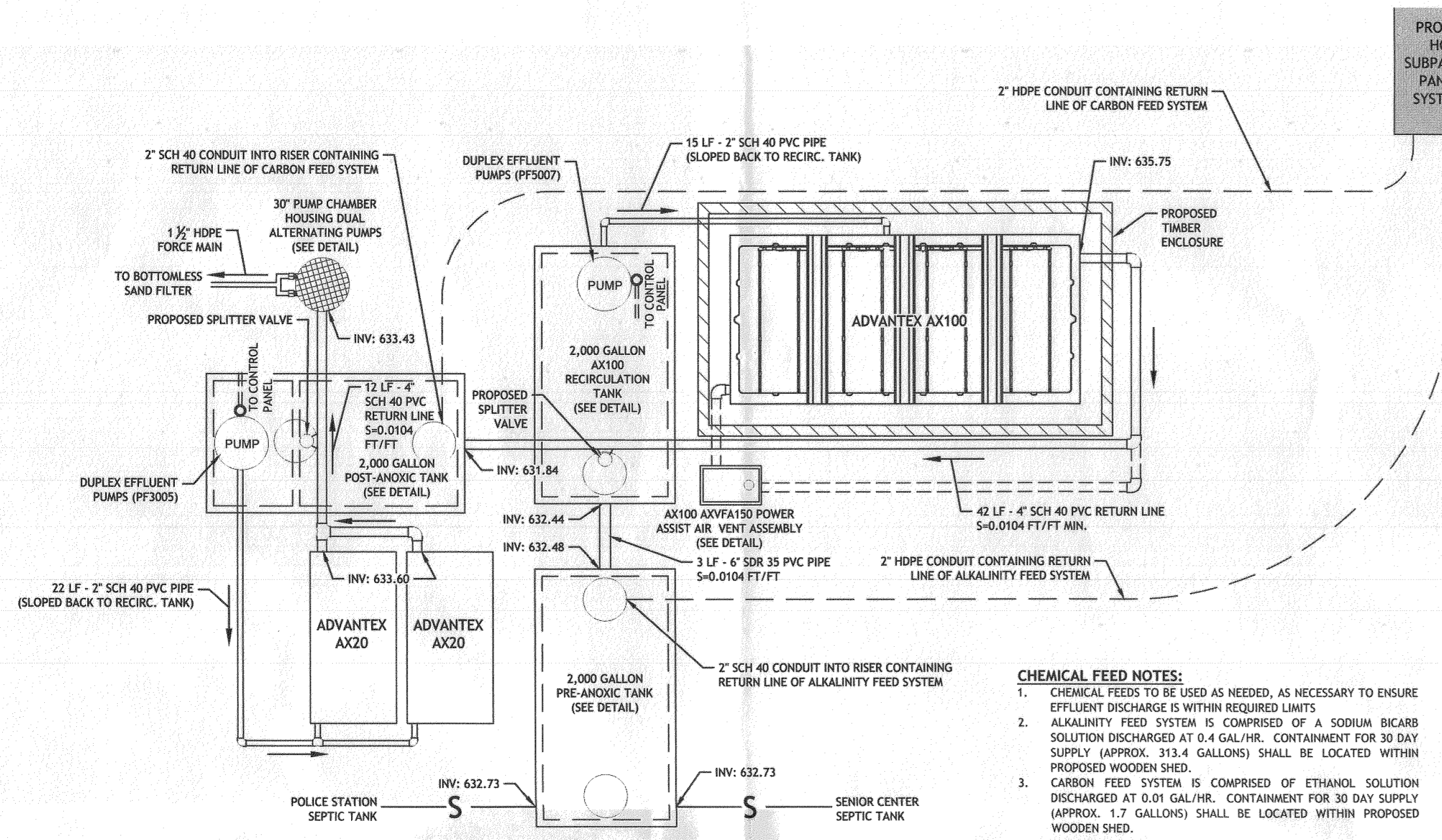
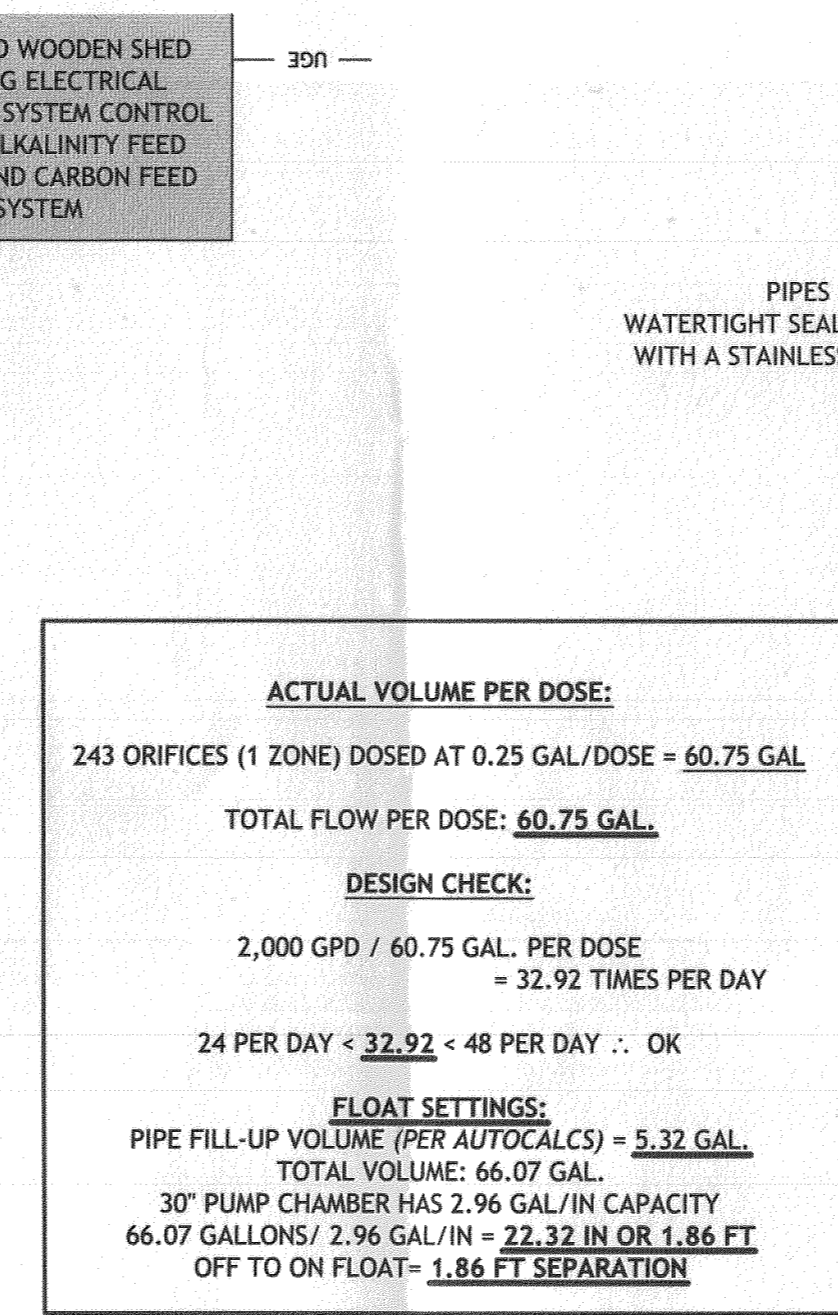


01.07.109 Town of Scituate 02-109 Engineer-Town Planner REC/Town of Scituate Police Station CAD Police Station Cds (WORKING SET) - OWTS.dwg, Jun. 14, 2018 9:18am



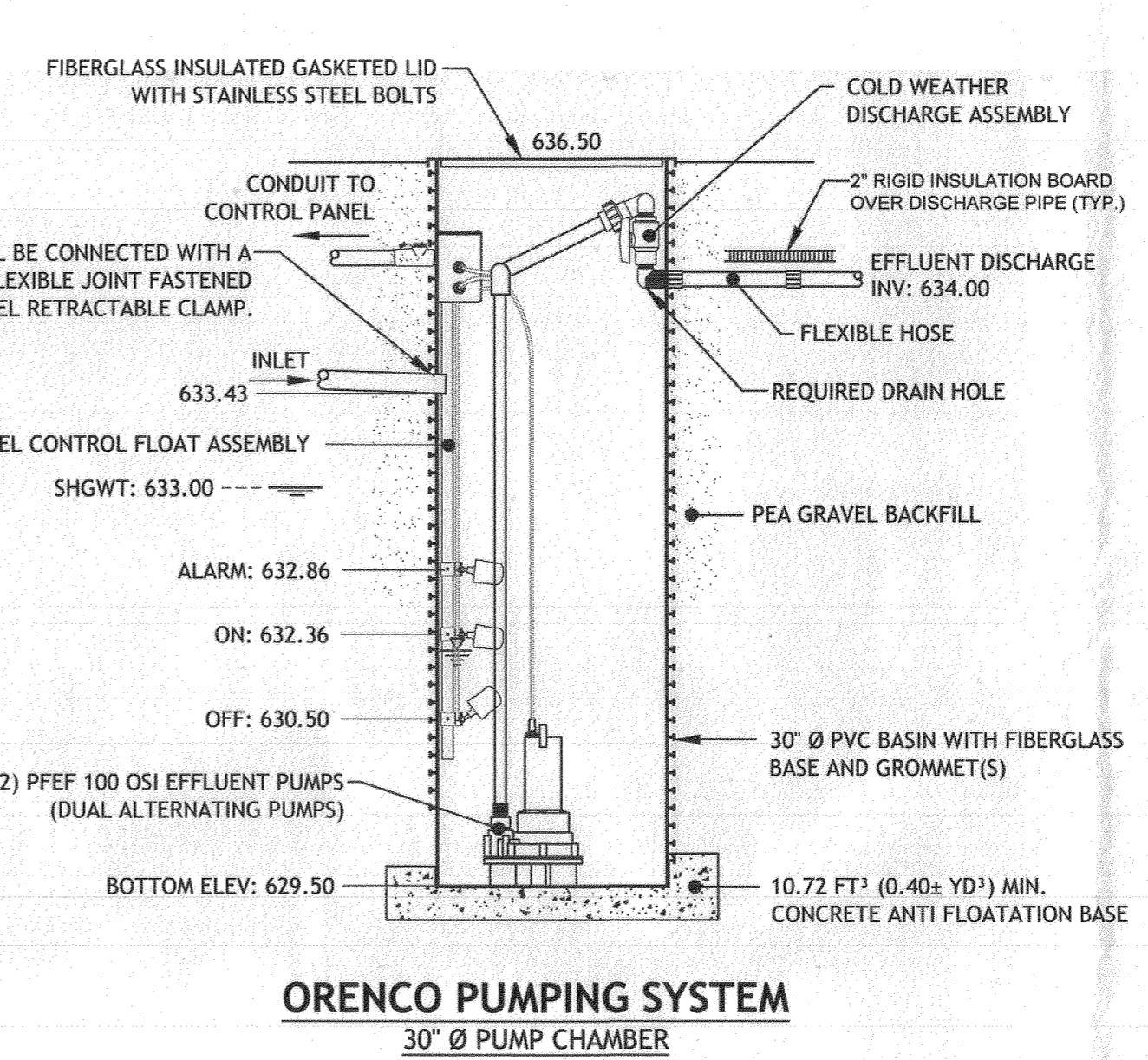
OWTS COMPONENT LAYOUT
NOT TO SCALE



ACTUAL VOLUME PER DOSE:
243 ORIFICES (1 ZONE) DOSED AT 0.25 GAL/DOSE = 60.75 GAL
TOTAL FLOW PER DOSE: 60.75 GAL

DESIGN CHECK:
2,000 GPD / 60.75 GAL. PER DOSE = 32.92 TIMES PER DAY
24 PER DAY < 32.92 < 48 PER DAY ∴ OK

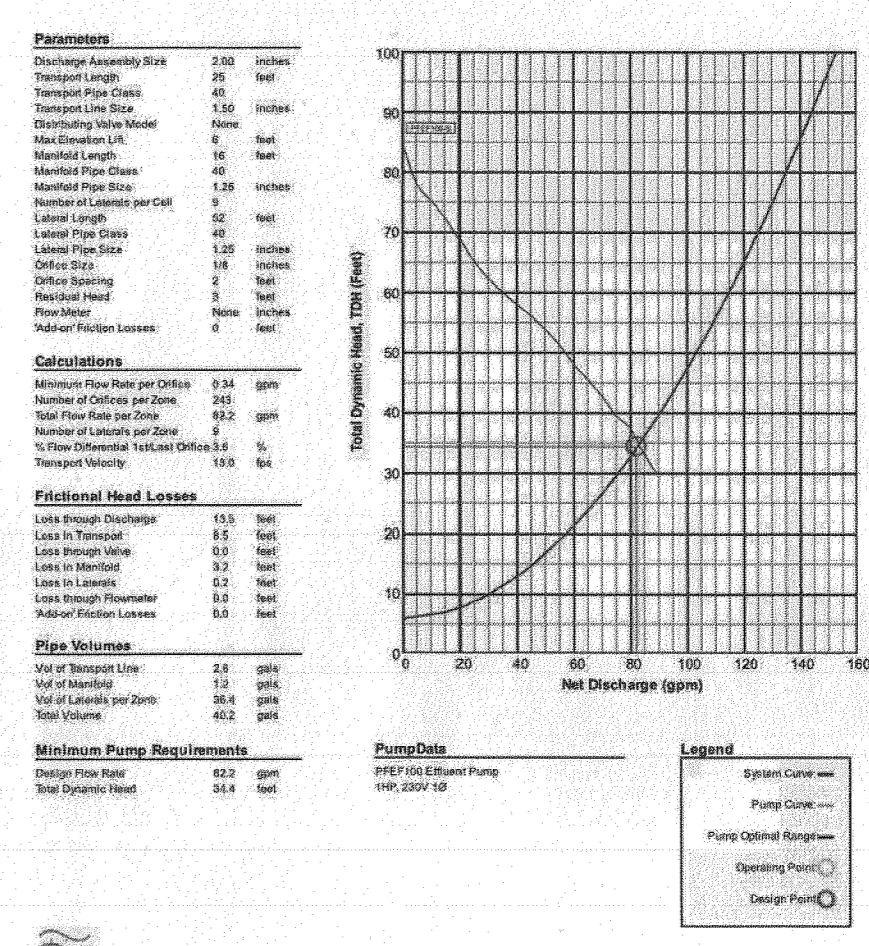
FLOAT SETTINGS:
PIPE FILL-UP VOLUME (PER AUTOCALCS) = 5.32 GAL.
TOTAL VOLUME: 66.07 GAL.
30" PUMP CHAMBER HAS 2.96 GAL/IN CAPACITY
66.07 GALLONS / 2.96 GAL/IN = 22.32 IN OR 1.86 FT
OFF TO ON FLOAT = 1.86 FT SEPARATION



ORENCO PUMPING SYSTEM
30" Ø PUMP CHAMBER

NOTE:
DISCHARGE ASSEMBLY DRAWN TO SHOW KEY COMPONENTS. ALL PIPING AND FITTINGS SHALL BE INSTALLED TO ENSURE DRAIN-BACK INTO THE PUMP BASIN TO AVOID FREEZING OF SHALLOW BURY DISCHARGE PIPING (WHERE APPLICABLE).

Pump Selection for a Pressurized System - Commercial Project



- CHEMICAL FEED NOTES:**
- CHEMICAL FEEDS TO BE USED AS NEEDED, AS NECESSARY TO ENSURE EFFLUENT DISCHARGE IS WITHIN REQUIRED LIMITS
 - ALKALINITY FEED SYSTEM IS COMPRISED OF A SODIUM DICARB SOLUTION DISCHARGED AT 0.4 GAL/HR. CONTAINMENT FOR 30 DAY SUPPLY (APPROX. 313.4 GALLONS) SHALL BE LOCATED WITHIN PROPOSED WOODEN SHED.
 - CARBON FEED SYSTEM IS COMPRISED OF ETHANOL SOLUTION DISCHARGED AT 0.01 GAL/HR. CONTAINMENT FOR 30 DAY SUPPLY (APPROX. 1.7 GALLONS) SHALL BE LOCATED WITHIN PROPOSED WOODEN SHED.

ORENCO SYSTEM, INC. PLAN NOTES:

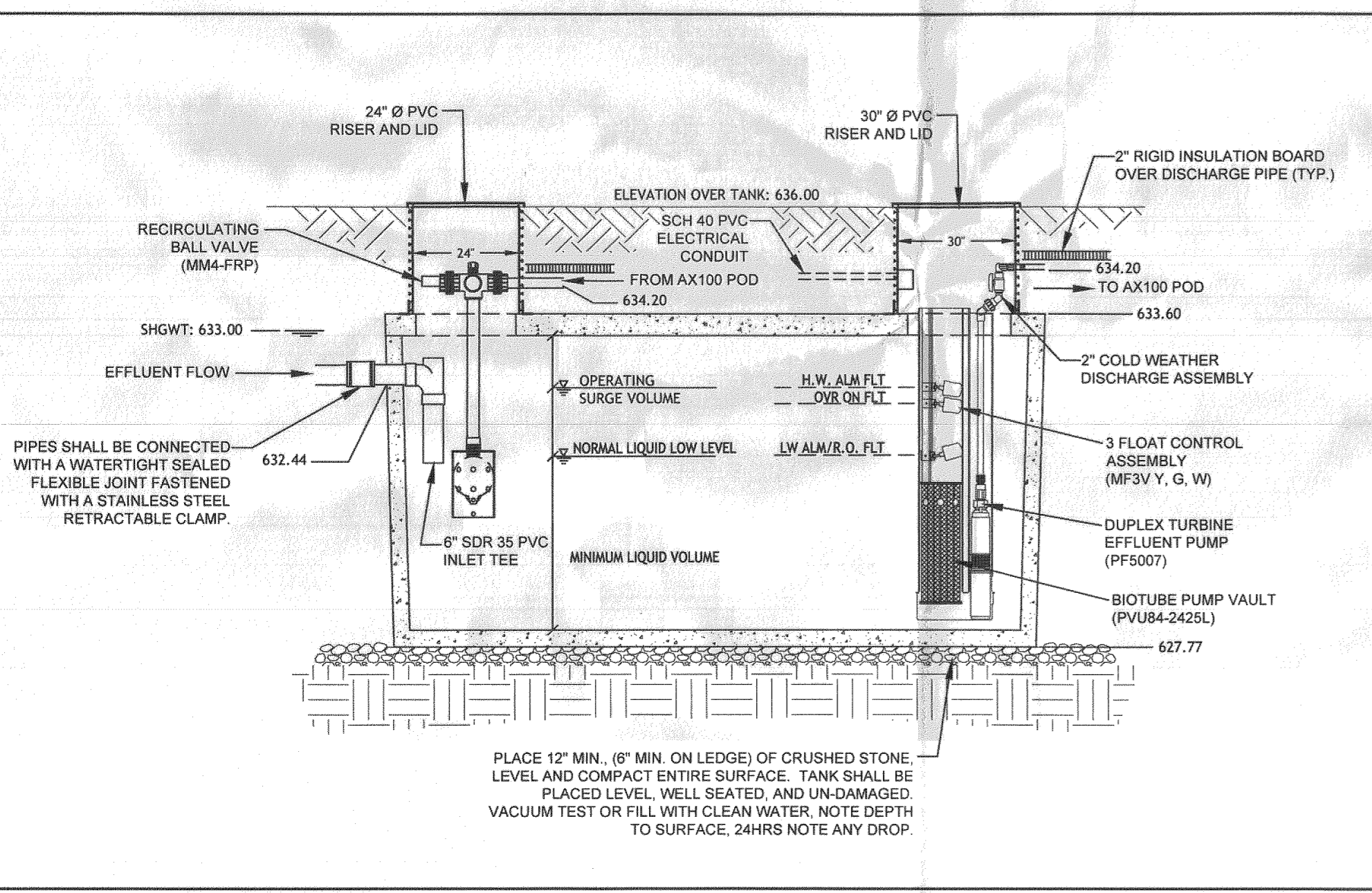
- THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS AS STATED IN THE 04/27/2018 MEMO BY NORTHEAST WATER SOLUTIONS, INC., FOR THE PURPOSE OF SERVING THE PROPOSED SCITUATE POLICE STATION AND EXISTING SCITUATE SENIOR CENTER ON CHOPMIST HILL ROAD IN SCITUATE, RHODE ISLAND. ANY CHANGES IN USAGE THAT WOULD AFFECT FLOWS OR WASTE STRENGTH REQUIRES A REVIEW BY THIS ENGINEER.
- EXPECTED FLOWS**
• Q AVG = 1,000 GPD
• Q PEAK = 2,000 GPD
- EXPECTED INFLUENT CHARACTERISTICS:**

CHARACTERISTIC	AVERAGE (MG/L)	WEEKLY PEAK (MG/L)	RARELY EXCEEDS (MG/L)
BOD	250	300	400
TSS	75	75	75
TKN	90	90	90

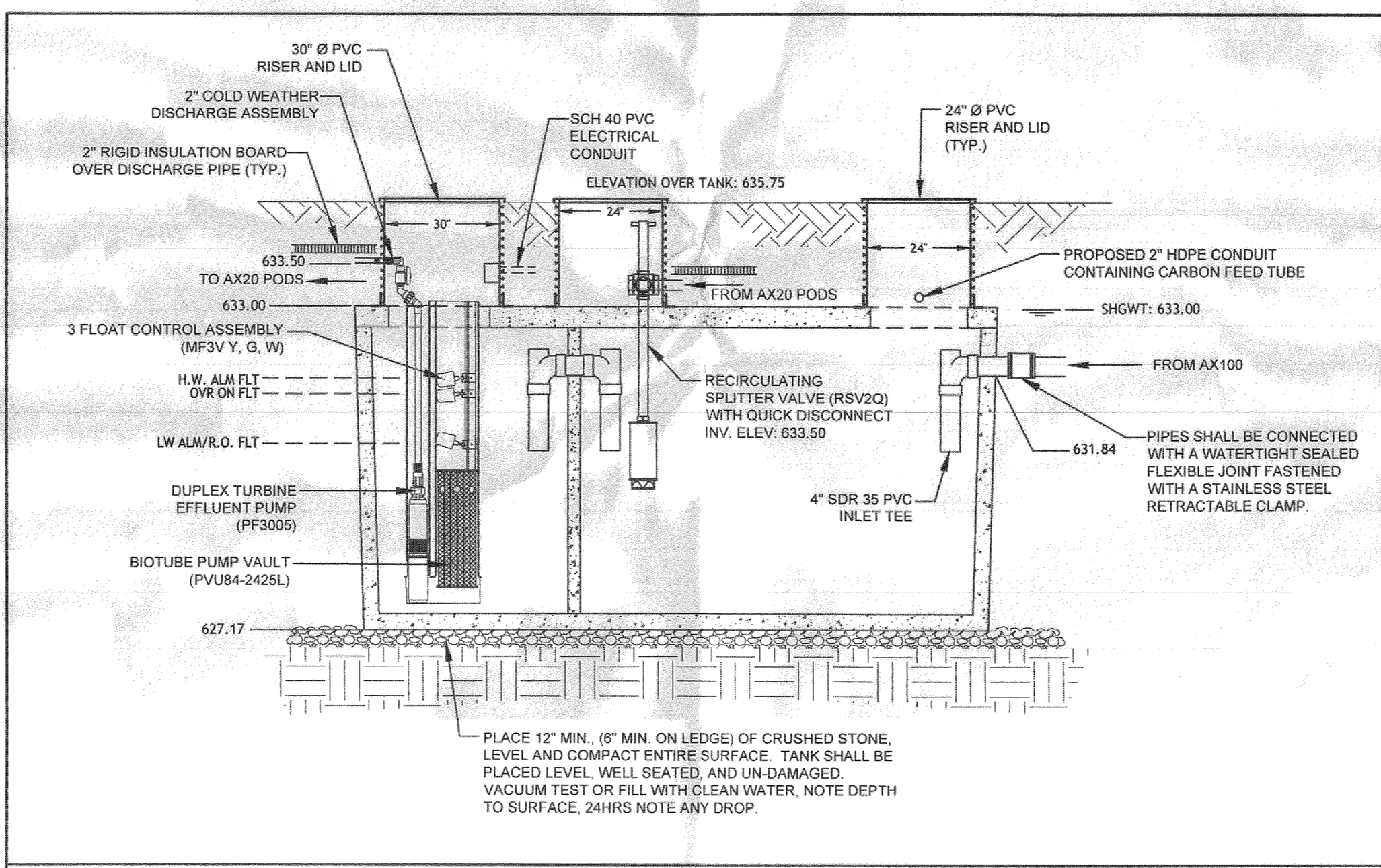
- TARGETED EFFLUENT CHARACTERISTICS:**

CHARACTERISTIC	AVERAGE (MG/L)	PERMIT REQUIREMENTS (MG/L)
BOD	20	30
TSS	20	30
TKN	19	19

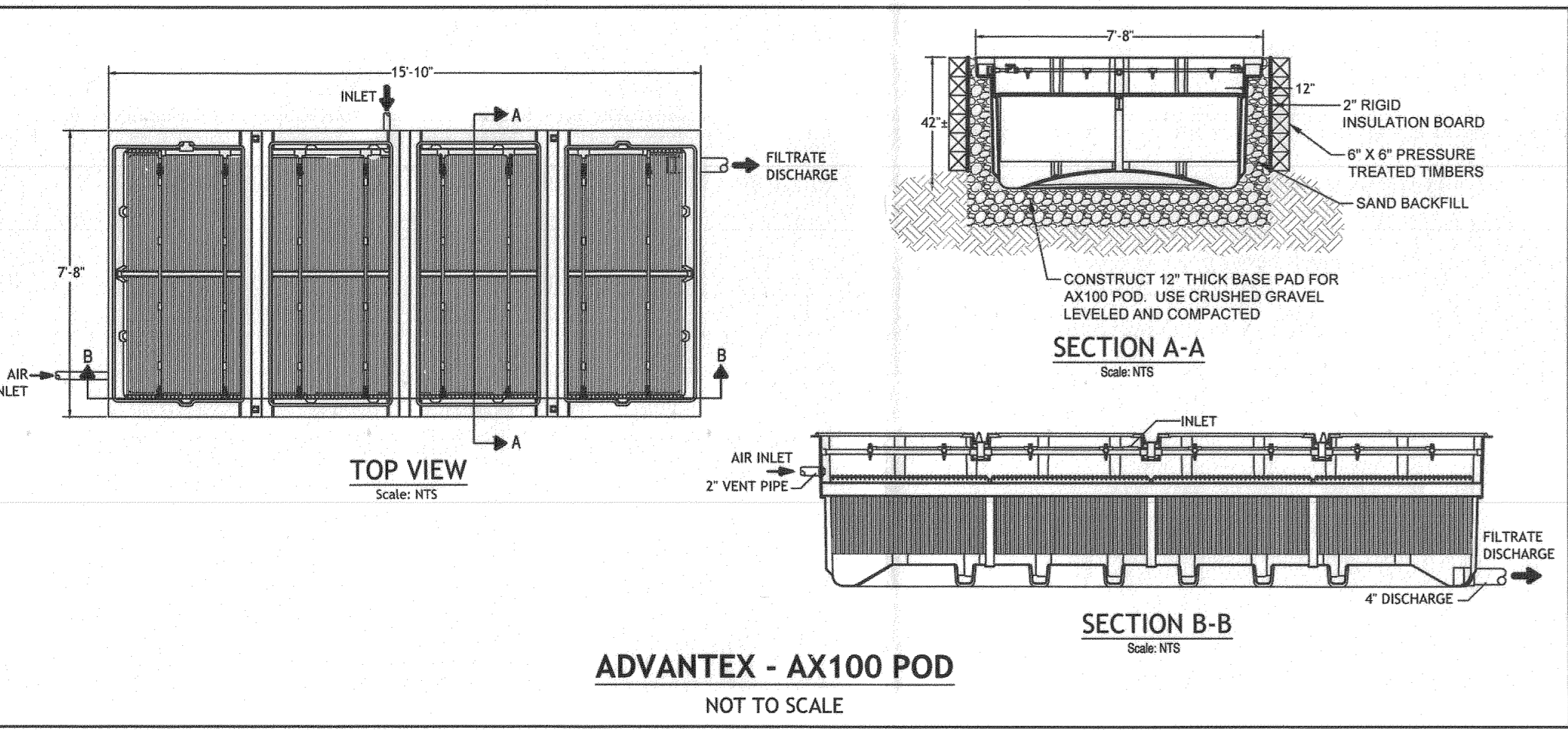
- ONCE A FACILITY IS PLACED INTO OPERATION, THE FLOWS AND WASTE STRENGTHS TO THE FACILITY SHOULD BE MONITORED. IF FLOW OR ANY OF THE INFLUENT WASTE STRENGTHS EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THE PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.
- DO NOT DISPOSE OF TOXICS OR CHEMICALS INTO SYSTEM. EXAMPLES: RESTAURANT DEGREASERS AND CLEANSERS, WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, AND ANY OTHER TOXIC WASTE PRODUCTS. IN ADDITION, WATER SOFTENER BRINE DISCHARGE IS PROHIBITED FROM BEING DISCHARGED INTO THE ADVANTEK TREATMENT SYSTEM.
- IN ORDER TO DEMONSTRATE WATERTIGHTNESS, TANKS SHALL BE TESTED AT THE FACTORY AND AGAIN ON-SITE PRIOR TO ACCEPTANCE. EACH TANK SHALL BE TESTED AT THE FACTORY, PRIOR TO SHIPPING, BY FILLING WITH WATER TO THE SOFFIT AND LETTING STAND FOR A MINIMUM OF TWO (2) HOURS. ANY LEAKAGE SHALL BE CAUSE FOR REJECTION. AFTER INSTALLATION IS COMPLETED AND BEFORE BACKFILLING, COMPLETELY FILL THE TANK WITH WATER, TO A LEVEL TWO (2) INCHES INTO THE RISER. WAIT A MINIMUM OF TWO (2) HOURS (OR AS REQUIRED BY LOCAL RULES) AND INSPECT THE TANK FOR LEAKS. THERE SHOULD BE NO DROP IN LIQUID LEVEL AND NO VISUAL LEAKAGE FROM SEAMS, PINHOLES, OR OTHER IMPERFECTIONS. ONCE THE TANK IS PROVEN TO BE WATERTIGHT, DROP THE WATER LEVEL IN THE TANK BELOW THE INVERT BUT NOT BELOW THE MID-SEAM.



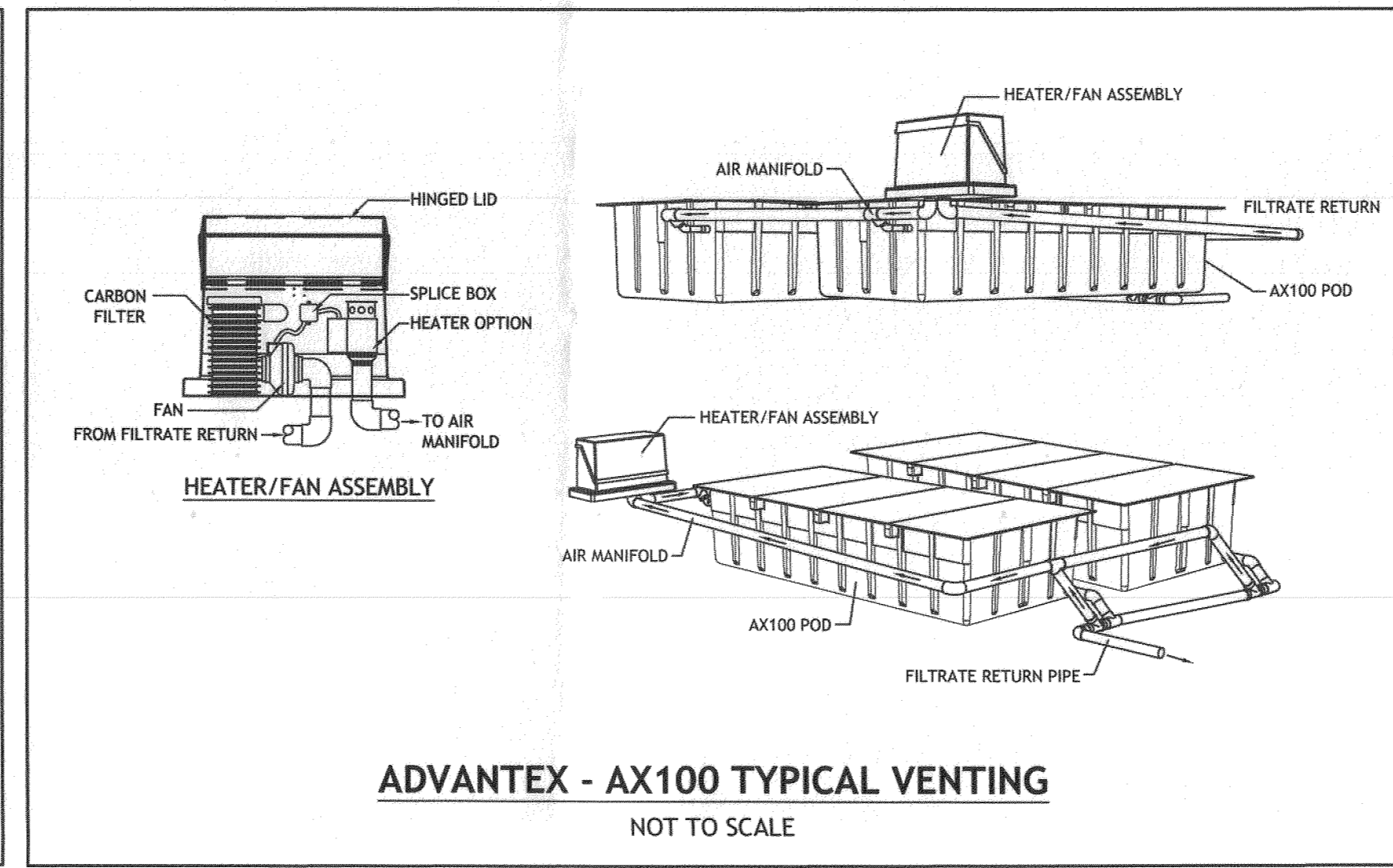
2,000 GALLON ONE-COMPARTMENT AX-100 RECIRCULATION TANK



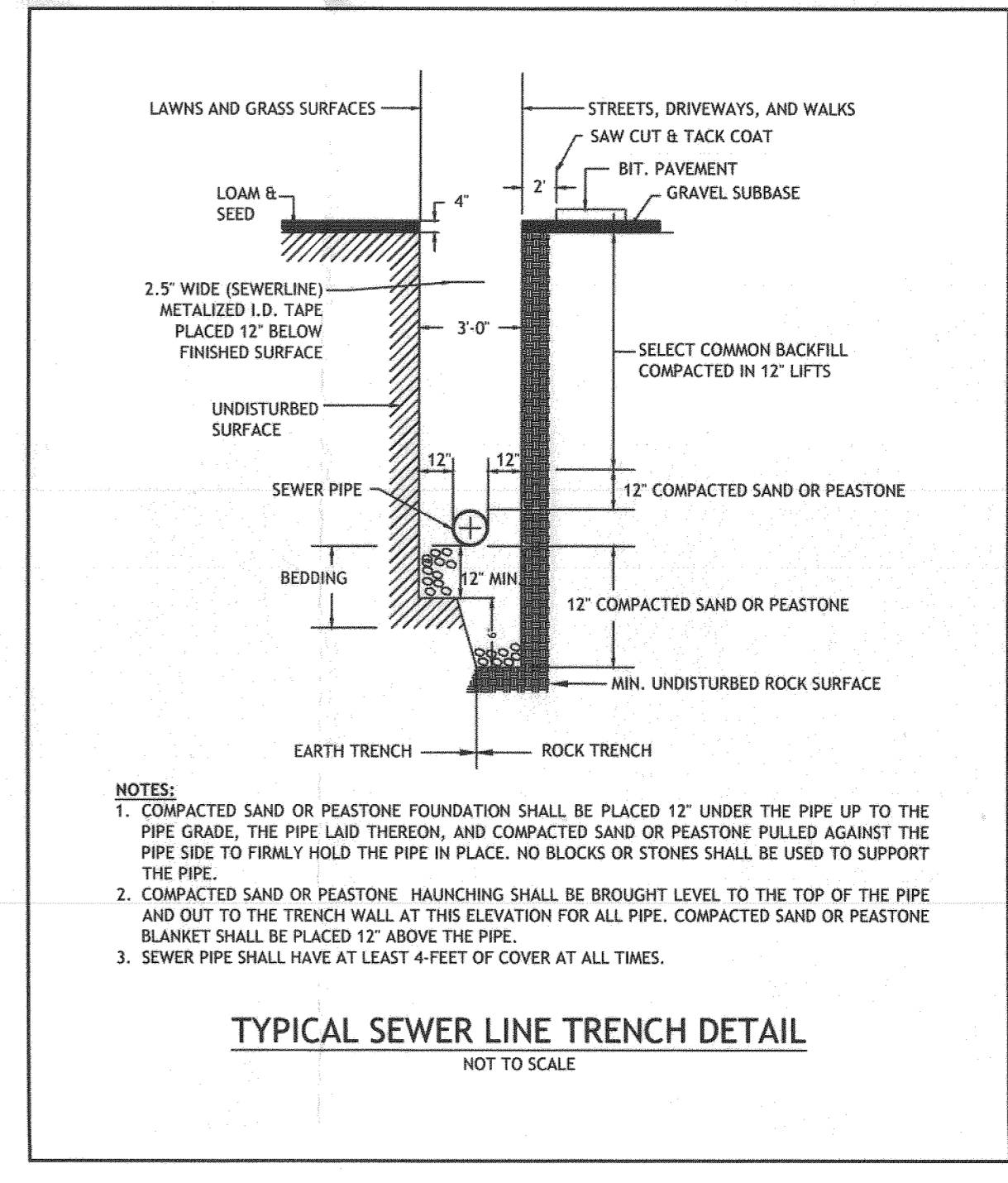
2,000 GALLON TWO-COMPARTMENT POST-ANOXIC TANK



ADVANTEK - AX100 POD
NOT TO SCALE



ADVANTEK - AX100 TYPICAL VENTING
NOT TO SCALE

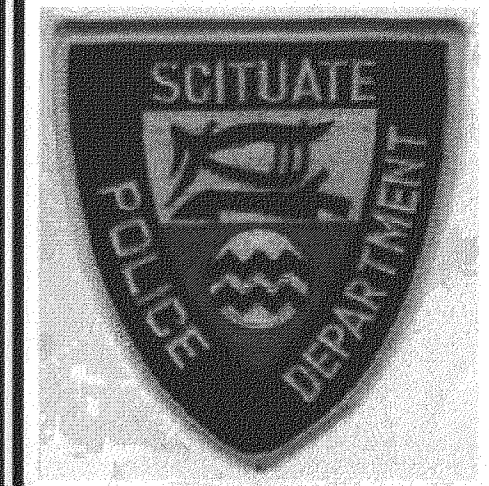


TYPICAL SEWER LINE TRENCH DETAIL
NOT TO SCALE

JOE CASALI ENGINEERING, INC.
300 POST ROAD, WARWICK, RI 02888
(401) 844-1300 (401) 844-1313 FAX: WWW.JOECASALI.COM

JOSEPH A. CASALI
No. 7250
REGISTERED PROFESSIONAL ENGINEER
CIVIL

PROPOSED SCITUATE POLICE STATION
1315 CHOPMIST HILL ROAD
SCITUATE, RHODE ISLAND
AP 35, LOT 10



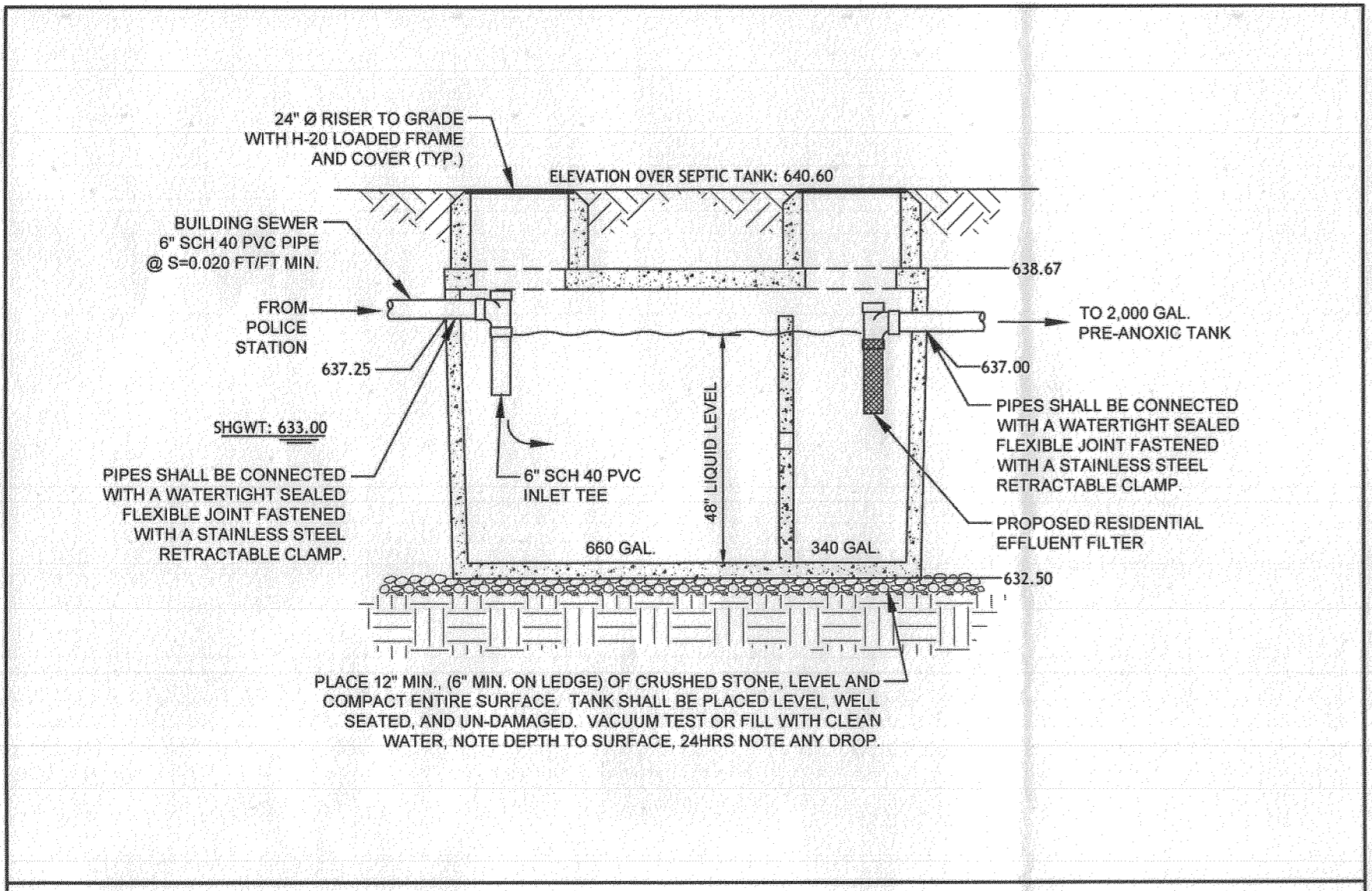
REVISIONS:

NO.	DATE	DESCRIPTION

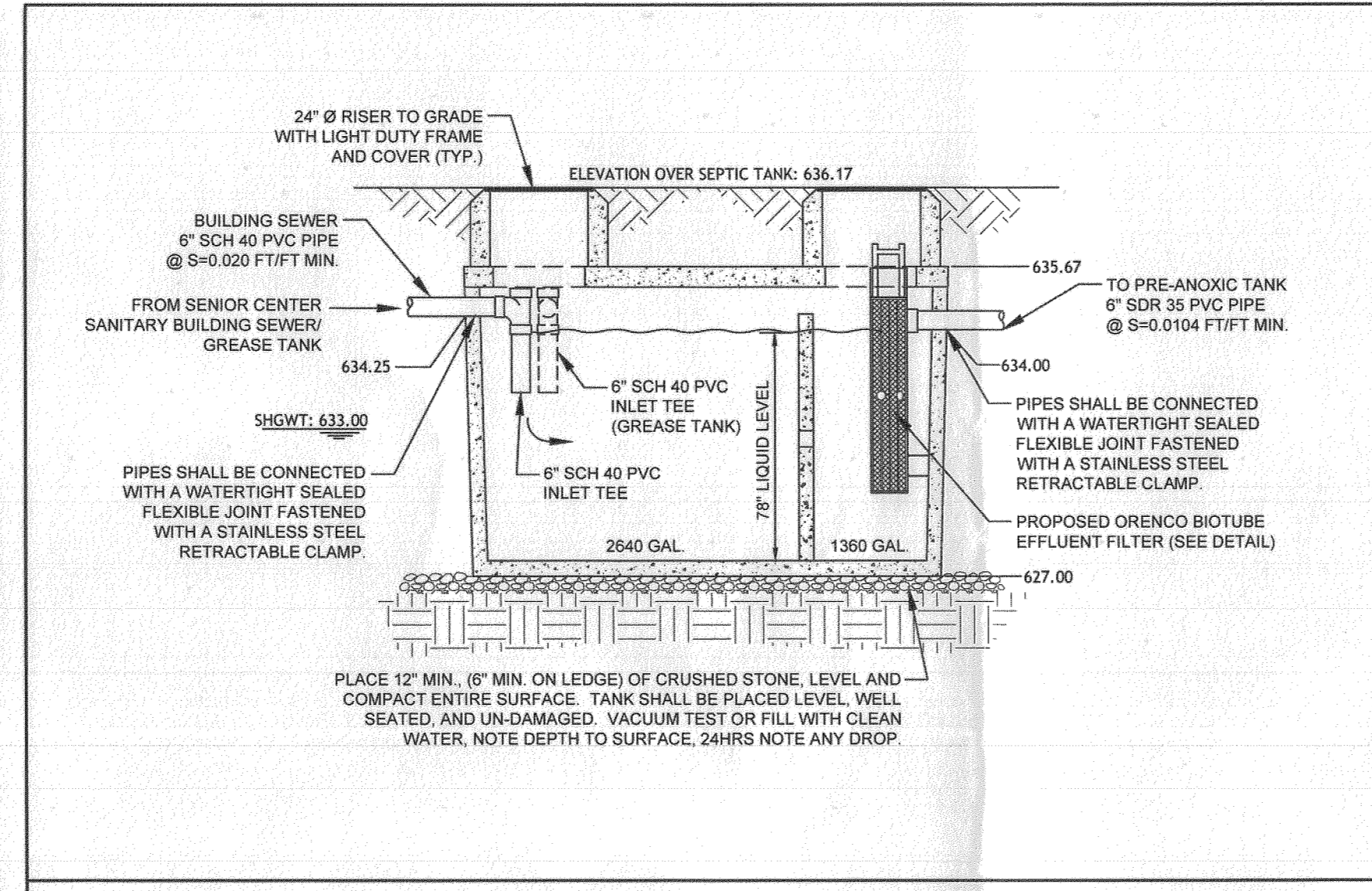
DESIGNED BY: DRD
DRAWN BY: SD/SEP
CHECKED BY: DRD
DATE: APRIL 2018
PROJECT NO: 07-109c

NOT ISSUED FOR CONSTRUCTION, UNLESS APPROVED BY RIDEM

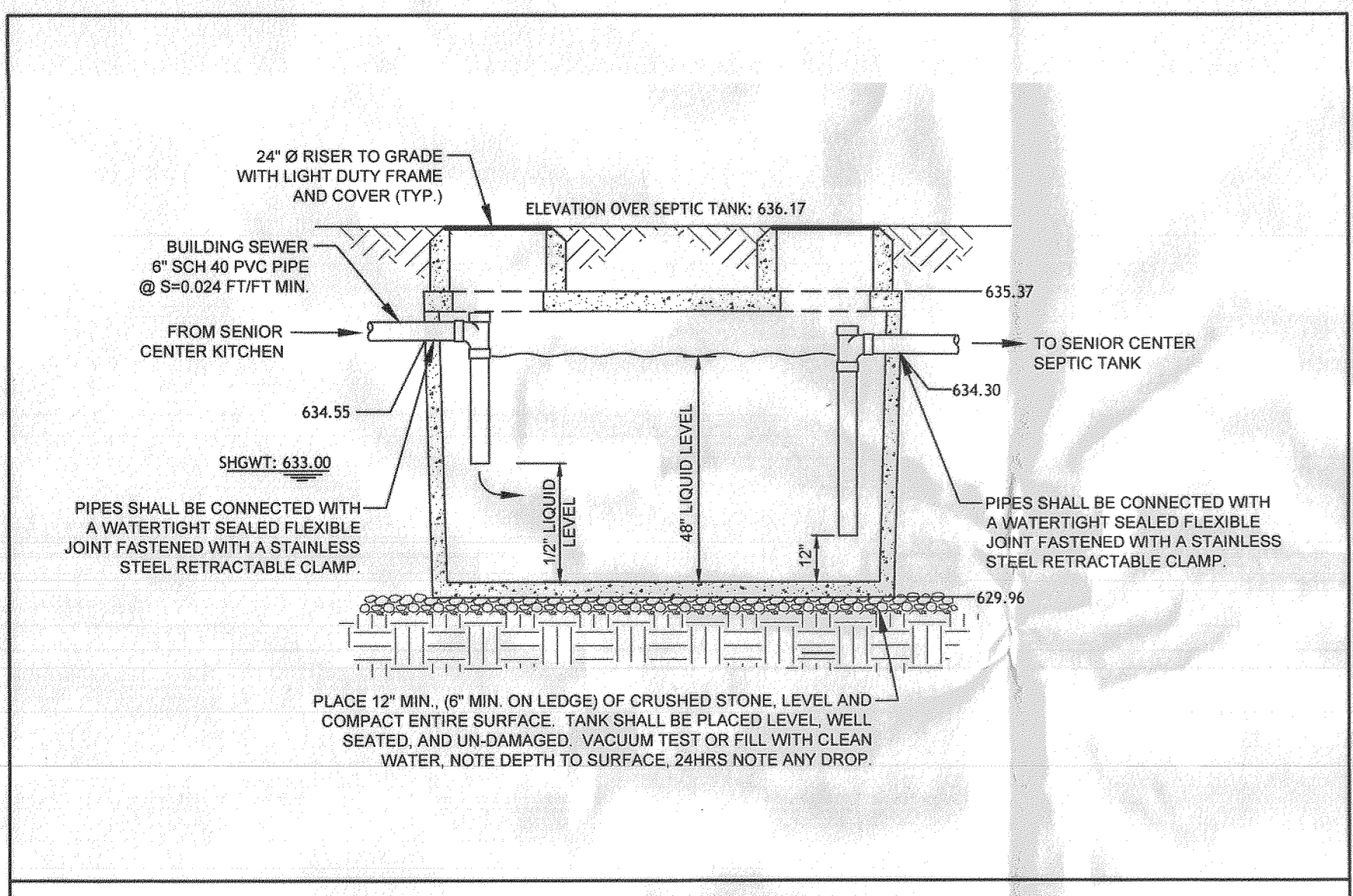
OWTS DETAILS I



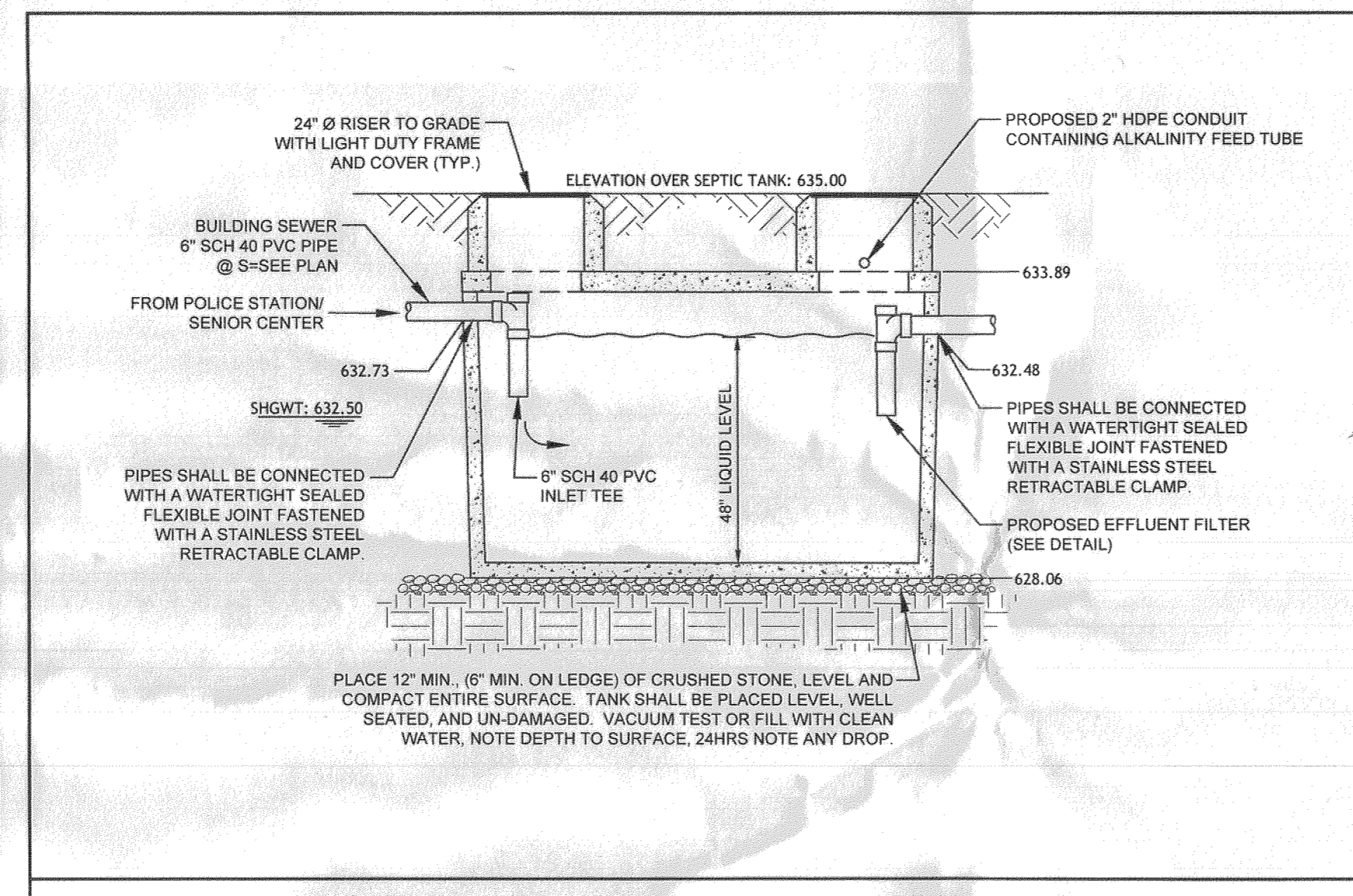
1,000 GALLON TWO-COMPARTMENT SEPTIC TANK (POLICE STATION)



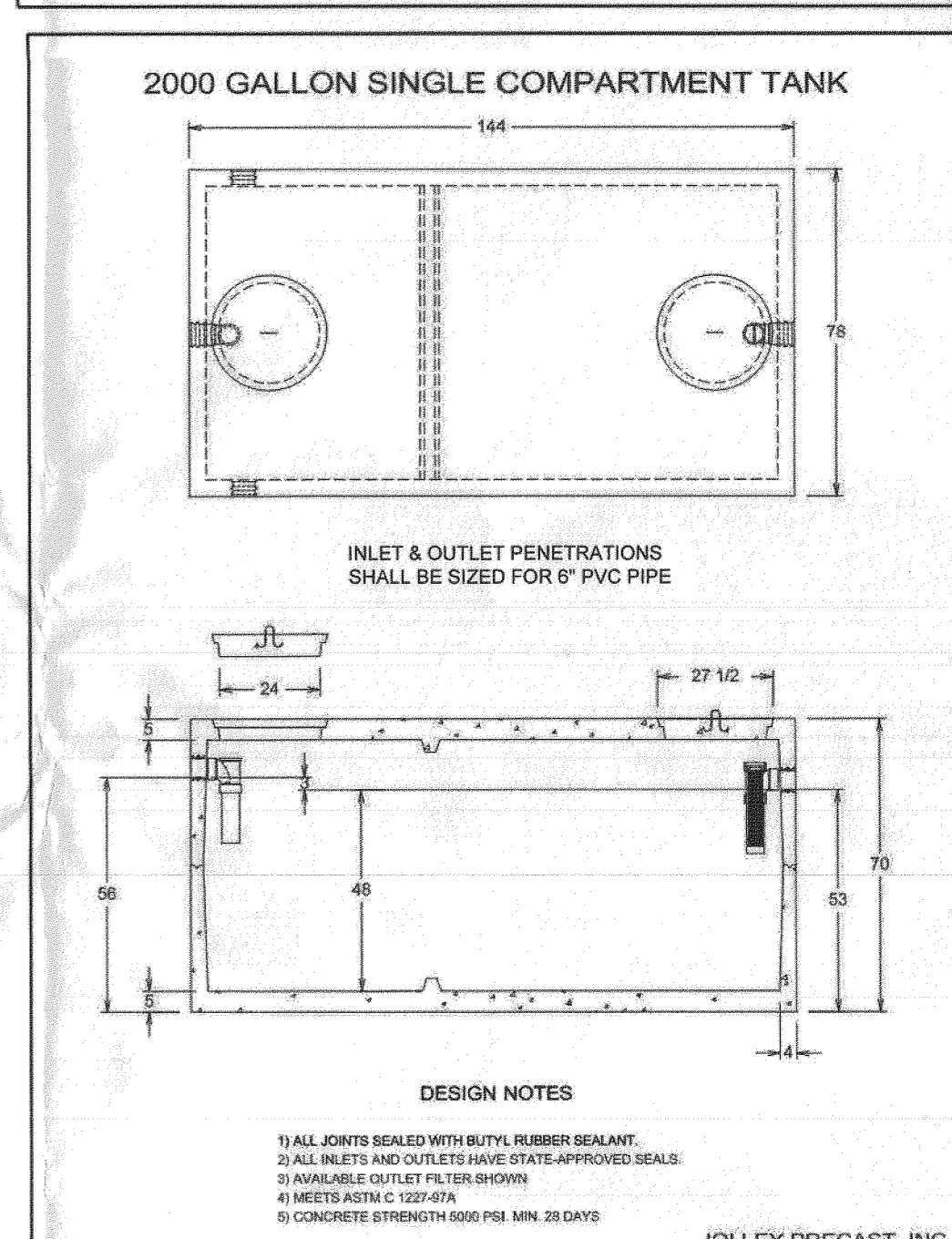
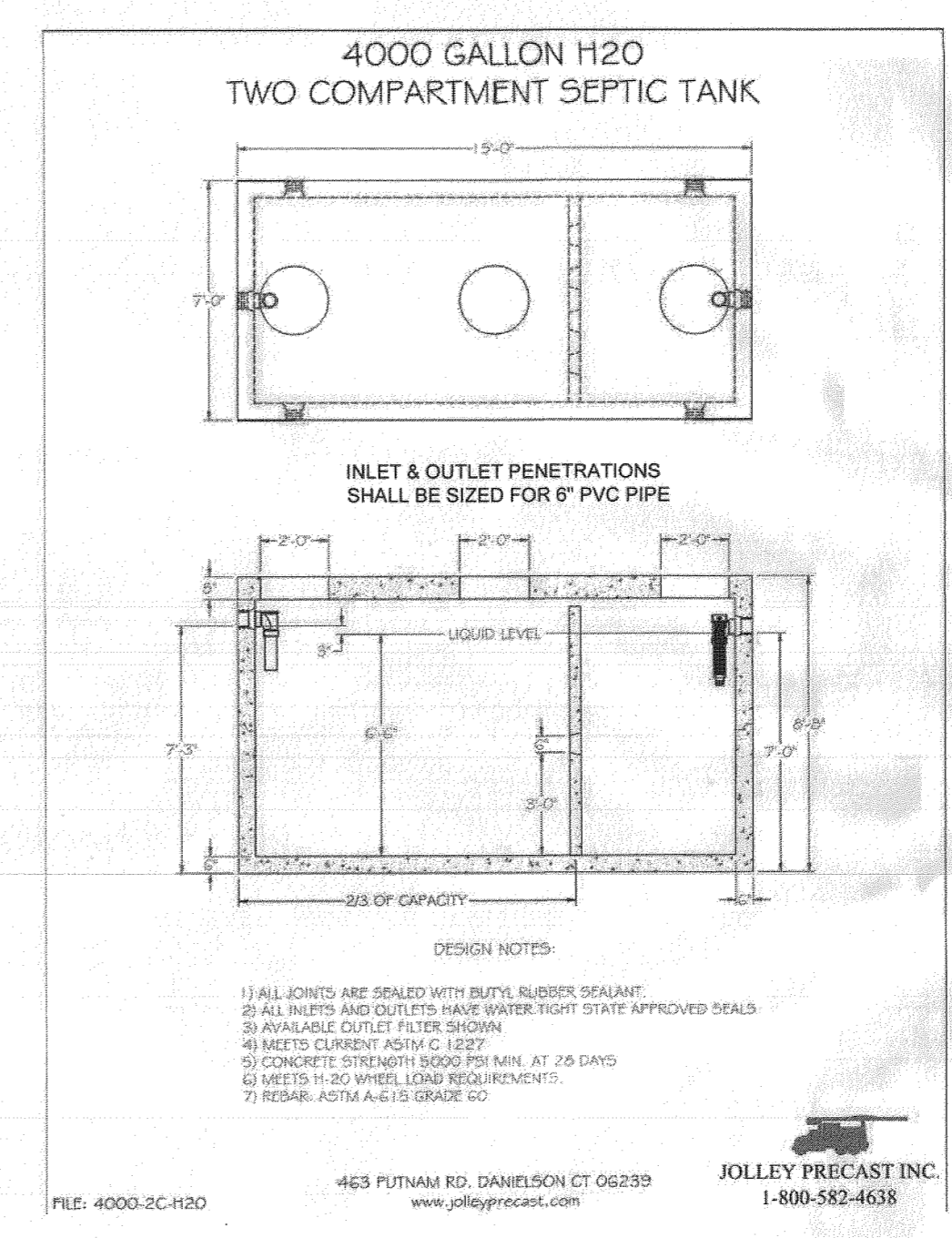
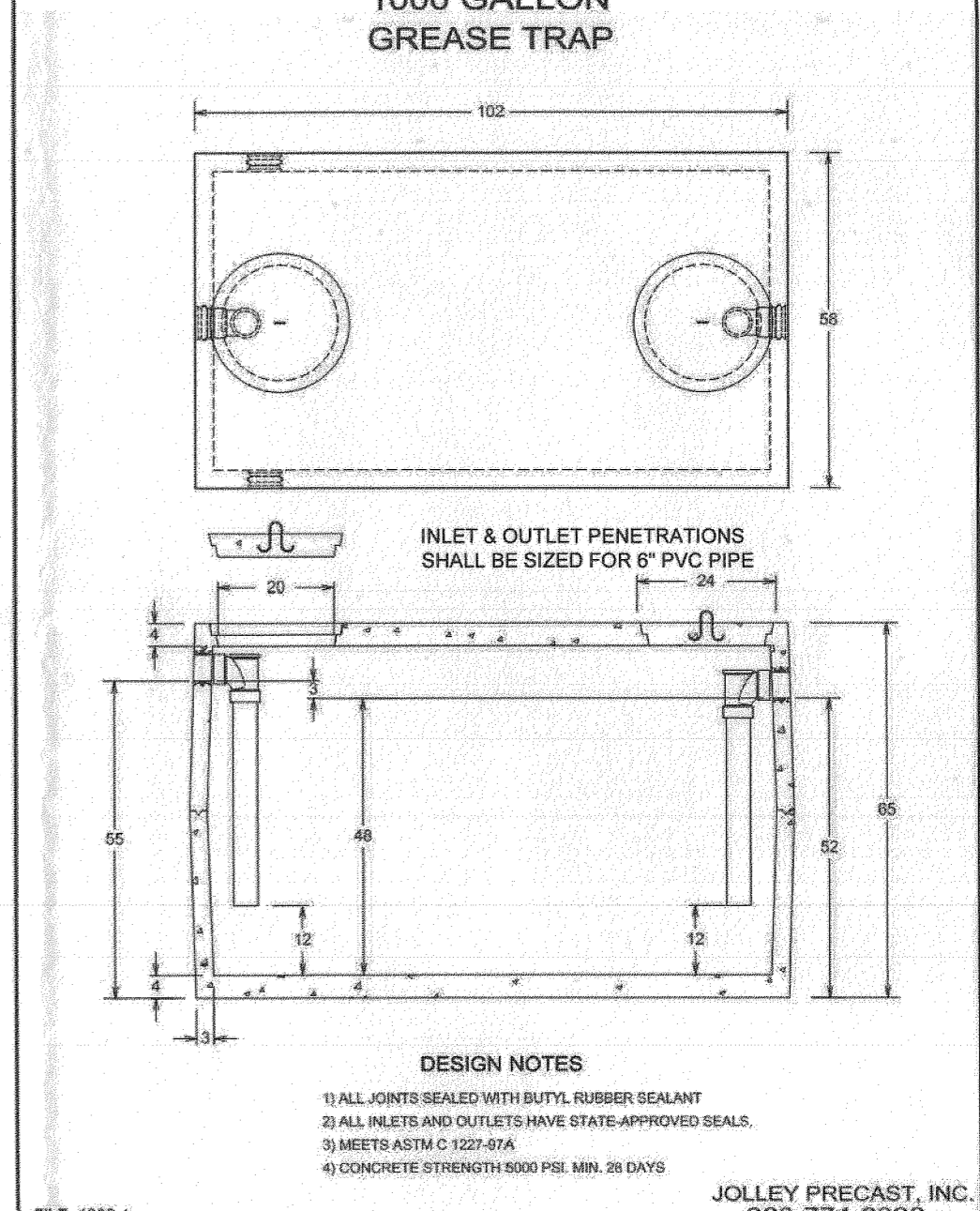
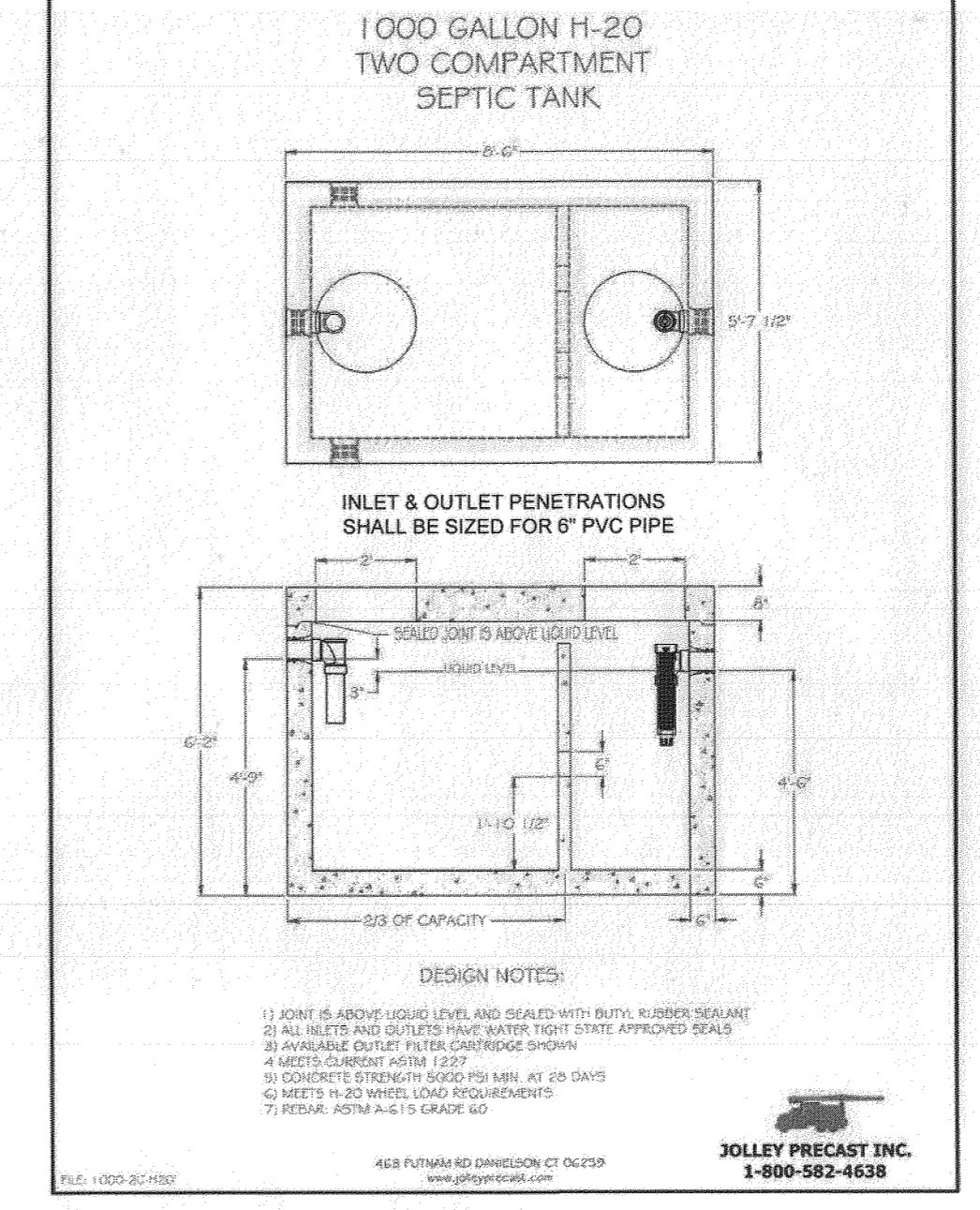
4,000 GALLON TWO-COMPARTMENT SEPTIC TANK (SENIOR CENTER)



1,000 GALLON GREASE TANK (SENIOR CENTER)



2,000 GALLON ONE-COMPARTMENT PRE-ANOXIC TANK



Technical Data Sheet

8'-15" Dia. Biotube® Effluent Filters

Applications
Orenco® 8'-15" Biotube® Effluent Filters are designed to remove solids from effluent leaving commercial septic tanks. They can be used in new and existing tanks.

General
Orenco® 8'-15" Biotube® Effluent Filters are used to improve the quality of effluent leaving a commercial septic tank. The Biotube cartridge fits snugly in the vault and is removable for maintenance. The handle assembly snaps into the notches in the top of the vault, and the top handle can be extended for easy removal of the cartridge. A "base inlet" model (see p. 2) is available for low-profile tanks.

An optional side rail system, available on larger models, simplifies installation and provides tank access for servicing.

Standard Models
FT0854-36, FT1254-36, FT1554-36, FT0822-14B, FT1254-36AR

Nomenclature

FT	Cartridge height (inches)	Cartridge height (feet)
36	36	3
42	42	3.5
48	48	4
54	54	4.5
60	60	5

Specifications

Model	FT0854-36	FT0822-14B	FT1254-36	FT1254-36AR	FT1554-36
A - Cartridge height, in.	36	14	36	36	36
B - Nominal diameter, in.	8	8	12	12	15
C - Inlet hole height, in.	22	n/a	22	22	22
D - Vault base to invert height, in.	38	13	38	38	38
E - Vault height, in.	54	22	54	54	54
F - Filter diameter, in.	8	n/a	8	8	8
G - Inlet hole diameter, in.	1.375	n/a	1.375	1.375	1.375
H - Number of discharge orifices	2	1	1	1	1
I - Discharge orifice diameter, in.	1.125	1.750	2	2	2
J - Filter surface area, ft²	14.6	6.0	30.0	30.0	50.6
K - Flow area, ft²	4.4	1.8	8.0	8.0	15.2

Materials of Construction
Vault, pipe coupling, handle components, support coupling and bracket: PVC
Biotube® cartridge: Polypropylene and polyethylene

Technical Data Sheet

8'-15" Diameter Biotube® Effluent Filters (continued)

Air vents and discharge orifices

Air vent
Discharge orifices

8" base inlet models
6" models
12"-15" models

Standard model

Base inlet model

VeriComm® DAX_RO Control Panels

Technical Data Sheet

For On-Demand Applications

Applications
VeriComm DAXRO and DAXRO remote telemetry control panels are used with on-demand duplex alternating pumping operations. Coupled with the VeriComm Web-based Monitoring System, these affordable control panels give wastewater treatment operators and maintenance organizations the ability to monitor and control each individual system's performance remotely, with real-time efficiency while remaining invisible to the homeowner.

Communication and Alarm Management

- Remote telemetry capabilities coupled with a Web-based monitoring application (see VeriComm Monitoring System, ATO-WEB-VCOM-1) for communication and alarm management.
- Updating of point values and record of queued changes during each communication session with host. Communication sessions that occur monthly, at a minimum, and more frequently during alarm conditions.
- Multiple methods of communication, as follows:
 - Cell-to-VeriComm® Host
 - Automatic notification to host of "Alarms," which signal fault conditions that need to be addressed immediately (e.g., pump failure).
 - Automatic notification to host of "Alerts," which signal less critical fault conditions and which trigger the panel's troubleshooting logic and alternative operating mode (e.g., shock flow mode).
 - Automatic notification to host of "Updates," which include alarm updates or all-clear notifications following Alarm/Alerts, as well as normally scheduled monthly panel reports.
 - Manual, forced communication from panel to host to effect an updating of point values and record of queued changes.
 - Real-Time Direct Connection to Panel
 - Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to disabled logged data and the ability to change point values from a laptop.
 - Manual, forced communication by local operator, however at the site to initiate an auto-restart mode, allowing a remote operator real-time access to disabled logged data and the ability to change point values.

Real-Time Direct Connection to Panel

- Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to disabled logged data and the ability to change point values from a laptop.
- Manual, forced communication by local operator, however at the site to initiate an auto-restart mode, allowing a remote operator real-time access to disabled logged data and the ability to change point values.

During real-time, manual connections, software with open architecture (and password security) is used, so proprietary software is required. VTI00 protocol allows access and control from any computer modern Mac or PC with a simple communication program like WinModem® (http://www.winmodem.com). VTI00 protocol allows access and control from any computer modern Mac or PC with a simple communication program like WinModem® (http://www.winmodem.com). VTI00 protocol allows access and control from any computer modern Mac or PC with a simple communication program like WinModem® (http://www.winmodem.com).

Data Collection and Utilization

- Data logs of system conditions and events, such as pump run times, pump cycles, and alarm conditions.
- Troubleshooting and Diagnostic Logic
 - Troubleshooting capabilities that can report suspected failed components, which then trigger Alarms.

Advanced Control Logic

- Advanced control logic that activates during fault malfunctions to diagnose the situation and keep the system operating normally until servicing.

Optional Components

Feature	Specifications	Product Code/Address
Pump Run Lights	38 in. Ø 22 mm diameter green lens, NEMA 4, LED, 120 VAC	PL
Heater	Autotemperature heater. Self-adjusting, radiates additional warmth as temperature drops.	HT

VeriComm® DAX_RO Control Panels

Technical Data Sheet

For On-Demand Applications

Applications
VeriComm DAXRO and DAXRO remote telemetry control panels are used with on-demand duplex alternating pumping operations. Coupled with the VeriComm Web-based Monitoring System, these affordable control panels give wastewater treatment operators and maintenance organizations the ability to monitor and control each individual system's performance remotely, with real-time efficiency while remaining invisible to the homeowner.

Communication and Alarm Management

- Remote telemetry capabilities coupled with a Web-based monitoring application (see VeriComm Monitoring System, ATO-WEB-VCOM-1) for communication and alarm management.
- Updating of point values and record of queued changes during each communication session with host. Communication sessions that occur monthly, at a minimum, and more frequently during alarm conditions.
- Multiple methods of communication, as follows:
 - Cell-to-VeriComm® Host
 - Automatic notification to host of "Alarms," which signal fault conditions that need to be addressed immediately (e.g., pump failure).
 - Automatic notification to host of "Alerts," which signal less critical fault conditions and which trigger the panel's troubleshooting logic and alternative operating mode (e.g., shock flow mode).
 - Automatic notification to host of "Updates," which include alarm updates or all-clear notifications following Alarm/Alerts, as well as normally scheduled monthly panel reports.
 - Manual, forced communication from panel to host to effect an updating of point values and record of queued changes.
 - Real-Time Direct Connection to Panel
 - Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to disabled logged data and the ability to change point values from a laptop.
 - Manual, forced communication by local operator, however at the site to initiate an auto-restart mode, allowing a remote operator real-time access to disabled logged data and the ability to change point values.

Real-Time Direct Connection to Panel

- Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to disabled logged data and the ability to change point values from a laptop.
- Manual, forced communication by local operator, however at the site to initiate an auto-restart mode, allowing a remote operator real-time access to disabled logged data and the ability to change point values.

During real-time, manual connections, software with open architecture (and password security) is used, so proprietary software is required. VTI00 protocol allows access and control from any computer modern Mac or PC with a simple communication program like WinModem® (http://www.winmodem.com). VTI00 protocol allows access and control from any computer modern Mac or PC with a simple communication program like WinModem® (http://www.winmodem.com).

Data Collection and Utilization

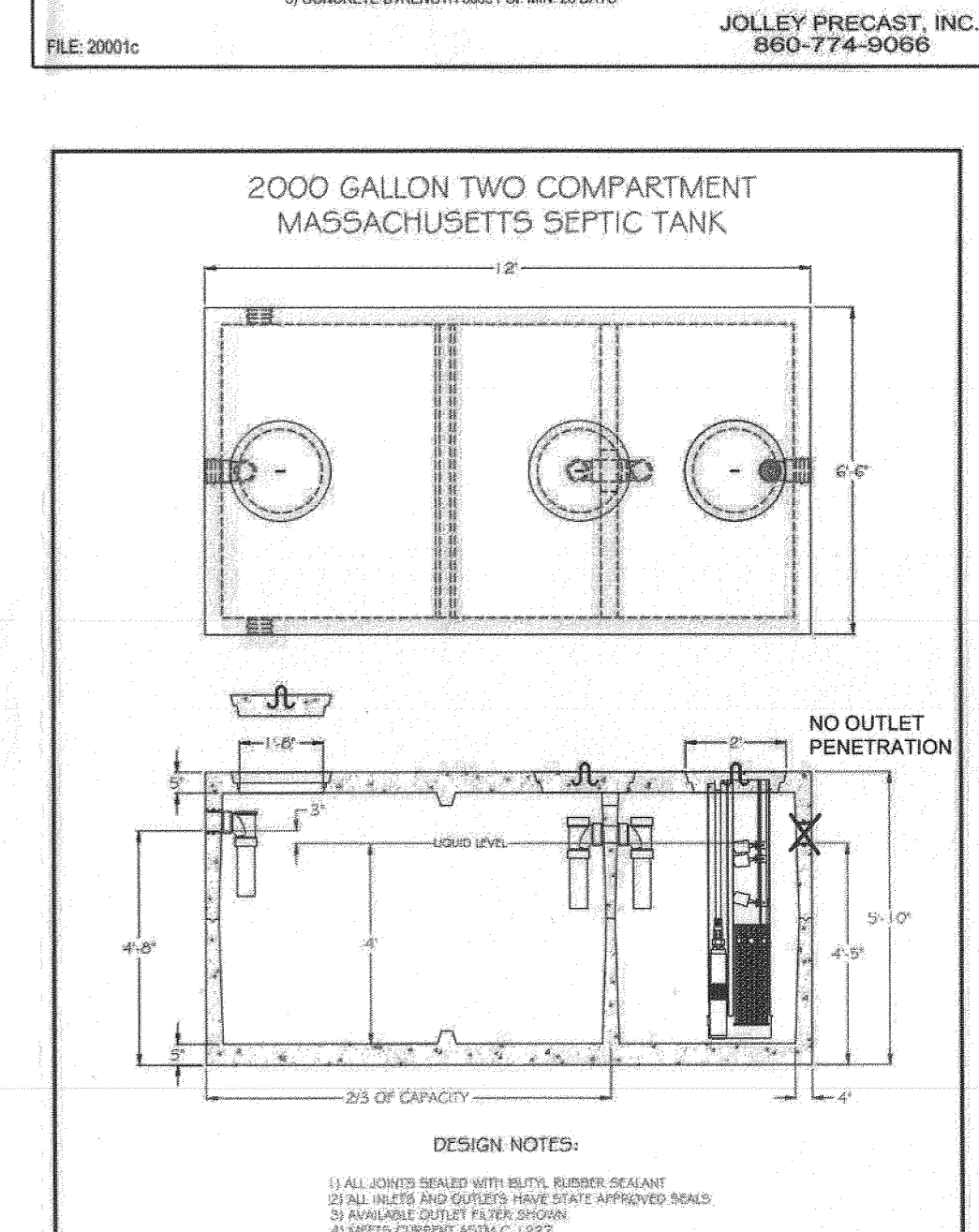
- Data logs of system conditions and events, such as pump run times, pump cycles, and alarm conditions.
- Troubleshooting and Diagnostic Logic
 - Troubleshooting capabilities that can report suspected failed components, which then trigger Alarms.

Advanced Control Logic

- Advanced control logic that activates during fault malfunctions to diagnose the situation and keep the system operating normally until servicing.

Optional Components

Feature	Specifications	Product Code/Address
Pump Run Lights	38 in. Ø 22 mm diameter green lens, NEMA 4, LED, 120 VAC	PL
Heater	Autotemperature heater. Self-adjusting, radiates additional warmth as temperature drops.	HT



JOE
JOE CASALI ENGINEERING, INC.
DRAINAGE - WETLANDS - ISDS - TRAFFIC - FLOODPLAIN
300 POST ROAD, WARWICK, RI 02888
(401) 944-1300 (401) 944-1313 FAX WWW.JOECASALI.COM

JOSEPH A. CASALI
No. 7250
REGISTERED PROFESSIONAL ENGINEER
CIVIL
6-12-13

**PROPOSED SCITUATE
POLICE STATION**
1315 CHOPMIST HILL ROAD
SCITUATE, RHODE ISLAND
AP 35, LOT 10

SCITUATE
POLICE
DEPARTMENT

REVISIONS:	NO.	DATE	DESCRIPTION

DESIGNED BY:	DRD
DRAWN BY:	SD/SEP
CHECKED BY:	DRD
DATE:	APRIL 2018
PROJECT NO.:	07-109c

**NOT ISSUED FOR CONSTRUCTION,
UNLESS APPROVED BY RIDEM**

**OWTS
DETAILS II**

**SHEET
8 OF 12**