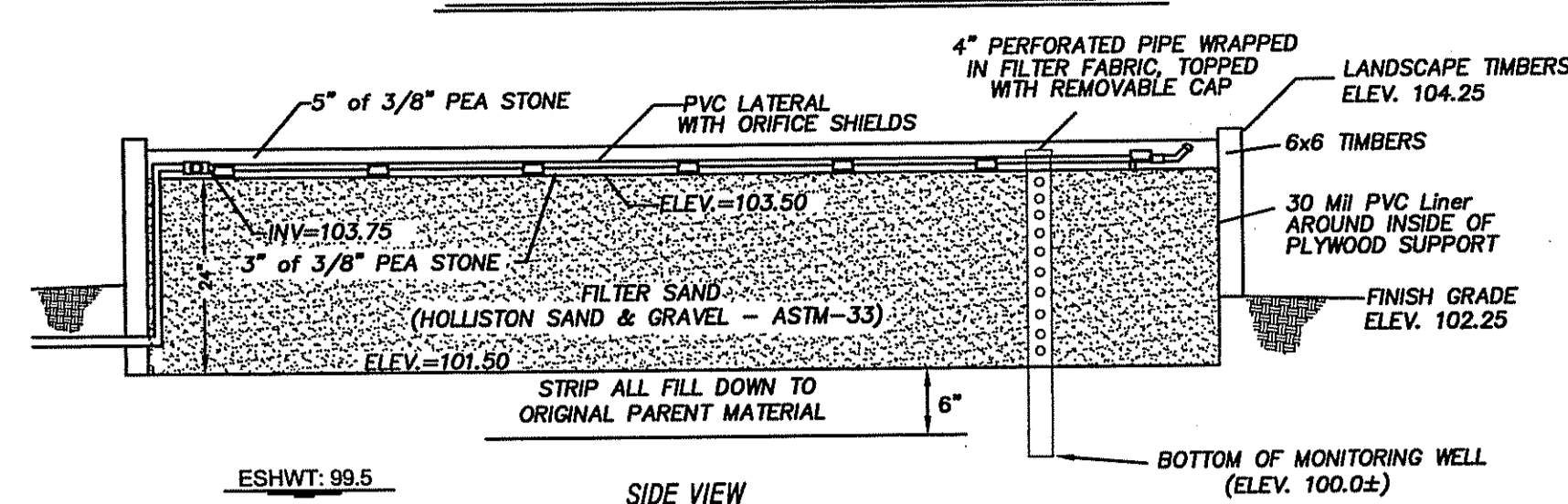


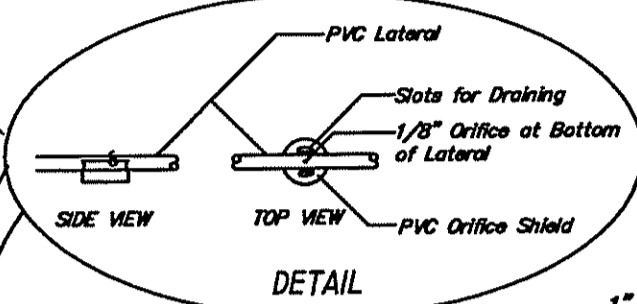
**BOTTOMLESS SAND FILTER NOT TO SCALE**



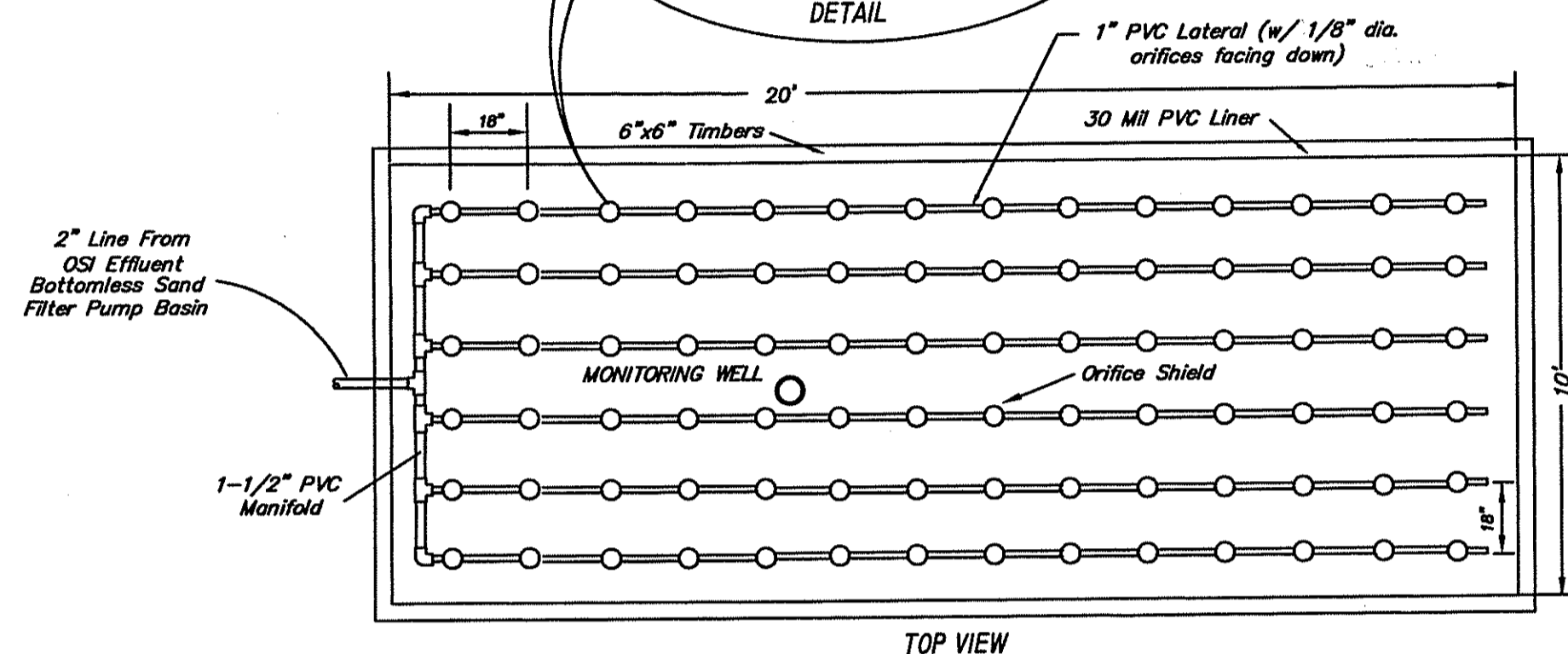
ESHWT: 99.5

SIDE VIEW

NOTE: TWO ORIFICES WITHOUT SLOTS TO BE PLACED ON TOP OF EACH LATERAL AT INTERVALS OF 1/3 AND 2/3 OF LATERAL LENGTH.



10'x20' BOTTOMLESS SAND FILTER  
2.3 GPD/SF LOADING RATE  
NUMBER OF ORIFICES PER LATERAL: 14  
TOTAL NUMBER OF ORIFICES: 84

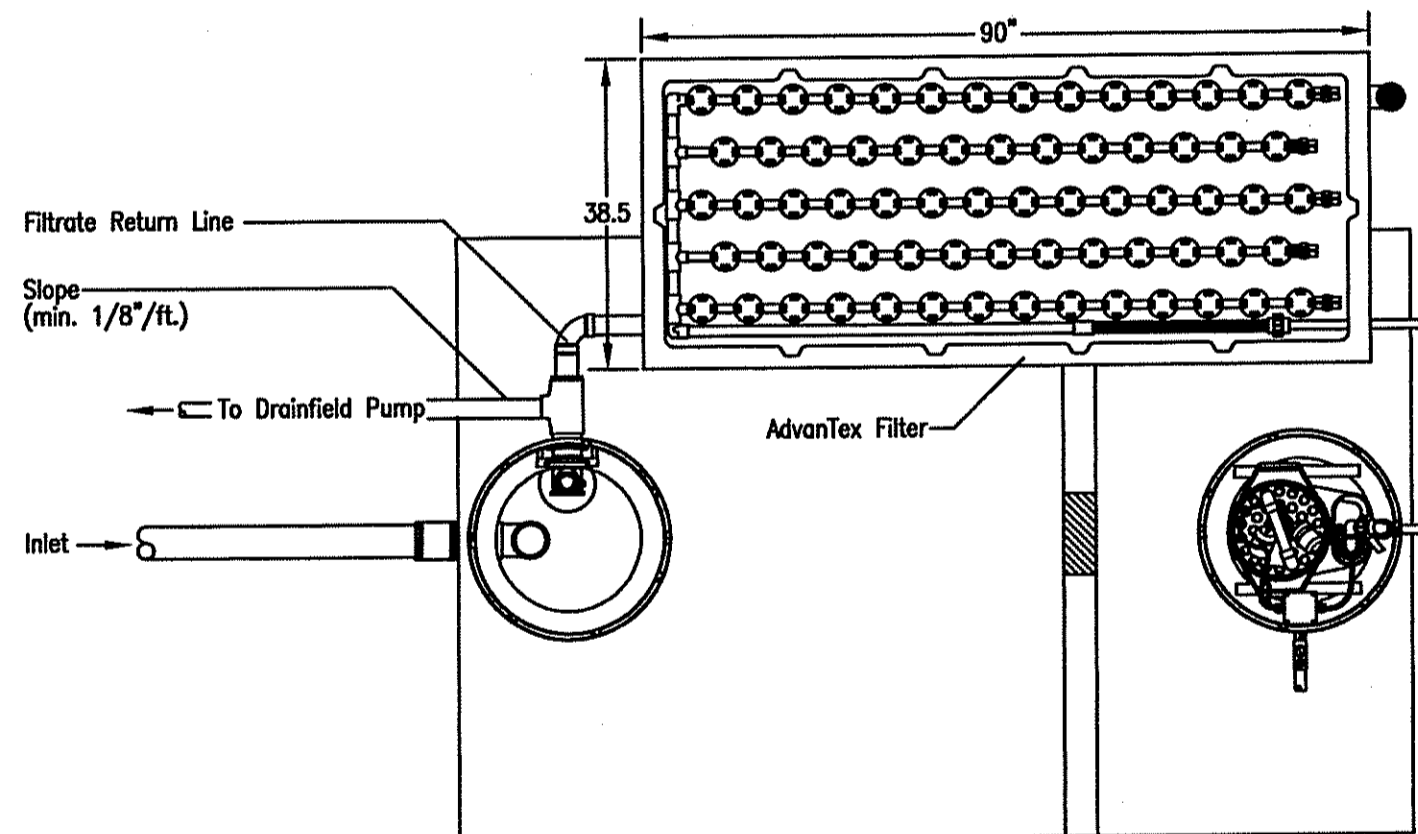


TOP VIEW

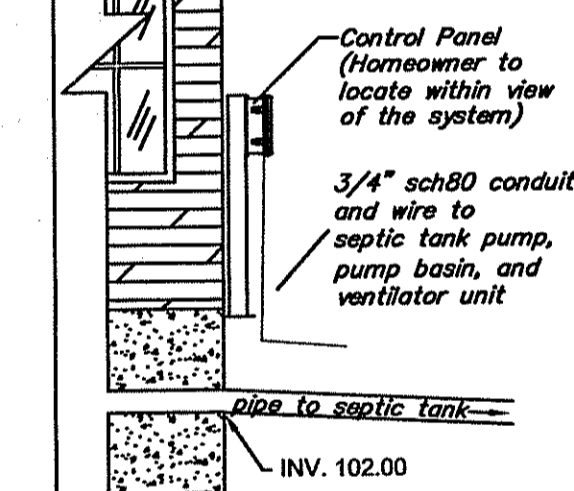
**RECIRCULATING EFFLUENT PUMP SYSTEM (REPS)  
(2 COMPARTMENT 2,000 GALLON SEPTIC TANK  
AX 20 ADVANTEX TEXTILE FILTER)**

NOT TO SCALE

**AdvanTex Treatment System  
AX 20 Series - Mode 3b**

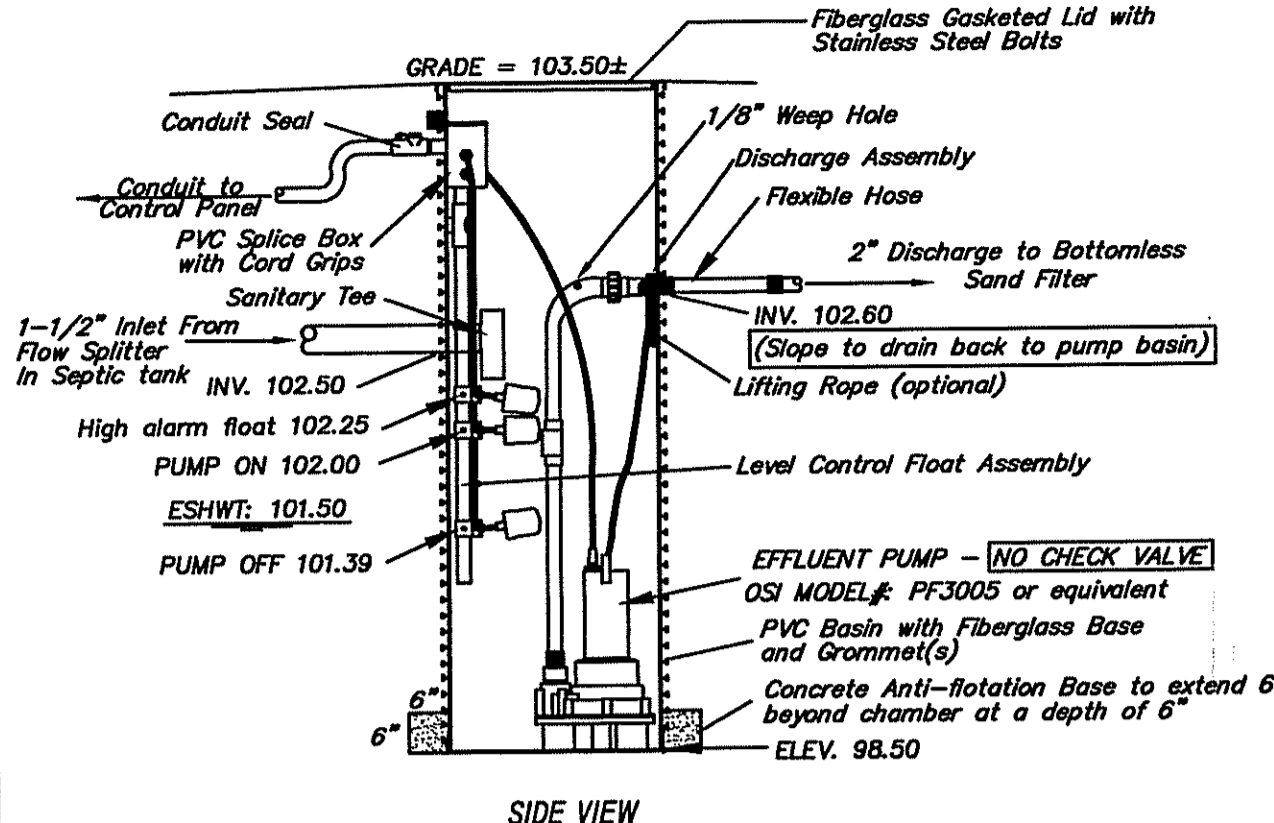


Top View



**BUOYANCY CALCULATIONS**  
ESHWT: ELEV. 100.50  
BOTTOM OF TANK: ELEV. 97.00  
BUOYANCY FORCE: 10,920 lbs±  
SEPTIC TANK WEIGHT: 12,100 lbs±  
ADVANTEX WEIGHT: 600 lbs±  
TOTAL COMBINED WEIGHT: 12,700 lbs±  
(NEGLECTS ADDITIONAL WEIGHT OF SOIL)  
STABILIZING NOT REQUIRED

**24" DIA. BOTTOMLESS SAND FILTER PUMP BASIN  
WITH EFFLUENT PUMP ASSEMBLY NOT TO SCALE**



SIDE VIEW

**SYSTEM COMPONENTS**

- 2,000 GALLON 2-COMPARTMENT CONCRETE SEPTIC TANK WITH PUMP VAULT AND RECIRCULATING SPLITTER VALVE AND W/O SIP3005 (6 STAGE) PUMP TANK.
- 5' DEEP - 24" DIAMETER PUMP BASIN.
- AX-20 ADVANTEX TEXTILE FILTER.
- 10' LONG x 20' WIDE BOTTOMLESS SANDFILTER
- ORENCO SYSTEMS, INC. CONTROL PANEL.

**TEST HOLE DATA**

DATE: 1-14-16  
BY OTHERS APPLICATION #9508-3299

TH1  
0'-12" Ap, SL, 10YR 3/3  
12'-29" Bw, SL, 10YR 5/6  
29'-77" C, LS, 2.5YR 7/3  
ESHWT: 28"  
NO LEDGE AT 98"

TH2  
0'-6" Ap, SL, 10YR 3/3  
6'-27" Bw, SL, 10YR 5/6  
27'-88" C, FS, 2.5YR 6/3  
ESHWT: 18"  
NO LEDGE AT 99"

SOIL CATEGORY: 6

**LEGEND**

- 100 --- 100 EXISTING CONTOURS
- 100 --- 100 PROPOSED CONTOURS
- TH1 TEST HOLE
- ▲ WETLAND FLAG
- STRAW BALES OR SILT FENCE AND LIMIT OF DISTURBANCE
- LIMIT OF DISTURBANCE

**OWTS NOTES**

- SYSTEM INSTALLATION TO BE SUPERVISED BY THE DESIGNER.
- ALL TREES AND/OR STUMPS WITHIN 10 FEET OF PROPOSED SYSTEM TO BE CLEARED.
- NO WELL EXISTS WITHIN 100' OF THE PROPOSED LEACHING SYSTEM.
- 5 FEET FROM SAND FILTER NOT TO BE LOWER THAN ELEVATION 354.00.
- ANY PRIVATE WELLS, EXISTING & PROPOSED, WITHIN 200' OF ISDS ARE SHOWN.
- ANY PUBLIC WELLS, EXISTING AND PROPOSED, WITHIN 500' OF ISDS ARE SHOWN.
- SEPTIC TANK TO BE A MINIMUM OF 75' FROM ALL WELLS.
- NO DRAINS OF ANY KIND SHALL BE WITHIN 25' UPGRADIENT OR 50' DOWNGRADIENT OR SIDE GRADIENT OF THE PROPOSED LEACHING SYSTEM.
- ALL SOIL AT LEAST 6"± BELOW EXISTING GRADE AT BOTTOMLESS SAND FILTER SHALL BE STRIPPED AND BACKFILLED WITH FILTER SAND.
- THE SEPTIC TANK SHALL BE A WATERTIGHT, 2,000 GALLON 2-COMPARTMENT TANK WITH 24" DIAMETER INLET AND OUTLET ACCESS RISERS. RISERS SHALL BE PVC WITH SECURE FIBERGLASS LIDS. IF CONCRETE TANK IS USED, ABS TANK ADAPTER SHALL BE CAST IN PLACE. TANK SHALL BE VACUUM TESTED WHEN CONSTRUCTED (W/CERTIFICATE) OR WATER TESTED/VACUUM TESTED ON SITE PRIOR TO ACCEPTANCE FROM THE ENGINEER.
- THE ADVANTEX-AX TREATMENT SYSTEM CONTAINS A PACKED BED FILTER THAT USES SPECIALLY DESIGNED TEXTILE MATERIALS WITHIN A PRE-ASSEMBLED FILTER UNIT.
- ALL PUMPS SHALL BE EQUIPPED WITH A HIGH WATER LEVEL VISIBLE AND AUDIBLE ALARM POWERED BY A CIRCUIT SEPARATE FROM THE PUMP POWER. THE ALARM SHALL BE LOCATED IN A NORMALLY OCCUPIED AREA OF THE DWELLING OR SHALL BE INSTALLED AT A LOCATION TO BE DESIGNATED BY THE HOMEOWNER.
- THE SEPTIC TANK SHALL BE PROVIDED WITH A PVC INLET TEE AND SCREENING PUMP VAULT IN THE OUTLET END. AN ACCESS RISER SHALL BE INSTALLED DIRECTLY ABOVE THE SCREENED PUMP VAULT AND INLET TEE.
- BOTTOMLESS SAND FILTER MEDIA: HOLLISTON SAND & GRAVEL ASTM-33 SAND, LESS THAN 1% PASSING THE SIEVE WITH AN EFFECTIVE SIZE OF .25mm-.45mm AND WITH A UNIFORMITY COEFFICIENT OF 2.0±.
- IF CONTRACTOR ENCOUNTERS ANY CONDITIONS DURING CONSTRUCTION WHICH INDICATE THE SYSTEM CANNOT BE INSTALLED IN ACCORDANCE WITH THE APPROVED DESIGN, OR FIND CONFLICTING INFORMATION ON THE PLAN, CONSTRUCTION SHALL CEASE AND DESIGNER BE NOTIFIED.
- THE DESIGNER IS NOT RESPONSIBLE FOR ANY NEGLIGENT ACT OF OMISSION OF AN ISDS USER, INCLUDING BUT NOT LIMITED TO, FAILURE TO PROPERLY USE AND MAINTAIN THE SYSTEM, WHICH CAUSES DAMAGE TO THE SYSTEM.
- LOCAL SUPPLIER OF OSI EQUIPMENT: ATLANTIC SOLUTIONS, 2417 EAST MAIN ROAD, PORTSMOUTH, RI 02871 TEL. (401) 293-0176
- 5 FEET FROM SAND FILTER NOT TO BE LOWER THAN ELEVATION 101.50.
- SITE IS LOCATED WITHIN THE PAWUUCKET CUMBERLAND DRINKING WATER SUPPLY WATERSHED AREA.

**SYSTEM SIZING:**

4 BEDROOMS: 115 GPD x 4 = 460 GPD  
SOIL CATEGORY: 6  
APPLICATION RATE: 2.3 GPD/SF  
AREA REQUIRED: 460/2.3 = 200 SF

**TIMER INFO:**

SET ADVANTEX TIMER TO 24 DOSES/DAY  
460 GPD/24 DOSES/DAY = 19.16 GAL/DOSE  
19.16/23.1 GPM = .83 MIN.  
TOTAL PUMP RUN TIME = 19.92 MIN./DAY  
TOTAL PUMP OFF TIME = 1380.83 MIN./DAY  
TIME OFF PER CYCLE = 59.17 MIN.  
TIME ON PER CYCLE = 0.83 MIN.

**DOSING RATE:**

19.16 GAL/DOSE  
PUMP CHAMBER CAPACITY = 23.5 GAL./FT OR 1.96 GAL./INCH  
PUMP CHAMBER DEPTH @ 19.16 GAL = .81 FEET  
DOSE PER ORIFICE = 460 GPD/(24 DOSES/DAY)/84 ORIFICES = .23 GAL./ORIFICE/DOSE

**RAIN GARDEN**

**TREATMENT**

Rain garden to be 8" deep with a 2-4 inch amended soil layer (50/50 mixture of the excavated native soils and mature organic compost) and a 2-3 inch layer of non-dyed aged shredded hardwood mulch.

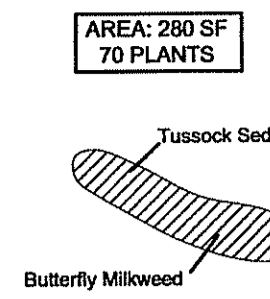
**CONSTRUCTION**

- A crushed stone entrance should be installed at the inflow to prevent channeling.
- A berm to detain stormwater should be constructed along the downhill side of the rain garden, perpendicular to the slope of the lawn.
- Be sure that the soil within the rain garden area does not become compacted by construction activities (i.e. heavy machinery). If soil becomes severely compacted it may need to be tilled and amended to maintain proper

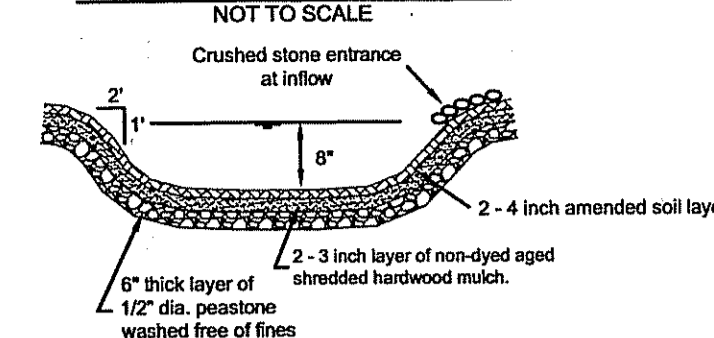
**MAINTENANCE**

- The rain garden shall be inspected following at least the first two precipitation events of at least 1.0 inch to ensure that the system is functioning properly. Thereafter, the rain garden shall be monitored and maintained to assure proper functioning, plant growth and survival. Plants shall be replaced on an as-needed basis during the growing season.
- Silt/accumulation shall be removed from the rain garden when the accumulation exceeds one inch, or when water ponds on the surface of the rain garden for more than 48 hours. The top few inches of material shall be removed and shall be replaced with fresh soil mixture and mulch.
- Pruning or replacement of woody vegetation shall occur when dead or dying vegetation is observed.
- Soil erosion gullies shall be repaired when they occur.
- Fertilizer or pesticides shall not be applied to plants within rain gardens.
- Perennial plants and ground covers shall be replaced as necessary to maintain adequate vegetated ground cover. Annual plants may also be used to maintain ground cover.

**RAIN GARDEN PLANTING DETAIL NOT TO SCALE**



**RAIN GARDEN CROSS-SECTION NOT TO SCALE**



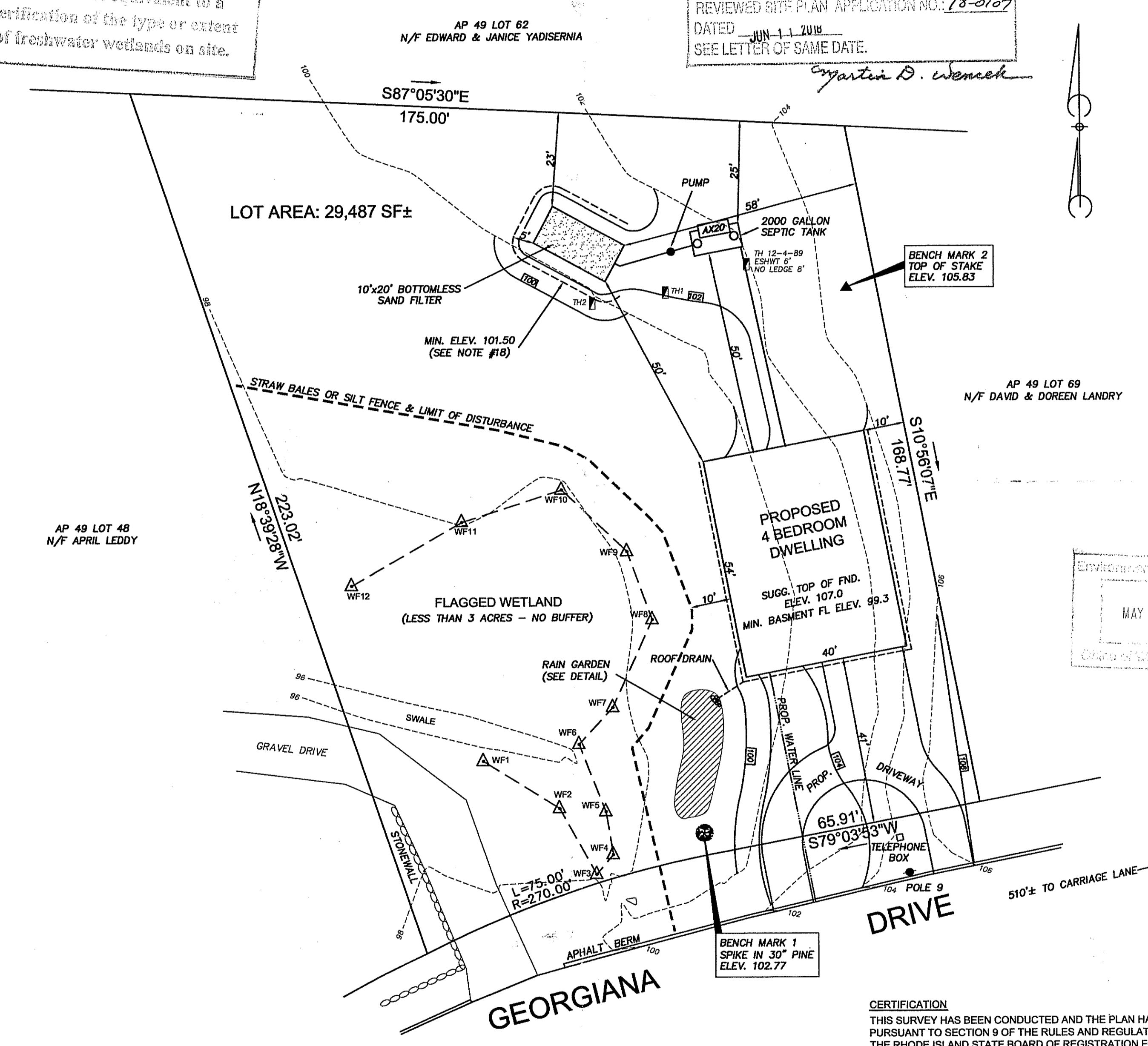
AREA: 280 SF  
70 PLANTS

Seed rain garden with "New England Deterioration Basin and Most Site Max" as available (or equal) from Allen's Seed Store, Exeter, RI.

Interplant with Tussock Sedge & butterfly Milkweed @ 1 plant per 4 square feet.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
REVIEWED SITE PLAN APPLICATION NO. 18-0107  
DATED JUN 11 2018  
SEE LETTER OF SAME DATE.  
Cynthia D. Wemel

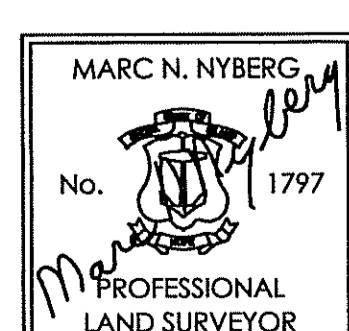


**ONSITE WASTEWATER TREATMENT SYSTEM & WETLANDS PLAN**  
for  
**ESTATE OF ANTHONY LAWRENCE**  
PLAT 49, LOT 68  
GEORGIANA DRIVE  
CUMBERLAND, RHODE ISLAND  
MARCH, 2018



**CERTIFICATION**  
THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:  
LIMITED CONTENT BOUNDARY SURVEY: CLASS IV  
TOPOGRAPHIC ACCURACY T-4  
STATEMENT OF PURPOSE  
THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND THE PREPARATION OF THE PLAN IS AS FOLLOWS: SEPTIC SYSTEM DESIGN

By: *Marc N. Nyberg*  
MARC N. NYBERG License No. 1797 COA No.: A52



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