

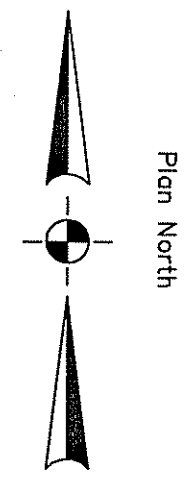
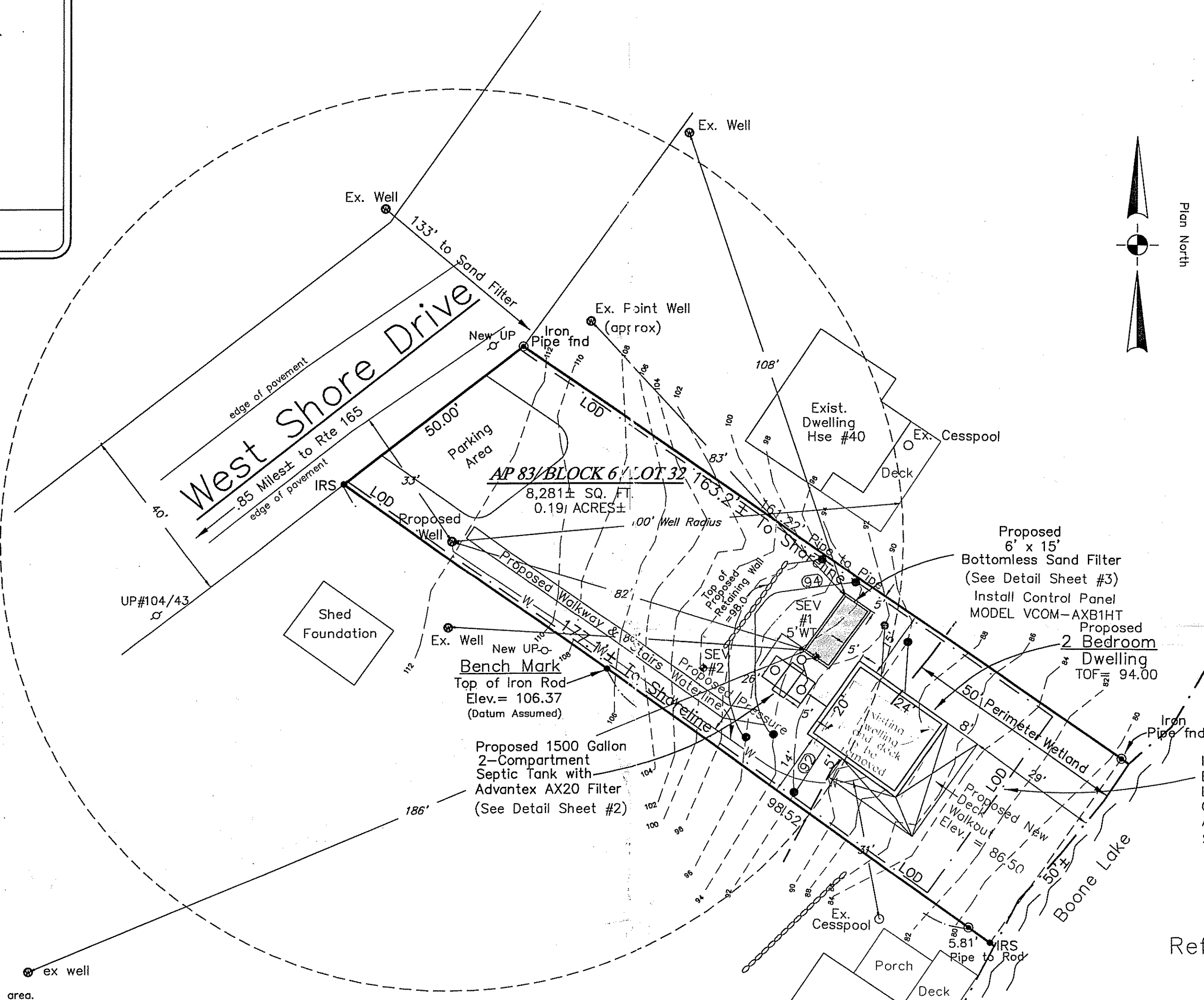
Location Plan
not to scale

Plat Reference

See Lot 44 Boone Lake Shores Section B in Exeter, RI by Robert G. Brown C.E. July 1944 Scale 1"=100' See Plat Book 1 page 17

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 4 2008 FILE # 08-0305
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Nancy L. Freeman



NOTES

- Do not park on OWTS area. Seed OWTS area with grass.
- Use H-20 Load distribution box. Minimum 3sq ft bottom area.
- Extend septic tank manhole to grade as shown. Grade to divert runoff.
- Remove all vegetation & trees within 10' of proposed OWTS.
- No OWTS existing or proposed within 100' of proposed well.
- No wells existing or proposed within 200' of proposed OWTS except as noted.
- No public wells existing or proposed within 500' of proposed OWTS.
- No underground drains existing or proposed within 25' of OWTS.
- Lot lines as shown are approximate and should be verified prior to construction activities.
- Use 4" diameter sewer pipe (SDR 35) watertight joints.
- Designer must supervise all phases of installation of OWTS.

Refer to Application # 0711-0866

**Redesign of
Onsite Wastewater Treatment System at
#42 West Shore Drive
in the Town of Exeter, Rhode Island**

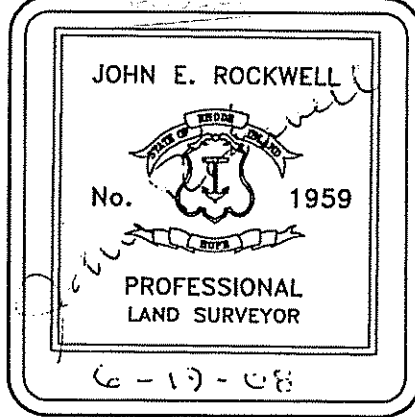
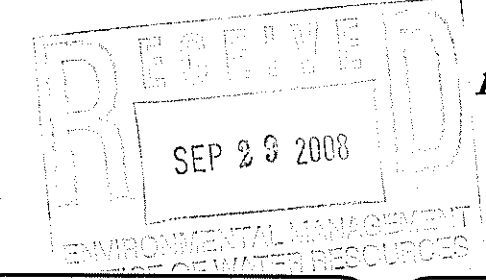
Prepared for: Christine Therrien
Date: June 19, 2008
Sheet 1 of 3

Legend

- A.P. Assessor's Plat
- UP Utility Pole
- 90--- Existing Contour
- (94)--- Proposed Contour
- Building Setback
- Perimeter Wetland
- Limit of Disturbance
- W Waterline

THIS SURVEY AND PLAN CONFORM TO A CLASS III STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.

BY: *John E. Rockwell*
REGISTERED PROFESSIONAL LAND SURVEYOR

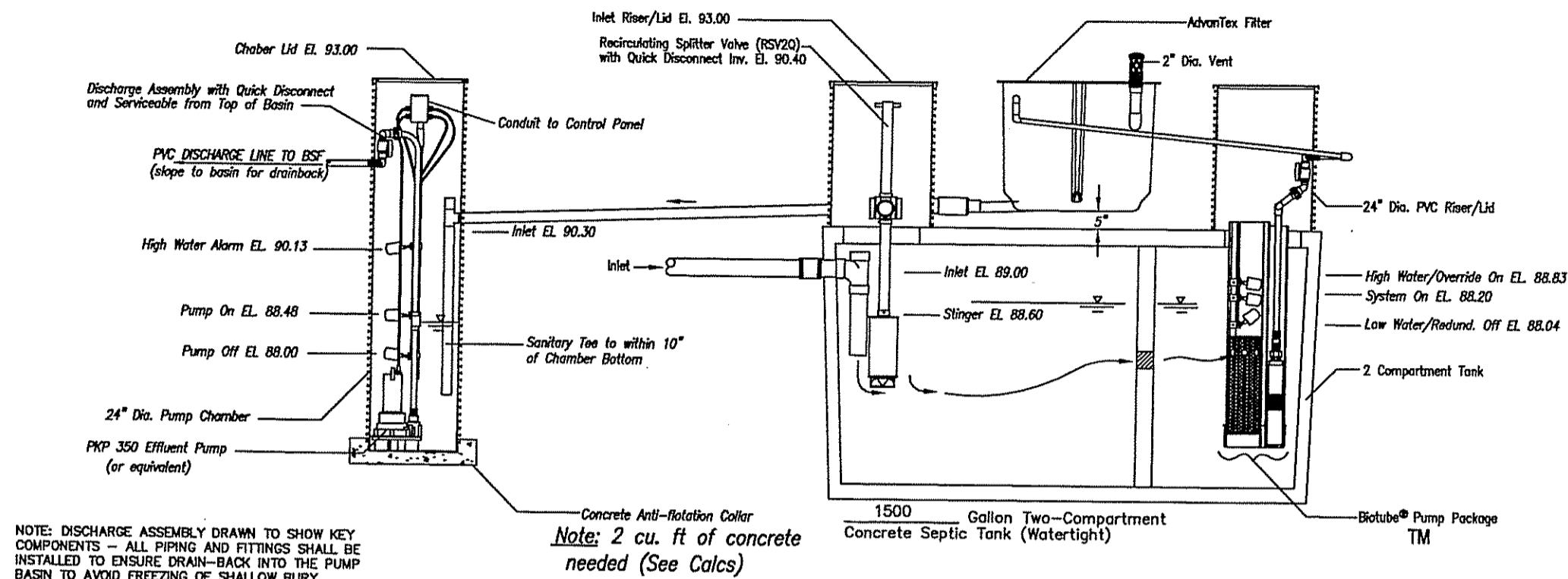


Coventry Survey Co., Inc.
46 South Main Street
Coventry, Rhode Island 02816
(401) 823-5028
Land Surveying / Mapping / ISDS Designs

Graphic Scale Scale in feet: 1"=20'

AdvanTex Treatment System with Low Head Pump Chamber

AX20 Series - Mode 3b - No Scale



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).

NOTE: 2 cu. ft. of concrete needed (See Calcs)

DISCHARGE PUMP FLOAT SETTING CALCULATIONS
 TOTAL DAILY FLOW = 230 GALLON/DAY
 DOSING RATE OF BSF/ZONE: 45 ORIFICES @ 0.25 GAL/DOSE = 11.25 GALLONS
 TOTAL CYCLES PER DAY: 230 GALLONS / 11.25 GALLON/CYCLE = 20.4 CYCLES
 DOSE SETTINGS: 11.25 GALLON DOSE / 23.50 GALLON/LIQ. FT. = 0.48 FT.
PUMP CHAMBER ELEVATIONS (72" CHAMBER):
 RIM = 93.00 (TOP OF CHAMBER)
 INLET = 90.30
 HWA = 90.13 (2" BELOW INLET)
 PUMP ON = 88.48
 PUMP OFF = 88.00 (12" MINIMUM LIQUID LEVEL FOR PKP 350 PUMP)
 BOTTOM CHAMBER = 87.00

GENERAL NOTES

- (1) The contractor shall verify the location of all utilities and contact DIG-SAFE prior to construction. All permits shall be the responsibility of the owner. The contractor shall contact the utility companies, if necessary, to make alterations or relocations.
- (2) The contractor shall be responsible for maintenance of the integrity of all existing utilities, structures, etc. for abutting properties.
- (3) All unwanted materials shall be removed from the site by the contractor.
- (4) Refer to the ISDS notes for other information.

OWTS NOTES

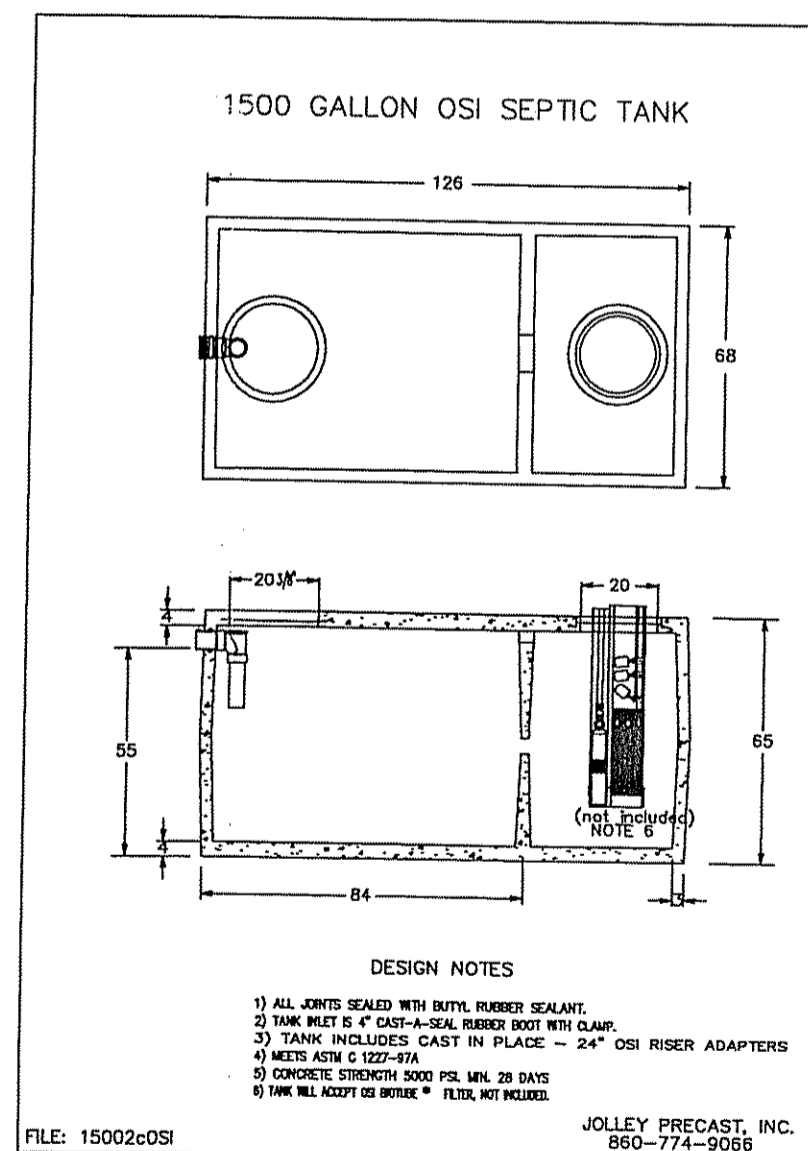
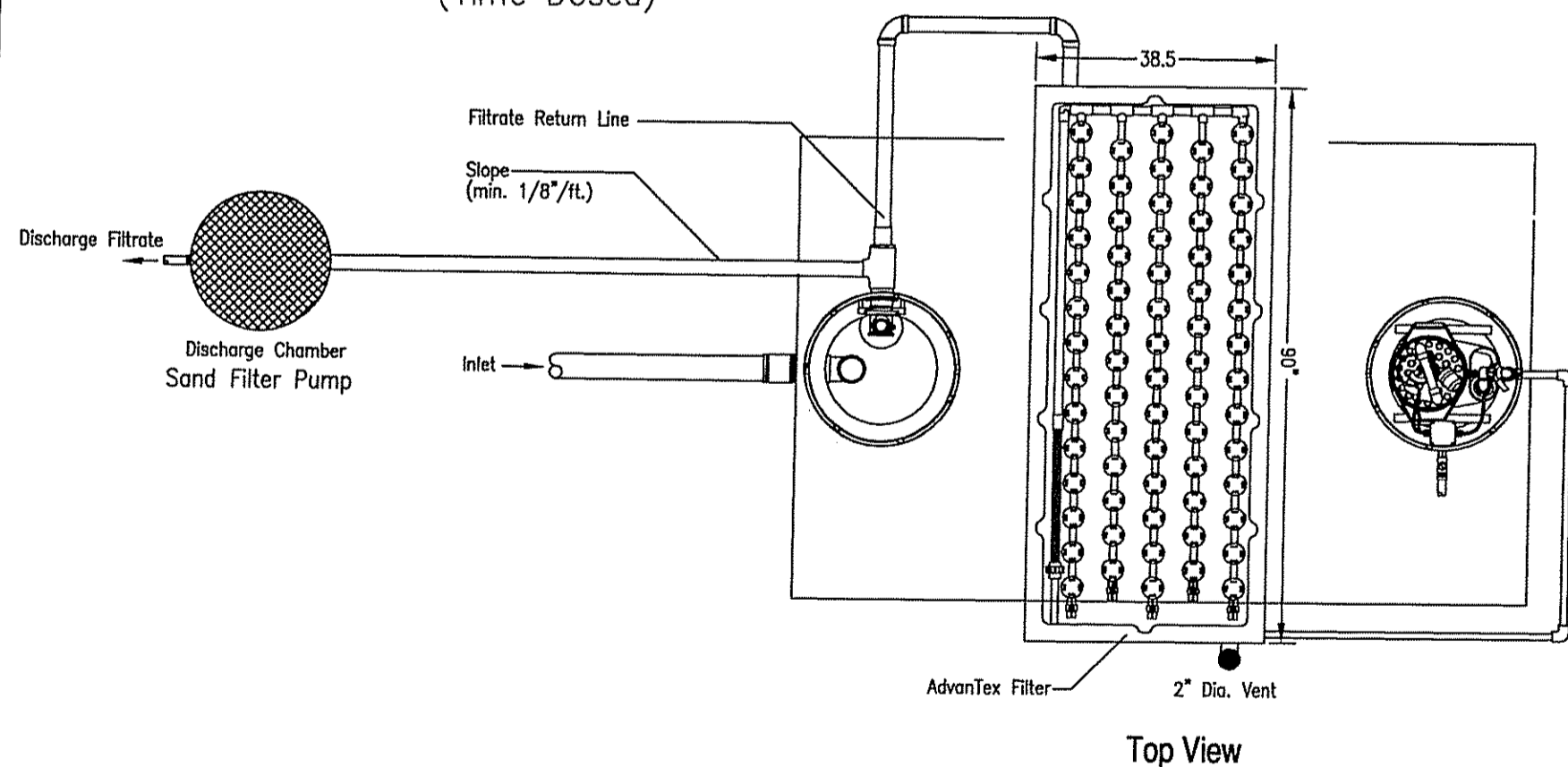
- (1) The proposed system shall consist of a leaktight, two-compartment 1500 gallon septic tank and houses an ORENCO AdvanTex - AX-20 Treatment System (Mode 3b). The second compartment shall have an ORENCO recirculating pump with biotube filter as shown on the profile. The installation shall be in accordance with the manufacturers instructions. The complete system shall be equipped with an hour meter and audible and visual alarms to indicate power interruption or loss. This alarm system is to be mounted on a NEMA approved cabinet on the exterior of the building.
- (2) The owner shall assure that proper electrical capacity is available for the system requirements.
- (3) The contractor shall install the components under the supervision of the designer, and the manufacturer's representatives. The contractor shall maintain documentation, verifying the minimum dimension of the tank as well as its structural integrity.
- (4) All installation shall be performed by a licensed DEM installer.
- (5) All system testing shall be conducted and verified by the designer and ORENCO Representative(s). Final system acceptance shall be based on the testing results and/or corrected operation as verified by the vendors and the engineer.
- (6) All system components shall be verified to be correct by the ORENCO representative prior to installation.

Sand Filter Pump - Use Model PKP350 (or equivalent)

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 Nancy L. Provencher

Category 1 System

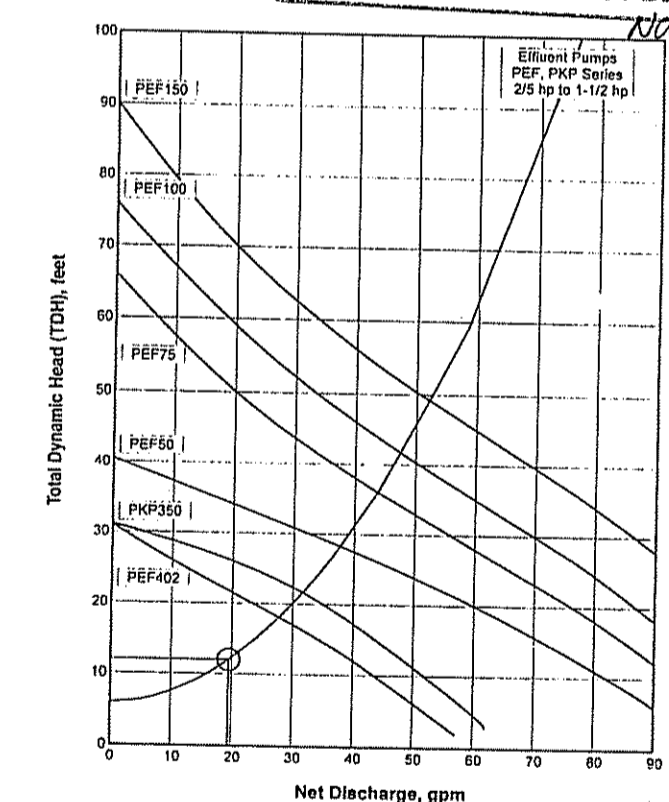
(Time Dosed)



Pump Selection for a Pressurized System

Input Parameters	Value
Orifice Size	1/8 inches
Residual Head at Last Orifice	5.0 feet
Orifice Spacing	1.7 feet
Number of Laterals per Cell	5
Lateral Length	14.0 feet
Lateral Line Size	1.00 inches
Lateral Pipe Class/Schedule	40
Distributing Valve Model	None
Manifold Length	1.8 feet
Manifold Line Size	1.25 inches
Manifold Pipe Class/Schedule	40
Lift to Manifold	8.0 feet
Transport Length	11.0 feet
Transport Line Size	2.00 inches
Transport Pipe Class/Schedule	40
Discharge Assembly Size	2.00 inches
Flow Meter	None inches
Add-on Friction Losses	0.0 feet

Calculations	Value
Minimum Flow Rate per Orifice	0.43 gpm
Number of Orifices per Zone	45
Total Actual Flow Rate	19.5 gpm
Number of Lines per Zone	5
% Flow Differential 1st and Last Orifice	0.4 %
Lift to Manifold	8.0 feet
Residual Head at Last Orifice	5.0 feet
Head Loss in Laterals	0.1 feet
Head Loss Through Distributing Valve	0.0 feet
Head Loss in Manifold	0.1 feet
Head Loss in Transport Pipe	0.1 feet
Head Loss Through Discharge	0.8 feet
Head Loss Through Flow Meter	0.0 feet
Add-on Friction Losses	0.0 feet
Total Flow Rate TDH	12.0 feet



Proposed
Onsite Wastewater Treatment System
 Detail Sheet

Prepared for: Christine Therrien
 Date: June 12, 2008

DETAILS BY:

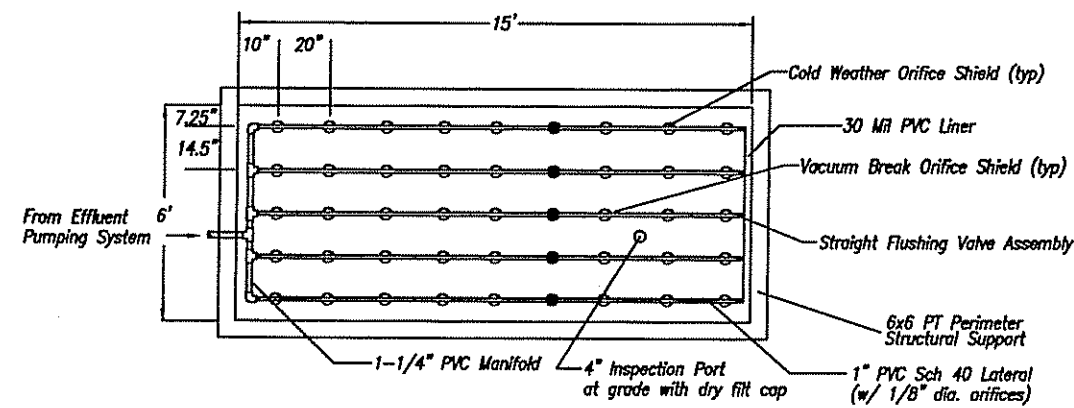
Orenco Systems®
 Incorporated
 Wastewater
 Technologies
 Incorporated
 70 Vermont Avenue, Unit A
 Warwick, Rhode Island
 02888
 TELEPHONE:
 (401) 737-7810
 FACSIMILE:
 (401) 737-4521

NOTE: ADVANTEX AX20 TREATMENT SYSTEM IS DESIGNED WITH THE USE OF A VERRICOMM TELEMETRY CONTROL PANEL MODEL VCOM-AXB1HT. HOUSE ELECTRICIAN TO PROVIDE 1-10 AMP CIRCUIT, 1-20 AMP CIRCUIT AND PHONE JACK FOR PANEL CONTROLS.

JOHN E. ROCKWELL
 No. 1959
 PROFESSIONAL
 LAND SURVEYOR
 6-17-08

SEP 29 2008
 Coventry Survey Co., Inc.
 46 South Main Street
 Coventry, Rhode Island 02816
 (401) 823-5028
 Land Surveying / Mapping / ISDS Designs
 No Scale

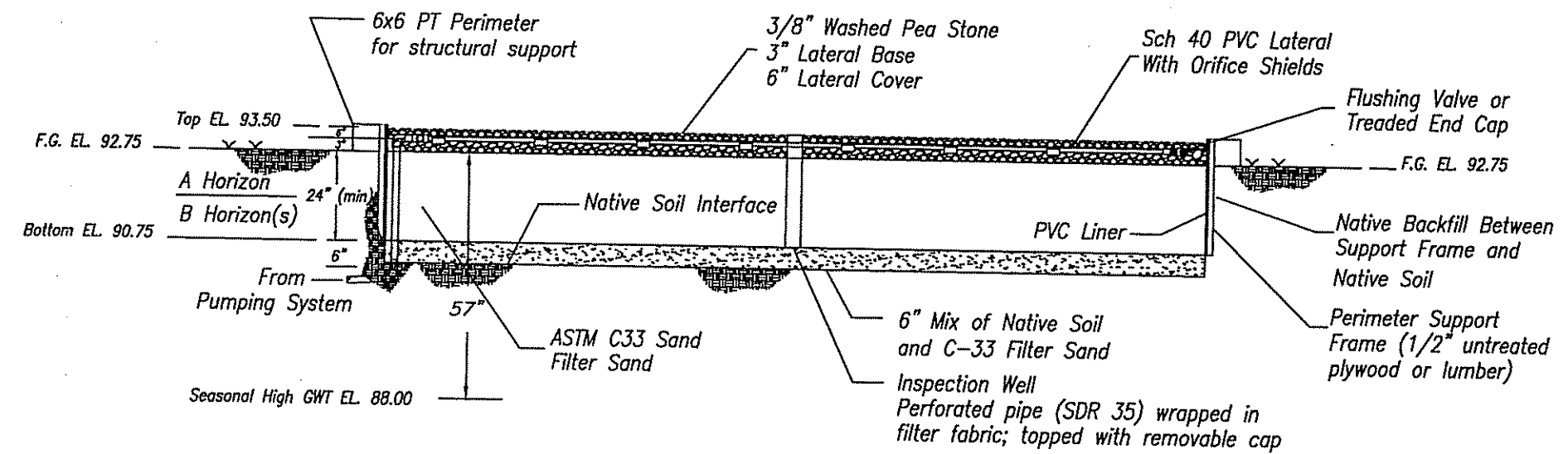
6'x15' (90 S.F.) Bottomless Sand Filter - Single Zone - 45 Orifices



TOP VIEW - 6'X15' BOTTOMLESS SAND FILTER (SINGLE ZONE)
N.T.S.

DETAILS BY:

Orenco Systems[®]
Incorporated
Wastewater
Technologies
Incorporated
70 Vermont Avenue, Unit A
Warwick, Rhode Island
02888
TELEPHONE:
(401) 737-7810
FACSIMILE:
(401) 737-4521



TYPICAL BOTTOMLESS SAND FILTER CROSS-SECTION
N.T.S.

Design Data

Receiving Soils Are Category 3 & 6

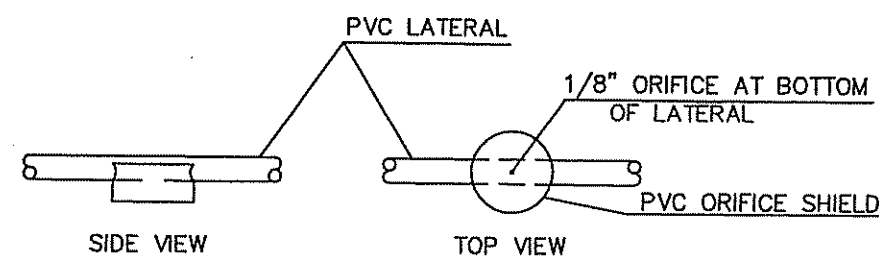
Category 3 = 4.5 Gal/SF/Day Loading Rate Category 6 = 3.0 Gal/SF/Day Loading Rate

For Design Loading Rate use 3.0 Gal/SF/Day

2 Bdrm x 115 Gal/Bdrm/Day = 230 Gal/Day x 1 Day/3.0 Gal/S.F. = 76.7/ Sq Ft Required (90 provided)

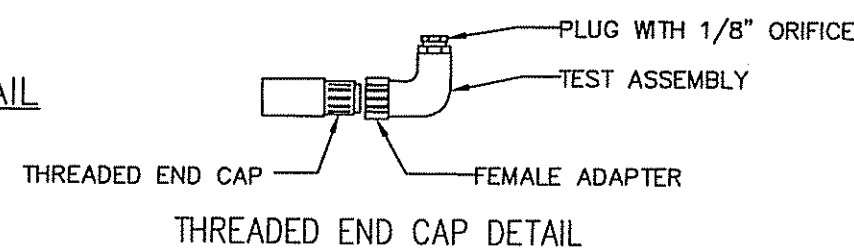
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Nancy L. Freeman



COLD WEATHER ORIFICE SHIELD DETAIL
N.T.S.

NOTE: FORTH AND TWELFTH TO LAST ORIFICE ARE DRILLED IN TOP OF LATERAL FOR VACUUM BREAK AND MANIFOLD DRAINBACK



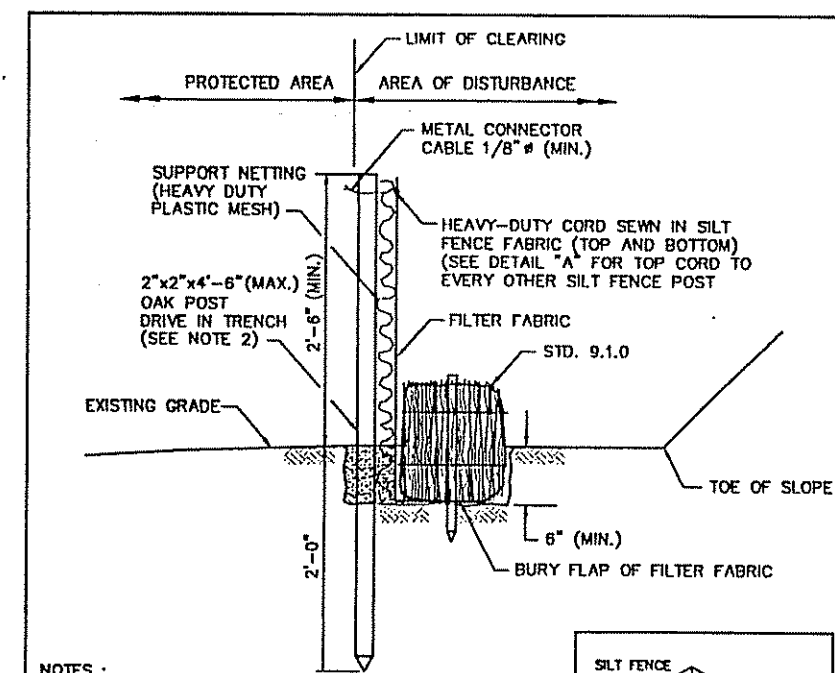
COLD WEATHER NOTES

After the required amount of filter sand has been added to the filter, place (3) inches of 3/8" washed pea stone over the filter sand. After the distribution laterals and orifice shields have been assembled atop the pea stone, add more pea stone so that a three (3) inch depth of pea stone is installed over the laterals and any upper orifice shield (See Figure 8A). The total depth of pea stone over the sand media will range from eight (8) to nine (9) inches, depending on the size of lateral pipe employed. No filter fabric of any kind should be placed between the sand and overlying pea stone.

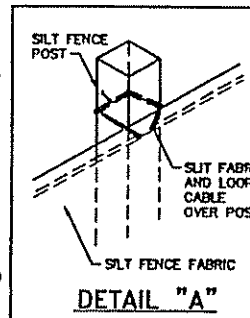
A series of 1/8 inch diameter holes (orifices) shall be drilled in the distribution laterals and spaced no less than 14 inches and no more than 24 inches apart. Two (2) orifices in each lateral shall be drilled pointing up (12 o'clock position); all other orifices shall be drilled pointing down (6 o'clock position). The up-pointing orifices shall be located approximately 1/3 and 2/3, respectively, along the length of each lateral. Orifice shields shall be placed over each orifice (above or below the lateral, as required). Orifice shields placed below any orifice shall contain slots or holes to provide free draining (usually referred to as cold weather orifice shields). See Figure 8.

Transport lines: The manual currently describes that these must be sloped to allow drain back and prevent freezing, yet designs are often such that only minimal slope is provided. Problems with transport lines may be diminished by providing greater pitch and by keeping the pump chamber close to the BSF whenever possible. In the installation of transport lines greater care must be taken to prevent sagging after backfill due to settling. If necessary less flexible piping should be specified on longer runs. Ensure that transport lines are placed on undisturbed trench bottom.

Start-up precautions: Systems should not be started up during the coldest months of the year as it may lead to water sitting with no biological activity for a long period of time allowing the water to freeze within the system or cool excessively causing rapid freezing at the BSF. Systems in high water situations should only have the proper amount of water to prevent buoyancy if required. If at all possible avoid mid winter start ups.



- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 208 OF THE R.I. STANDARD SPECIFICATIONS.
 2. STD. 9.1.0 IS INSTALLED "TIGHT" AGAINST SILT FENCE. THOROUGHLY COMPACT EXCAVATED SOILS BACK INTO TRENCH AFTER INSTALLATION OF EROSION CONTROL DEVICE. SILT FENCE FABRIC SHALL NOT BE SLIT. STD. 9.1.0 POST SHALL BE DRIVEN THROUGH SILT FENCE FABRIC. 2"x2"x4"-6" (MAX.) OAK POST FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
 3. 1"x1/4"-6" (MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
 4. SILT FENCE AND BALED HAY SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.



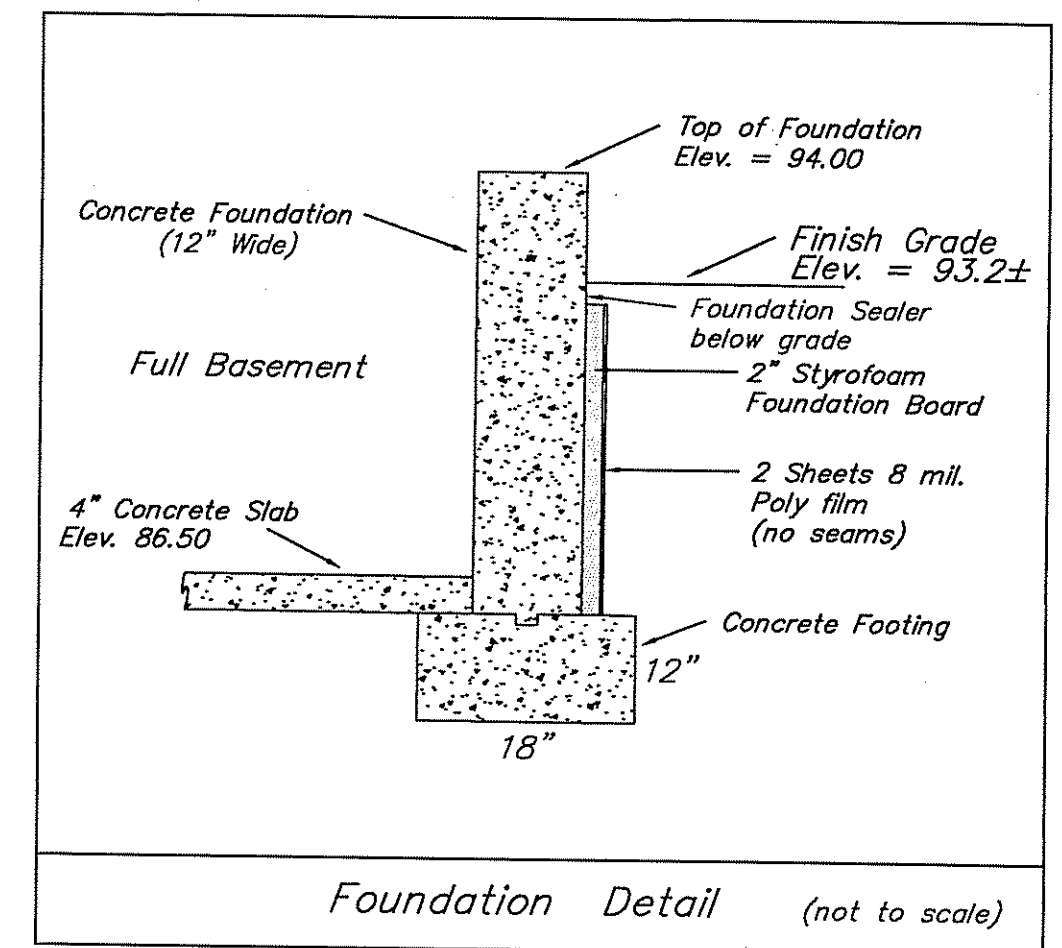
REVISIONS		
NO.	BY	DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
BALED HAY EROSION CHECK AND SILT FENCE COMBINED

John E. Rockwell
Professional Land Surveyor

JUNE 15, 1998

R.I. STANDARD 9.3.0



Proposed Onsite Wastewater Treatment System Detail Sheet

Prepared for: Christine Therrien
Date: June 17, 2008

Sheet 3 of 3

