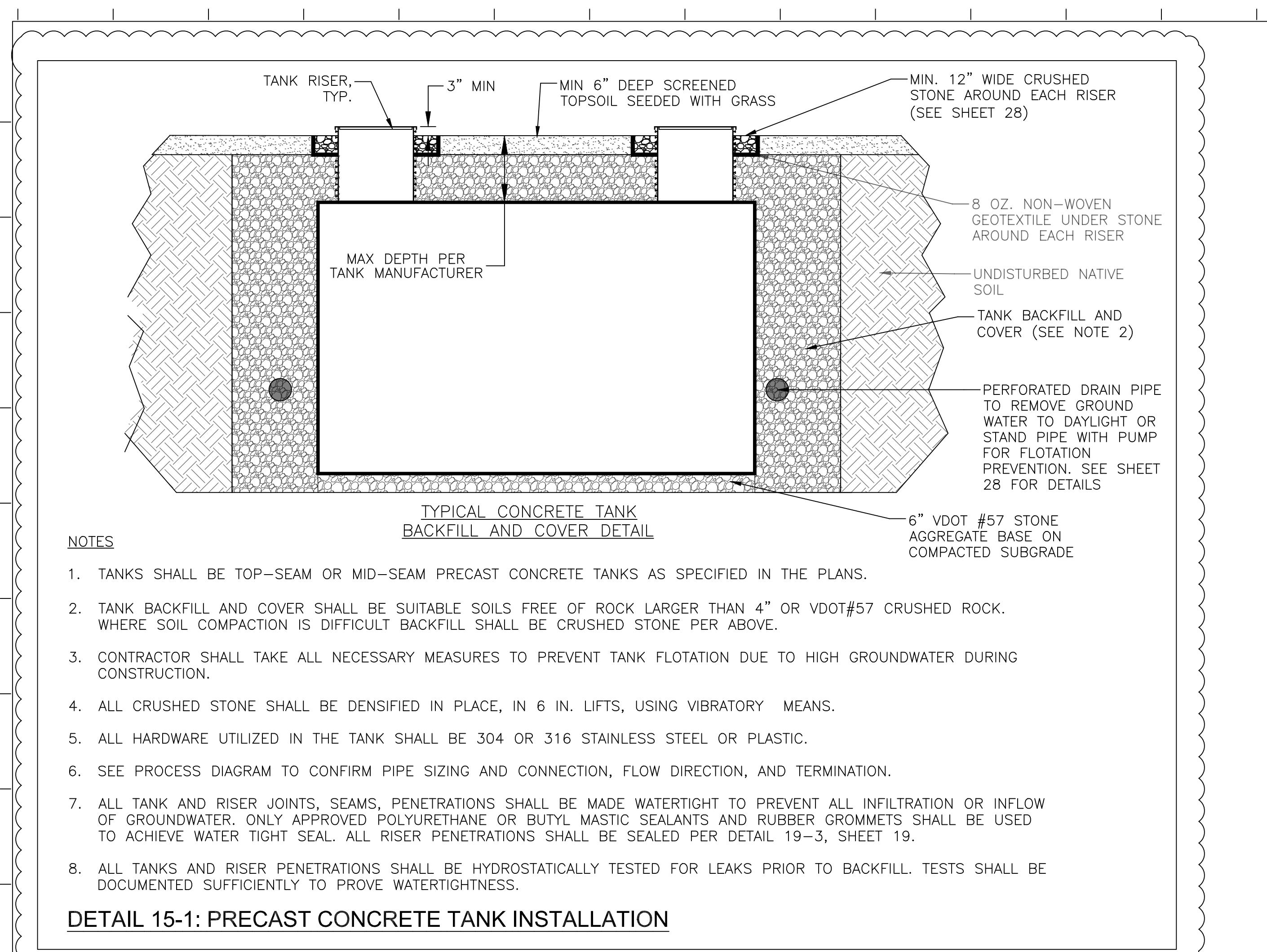




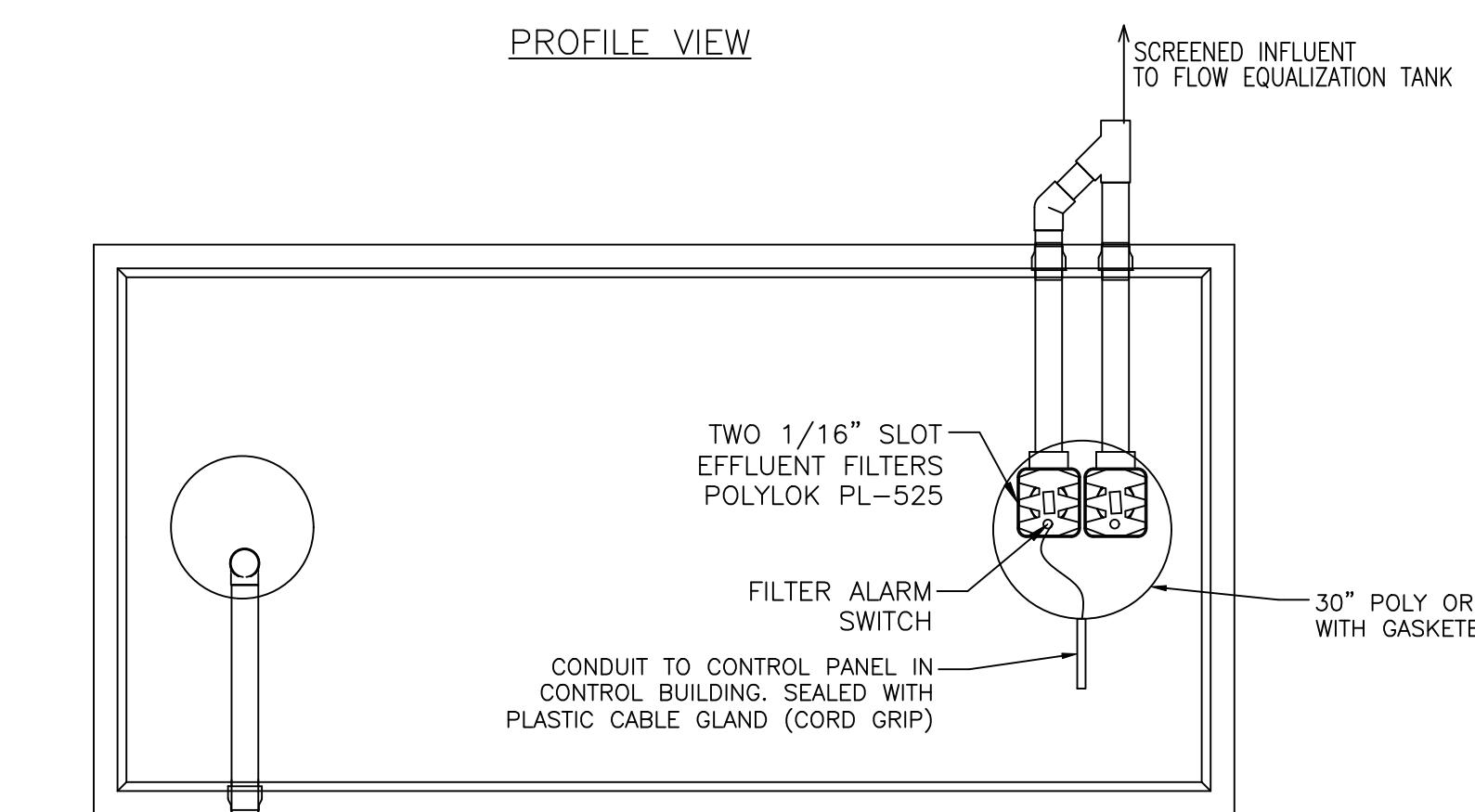




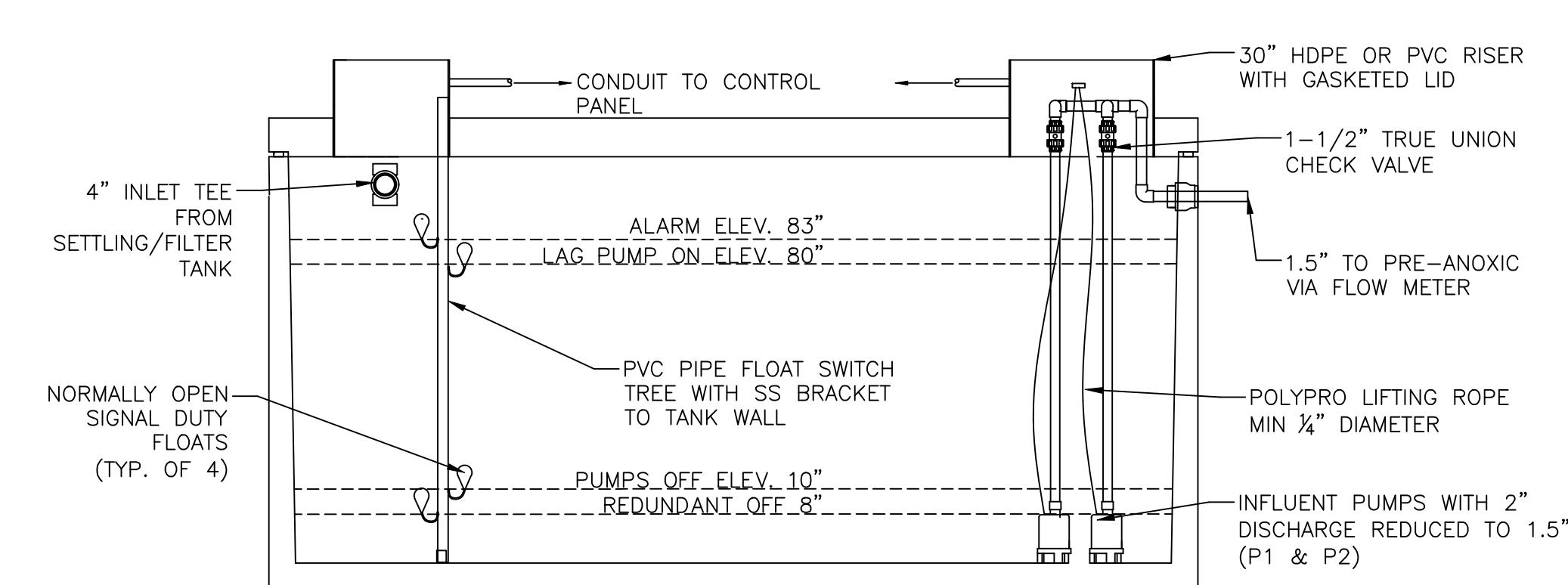
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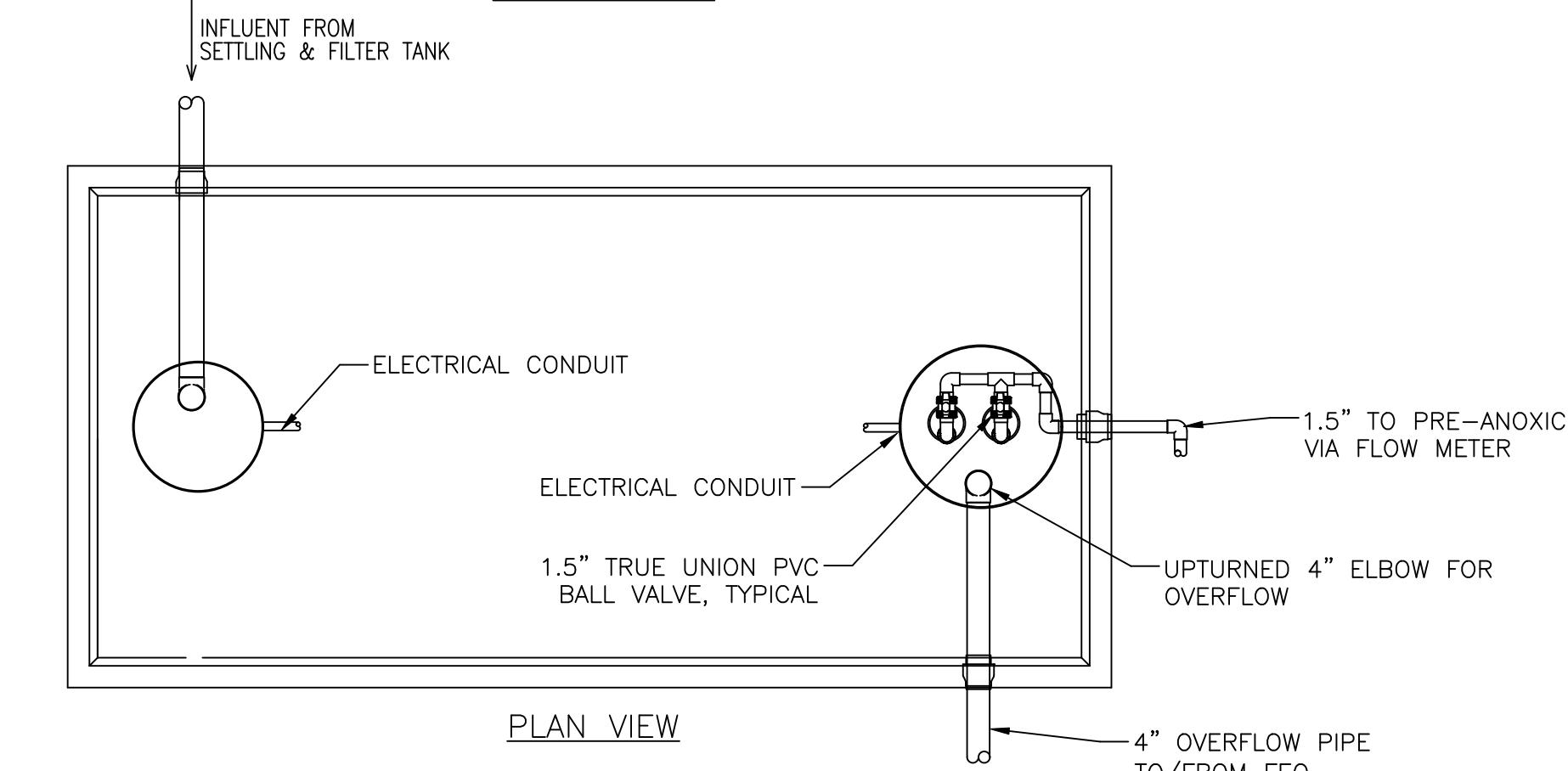
[PROFILE](#) [VIEW](#)



## **DETAIL 15-2:** **3,000 GALLON CONCRETE** **SETTLING & FILTER TANK**



PROFILE VIEW



## **DETAIL 15-4:**

### **3,000 GALLON CONCRETE FLOW EQUALIZATION TANK**

## **DETAIL 15-3:** **2,000 GALLON CONCRETE PRE-ANOXIC TANK**



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# INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES

PROJECT LOCATION:  
**AI REMARI E COUNTY VA**

DATE: 11/26/2024 DRAWING SCALE: AS NOTED

DRAWN BY:  
DESIGNED BY:  
MONTGOMERY, PA

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SHEET TITLE:

SHEET TITLE: **TREATMENT**

**SHEET TITLE:**

**TREATMENT**

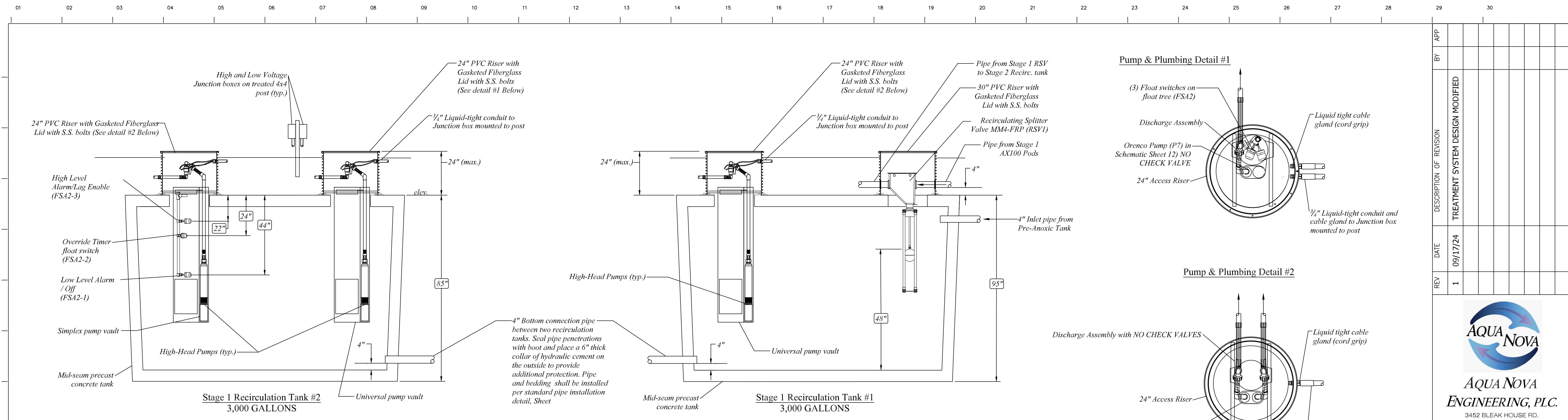
**SYSTEM DRAFT**

## **TREATMENT SYSTEM DETAIL**

## **TREATMENT SYSTEM DETAIL**

# **TREATMENT SYSTEM DETAIL**

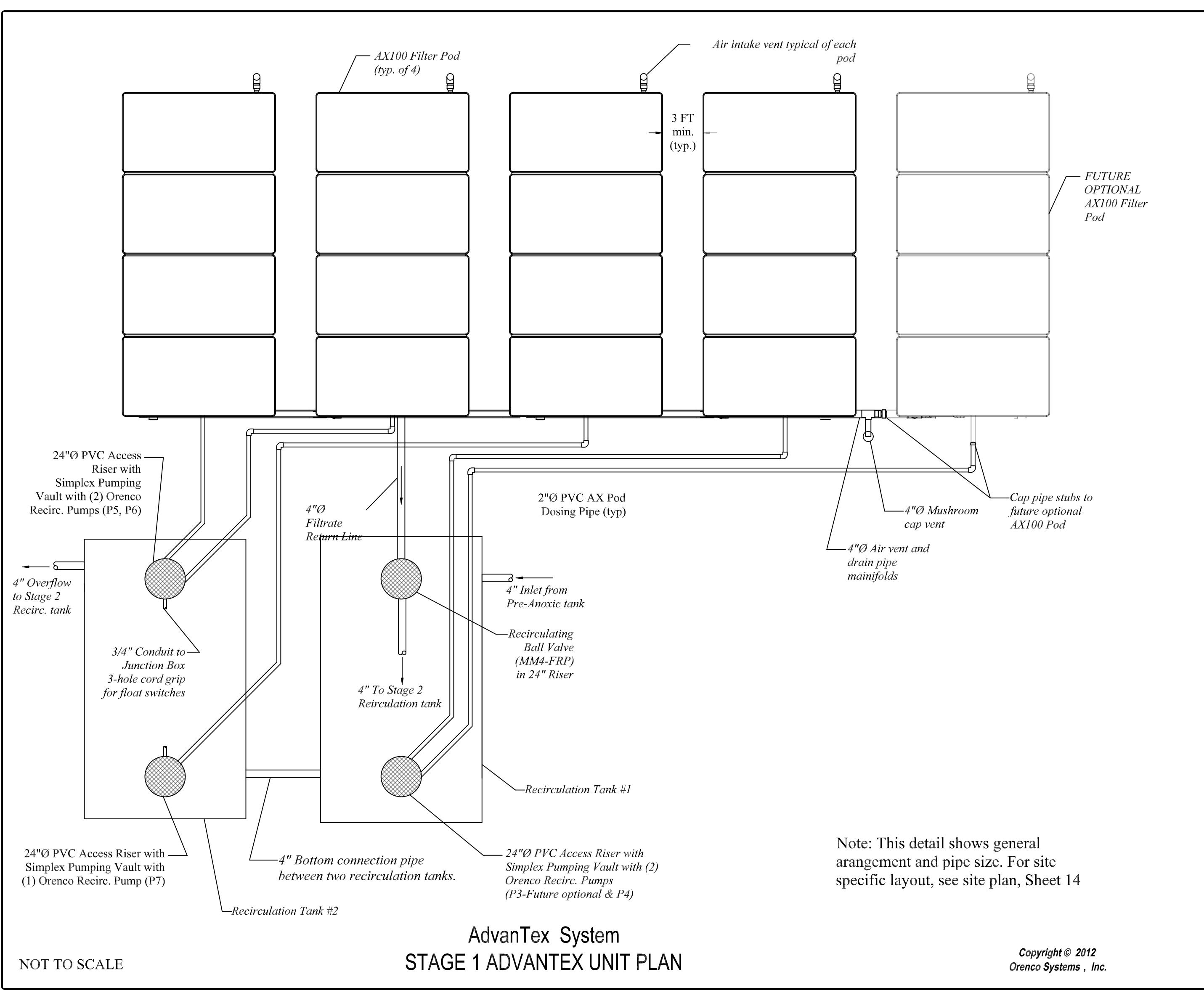
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AdvanTex System  
STAGE 1 RECIRCULATION TANK AND PUMP DETAILS

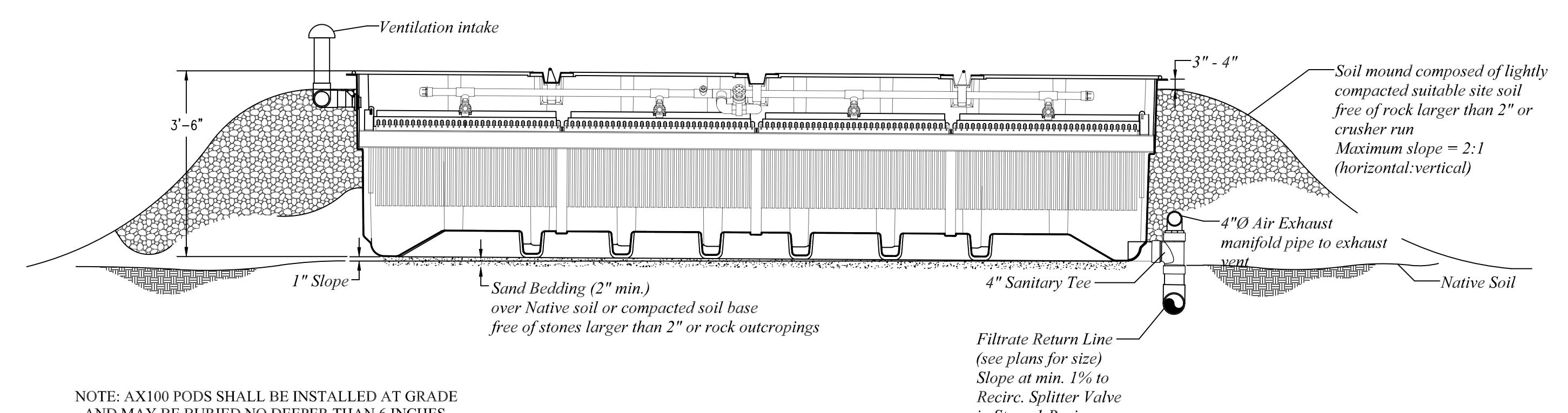
NOT TO SCALE

NOTE: ALL VALVES AND UNIONS MUST BE NO FURTHER THAN 18" BELOW THE RISER RIM TO ALLOW ACCESS.



AdvanTex System  
STAGE 1 ADVANTEX UNIT PLAN

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AdvanTex System  
STAGE 1 ADVANTEX AX100 UNIT PROFILE AND VENT PIPE DETAIL

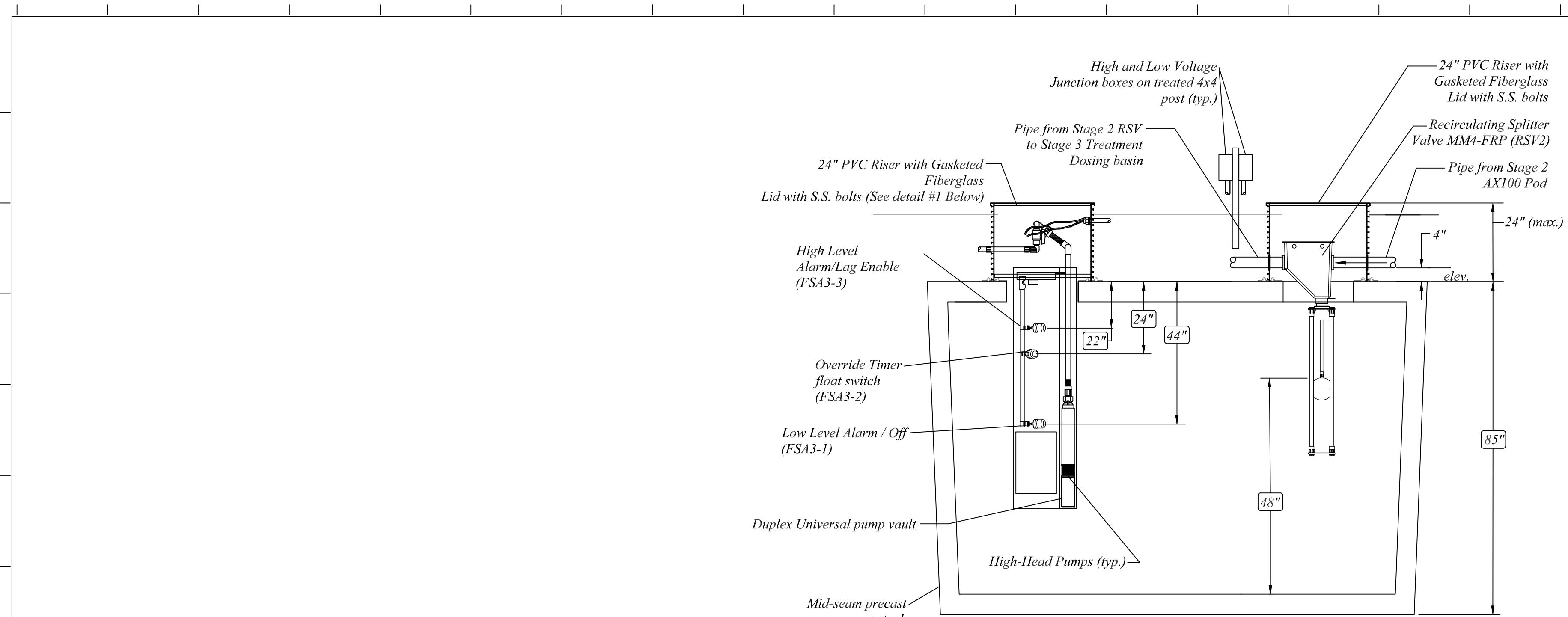
NOT TO SCALE

PROJECT NAME: INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPGRADES  
PROJECT LOCATION: ALBEMARLE COUNTY, VA  
DRAWING SCALE: AS NOTED  
DATE: 11/26/2024

CBH  
DJM  
DJM  
DRAWN BY:  
DESIGNED BY:  
CHECKED BY:  
SHEET TITLE:  
DATE: 2024/11/26

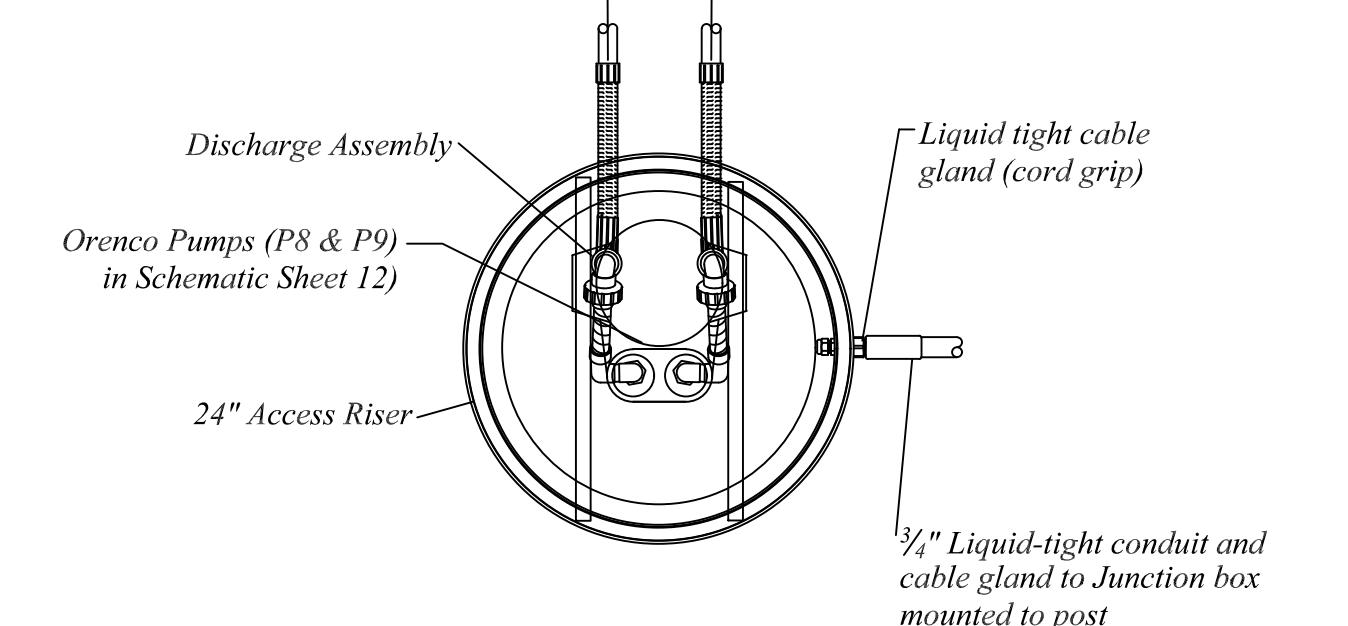
STAGE 1  
ADVANTEX  
TREATMENT

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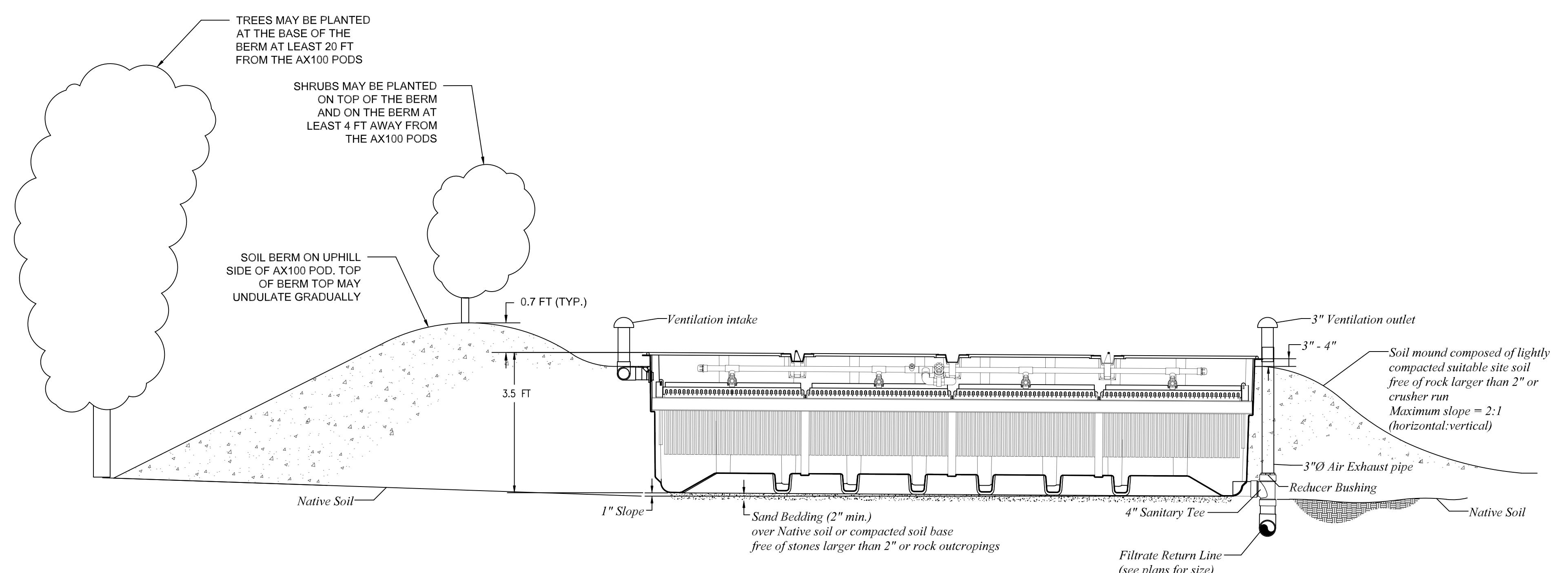
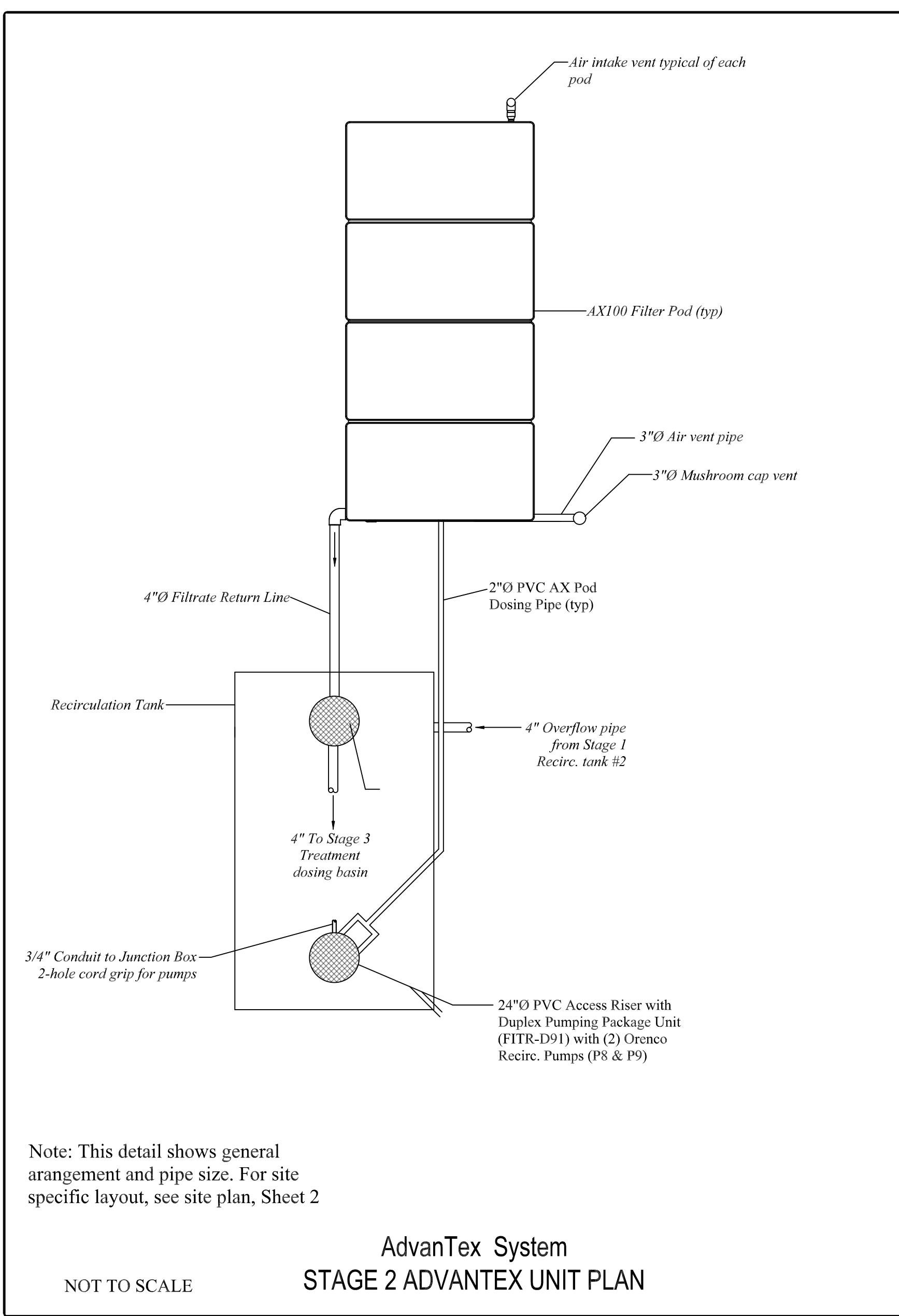
NOTE: ALL VALVES AND UNIONS MUST BE NO FURTHER THAN 18" BELOW THE RISER RIM TO ALLOW ACCESS.

Pump & Plumbing Detail #1



AdvanTex System  
STAGE 1 RECIRCULATION TANK AND PUMP DETAILS

NOT TO SCALE



AdvanTex System  
STAGE 2 ADVANTEX AX100 UNIT PROFILE AND VENT DETAILS

NOT TO SCALE

PROJECT NAME: INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPDATES  
DATE: 11/26/2024 DRAWING SCALE: AS NOTED  
PROJECT LOCATION: ALBEMARLE COUNTY, VA

DATE: 11/26/2024 DRAWING SCALE: AS NOTED  
PROJECT LOCATION: ALBEMARLE COUNTY, VA

DRAWN BY: CBH  
DESIGNED BY: DJM  
CHECKED BY: DJM

SHEET TITLE:

**STAGE 2  
ADVANTEX  
TREATMENT**

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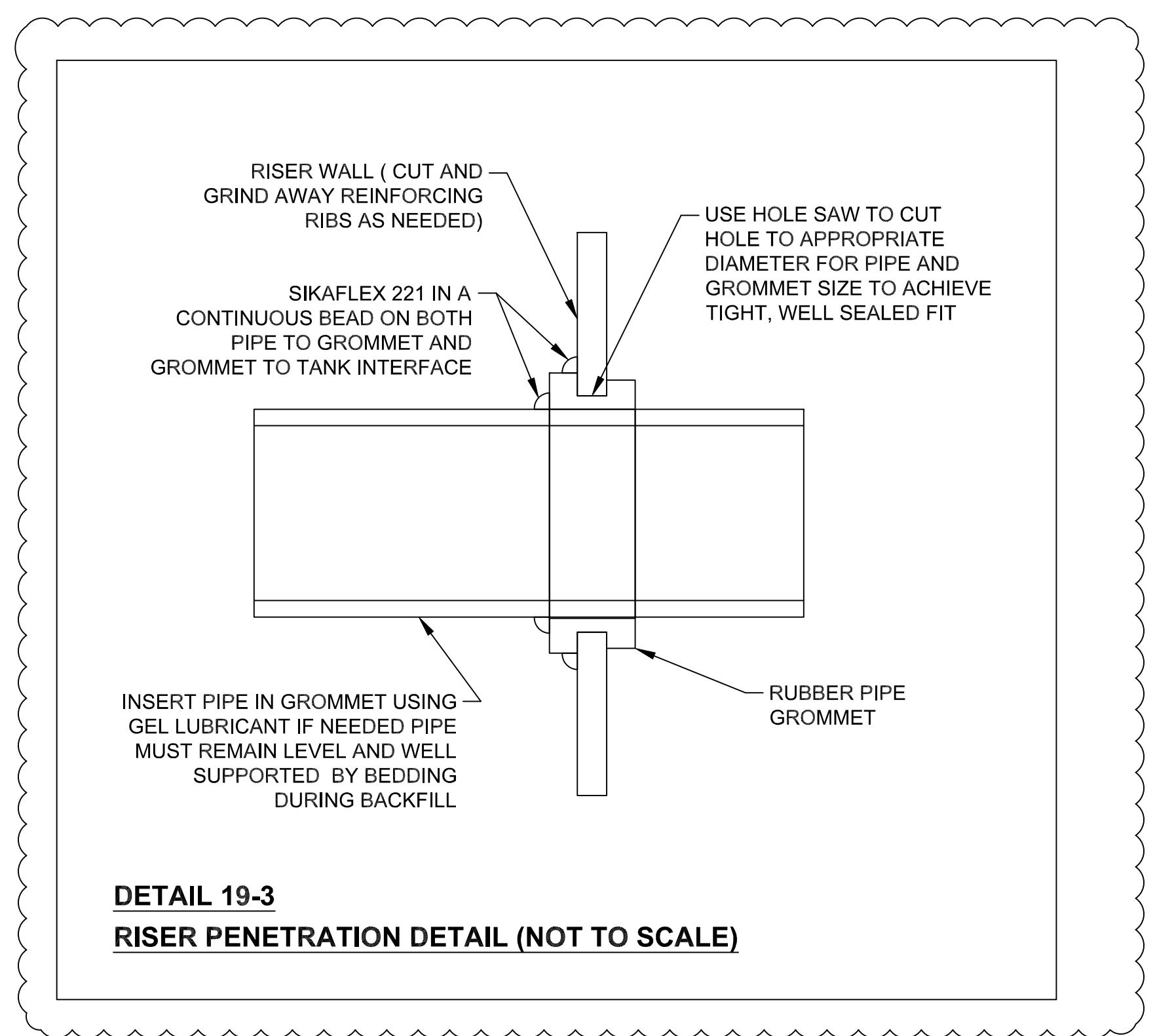


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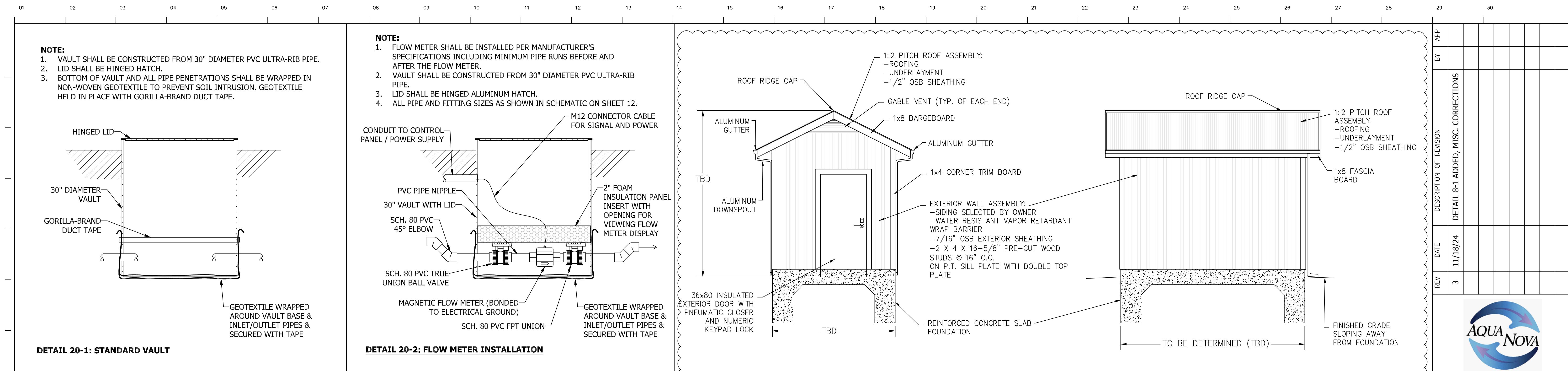
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**DETAIL 19-3**  
**RISER PENETRATION DETAIL (NOT TO SCALE)**



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PROJECT NAME: INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPDATES

PROJECT LOCATION: ALBEMARLE COUNTY, VA

DATE: 11/26/2024 DRAWING SCALE: AS NOTED

DRAWN BY: CBH  
DESIGNED BY: DJM  
CHECKED BY: DJM

SHEET TITLE: FLOW METER & EQUIPMENT BUILDING DETAILS

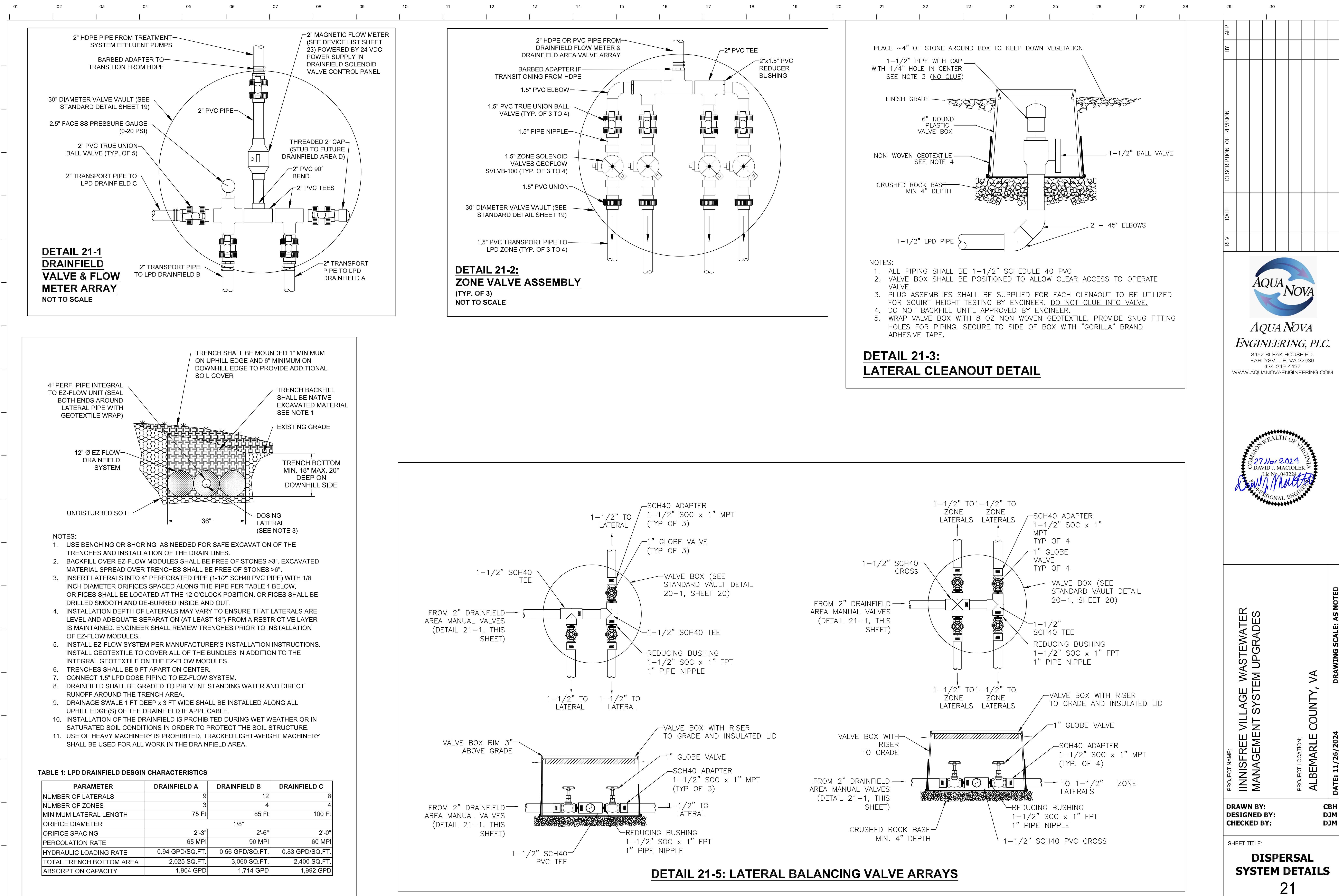
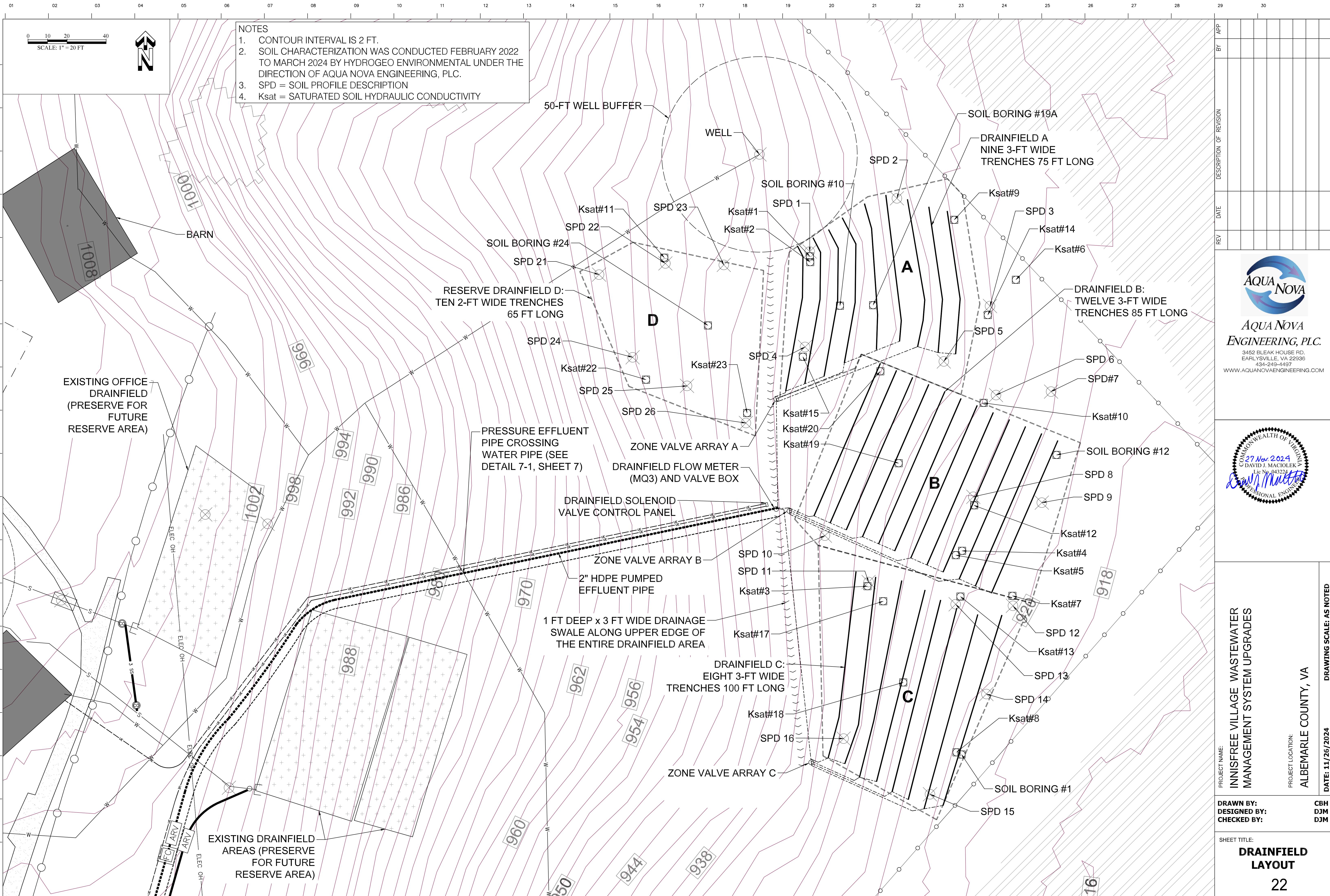


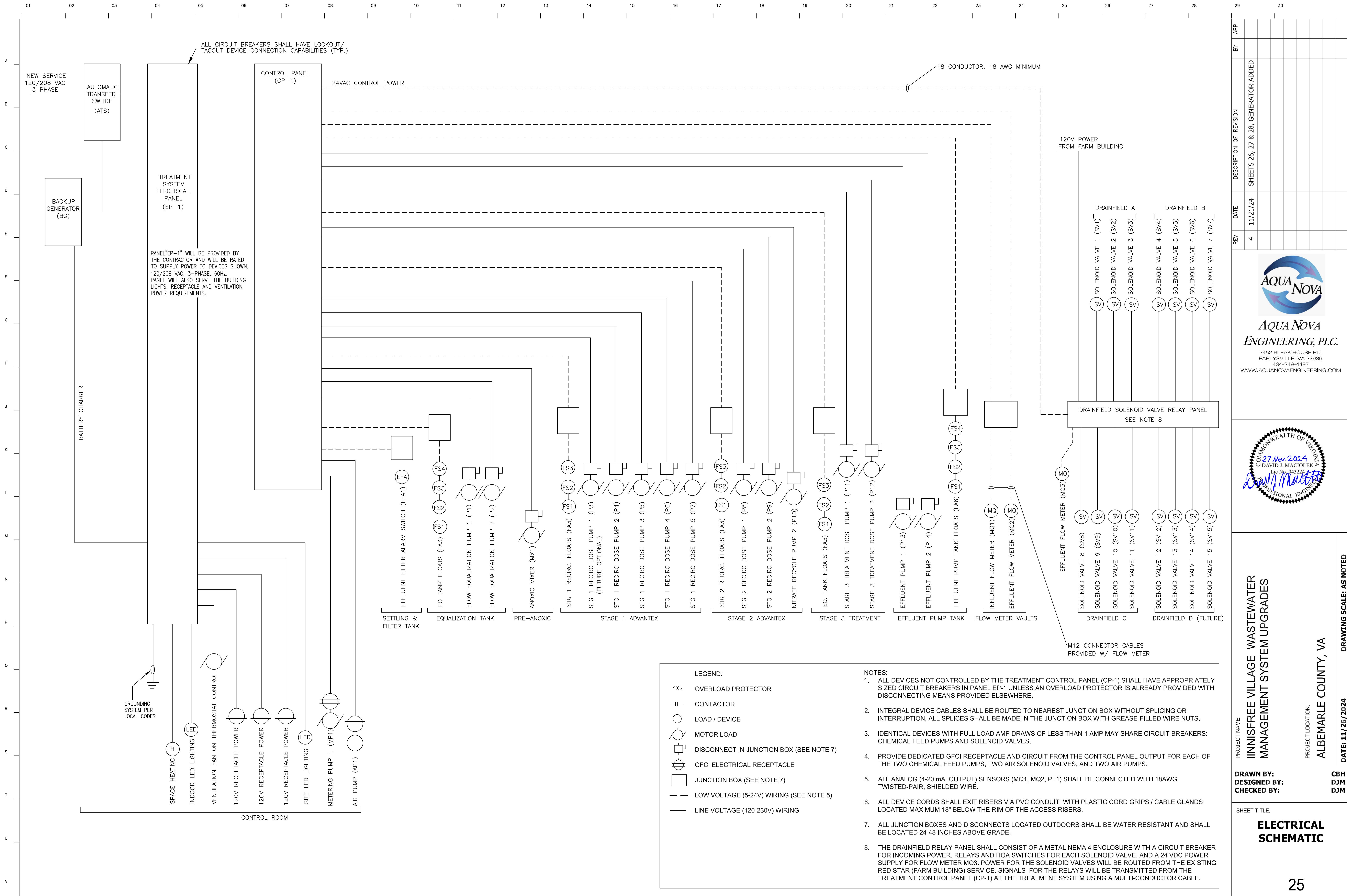
TABLE 1: LPD DRAINFIELD DESIGN CHARACTERISTICS

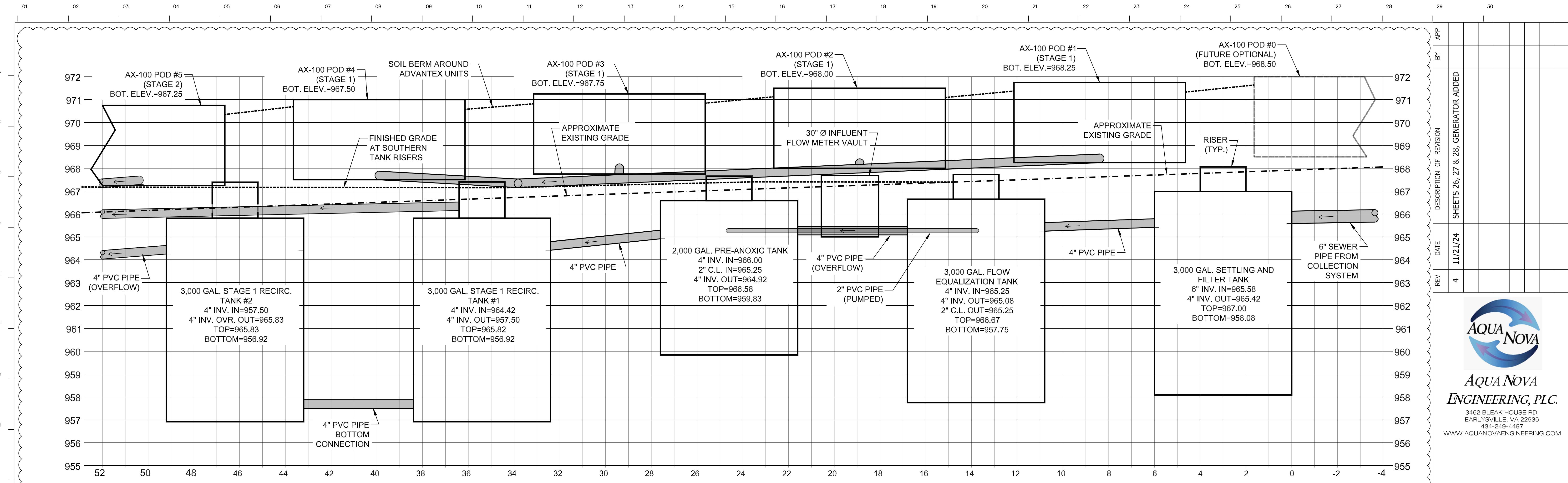
PARAMETER	DRAINFIELD A	DRAINFIELD B	DRAINFIELD C
NUMBER OF LATERS	9	12	8
NUMBER OF ZONES	3	4	4
MINIMUM LATERAL LENGTH	75 Ft	85 Ft	100 Ft
ORIFICE DIAMETER	1/8"		
ORIFICE SPACING	2'-3"	2'-6"	2'-0"
PERCOLATION RATE	65 MPI	90 MPI	60 MPI
HYDRAULIC LOADING RATE	0.94 GPD/SQ.FT.	0.56 GPD/SQ.FT.	0.83 GPD/SQ.FT.
TOTAL TRENCH BOTTOM AREA	2,025 SQ.FT.	3,060 SQ.FT.	2,400 SQ.FT.
ABSORPTION CAPACITY	1,904 GPD	1,714 GPD	1,992 GPD











DETAIL 26-1: SYSTEM HYDRAULIC PROFILE - ACROSS THE TANKS - PART 1

HORIZONTAL SCALE: 1 INCH = 2 FT

NOTE: FOR CLARITY, NOT ALL PIPING AND PENETRATIONS ARE SHOWN. REFER TO PROCESS SCHEMATIC ON SHEET 12 AND LAYOUT ON SHEET 14 FOR DETAILS. ELEVATION VALUES ARE APPROXIMATE AND INTENDED TO ILLUSTRATE RELATIVE SLOPE AND POSITION OF PIPING AND TANKS. FIELD VERIFY.



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DRAWING SCALE: AS NOTED

PROJECT NAME: INNISFREE VILLAGE WASTEWATER MANAGEMENT SYSTEM UPDATES

PROJECT LOCATION: ALBEMARLE COUNTY, VA

DATE: 11/26/2024

CBH

DJM

DJM

DRAWN BY:

DESIGNED BY:

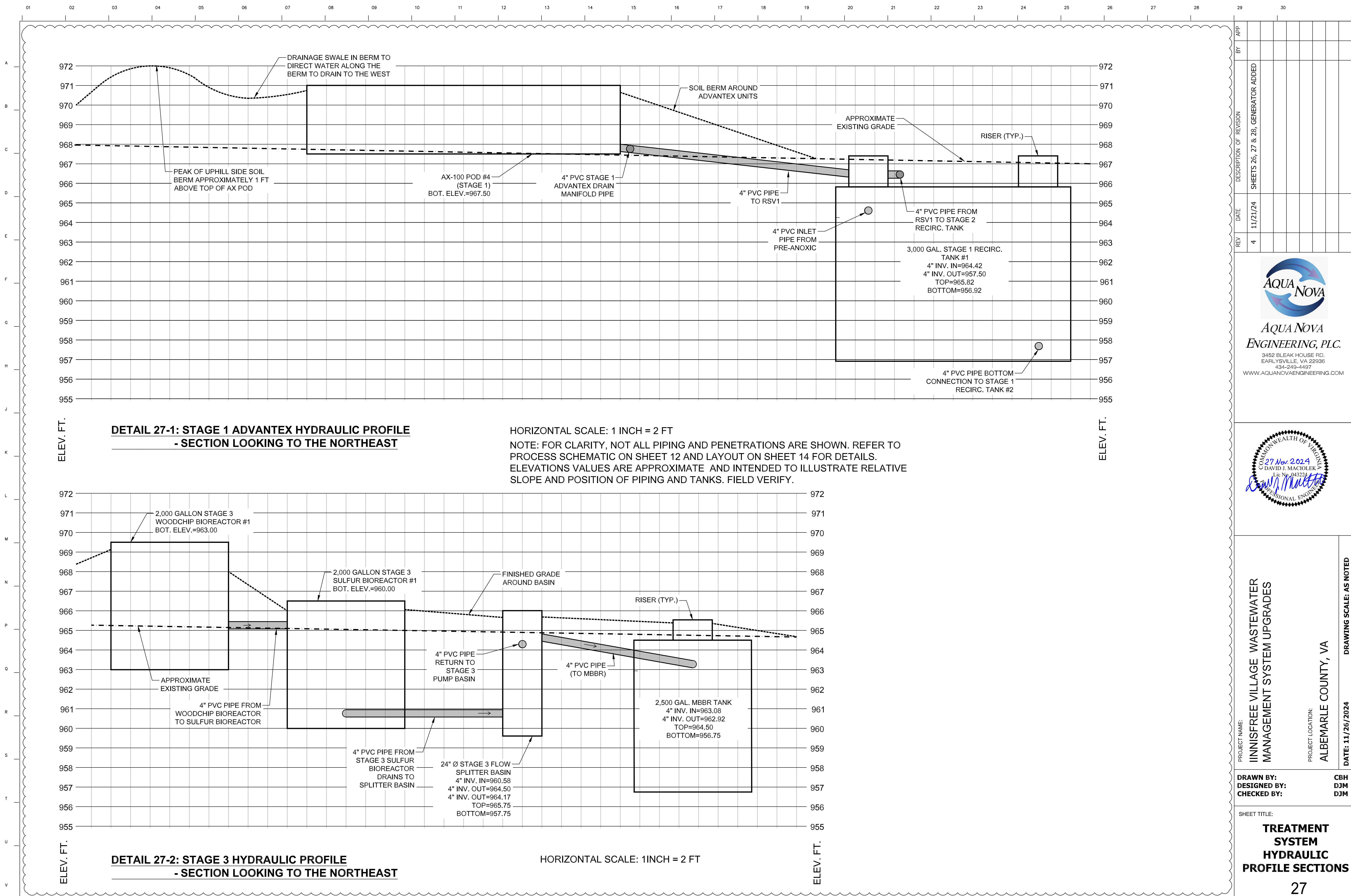
CHECKED BY:

CBH

DJM

DJM

DATE: 11/26/2024



## **DETAIL 27-2: STAGE 3 HYDRAULIC PROFILE** **- SECTION LOOKING TO THE NORTHEAST**

HORIZONTAL SCALE: 1 INCH = 2 FT

# **TREATMENT SYSTEM HYDRAULIC FILE SECTIONS**

