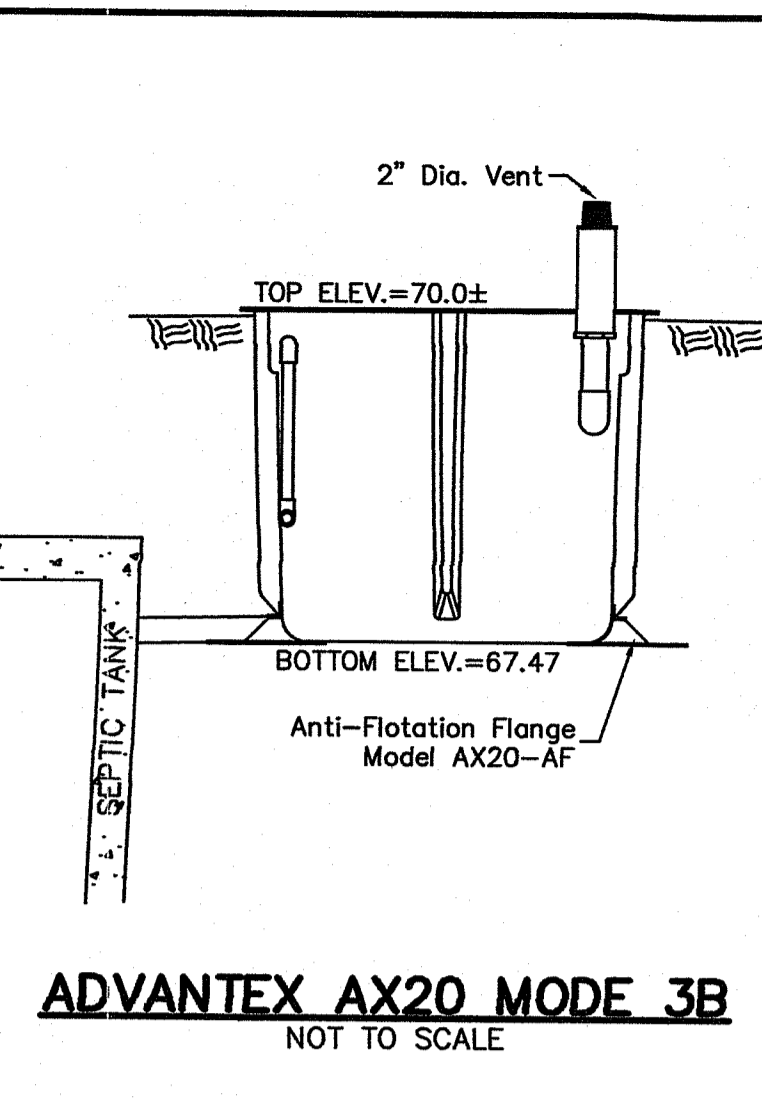
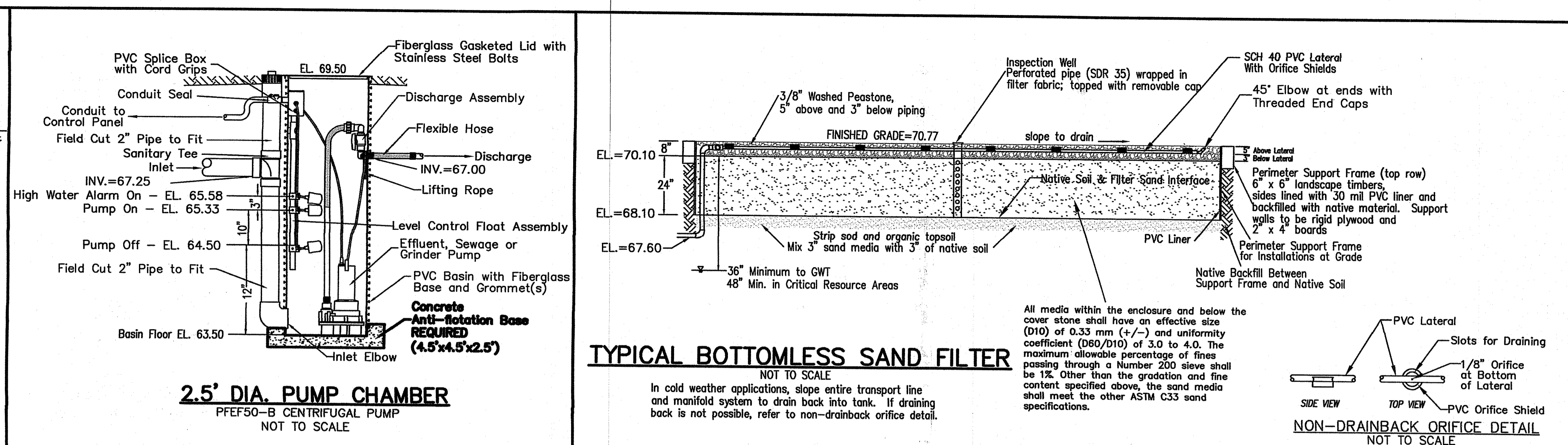


SEPTIC/RECIRCULATION TANK
2 COMPARTMENT-1500 GALLON CONCRETE TANK
NOT TO SCALE



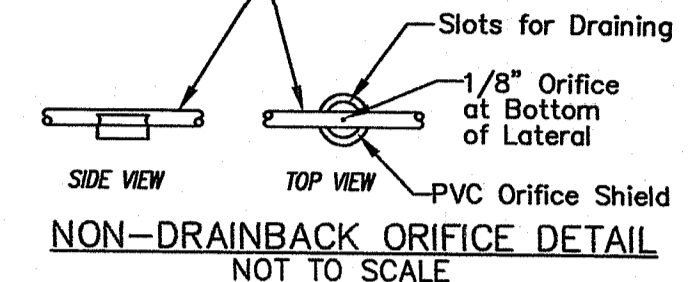
ADVANTEK AX20 MODE 3B
NOT TO SCALE



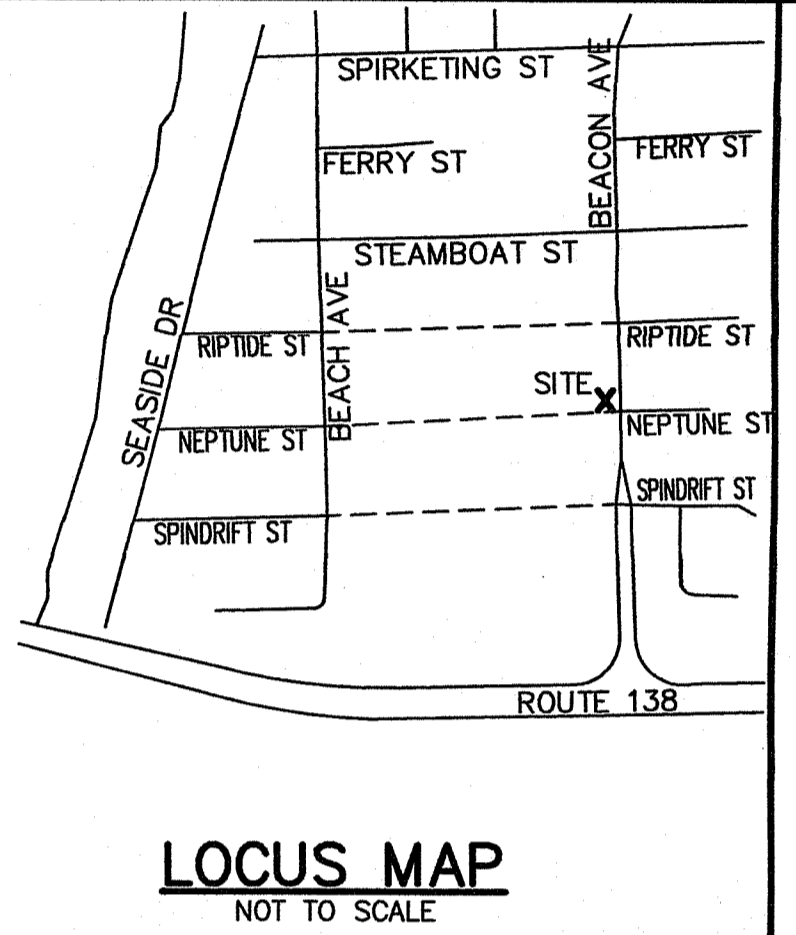
2.5" DIA. PUMP CHAMBER
PFEF50-B CENTRIFUGAL PUMP
NOT TO SCALE

TYPICAL BOTTOMLESS SAND FILTER

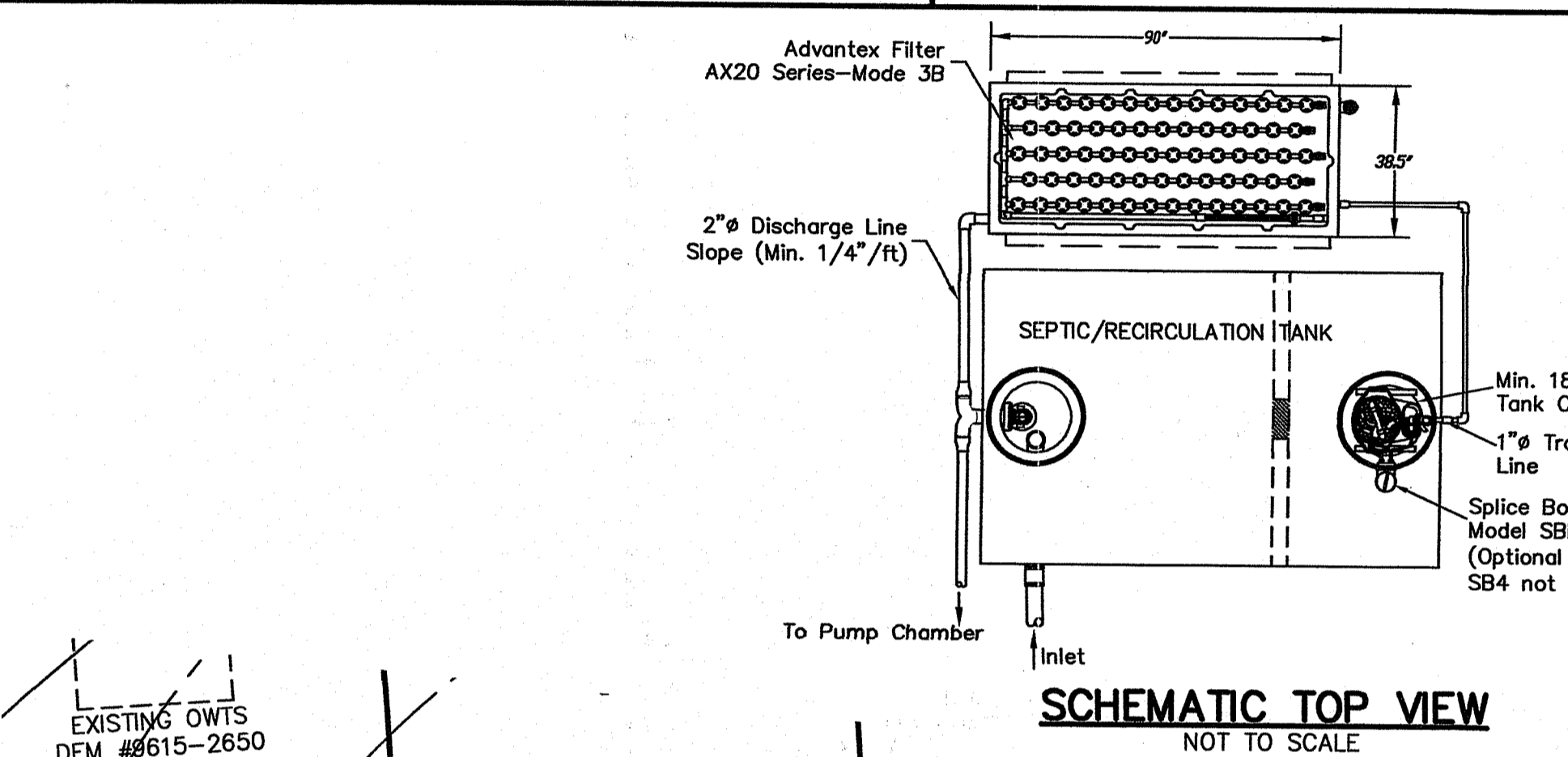
NOT TO SCALE
In cold weather applications, slope entire transport line and manifold system to drain back into tank. If draining back is not possible, refer to non-drainback orifice detail.



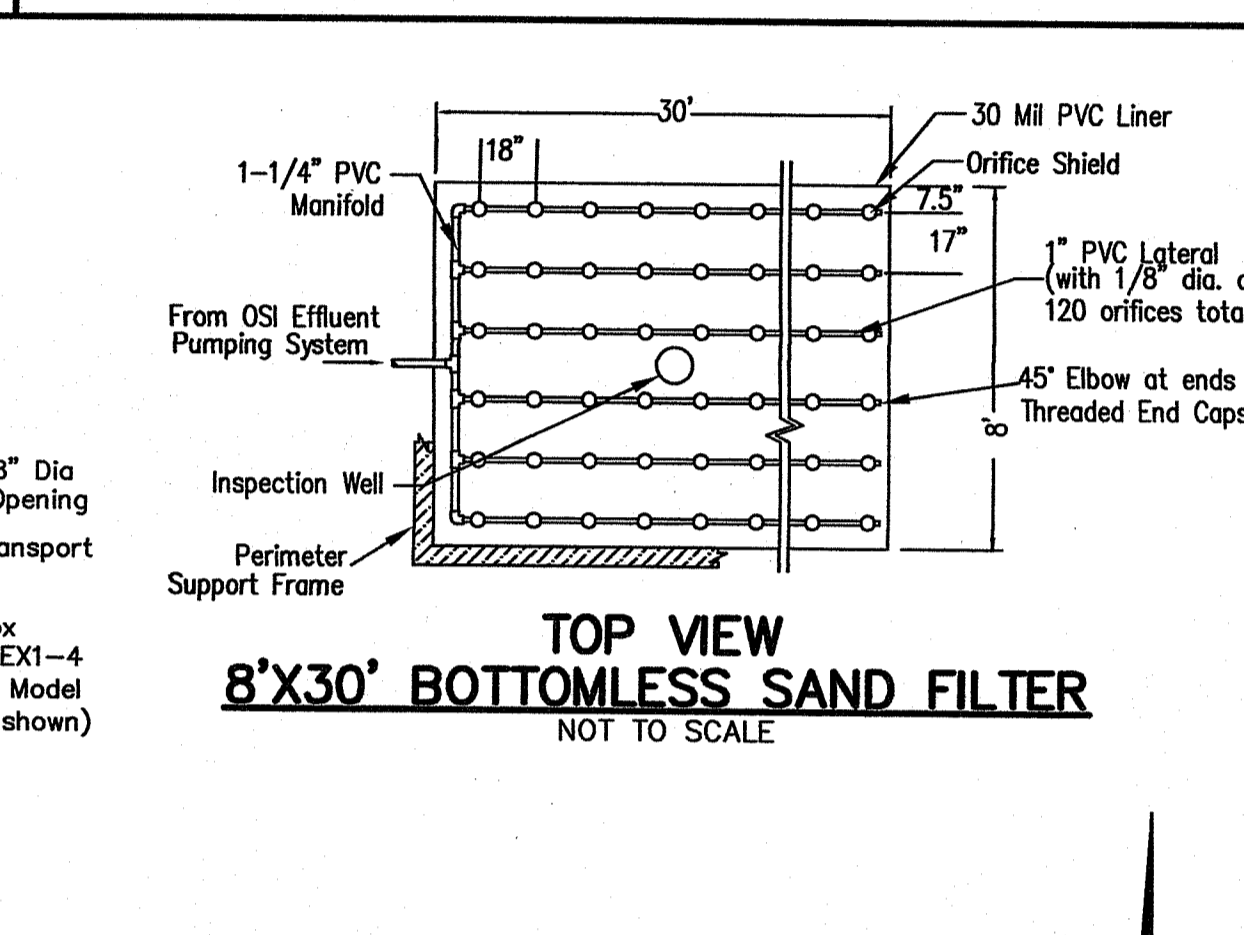
NON-DRAINBACK ORIFICE DETAIL
NOT TO SCALE



LOCUS MAP
NOT TO SCALE



SCHEMATIC TOP VIEW
NOT TO SCALE



8'X30' BOTTOMLESS SAND FILTER
NOT TO SCALE

SPECIFICATIONS

- CONCRETE TANKS:**
- Walls, bottom and top of reinforced concrete tanks shall be designed against the shortest dimension using one-way slab analysis. Stresses in each face of monolithically constructed tanks may be determined by analyzing the tank cross-section as a continuous fixed frame.
 - The walls and bottom slab shall be poured monolithically; alternatively, water stops may be provided.
 - Reinforcing steel shall be ASTM A-615 Grade 60, $f_y = 60,000$ psi. Details and placement shall be in accordance with ACI 315 and ACI 318.
 - Concrete shall be ready-mix with cement conforming to ASTM C150, Type II. It shall have a cement content of not less than six (6) sacks per cubic yard and maximum aggregate size of 3/4". Water/cement ratio shall be kept low (0.35), and concrete shall achieve a minimum compressive strength of 4000 psi in 28 days. The Contractor shall submit a concrete mix design to the Engineer for review and approval. Three (3) concrete sample cylinders shall be taken and tested for each tank manufactured until the manufacturer and Engineer are satisfied that the minimum compressive strength is being obtained. To ensure compliance, the manufacturer shall then make and set three (3) sample cylinders for a minimum of 20% of the remaining tanks at the discretion of the Engineer. If the minimum compressive strength is not being obtained, the manufacturer shall be required to make and test sample cylinders for each tank manufactured. Calcium chloride will not be allowed in the mix design. The cost of testing cylinders shall be the tank manufacturer's responsibility. The tank manufacturer may supply a Swiss hammer for compressive testing in the field in lieu of sample cylinders.
 - Tanks may be protected by applying a heavy cement-base waterproof coating (Thorsol or approved equal), on both inside and outside surfaces, in compliance with Council of American Building Officials (CABO) report #NRB-168; 6181; however, the tank should be watertight without the addition of seal coatings.
 - Form release used on tank molds shall be Nox Crete or approved equal. Diesel or other petroleum products are not acceptable.
 - Tanks shall not be moved from the manufacturing site to the job site until the tank has cured for seven (7) days or has reached two-thirds of the design strength.
 - Tanks shall be manufactured and furnished with access openings of the size and configuration to accommodate individual packaged pump systems. For 24" diameter access risers, the tank manufacturer shall cast in place a flanged tank adapter to facilitate the bolting of a 24" diameter access riser. The flanged tank adapter shall be made of 1/4" thick ABS and shall have an outside diameter of 27" and an inside diameter of 22-3/4". The flanged adapter shall be Oresco Systems, Inc. Model PRTA24 or engineer-approved equal. The adapter must have an overall height of not less than 3" to allow 1-1/2" exposed for sufficient bonding area once the adapter is installed in the tank. For 21" and 30" diameter access risers, either a grooved tank adapter plate (Model RRTA or RRTA30) or a flanged tank adapter (Model FRTA30) may be installed in the tank. The adapter shall be manufactured of fiberglass or ABS and shall accommodate either a 21" or 30" diameter access riser.
 - The septic tank and the top slab shall be sealed with a preformed flexible plastic gasket. The flexible plastic gasket shall be equal to the flexible butyl resin sealant congeal CS-102 or CS-202 as manufactured by Concrete Sealants, Inc. of New Carlisle, Ohio, and shall conform to federal specification SS-50210 (29A) and shall have an overall height of not less than 3" to allow 1-1/2" exposed for sufficient bonding area once the adapter is installed in the tank. For 21" and 30" diameter access risers, either a grooved tank adapter plate (Model RRTA or RRTA30) or a flanged tank adapter (Model FRTA30) may be installed in the tank. The adapter shall be manufactured of fiberglass or ABS and shall accommodate either a 21" or 30" diameter access riser.
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 - In order to demonstrate watertightness, tanks shall be tested twice prior to acceptance. Inlets to the septic tank will be watertight pipe seal Coat-A-Seal (Manufactured by Press-Seal Gasket Corporation) or approved equal. Each tank shall be tested at the factory prior to shipping by filling with water to the soffit and letting stand. After 24 hours, the tank shall be refilled to the soffit and the infiltration rate shall be determined by measuring the water loss during the next two (2) hours. Any leakage shall be cause for rejection. After installation is completed, each tank shall be filled with water to a point 2" into the access riser and retested as previously described (the field test period may be reduced to not less than two (2) hours). Backfill of a depth equal to the water height in the riser must be in place over the tank to prevent damage due to hydrostatic uplift. No tank will be accepted if there is any leakage over the two (2) hour period.
- RISERS & LIDS:**
- Risers shall be required for access to internal vaults and access into the septic tanks for sewage pumping. All risers shall be constructed watertight. The risers shall be attached to the tanks such that a watertight seal is provided. Risers shall extend 3' above original grade to allow for settlement and to ensure positive drainage away from the access. Risers for inspection ports shall be a minimum of 18" in nominal diameter. Risers containing pumping assemblies or electrical splice boxes shall be a minimum of 24" in diameter and shall be of sufficient diameter to allow removal of internal vaults without removing splice boxes, etc. Risers shall be a minimum of 30" in nominal diameter when the depth of bury is 36" or greater. All other risers shall be a minimum of 24" in nominal diameter and shall vary in height depending on the depth of bury on the various tanks. Adhesive required to adhere the PVC or fiberglass risers to either fiberglass or ABS tank adapter shall be either a two-part epoxy (Model MA320 approved equal, or a single component adhesive Model ADH100 or approved equal). To ensure product compatibility, risers, lids, and attachment components shall be supplied by a single manufacturer.
 - One lid shall be furnished with each riser. Lids shall be Oresco Systems, Inc. Model FL180-4BU, FL210, FL24-4B, FL24-4BU, or FL300 or engineer-approved equal, as appropriate, fiberglass with green non-skid finish, and provided with stainless steel bolts, and wrench. Lids shall be watertight, corrosion resistant and UV resistant. Lids shall be flat, with no noticeable upward dome. A crown or dome of no more than 1/8" is allowable. Lids shall not be attached to the tank on them. Lids shall have a green non-skid finish. Self-lubricating plastics, such as polyethylene, shall not be considered non-skid without addition of a non-skid coating. Lids shall form a watertight seal with the top of riser. Lids shall be not less than two (2) hours. Backfill of a depth equal to the water height in the riser must be in place over the tank to prevent damage due to hydrostatic uplift. No tank will be accepted if there is any leakage over the two (2) hour period.
 - Traffic bearing lids: The traffic bearing lid shall be a cast iron frame and cover, part number 6024, 3060, 4036, as manufactured by Sather Manufacturing Co., Inc., or approved equal, which will fit over a standard lid. The cover shall have the word SEWER cast into it.
 - Insulation (if required) Rigid closed-cell foam insulation of 2" or 4" thickness shall be mechanically attached to the underside of the lid. All fasteners shall be made of corrosion resistant stainless steel. The insulation shall have an R-value of no less than 10 per 2" increment.
 - Riser installation: shall be accomplished according to the manufacturer's instructions.
- SEPTIC TANK EFFLUENT PUMPING ASSEMBLIES:**
- Screened Pump Vault: Oresco Systems, Inc. Model PVU57-1819, Universal Biotube Pump Vault or engineer-approved equal, installed in conformance with the engineer's plans. The filter shall have a minimum effective screen area of no less than 15.5 square feet. (Note: Commercial and multiple-user tanks may require a larger or duplex Biotube Pump Vault, the sizes of which must be individually determined and spelled out in the specifications.) The Biotube Pump Vault shall consist of a 12" diameter, 57" deep HDPE vault with eight (8) 2" diameter holes evenly spaced around the perimeter, located appropriately to allow for maximum sludge and scum accumulation before requiring pumping (approximately 70% of minimum liquid level). Housed inside the polyethylene vault shall be the Biotube assembly consisting of 1/8" mesh polypropylene tubes. Attached to the vault is a flow inducer to accept one or two high-head effluent pumps. Two-wire motor, with 10 foot long extra heavy duty (SO) electrical cord with ground. Pump shall be capable of providing a flow rate of 5 gpm against a head of 200 feet, or 10 gpm against a head of 135 feet. When used in conjunction with a flow controller, the pump shall be capable of providing 5 gpm against a head of 160 feet. Pump shall be UL and CSA listed as an effluent pump. Pump shall be provided with a non-prorated five-year warranty. Larger horsepower units are available (3/4 to 1-1/2 hp, 230 VAC).
 - Electrical Splice Box: Oresco Systems, Inc. Model SB4, UL approved for wet locations, equipped with four electrical cord grips and a 3/4" outlet fitting. Also included shall be UL listed waterproof butt splice connectors—the use of a UL-approved conduit seal kit shall be required to prevent the passage of gases, vapors, or flames through the conduit.

DESIGN CRITERIA:

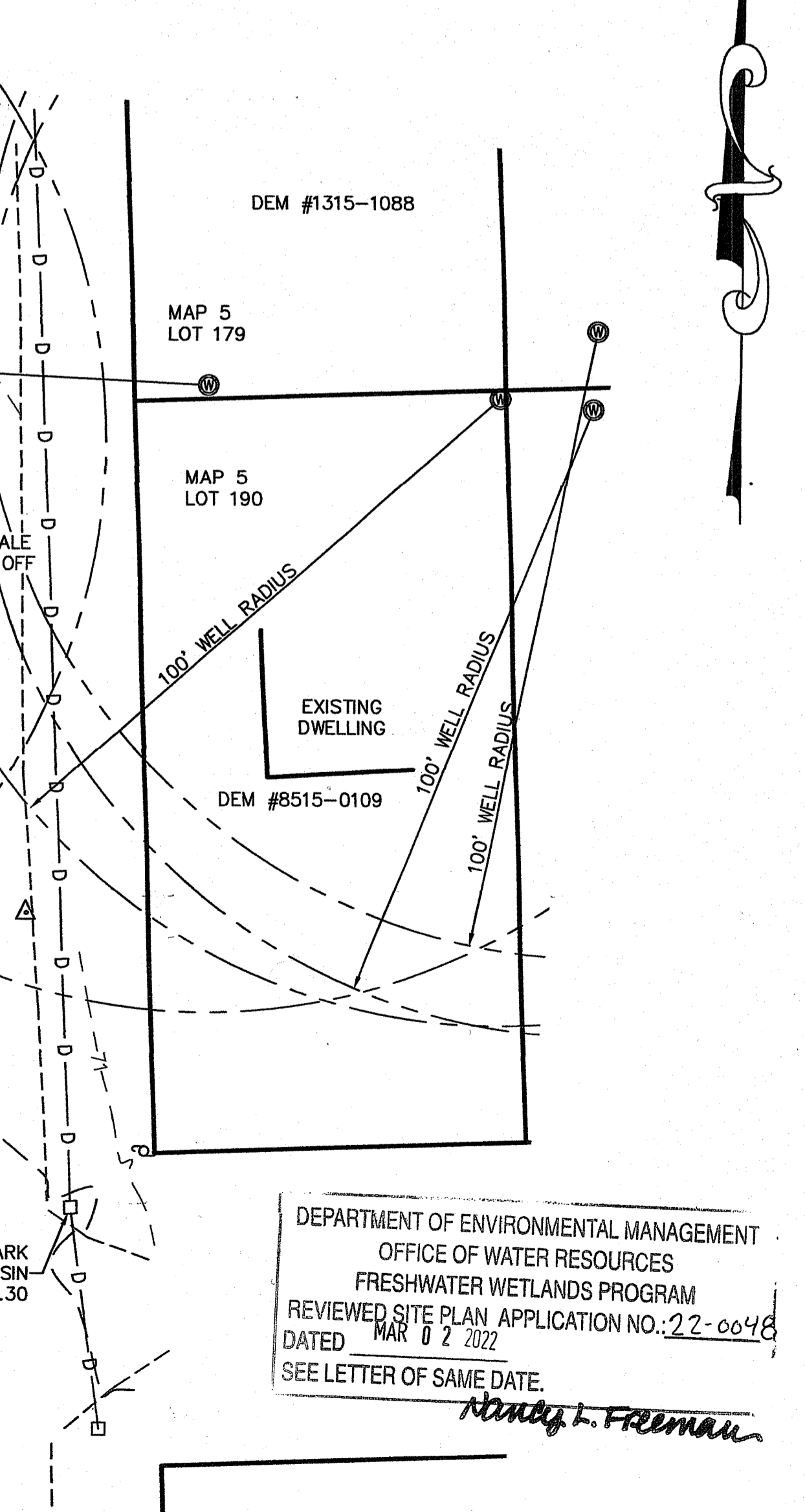
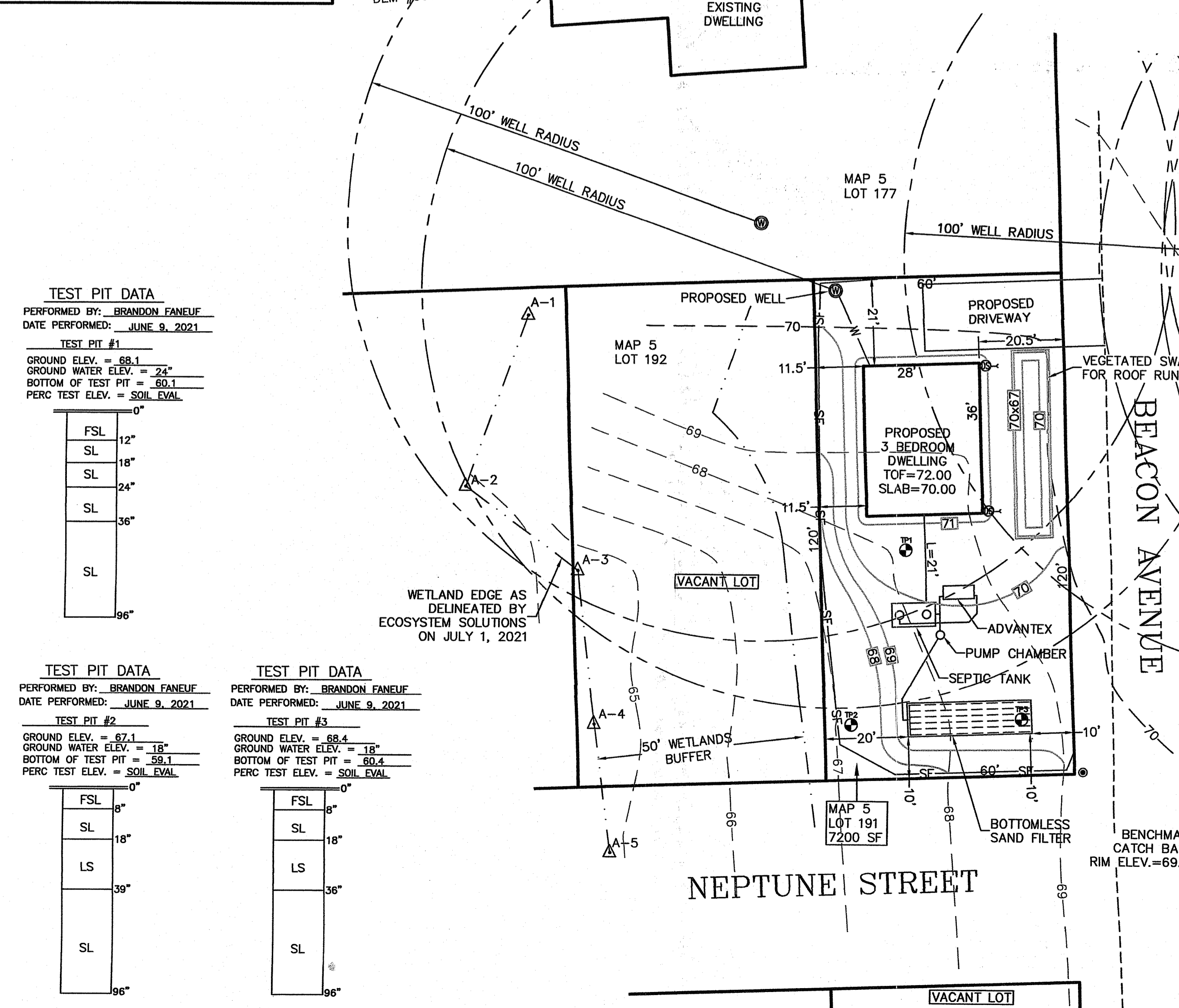
TYPE OF ESTABLISHMENT: PROPOSED 3 BEDROOM SINGLE FAMILY DWELLING
NO ADDITIONAL CAPACITY HAS BEEN PROVIDED FOR GARBAGE GRINDERS
DESIGN FLOW: 3 BDRM X 115 GPD/BDRM = 345 GPD
SEPTIC TANK CAPACITY REQUIRED: 1500 GALLONS (2 COMPARTMENT)
SEPTIC TANK CAPACITY PROVIDED: 1500 GALLONS (2 COMPARTMENT)
DESIGN LOADING RATE: 1.5 GPD/SF
BOTTOMLESS SAND FILTER
LEACHING CAPACITY REQUIRED: 345 GPD / 1.5 GPD/SF = 230 SF
LEACHING CAPACITY PROVIDED: 8' x 30' = 240 SF

GENERAL NOTES

- ALL CHANGES TO THIS PLAN MUST BE APPROVED BY THE R.D. DEM AND MOUNT HOPE ENGINEERING.
- ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE STATE ENVIRONMENTAL CODE AND ANY APPLICABLE LOCAL RULES AND REGULATIONS.
- ANY CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFERING FROM THOSE SHOWN HEREON SHALL BE REPORTED TO MOUNT HOPE ENGINEERING. BEFORE CONSTRUCTION CONTINUES.
- ALL ELEVATIONS BASED ON NAVD-88 DATUM.
- PER RI DEM REGULATIONS (NOVEMBER 2018) AND IN ACCORDANCE WITH SOUND CONSTRUCTION PRACTICE, THE FOLLOWING INSPECTIONS SHALL BE MADE:
 - THE CONTRACTOR/HOMEOWNER SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
 - THE ENGINEER SHALL BE NOTIFIED UPON EXCAVATION OF THE LEACHING FIELD BOTTOM.
 - THE ENGINEER SHALL BE NOTIFIED UPON INSTALLATION OF ALL REQUIRED STRUCTURES. SAND AND AGGREGATE SHALL MEET THE SPECIFICATION BELOW AND SHALL BE APPROVED BY THE ENGINEER.
 - THE ENGINEER SHALL BE NOTIFIED UPON COMPLETION AND PRIOR TO FINAL COVER OF THE SYSTEM.
 - THE ENGINEER SHALL BE NOTIFIED AFTER ALL BACKFILL AND FINAL GRADING HAS BEEN COMPLETED, INCLUDING REQUIRED FILL PERIMETER.
 - THE CONTRACTOR SHALL SUPPLY A LIST OF ALL MATERIALS USED, SOURCE OF MATERIAL, AND DATES DELIVERED TO THE SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR DELAY OR ANY AND ALL ADDITIONAL EXCAVATION, LABOR, OR OTHER WORK FOR FAILURE OF THE CONTRACTOR AND/OR HOMEOWNER TO ADHERE TO THE ABOVE INSPECTION SCHEDULE.
- THERE ARE NO WELLS, EXISTING OR PROPOSED, WITHIN 200' OF SYSTEM, EXCEPT AS SHOWN. NO PUBLIC WELLS, EXISTING OR PROPOSED, WITHIN 500'. NO DRAINS WITHIN 25'.
- HOMEOWNER SHALL OBTAIN REQUIRED AGREEMENT FOR TREATMENT TECHNOLOGY MAINTENANCE THROUGH THE EQUIPMENT VENDOR. EXECUTED AGREEMENT SHALL BE RECORDED AT THE LOCAL TOWN HALL BY THE OWNER. COPY OF THE RECORDED AGREEMENT TO BE PROVIDED TO THE ENGINEER FOR SUBMITTAL TO DEM FOR FINAL COMPLIANCE.
- PROPERTY LINE INFORMATION TAKEN FROM ASSESSORS MAP, NOT FROM AN ACTUAL PROPERTY LINE SURVEY. PROPOSED DWELLING LOCATION TO BE APPROVED BY LOCAL AUTHORITIES AND ZONING BOARD.

LEGEND

- 56---
 - 56
 - D
 - W
 - SF
 - 6
 - 56x5
 - 56x3
 - 6
- EXISTING CONTOURS
PROPOSED CONTOURS
EXISTING DRAIN LINE
PROPOSED WATER LINE
PROPOSED SILT FENCE
TEST PIT
EXISTING SPOT GRADE
PROPOSED SPOT GRADE
PROPOSED DOWNSPOUT



TEST PIT DATA
PERFORMED BY: BRANDON FANEUF
DATE PERFORMED: JUNE 9, 2021

TEST PIT #1

GROUND ELEV. = 68.1
GROUND WATER ELEV. = 24"
BOTTOM OF TEST PIT = 60.1
PERC TEST ELEV. = SOIL EVAL.

FSL	12"
SL	18"
SL	24"
SL	36"
SL	96"

TEST PIT DATA
PERFORMED BY: BRANDON FANEUF
DATE PERFORMED: JUNE 9, 2021

TEST PIT #2

GROUND ELEV. = 67.1
GROUND WATER ELEV. = 18"
BOTTOM OF TEST PIT = 59.1
PERC TEST ELEV. = SOIL EVAL.

FSL	8"
SL	18"
LS	39"
SL	96"

TEST PIT DATA
PERFORMED BY: BRANDON FANEUF
DATE PERFORMED: JUNE 9, 2021

TEST PIT #3

GROUND ELEV. = 68.4
GROUND WATER ELEV. = 18"
BOTTOM OF TEST PIT = 60.4
PERC TEST ELEV. = SOIL EVAL.

FSL	8"
SL	18"
LS	36"
SL	96"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN APPLICATION NO. 22-0048
DATED MAR 02 2022
SEE LETTER OF SAME DATE.
Nancy J. Freeman

ONSITE WASTEWATER TREATMENT SYSTEM

PREPARED FOR: CAROLYN LANDI
34 TREMONT STREET
CRANSTON, RI 02920
FEB 02 2022

SCALE: 1" = 20'
DATE: 09/17/21
DRAWN: BC
DESIGN: TC
CHECKED: TC
PROJECT NO. 2021-272
SHEET NO. 1 OF 1

OWNED BY: CAROLYN LANDI
LOCATION: MAP 5, LOT 191
NEPTUNE STREET, JAMESTOWN

TODD CHAPLIN
REGISTERED PROFESSIONAL ENGINEER

Mount Hope ENGINEERING
CIVIL/ENVIRONMENTAL SERVICES
Post Office Box 943
Portsmouth, Rhode Island 02871
(401) 683-1934/(508) 379-1234