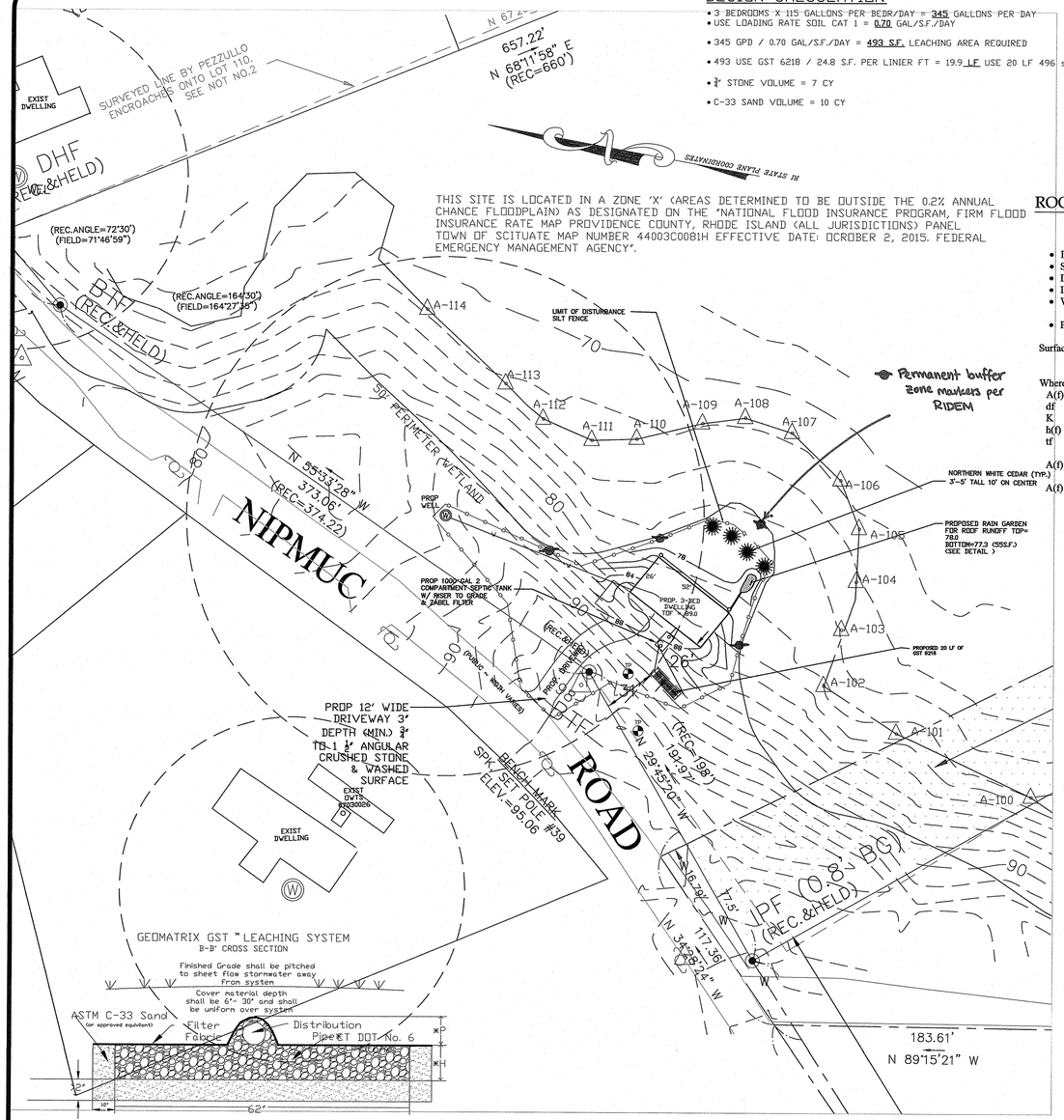
## DESIGN CALCULATION

- 3 BEDROOMS X 115 GALLONS PER BEDR/DAY = 345 GALLONS PER DAY
- USE LOADING RATE SOIL CAT 1 = 0.70 GAL/S.F./DAY
- 345 GPD / 0.70 GAL/S.F./DAY = 493 S.F. LEACHING AREA REQUIRED
- 493 USE GST 6218 / 24.8 S.F. PER LINIER FT = 19.9 LF USE 20 LF 496 sF
- ¾" STONE VOLUME = 7 CY
- C-33 SAND VOLUME = 10 CY

## LEGEND

- 270 — EX. CONTOUR
- ZONE SETBACK
- ABUTTER PROPERTY LINE
- OWNER PROPERTY LINE
- 270 — PROPOSED CONTOUR
- TP WET SEASON EVALUATION PERCOLATION TEST
- LEDGE PROBES
- WETLAND FLAG




### GEOMATRIX GST "LEACHING SYSTEM
B-B' CROSS SECTION




*H= 6"
(GST6206)
12" (GST6212)
18" (GST6218)
24"(GST6224)
30"(GST6230)
36"(GST6236)

*P= 2' - 5.5'

*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications

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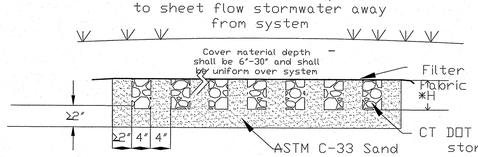
Patents Pending

### GEOMATRIX GST LEACHING SYSTEM
A-A' CROSS SECTION




GEOMATRIX ST LEACHING SYSTEM
A-A' Cross Section
Geomatrix Systems, LLC., Old Saybrook, CT 860-510-0730

*ZONING REGULATIONS*

*ZONED RR-120*
*MIN. LOT AREA – 120,000 SQ. FT.*
*MIN. FRONTAGE – 300 FT.*

*SETBACKS*
*FRONT YARD – 50 FT.*
*SIDE YARD – 35 FT.*
*REAR YARD – 60 FT.*

## ROOF RAIN GARDEN SIZING CALCULATIONS

- Impervious Roof Area = 1,352 s.f.
- Soil type: Sand
- Design Coefficient of Permeabiltiy = 3.5 ft/day
- Intensity = 1-inch
- Water Quality Volume Needed:
  1352 s.f. x 0.083 (1") = 113 c.f.
- Proposed Rain Garden Depth = 8-inches or 0.7-feet

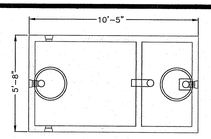
Surface Area at Bottom of the Garden:

$$A(f) = (WQv)(df) / [(k)(hf + df)(tf)]$$

Where:
- A(f) = 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)
- h(f) = 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)

$$A(f) = (113)(1.5) / [(3.5)(0.7 + 1.0)(1.0)]$$

A(f) = 28.5 s.f. use 55 s.f.




CROSS SECTION VIEW

DESIGN NOTES:
1) ALL JOINTS SEALED WITH BUTYL RUBBER SEALANT
2) ALL INLETS AND OUTLETS HAVE STATE-APPROVED SEALS
3) AVAILABLE WITH 8" HEAVY DUTY TOP
4) MEETS ASTM C 1227-97A
5) CONCRETE STRENGTH 5000 PSI MIN. 28 DAYS
6) FIRST COMPARTMENT SHALL HAVE ⅔ TANK CAPACITY.

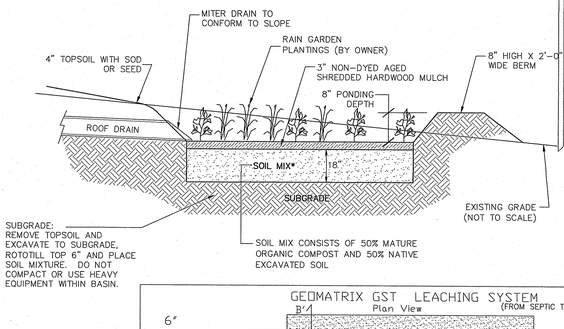
### 1,000 GALLON 2-COMPARTMENT SEPTIC TANK

JOLLY PRECAST OR EQUAL
NOT TO SCALE

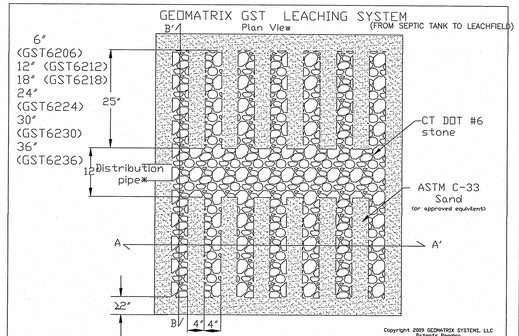
### STORMWATER TREATMENT PRACTICE

| IMPERVIOUS SURFACE | AREA | METHOD | AREA REQ'D | AREA PROVIDED |
|---|---|---|---|---|
| ROOF TOP | 1,352 S.F. | RAIN GARDEN | 28.5 S.F. | 55 S.F. |

* PER SOIL EVALS FSL




### GEOMATRIX GST LEACHING SYSTEM
Plan View (FROM SEPTIC TANK TO LEACHFIELD)




*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications

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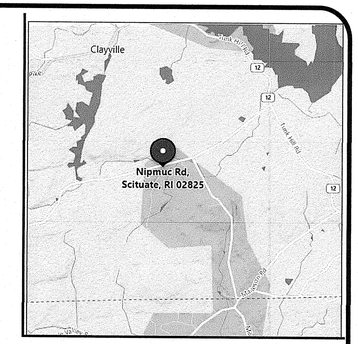
Patents Pending

GEOMATRIX ST LEACHING SYSTEM
Plan View
Geomatrix Systems, LLC., Old Saybrook, CT 860-510-0730

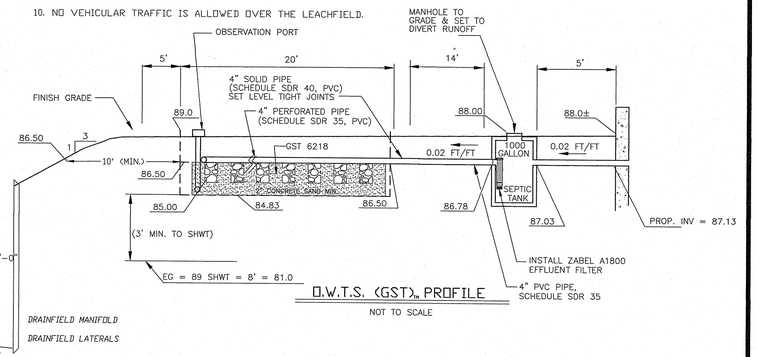
| Scale | None | REV. 0 (04/09/07) |
|---|---|---|
| Date | 6/28/2007 | ACAD file: ENV ST LS PLAN VIEW.DWG |
| Drawn By: EDP | | Sheet 1 OF 3 |

## OWTS NOTES:

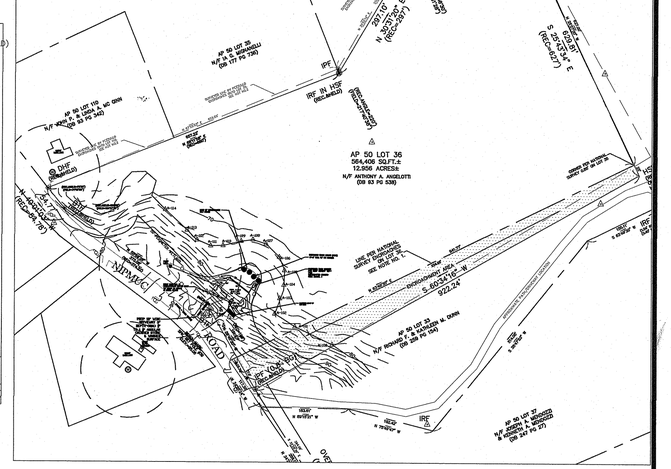
1. ALL DESIGN, CONSTRUCTION, AND MAINTENANCE REQUIREMENTS, WHETHER NOTED HEREON OR NOT, SHALL BE IN CONFORMANCE WITH RULES AND REGULATIONS ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ONSITE WASTEWATER TREATMENT SYSTEMS", NOVEMBER 25, 2018 AND ALL AMENDMENTS, BY THE RHODE ISLAND DEPT. OF ENVIRONMENTAL MANAGEMENT.
2. STRIP LEACHING AREA OUT TO 0 FEET AROUND ENTIRE PERIMETER AND EXCAVATE DOWN TO ELEVATION 84.83, REMOVING ALL TREES, BRUSH, TOPSOIL, SUBSOIL, UNDESIRABLE MATERIAL AND SOIL CONTAINING FINES. REPLACE WITH GRAVEL IF REQUIRED AS SPECIFIED IN RIDEM REGULATIONS.
3. INSTALLER MUST ASSURE THAT BOTTOM AND SIDES OF EXCAVATION FOR THE LEACHFIELD ARE NOT COMPACTED OR SMEARED.
4. ALL TREES, STUMPS, AND BRUSH SHALL BE REMOVED WITHIN 10 FEET OF THE SYSTEM.
5. MAINTAIN INVERT ELEVATION OF 86.50 FOR 10 FEET AROUND SYSTEM.
6. 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 ISDS.
7. THERE ARE NO KNOWN SUBSURFACE DRAINS, EXISTING OR PROPOSED, WITHIN 50 FEET OF THE PROPOSED OWTS.
8. ALL PVC PIPE SHALL BE 4" DIA. SDR 35 OR EQUIVALENT, UNLESS NOTED OTHERWISE.
9. THE DISTRIBUTION BOX SHALL HAVE A MINIMUM BOTTOM AREA OF 3 SQUARE FEET.
10. NO VEHICULAR TRAFFIC IS ALLOWED OVER THE LEACHFIELD.




LOCUS MAP NOT TO SCALE




O.W.T.S. (GST)₁ PROFILE
NOT TO SCALE


AP 50 LOT 38
864,408 SQ.FT.±
12.956 ACRES±
N/F ANTHONY A. ANGELOTTI
(BK 83 PG 538)
NIPMUC
ROAD
PROP. 1000 GAL 2 COMPARTMENT SEPTIC TANK W/ RISER TO GRADE & ZABEL FILTER
PROP. 3-BED DWELLING TOP = 89.0
PROPOSED RAIN GARDEN FOR ROOF RUNOFF TOP=79.0 BOTTOM=77.3 (SSSF.) (SEE DETAIL )
PROPOSED 20 LF OF GST 6218
PROP 12' WIDE DRIVEWAY 3" DEPTH (MIN.) ¾" TO 1 ½" ANGULAR CRUSHED STONE & WASHED SURFACE
EXIST DWTS #P630026
EXIST DWELLING
BENCH MARK SPK SET POLE ELEV.=95.06 #39
(REC=214.5')
S 25°33'37" E
(REC=214.5')
N 32°57'10" W
(REC=231')
S 60°57'10" W
(REC=204.97')
S 60°57'10" W
822.24'
N 29°02'50" E
(REC=204.97')
N 60°57'10" E
(REC=204.97')
N 60°57'10" E
822.24'
N 29°02'50" E
(REC=204.97')
S 29°02'50" W
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