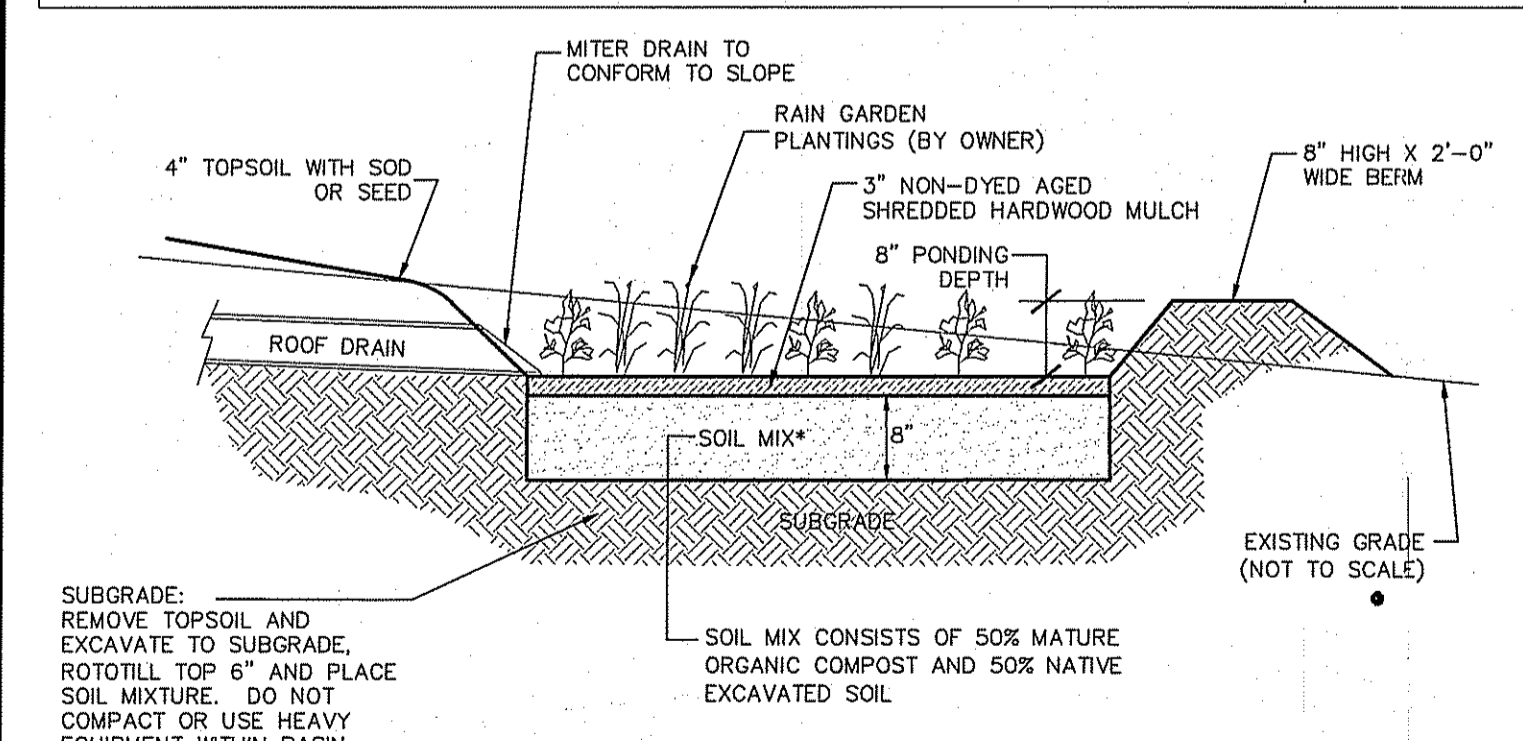
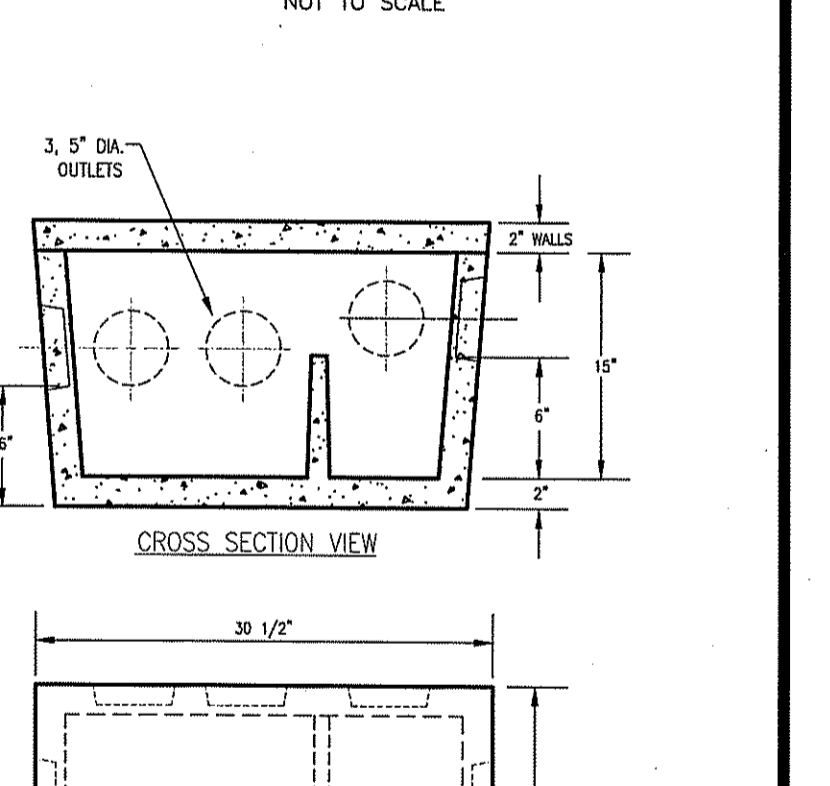
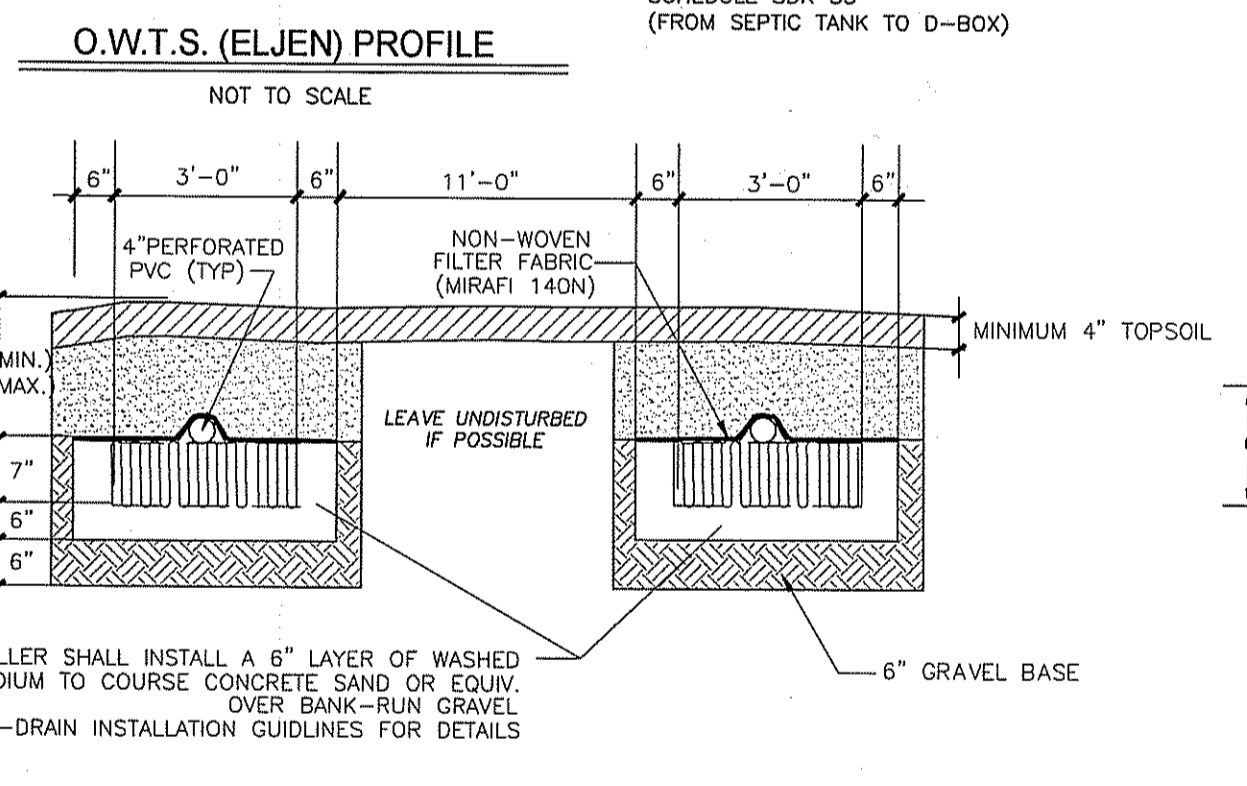
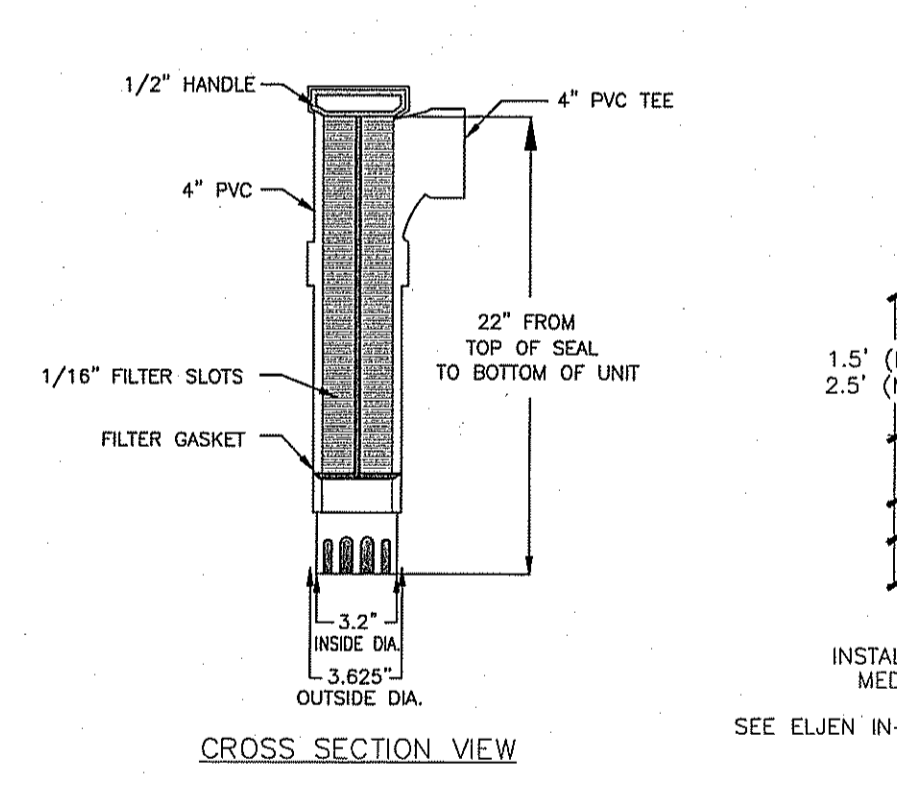
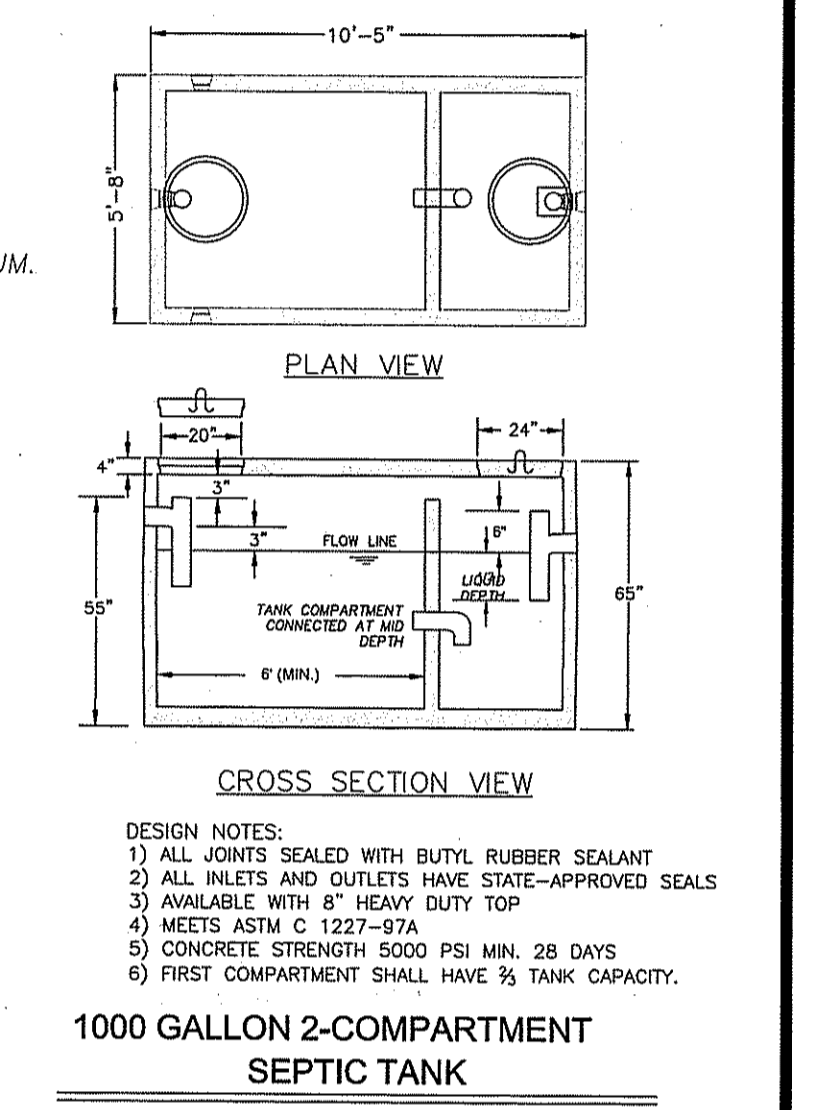
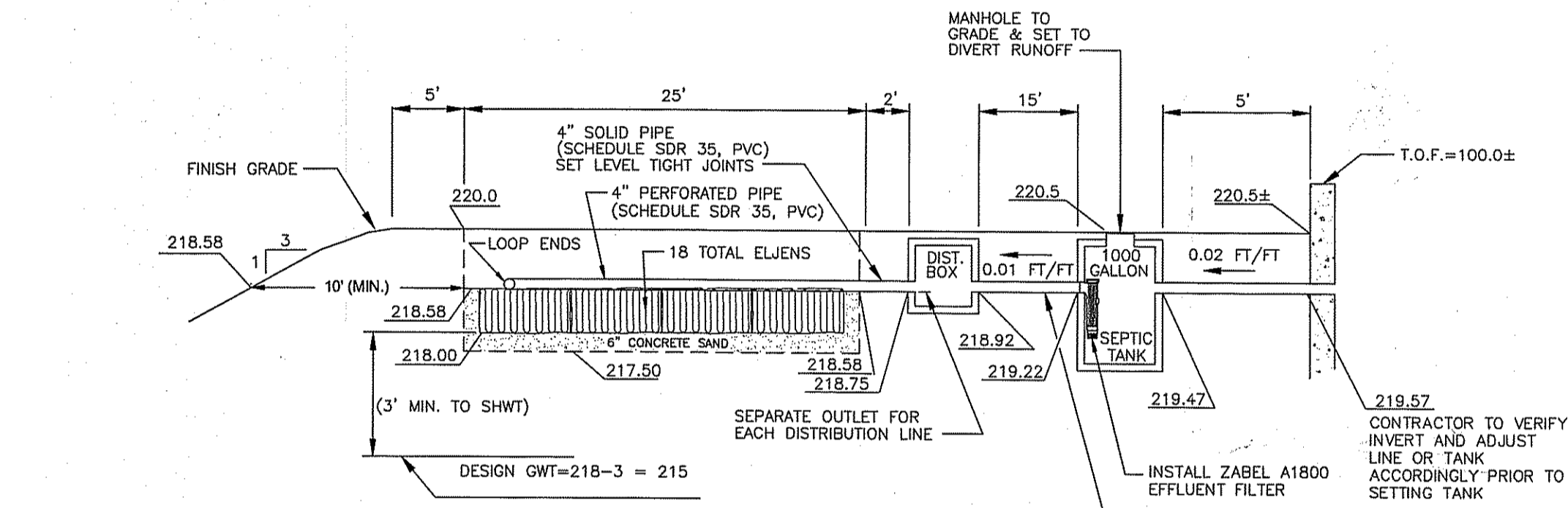
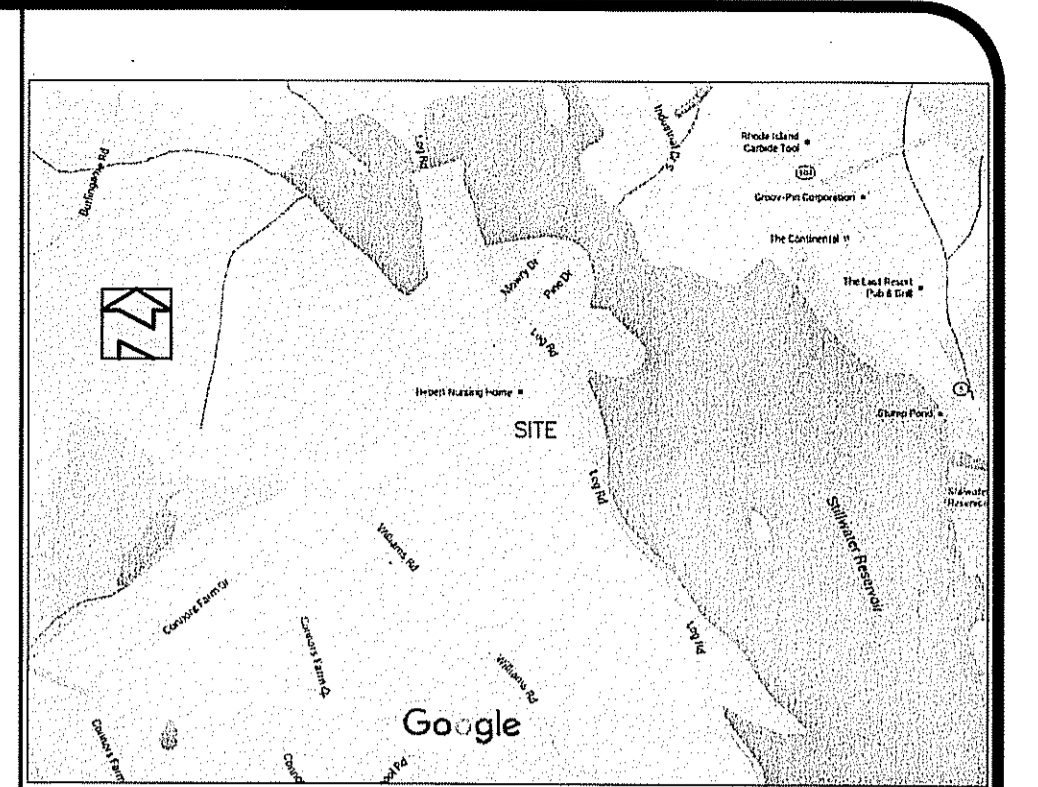


**DESIGN CALCULATION**

- EXIST 3 BED X 115 GALLONS PER BED/DAY = 345 GALLONS PER DAY
- DESIGN LOADING RATE SOIL CAT GM = 0.70 GAL/S.F./DAY
- 345 GPD / 0.70 GAL/S.F./DAY = 493 S.F. LEACHING AREA REQUIRED
- 493 S.F. / 28 S.F. PER ELJEN UNIT = 18 ELJENS REQ'D
- TOTAL AREA PROVIDED = 504 S.F. > 493 S.F.

- OWTS NOTES:**
- ALL DESIGN, CONSTRUCTION AND MAINTENANCE REQUIREMENTS, WHETHER NOTED HEREON OR NOT, SHALL BE IN CONFORMANCE WITH RULES AND REGULATIONS ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ONSITE WASTEWATER TREATMENT SYSTEMS, JANUARY 1, 2008 AND ALL AMENDMENTS, BY THE RHODE ISLAND DEPT. OF ENVIRONMENTAL MANAGEMENT.
  - STRIP LEACHING AREA OUT TO 5 FEET AROUND ENTIRE PERIMETER AND EXCAVATE DOWN TO ELEVATION 215.00, REMOVING ALL TREES, BRUSH, TOPSOIL, SUBSOIL, UNDESIRABLE MATERIAL AND SOIL CONTAINING FINES. REPLACE WITH GRAVEL IF REQUIRED AS SPECIFIED IN RIDEM REGULATIONS.
  - INSTALLER MUST ASSURE THAT BOTTOM AND SIDES OF EXCAVATION FOR THE LEACHFIELD ARE NOT COMPACTED OR SMEARED.
  - ALL TREES, STUMPS, AND BRUSH SHALL BE REMOVED WITHIN 10 FEET OF THE SYSTEM.
  - MAINTAIN INVERT ELEVATION OF 218.58 FOR 10 FEET AROUND SYSTEM.
  - THERE ARE NO KNOWN PRIVATE WELLS OR DRAINS EXIST, OR PROPOSED LOCATED WITHIN 200 FEET OF THE OWTS EXCEPT AS SHOWN AND NO KNOWN PUBLIC WELLS (EXIST. & PROP.) LOCATED WITHIN 500 FEET OF THE PROPOSED SIDS.
  - THERE ARE NO KNOWN SUBSURFACE DRAINS, EXISTING OR PROPOSED, WITHIN 50 FEET OF THE PROPOSED OWTS.
  - ALL PVC PIPE SHALL BE 4" DIA. SDR 35 OR EQUIVALENT, UNLESS NOTED OTHERWISE.
  - THE DISTRIBUTION BOX SHALL HAVE A MINIMUM BOTTOM AREA OF 3 SQUARE FEET.
  - NO VEHICULAR TRAFFIC IS ALLOWED OVER THE LEACHFIELD.
  - THE DISCHARGE OF ANY WATER TREATMENT BACKFLOW SYSTEM OR GARBAGE DISPOSAL USE VOIDS THE MANUFACTURES WARRANTY ON THE SEPTIC SYSTEM.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC. 12, 2016 FILE # 16-0230  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

**ROOF RAIN GARDEN SIZING CALCULATIONS**

- Impervious Roof & Driveway Area = 1,672 s.f.
- Soil type: Sand
- Design Coefficient of Permeability = 3.5 ft/day
- Intensity = 1-inch
- Water Quality Volume Needed: 2,785 s.f. x 0.083 (1") = 231 c.f. Say 235 c.f.
- Proposed Rain Garden Depth = 8-inches or 0.7-foot

Surface Area at Bottom of the Garden:

$$A(t) = (WQv)(df) / [(t)(hf + df)(t)]$$

Where:

- A(t) = surface area of the filter bed (ft²)
- df = Filter bed depth (ft) = 1.5 ft
- K = coefficient of permeability of the filter media (use 3.5 ft/day)
- hf = Average height of water above the dry swale (ft) (use 0.7 ft)
- tf = design filter bed drain time (assume 1 day for design purposes)

$$A(t) = (235)(1.5) / [(1.0)(0.7 + 1.0)(1.0)]$$

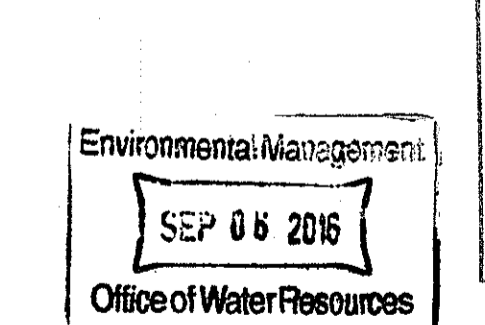
$$A(t) = 207 \text{ s.f. use } 210 \text{ s.f.}$$

- Maintenance Notes:**
- THE RAIN GARDEN SHALL BE INSPECTED FOLLOWING AT LEAST THE FIRST TWO PRECIPITATION EVENTS AT 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/SEDIMENT 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 VEGETATION SHALL OCCUR WHEN DEAD OR DYING VEGETATION IS OBSERVED.
  - GULLIES SHALL BE REPAIRED WHEN THEY OCCUR.
  - FERTILIZER OR PESTICIDES SHALL NOT BE APPLIED TO PLANTS WITHIN RAIN GARDENS.
  - SWALES SHALL BE INSPECTED ANNUALLY AND SHOULD BE INSPECTED AFTER LARGE STORM EVENTS.
  - ERODED SIDE SLOPES AND CHANNEL BOTTOMS SHALL BE STABILIZED AS NECESSARY.

**Rain Garden Plantings:**

LATIN NAME	COMMON NAME	SIZE	SPACING
<i>GRASSES / PERENNIALS</i>			
<i>FESTUCA OVINE GLAUCA</i>	BLUE FESCUE	1 GAL	18" O.C.
<i>PANICUM VIRGATUM</i>	SWITCHGRASS	1 GAL	18" O.C.
<i>PENNISETUM ALOPECUROIDES</i>	FOUNTAIN GRASS	1 GAL	18" O.C.
<i>RUDECKIA HIRTA</i>	BLACK EYED SUSAN	1 GAL	18" O.C.
<i>SHRUBS</i>			
<i>CEPHALANTHUS OCCIDENTALIS</i>	COMMON BUTTBONBUSH		
<i>COMPTONIA PEREGRINA</i>	SWEET FERN		
<i>LEDUM GROENLANDICUM</i>	LABRADOR TEA		
<i>PHOTINIA MELANOCARPA</i>	BLACK CHOKEBERRY		

\* FINAL PLANTINGS TO BE CHOSEN AND INSTALLED BY OWNER OR OWNER REPRESENTATIVE. REFERENCE THE RHODE ISLAND COASTAL PLANT GUIDE AT [www.uri.edu/csls/cscoc/coastalplants/CoastalPlantGuide](http://www.uri.edu/csls/cscoc/coastalplants/CoastalPlantGuide).



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site-DISTRIBUTION BOX DB-5 W/ BAFFLE

**OWTS SITE PLAN & DETAILS**  
**OWTS DESIGN**  
A.P. 38 LOT 12  
216 LOG ROAD SMITHFIELD, RI

PREPARED FOR:  
ROBERT RODEO  
7 AUSTIN AVE #14 SUITE 3A GREENVILLE, RI 02828

ADVANCED CIVIL DESIGN,