

**NORBERT A. THERIEN**  
 No. 1739  
 PROFESSIONAL LAND SURVEYOR  
 42 Hamlet Ave., Woonsocket, R.I.  
 (401) 789-7779

**NATIONAL Surveyors-Developers Inc.**

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 REGISTRATIONS FOR PROFESSIONAL LAND SURVEYORS NOVEMBER 25, 2015 AS FOLLOWS:

TYPE OF SURVEY: COMPREHENSIVE BOUNDARY SURVEY  
 MEASUREMENT SPECIFICATION: CLASS 1 STANDARD

PURPOSE OF SURVEY: BOUNDARY SURVEY & EXISTING CONDITIONS PLAN

BY: *Norbert A. Therien*  
 NORBERT A. THERIEN, PLS NO. 1739

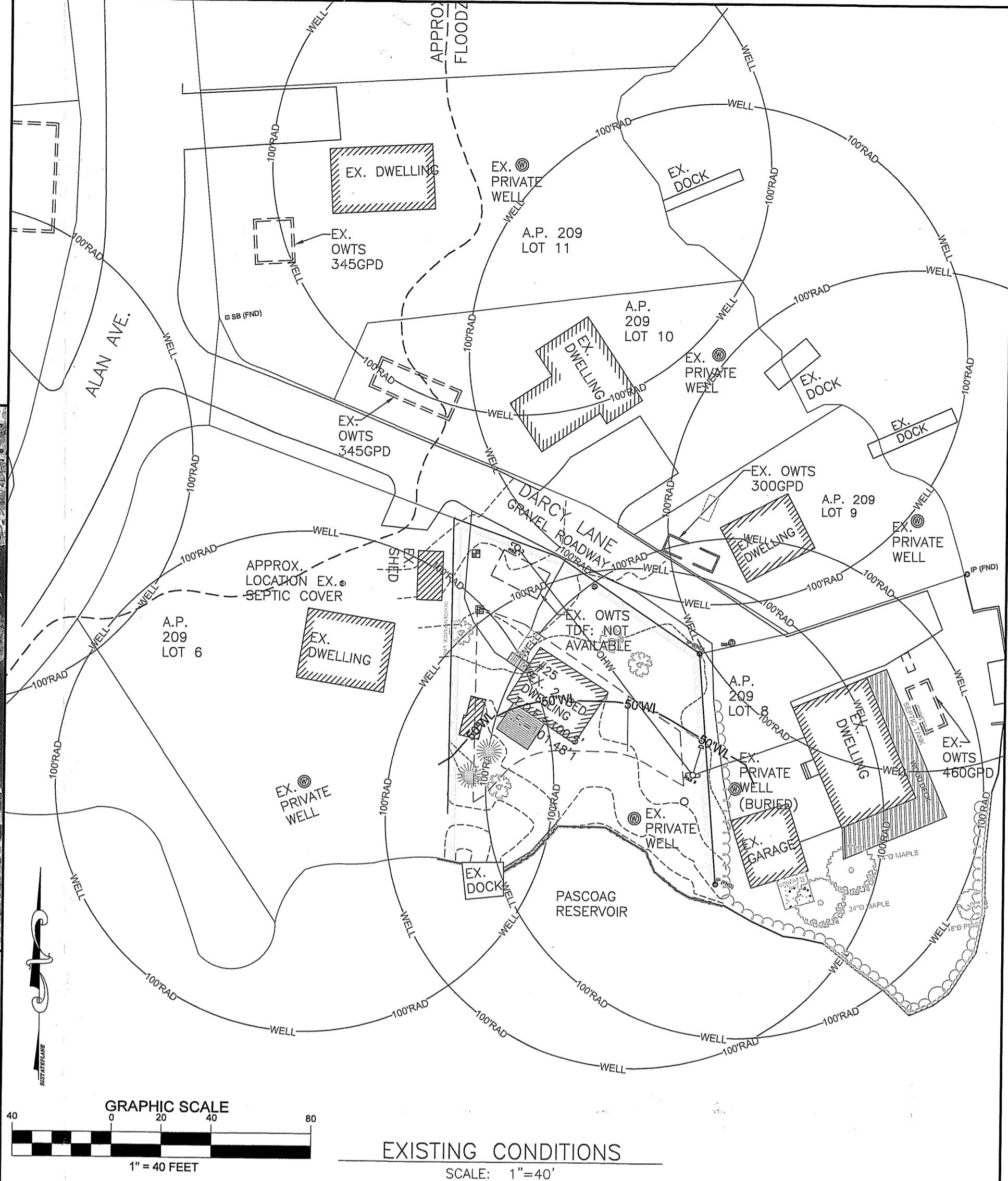


LOCUS MAP  
 NOT TO SCALE

LEGEND

---	SUBJECT PROPERTY LINE	---	APPROX. BULKHEAD	---	APPROXIMATE BULKHEAD
---	ABUTTER LINE	---	BH	---	BASEMENT
---	STONEWALL	---	CONC.	---	CONCRETE
○	IRON PIN	EL.	ELEVATION	EL.	ELEVATION
□	BOUND	EX.	EXISTING	EX.	EXISTING
⊙	DRILL HOLE	F.F.	FINISHED FLOOR	F.F.	FINISHED FLOOR
⊕	UTILITY POLE	F.G.	FINISHED GRADE	F.G.	FINISHED GRADE
---	EX. CONTOUR	OPD	GALLONS PER DAY	OPD	GALLONS PER DAY
---	EX. OVERHEAD WIRE	INV.	INVERT	INV.	INVERT
---	50' PERIMETER WETLAND	MAX.	MAXIMUM	MIN.	MINIMUM
---	SOIL EVALUATION HOLE	REQ'D	REQUIRED	TDF	TOTAL DAILY FLOW
⊙	EXISTING WELL	T.O.F.	TOP OF FOUNDATION	TYP.	TYPICAL
⊙	SILT SOCK				
---	LIMIT OF DISTURBANCE				
---	PRO. CONTOUR				
---	PRO. ELECTRIC CONDUIT				
---	EX. WELL 50'RADIUS				
---	EX. WELL 75'RADIUS				
---	EX. WELL 100'RADIUS				
---	PRO. OWTS GRAV. SEWER LINE				
---	PRO. OWTS FORCEMAIN				

**REFERENCES & NOTES:**  
 1. PROPERTY LINES INFORMATION OBTAINED FROM SURVEY PERFORMED BY NATIONAL LAND SURVEYORS-DEVELOPERS, INC.  
 2. SITE TOPOGRAPHY AND EXISTING CONDITIONS OBTAINED FROM SURVEY PERFORMED BY NATIONAL LAND SURVEYORS-DEVELOPERS, INC.  
 3. AERIAL IMAGERY OBTAINED FROM RIGIS DATA  
 4. FEMA FLOOD INSURANCE RATE MAP NO. 44007C0130C, PANEL 130 OF 451 IN PROVIDENCE COUNTY, EFFECTIVE DATE MARCH 2, 2009



**VARIANCES REQUESTED:**  
 1. 6.33E. DEPTH TO GROUNDWATER FROM ORIGINAL GROUND SURFACE - REQUIRED DEPTH TO THE SEASONAL HIGH GROUNDWATER IS 24" ON LOTS LESS THAN 20,000 SQUARE FEET.  
 THE PROPOSED LEACHFIELD IS LOCATED IN AN AREA WITH AN 18" SEASONAL HIGH WATER TABLE ON A LOT OF LESS THAN 20,000 SQUARE FEET.

**DRAINAGE CALCULATIONS**

EXISTING IMPERVIOUS AREA	EXISTING HOUSE ROOF	900 SF
EXISTING SHED ROOF	EXISTING SHED ROOF	100 SF
TOTAL	TOTAL	900 SF
PROPOSED IMPERVIOUS AREA	PRO. HOUSE ROOF	1,870 SF
TOTAL	TOTAL	1,870 SF

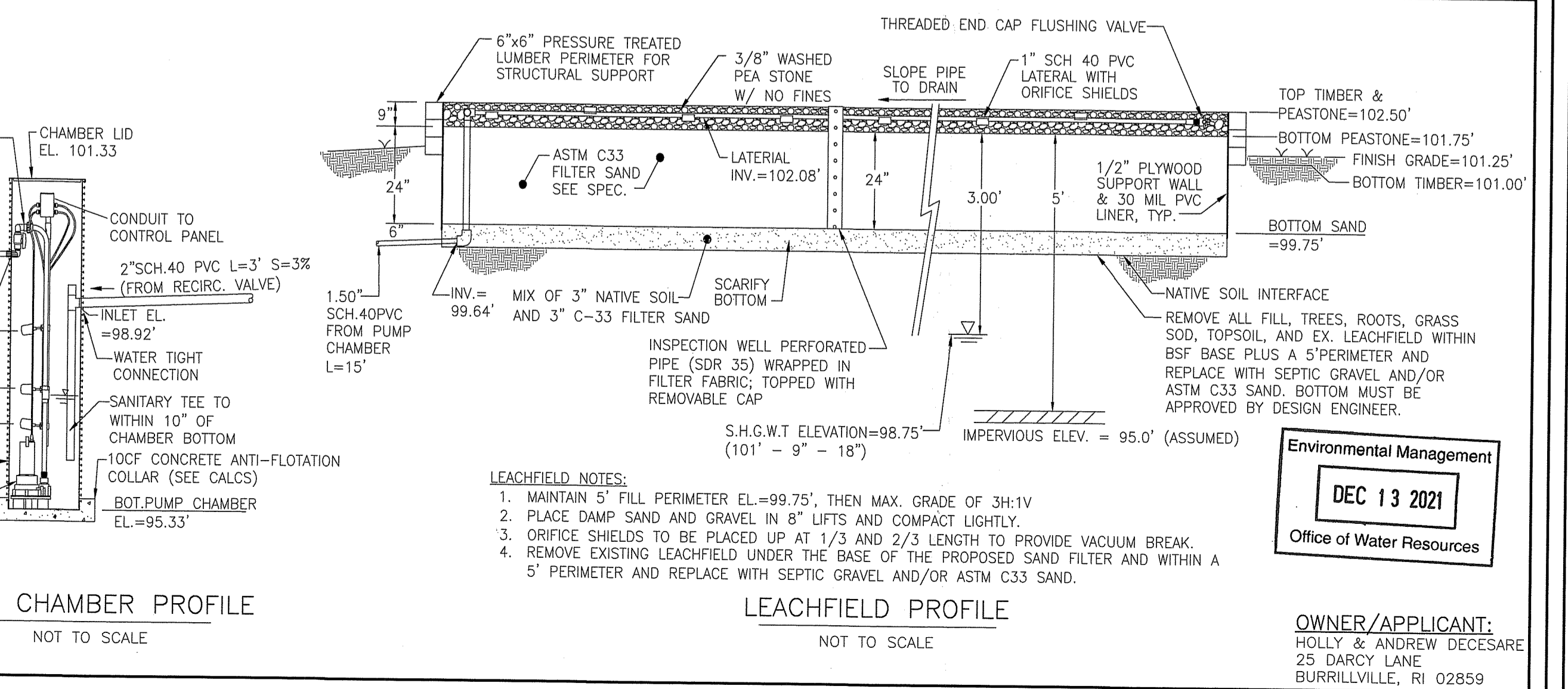
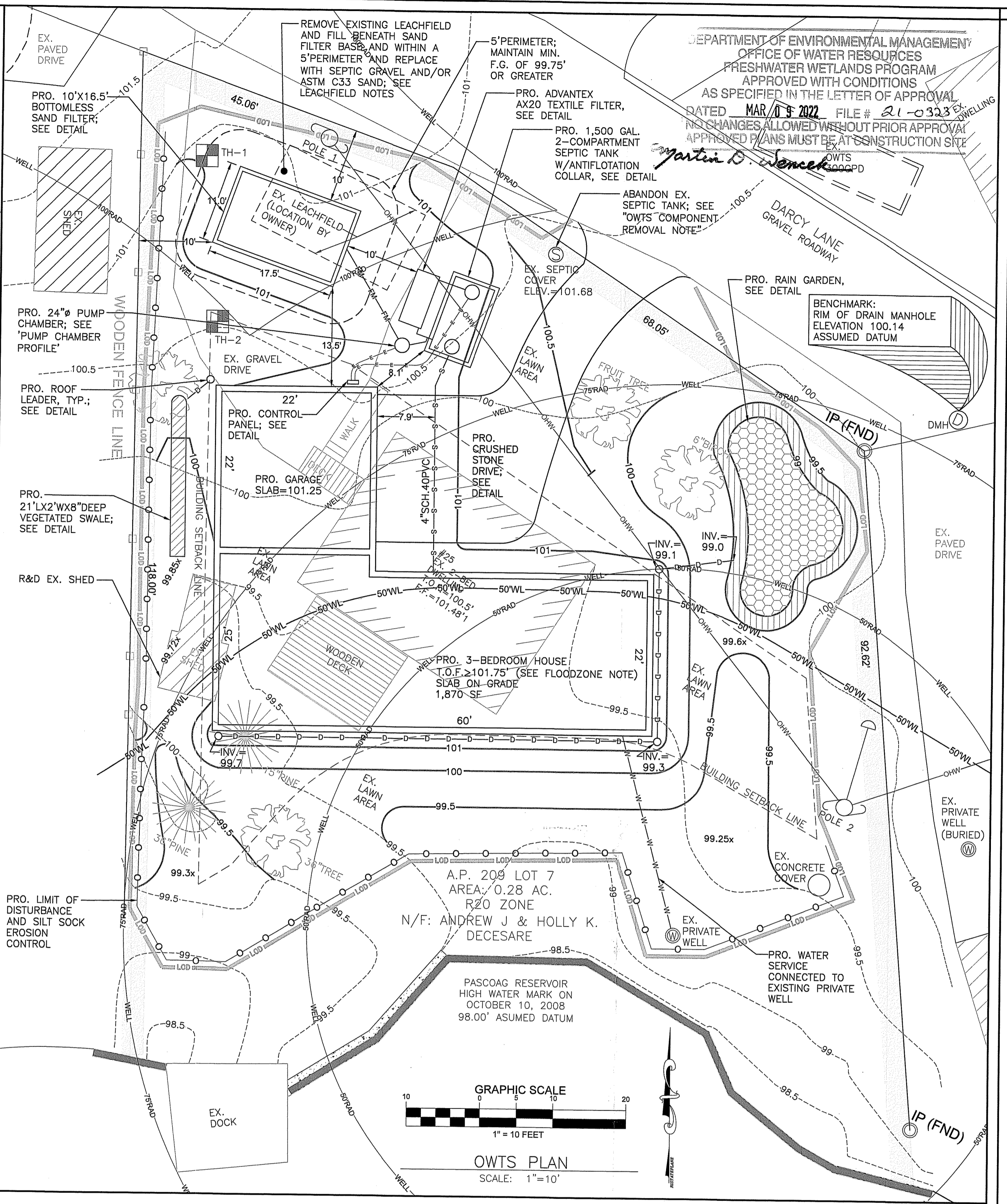
TOTAL NET INCREASE IN IMPERVIOUS AREA: 970 SF

**FOODZONE NOTE:**  
 1. THE SUBJECT SITE LIES WITHIN THE FEMA FLOOD ZONE 'AE' AS PER THE FLOOD INSURANCE RATE MAP NO. 44007C0130C DATED MARCH 2, 2009. THE PROPOSED T.O.F. ELEVATION MAY BE RAISED TO AN ELEVATION HIGHER THAN SHOWN ON THE PLAN TO MINIMIZE FLOOD RISK. ELEVATION SHOWN IS THE MINIMUM ELEVATION REQUIRED FOR THE DESIGN OF THE PROPOSED OWTS AND SHALL NOT BE LOWER THAN SHOWN.

**DRAINAGE CALCULATIONS**

PROPOSED IMPERVIOUS AREA	PRO. VEGETATED SWALE	260 SF (NW CORNER OF HOUSE)
REQ'D DRAINAGE AREA	REQ'D DRAINAGE AREA	260 X 32 = 42 SF
PROPOSED 2'WIDE X 21'LONG VEGETATED SWALE	PROPOSED 2'WIDE X 21'LONG VEGETATED SWALE	42 SF = REQ'D AREA
PRO. RAIN GARDEN	PROPOSED IMPERVIOUS AREA	1,610 SF
REQ'D GARDEN SIZING (6" DEPTH)	REQ'D GARDEN SIZING (6" DEPTH)	1,610 X 150 = 245 SF BOTTOM AREA
PRO. GARDEN SIZE	PRO. GARDEN SIZE	245 SF BOTTOM AREA X 390 SF TOP AREA X 6" DEPTH

\*RAIN GARDEN AND VEGETATED SWALE SIZING BASED UPON THE "STATE OF RHODE ISLAND STORMWATER MANAGEMENT GUIDANCE FOR INDIVIDUAL SINGLE-FAMILY RESIDENTIAL LOT DEVELOPMENT."



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

Environmental Management  
 DEC 13 2021  
 Office of Water Resources

OWNER/APPLICANT:  
 HOLLY & ANDREW DECESARE  
 25 DARCY LANE  
 BURRILLVILLE, RI 02859

RI DEM APPLICATION PLAN  
 25 DARCY LANE  
**PROPOSED OWTS DESIGN PLAN**  
 A.P. 209, LOT 7  
 BURRILLVILLE, RHODE ISLAND 02859  
 SCALE: AS SHOWN DATE: 12/02/21 SHEET 1 of 2

REVISIONS:

NO.	DATE	DESCRIPTION	BY

REGISTRATION:  
 DAVID KENNETH MANONI  
 REGISTERED PROFESSIONAL ENGINEER  
 (Civil)

**GROUND BREAKING**  
**DESIGNS, LLC**  
 CIVIL ENGINEERING SOLUTIONS  
 90 HIGHLAND AVE., SOUTH KINGSTOWN, RI 02879 ☎ PHONE: (401) 622-2932

**GENERAL NOTES:**

- THIS PLAN WAS PREPARED FOR RIDEM PERMIT APPLICATION ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER. THIS IS NOT THE BUILDING PERMIT PLAN.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE "RULES ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ONSITE WASTEWATER TREATMENT SYSTEMS", LATEST REVISION, AS REGULATED THROUGH THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (THESE ARE REFERRED TO AS THE "RULES") AND THE STATE OF RHODE ISLAND ONE & TWO FAMILY DWELLING BUILDING CODE.
- THE PROPOSED ACTIVITIES (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) UNDER THE RHODE ISLAND COASTAL RESOURCE MANAGEMENT COUNCIL'S JURISDICTION.
- PUBLIC SEWERS (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) LOCATED WITHIN 200 FEET OF THE PROPERTY LINE.
- DRINKING WATER LINES (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) LOCATED WITHIN 50 FEET OF THE PROPOSED OWT'S. ALL DRINKING WATER LINES WITHIN 50 FEET OF THE PROPOSED OWT'S HAVE BEEN SHOWN, IF PRESENT.
- WATER SUPPLY IS BY (PUBLIC WATER SYSTEM \_\_\_\_\_) OR (PRIVATE WELL \_\_\_\_\_).
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) EXISTING AND PROPOSED PRIVATE DRINKING WATER WELLS LOCATED WITHIN THE SPECIFIED SETBACK DETAILED IN TABLE 22.5 OF THE "RULES" + 100 FEET. IF WELL(S) ARE PRESENT, THEY HAVE BEEN SHOWN ON THE PLAN.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) EXISTING AND PROPOSED WELLS SERVING NON-POTABLE USES WITHIN 100' OF THE OWT'S. IF WELL(S) ARE PRESENT, THEY HAVE BEEN SHOWN ON THE PLAN.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) EXISTING AND PROPOSED PUBLIC DRINKING WATER SUPPLY WELLS WITHIN 500 FEET OF THE PROPOSED OWT'S. IF WELL(S) ARE PRESENT, THEY HAVE BEEN SHOWN ON THE PLAN. THE TYPE OF PUBLIC WELL, IF PRESENT, IS NOTED NEXT TO THE WELL.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) WATERCOURSES AND WETLANDS WITHIN 200 FEET OF THE PROPOSED OWT'S. IF PRESENT, THE LOCATIONS ARE SHOWN ON THE PLAN.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) STORM AND SUBSURFACE DRAINS WITHIN 200 FEET OF THE PROPOSED OWT'S. SAID DRAINS (DO \_\_\_\_\_) OR (DO NOT \_\_\_\_\_) DISCHARGE DIRECTLY OR INDIRECTLY INTO A CRITICAL RESOURCE AREA AS IDENTIFIED IN RULE 38 OF THE "RULES".
- THE PROPOSED OWT'S (IS \_\_\_\_\_) OR (IS NOT \_\_\_\_\_) LOCATED WITHIN THE WATERSHED OF A PUBLIC WATER SUPPLY.
- THE PROPOSED OWT'S (IS \_\_\_\_\_) OR (IS NOT \_\_\_\_\_) LOCATED WITHIN A CRITICAL RESOURCE AREA AS IDENTIFIED IN RULE 38 OF THE "RULES". THE DISTANCE TO THE NEAREST CRITICAL RESOURCE OF CONCERN IS N/A FEET.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) EXISTING OWT'S WITHIN 200 FEET OF THE EXISTING WELLS. IF PRESENT, THE LOCATION AND SIZE HAS BEEN SHOWN ON THE PLAN. NO NEW WELLS ARE PROPOSED.
- EXISTING OWT'S WITH A DESIGN FLOW GREATER THAN 1,000 GAL/DAY (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) LOCATED WITHIN 400 FEET OF THE EXISTING WELL. IF PRESENT, THE LOCATION AND SIZE HAS BEEN SHOWN ON THE PLAN.
- THERE (ARE \_\_\_\_\_) OR (ARE NOT \_\_\_\_\_) AREAS OR SUBJECT PROPERTY WHERE SOIL HAS BEEN EXCAVATED AND/OR WHERE STORM DEPOSITED SAND AND THE BACKDUNE ENVIRONMENT OR WHERE HUMAN TRANSPORTED MATERIAL HAS BEEN DEPOSITED.
- THE PROPOSED OWT'S LIES WITHIN THE FEMA FLOOD ZONE 'AE' AS PER THE FLOOD INSURANCE RATE MAP NO. 440070D300 DATED MARCH 2, 2009.
- THIS APPLICATION (IS \_\_\_\_\_) OR (IS NOT \_\_\_\_\_) PART OF A SUBDIVISION OF FIVE (5) LOTS OR LESS WITH EXISTING ROAD FRONTAGE.
- THE CONTRACTOR SHALL STAKE AND FLAG THE LEACHFIELD TO PROTECT IT FROM VEHICLE TRAFFIC AND EXCESSIVE WEIGHT LOADS BEFORE AND DURING CONSTRUCTION OF THE OWT'S AND THE PROPOSED ADDITION. FLAGGING SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES AT THE SITE ARE COMPLETE.

**NITROGEN LOADING CALCULATION:**

- ALL PROPERTIES SERVED BY AN OWT'S AND A PRIVATE WELL SHALL NOT EXCEED A NITROGEN LOADING RATE OF 345 GPD PER 20,000 SF OF LAND.
- ALLOWABLE NITROGEN LOADING ON SUBJECT PROPERTY (12,196 SF):  
 $345 \text{ GPD} \times 12,196 \text{ SF} = 210 \text{ GPD}$
- PROPOSED ADVANTEX AX20 SYSTEM REDUCES NITROGEN LOADING BY 50%  
 $3 \text{ BEDROOMS} \times 115 \text{ GPD} \times 50\% = 172.5 \text{ GPD} < \text{ALLOWABLE}, \text{OK}$

**CONTRACTOR'S NOTES - CONSTRUCTION:**

- NOTIFY ENGINEER 5 DAYS PRIOR TO START OF CONSTRUCTION.
- ENGINEER TO APPROVE BOTTOM OF LEACHFIELD BED PRIOR TO PLACEMENT OF GRAVEL AND/OR SAND.
- SCARIFY LEACHFIELD BOTTOM IMMEDIATELY PRIOR TO PLACEMENT OF SAND, NOT THE DAY BEFORE.
- ENGINEER TO INSPECT ALL SYSTEM COMPONENTS PRIOR TO BACKFILLING. CONTRACTOR SHALL PROVIDE VACUUM TEST REPORT FROM SEPTIC TANK MANUFACTURER.
- ENGINEER TO INSPECT COMPLETED SYSTEM PRIOR TO BACKFILLING. FINE GRADE SEPTIC TANK AREA SO RUNOFF DOES NOT FLOW ONTO AREA FROM UPLAND AREAS DURING & AFTER CONSTRUCTION.
- ALL CONCRETE RISER SECTIONS SHALL BE MORTARED/SEALED WATERTIGHT TO TANK.
- CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN FIELD AND DESIGN DATA SHOWN HEREON TO BE REPORTED TO THE ENGINEER.
- THE CONTRACTOR SHALL STAKE AND FLAG THE PROPOSED OWT'S LEACHFIELD AREA TO PROTECT IT FROM VEHICLE TRAFFIC AND EXCESSIVE WEIGHT LOADS BEFORE AND DURING CONSTRUCTION OF THE OWT'S AND THE PROPOSED ADDITION. FLAGGING SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES AT THE SITE ARE COMPLETE.

**GRADING & DRAINAGE NOTES:**

- CONTRACTOR TO FINE GRADE LOT IN ACCORDANCE WITH STATE OF RHODE ISLAND ONE & TWO FAMILY DWELLING CODE. LOT SHALL BE GRADED SO THAT ADDITIONAL ACCUMULATION OF SURFACE WATER DOES NOT OCCUR ACROSS ADJOINING PROPERTY. SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER POINT OF COLLECTION SO AS NOT TO CREATE A HAZARD. LOTS SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6" WITHIN THE FIRST 10 FEET. SURFACES SHALL BE SLOPED AWAY FROM HOUSE AT A SLOPE OF 2% FOR AT LEAST 10 FEET.
- FINE GRADE PROPERTY TO PREVENT STREET RUNOFF FROM ENTERING SUBJECT PROPERTY.

**EXISTING OWT'S COMPONENT REMOVAL NOTE:**

- REMOVAL - ANY OWT'S COMPONENTS THAT ARE EXCAVATED AND REMOVED OFF-SITE MUST BE PROPERLY DISPOSED OF AT A LICENSED SOLID WASTE LANDFILL.
- ABANDONMENT ON SITE - SEPTIC TANKS AND CONCRETE CHAMBERS THAT ARE NO LONGER IN USE SHALL BE PROPERLY ABANDONED. THE STRUCTURE SHALL BE EMPTIED OF ALL WASTES AND THEN EITHER REMOVED, FILLED WITH CLEAN SAND OR CRUSHED AND THE AREA BACKFILLED WITH CLEAN SOIL.

**ADVANTEX AX-20 NOTES:**

- ALL WORK AND INSTALLATION PROCEDURES SHALL CONFORM TO RIDEM'S "GUIDELINES FOR THE DESIGN, USE, AND MAINTENANCE OF PRESSURIZED DRAINFIELDS" - NOVEMBER 2013". ONLY RIDEM APPROVED INSTALLERS ARE PERMITTED TO INSTALL THIS OWT'S.
- THIS OWT'S IS AND SHALL ALWAYS BE PRESSURE DOSED UTILIZING PROGRAMMABLE TIMERS. SINCE THE ADVANCED TREATMENT UNIT IS TIME-DOSED (CATEGORY 1 OPTION) THE TIMER SHALL ALSO CONTROL THE APPLICATION OF INFILTRANT TO THE LEACHFIELD.
- THE ADVANTEX UNIT ASSOCIATED COMPONENTS (PUMPS, FLOATS, VALVES, PIPE CONNECTIONS, ETC.) SHALL BE INSTALLED BY THE ORENCO SYSTEMS (O.S.) MANUFACTURER'S REPRESENTATIVE. THE O.S. REPRESENTATIVE SHALL PROVIDE CERTIFICATION TO THE ENGINEER THAT THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- ALL PIPING AND FITTINGS SHALL BE INSTALLED TO ENSURE DRAIN-BACK INTO THE SEPTIC TANK.
- ADVANTEX PODS SHALL BE EQUIPPED WITH ANTI-FLOTATION FLANGES.
- PUMP VAULT SHALL BE ORENCO SYSTEMS MODEL PVU57-1819 OR APPROVED EQUAL.
- THE PUMP DOSING THE AX-20 POD SHALL BE ORENCO SYSTEMS MODEL PF00511 OR APPROVED EQUAL.
- ORENCO SYSTEMS CONTROL & ALARM PANEL SHALL BE VERICOM MODEL VERRICOM TELEMETRY CONTROL PANEL MODEL VCCM-AXB1HT. SEE ELECTRICAL PANEL FOR DETAILS.

**SEPTIC TANK NOTES:**

- SEPTIC TANK SHALL BE WATER TIGHT AND CONSTRUCTED OF PRECAST REINFORCED CONCRETE.
- PRECAST REINFORCED CONCRETE TANKS SHALL CONFORM WITH ASTM C-1227-02, LATEST EDITION.
- TANKS SHALL BE PERMANENTLY MARKED AT THE INLET END OF THE TANK WITH DATE OF MANUFACTURE; NAME OF MANUFACTURER; CAPACITY; AND EXTERNAL LOADS FOR WHICH TANK IS DESIGNED TO RESIST.
- A WARNING LABEL AT ALL OPENINGS SHALL BE PROVIDED WHICH READS "ENTRANCE INTO THE TANK COULD BE FATAL."
- TANK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
- TANK SHALL BE INSTALLED ON A LEVEL, STABLE BASE THAT WILL NOT SETTLE.
- SURFACE WATER SHALL BE DIVERTED AWAY FROM THE TANK OPENINGS.
- TANK SHALL NOT BE DAMAGED DURING BACKFILLING. BACKFILL MATERIAL SHALL BE FREE OF LARGE STONES, STUMPS, WASTE, CONSTRUCTION MATERIAL, RUBBISH, ORGANIC MATERIAL, AND FROZEN SOILS.
- TANK AND RISERS SHALL BE TESTED FOR TANK TIGHTNESS BY EITHER VACUUM TESTING OR WATER PRESSURE TEST AS SPECIFIED IN THE "RULES". CONTRACTOR SHALL PROVIDE WRITTEN CERTIFICATION THAT THE TEST PASSED PRIOR TO C.O.C.
- JOINTS OF ALL CONCRETE TANKS SHALL BE SEALED WITH A 1" DIA. BUTYL RUBBER SEALANT OR APPROVED EQUAL.
- MANHOLE OPENINGS SHALL BE 20 INCH MINIMUM.
- PROVIDE VENT OPENING AT TOP OF BAFFLE WALL EQUAL TO 4" PIPE OR GREATER.

**TANK SIZING CALCULATIONS:**

RESIDENTIAL DWELLING = 3 BEDROOMS  
 1,500 GAL PROVIDED (CODE 26.1.1)

**LEACHFIELD SIZING CALCULATIONS:**

FLOW TO LEACHFIELD = 115 GAL/BEDROOM/DAY X 3 BEDROOMS = 345 GAL/DAY  
 LOADING RATE = 2.1 GAL/SF/DAY  
 SQUARE FEET REQ'D. = 345 / 2.1 = 165 S.F.  
 SAND FILTER AREA = 16.5' X 10' = 165 S.F. = SQUARE FEET REQ'D.

**DOSING DATA TO LEACHFIELD:**

MAX. DOSE TO ORIFICES = 22.75 GAL (0.25 GAL/ORIFICE X 91 ORIFICES)  
 DRAINBACK TO PUMP = 15 FT. X 0.106 GAL/FT. = 1.6 GAL  
 MAX. DOSE TO LEACHFIELD = 22.75 GAL + 1.6 GAL = 24.35 GAL  
 PUMP SETTING: PUMP SYSTEM SHALL DOSE NO MORE THAN 24.35 GALLONS PER DOSE TO THE LEACHFIELD. SET FLOAT SETTING BETWEEN ON/OFF AT 9 INCHES (23.5 GAL/VERTICAL FOOT IN PUMP BASIN X 1.0 FEET = 17.6 GAL/DOSE X 24.35 GAL/DOSE; THEREFORE, DESIGN OK).

**BUOYANCY CALCULATIONS:**

1. 24" DIA. PVC PUMP CHAMBER BUOYANT FORCE (UPWARD) =  
 $3.14 \times (1.0')^2 \times 6.0' \times 62.4 \text{ LB/CF} = 1,176 \text{ LBS}$   
 (WEIGHT OF PVC BASIN NEGLECTED)  
 CONCRETE ANTI-FLOTATION BASE: 10 CF OF CONCRETE  
 $10 \text{ CF OF CONCRETE} \times 150 \text{ LB/CF} = 1,500 \text{ LBS} > 1,176 \text{ LBS}$   
 THEREFORE BUOYANT FORCE OF PVC BASIN IS NEGLECTED BY 10 CF OF CONCRETE

2. 1,500 GAL. SEPTIC TANK - PROVIDE ANTI-FLOTATION COLLAR, SEE SEPTIC TANK DETAIL

**WASTEWATER STRENGTH:**

THE ADVANTEX SYSTEM REQUIRES THE FOLLOWING WASTEWATER STRENGTH. THE PROPOSED USE TYPICALLY PRODUCES WASTEWATER STRENGTHS WHICH MEET THE REQUIREMENTS. SHOULD WASTEWATER STRENGTH NOT MEET THE BELOW CRITERIA, ADDITIONAL MEASURES MAY NEED TO BE INCORPORATED INTO THE SYSTEM. OWNER IS RESPONSIBLE FOR INCORPORATING SUCH MEASURES.

	AVERAGE	WEEKLY PEAK	RARELY EXCEEDS
	(mg/L)	(mg/L)	(mg/L)
BOD	150	250	500
TSS	40	75	150
TKN	65	75	150
FOG	20	25	30

**OWNER'S NOTES:**

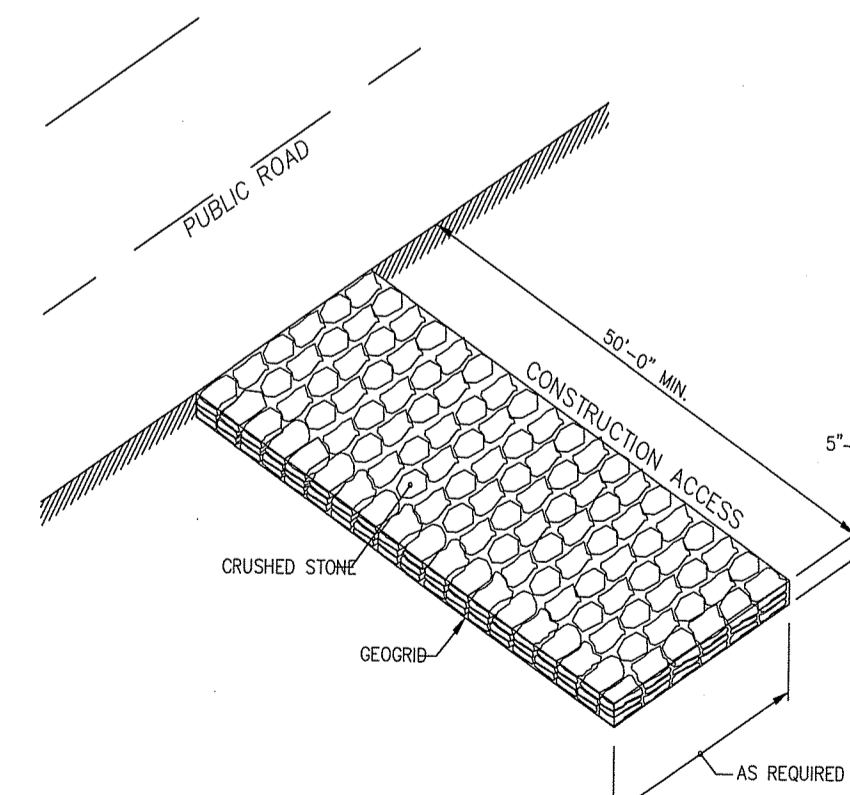
- VEHICLE PARKING OR TRAFFIC OVER THE LEACHFIELD AND SEPTIC TANKS IS PROHIBITED.
- BACKWASH WATER FROM WATER TREATMENT SYSTEMS SHALL NOT BE DISCHARGED INTO THE SEPTIC SYSTEM.
- SEPTIC TANKS SHALL BE PUMPED OUT EVERY 24 MONTHS AND SYSTEM MAINTAINED BY AN ORENCO SYSTEMS APPROVED MAINTENANCE SERVICE PROVIDER.
- ONLY WASTEWATER AS DEFINED IN THE RIDEM OWT'S REGULATIONS IS ALLOWED TO BE DISCHARGED INTO THE SEPTIC SYSTEM. ABSOLUTELY NO CHEMICALS, OILS, FATS, GREASE, OR PAINTS ARE ALLOWED.
- NO TREES OR LARGE SHRUBS SHALL BE PLANTED WITHIN 10 FEET OF THE LEACHFIELD.
- NO SUBSURFACE DRAINS OR STORM DRAINS SHALL BE INSTALLED WITHIN 50 FEET OF THE OWT'S LEACHFIELD OR 25 FEET OF ANY OTHER COMPONENT, UNLESS THE DRAIN IS UPRADIANT AND ITS INVERTS ARE AT A HIGHER ELEVATION THAN THE OWT'S IN WHICH CASE THE SETBACKS MAY BE REDUCED TO 25 FEET AND 15 FEET RESPECTIVELY.

**TESTHOLE DATA**

TH-1				TH-2			
HORIZON	DEPTH	TEXTURE	SOIL CATEGORY	HORIZON	DEPTH	TEXTURE	SOIL CATEGORY
C <sup>-</sup>	0'-0"	GRAVEL	DRIVEWAY	C <sup>-</sup>	0'-0"	GRAVEL	DRIVEWAY
Bwb1	0-10"	FSL	4	Bwb	0-6"	FSL	4
Bwb2	10-30"	FSL	4	Bwb	6-24"	FSL	4
C	30-72"	FSL	7	C	24-60"	FSL	7

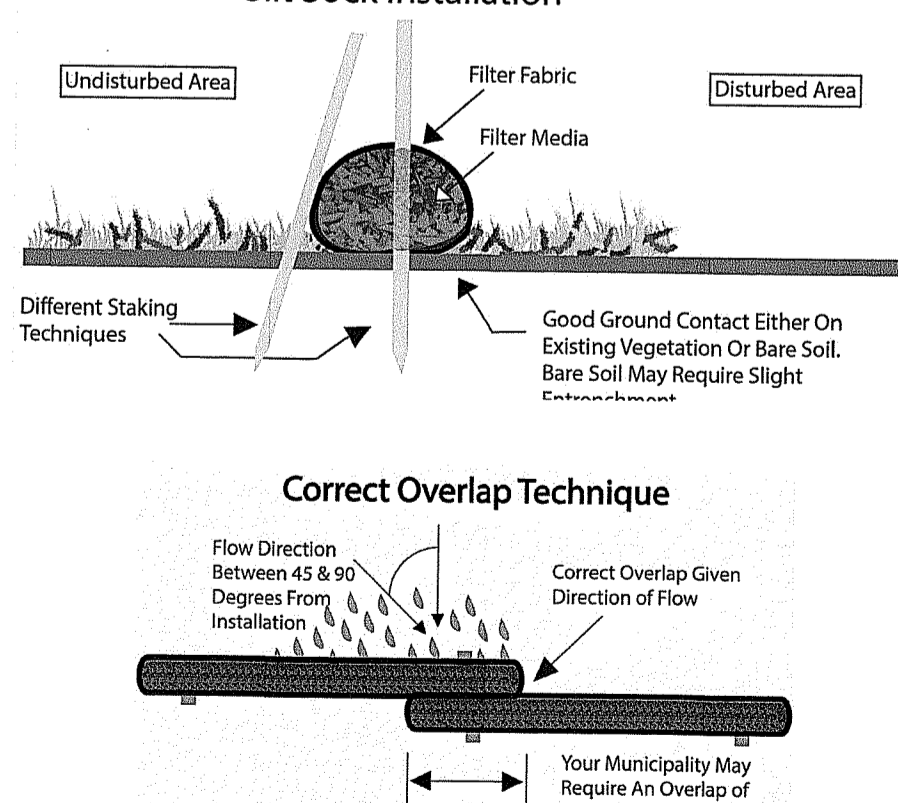
E.S.H.G.W.T. = 21" (FROM O.G.) DESIGN LOADING RATE = 2.1 GAL/SF/DAY

E.S.H.G.W.T. = 18" (FROM O.G.) DESIGN LOADING RATE = 2.1 GAL/SF/DAY



CONSTRUCTION ACCESS NOT TO SCALE

**Silt Sock Installation**



SILT SOCK DETAIL NOT TO SCALE

**NOTES:**

- DO NOT COMPACT SOILS IN RAIN GARDEN AREA. TILL BOTTOM OF RAIN GARDEN PRIOR TO PLACEMENT OF SANDY LOAM TOPSOIL AND BIORETENTION SOIL TO PROMOTE GOOD INFILTRATION RATES.
- FINE GRADE RAIN GARDEN SO IT HOLDS REQUIRED DEPTH OF RUNOFF PRIOR TO OVERFLOWING.
- DIRECT IMPERVIOUS AREAS (TO THE MAXIMUM EXTENT POSSIBLE) TO FLOW INTO RAIN GARDEN.
- BIORETENTION SOIL MIX (BY VOLUME):  
 SAND 85 to 88%  
 SILT 0 to 12%  
 CLAY 0 to 2%  
 ORGANIC MATTER 3 to 5%
- THE BIORETENTION SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OTHER WOODY MATERIAL OVER 1" IN DIAMETER, OR BRUSH/SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE SOIL SHOULD BE IN LIFTS OF 6 INCHES, LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET).
- SURFACE OF RAIN GARDEN SHALL NOT BE MULCH OR ANY OTHER SURFACE PRONE TO FLOATING AWAY.

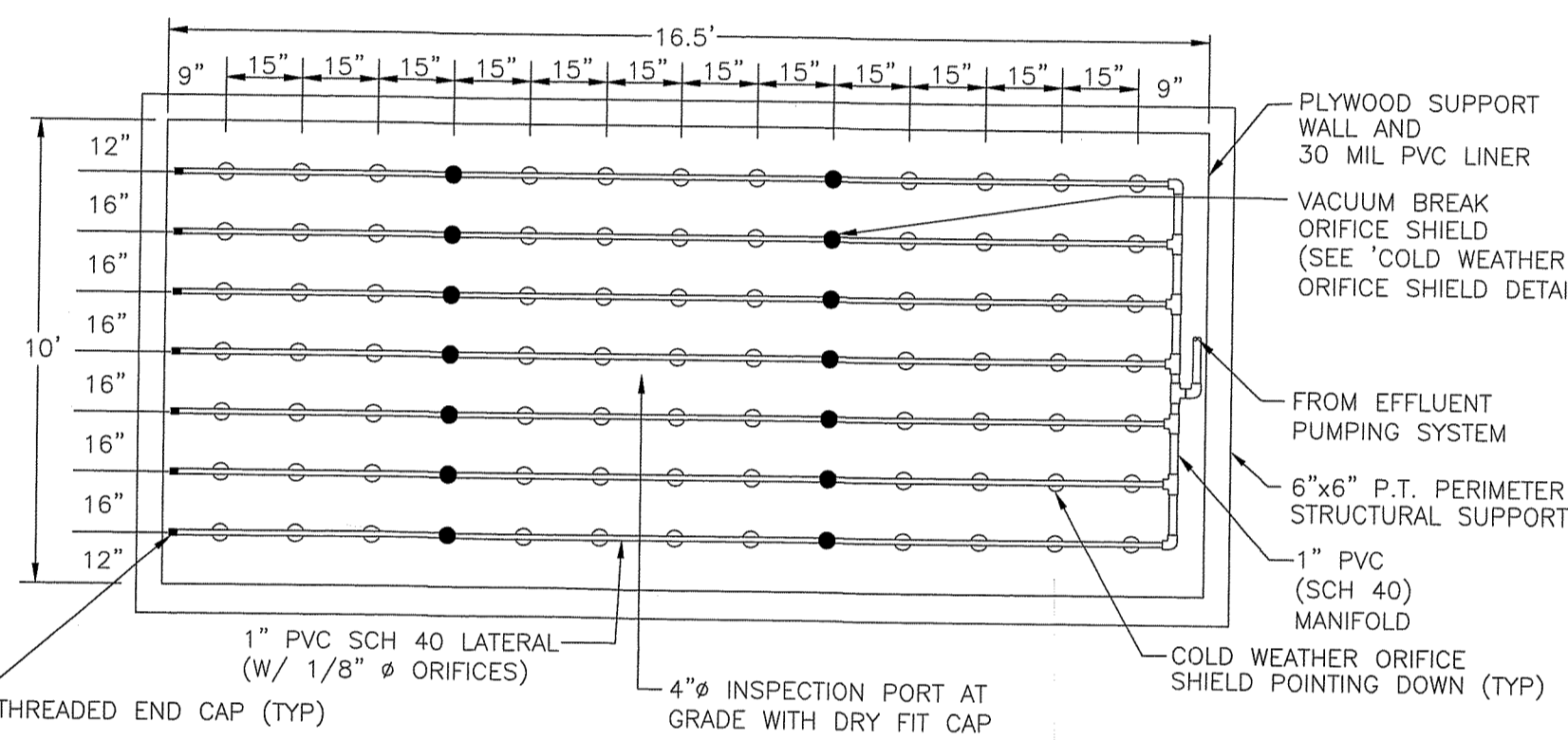
**RAIN GARDEN DETAIL**

RAIN GARDEN DETAIL NOT TO SCALE

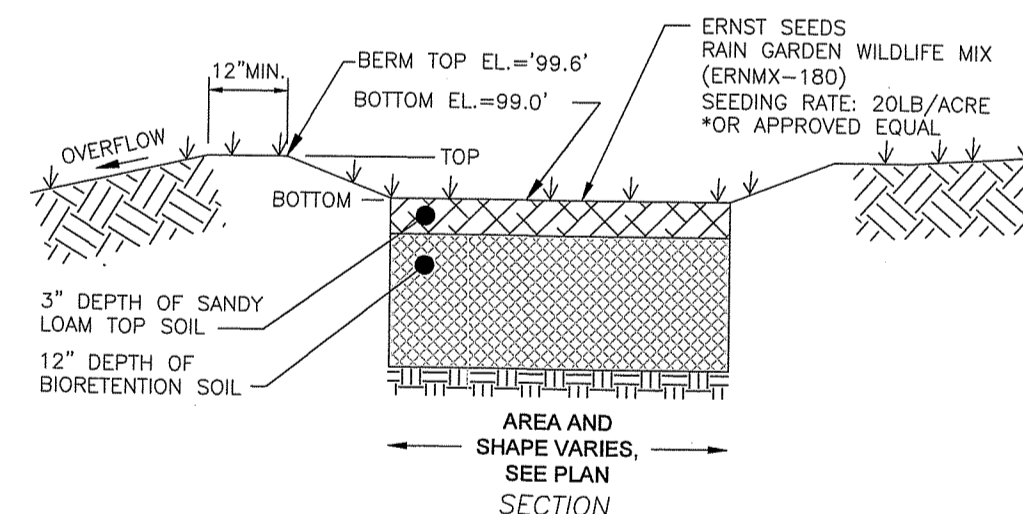
**RAIN GARDEN MAINTENANCE:**

- SEDIMENT SHALL BE REMOVED FROM THE RAIN GARDEN BED WHEN THE ACCUMULATION EXCEEDS 1".
- WHEN THE FILTERING CAPACITY OF THE FILTER DIMINISHES SUBSTANTIALLY, THE TOP FEW INCHES OF MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL.
- DURING THE SIX MONTHS IMMEDIATELY AFTER CONSTRUCTION, THE RAIN GARDEN SHALL BE INSPECTED FOLLOWING AT LEAST THE FIRST TWO PRECIPITATION EVENTS OF AT LEAST 1.0" TO ENSURE THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER, INSPECTIONS SHALL BE CONDUCTED ON AN ANNUAL BASIS AND AFTER STORM EVENTS OF GREATER THAN OR EQUAL TO 2.7" OF RAINFALL IN A 24-HOUR PERIOD.
- PRUNING OR REPLACEMENT OF WOODY VEGETATION SHALL OCCUR WHEN DEAD OR DYING VEGETATION IS OBSERVED.
- FERTILIZER OR PESTICIDES SHALL NOT BE APPLIED TO PLANTS WITHIN RAIN GARDENS.
- PERENNIAL PLANTS AND GROUND COVERS SHALL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE VEGETATED GROUND COVER. ANNUAL PLANTS MAY ALSO BE USED TO MAINTAIN GROUND COVER.

**ADVANTEX TREATMENT SYSTEM AX20 SERIES MODE 3B PLAN VIEW**



10'x16.5' (165 S.F.) SINGLE ZONE BOTTOMLESS SAND FILTER-91 ORIFICES NOT TO SCALE

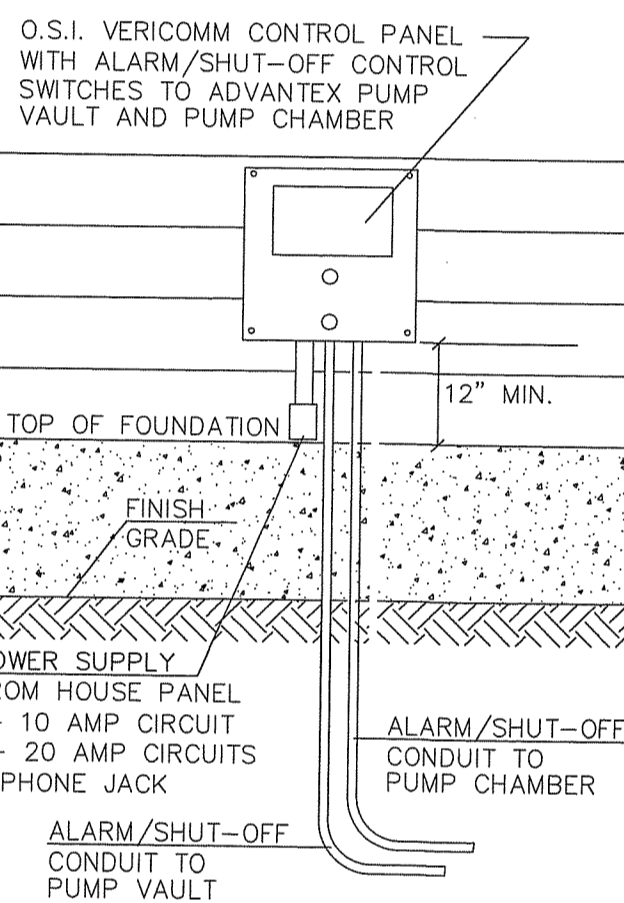


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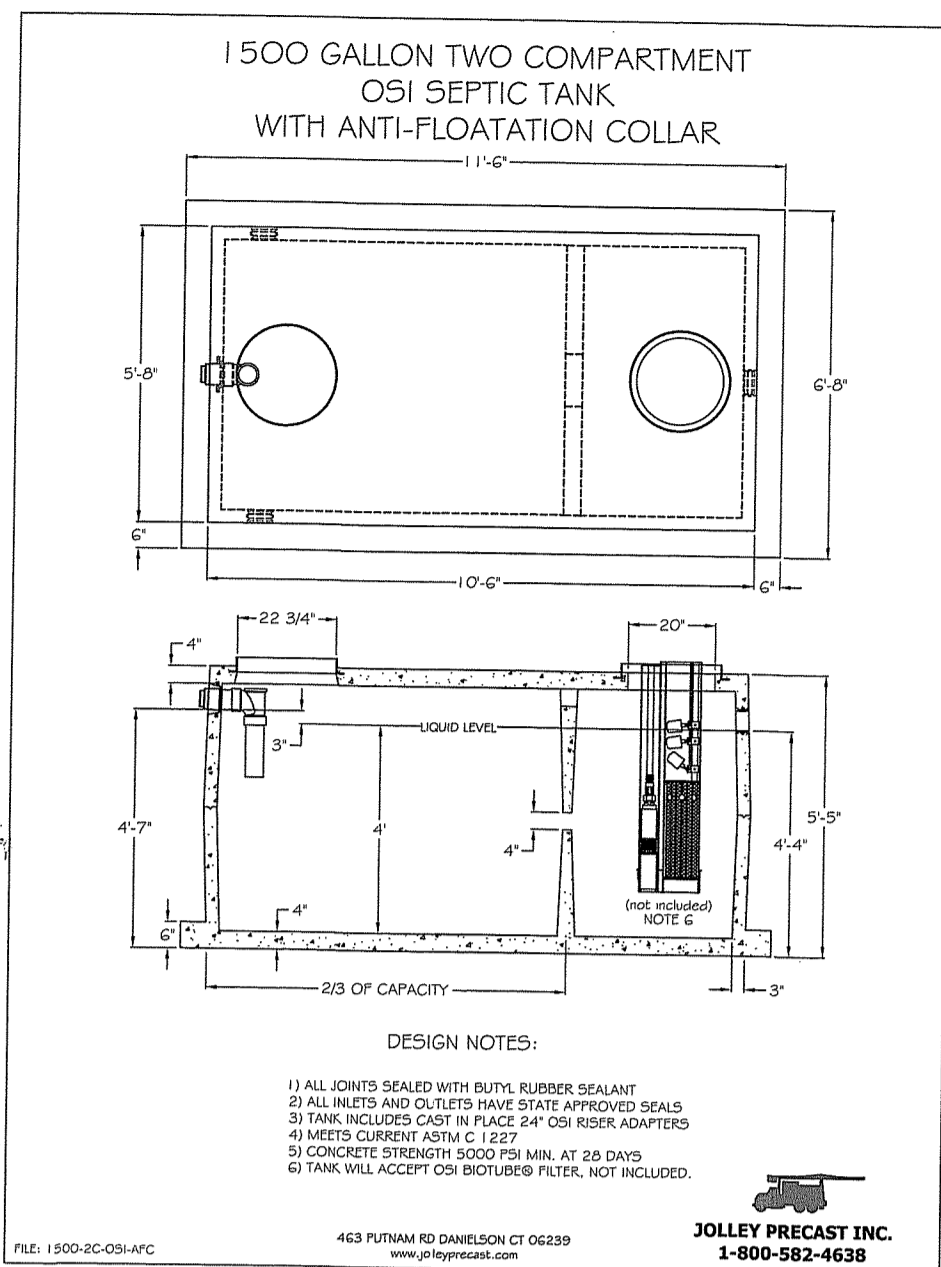
RAIN GARDEN DETAIL NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED: MAR 09 2022 FILE # 21-0323  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

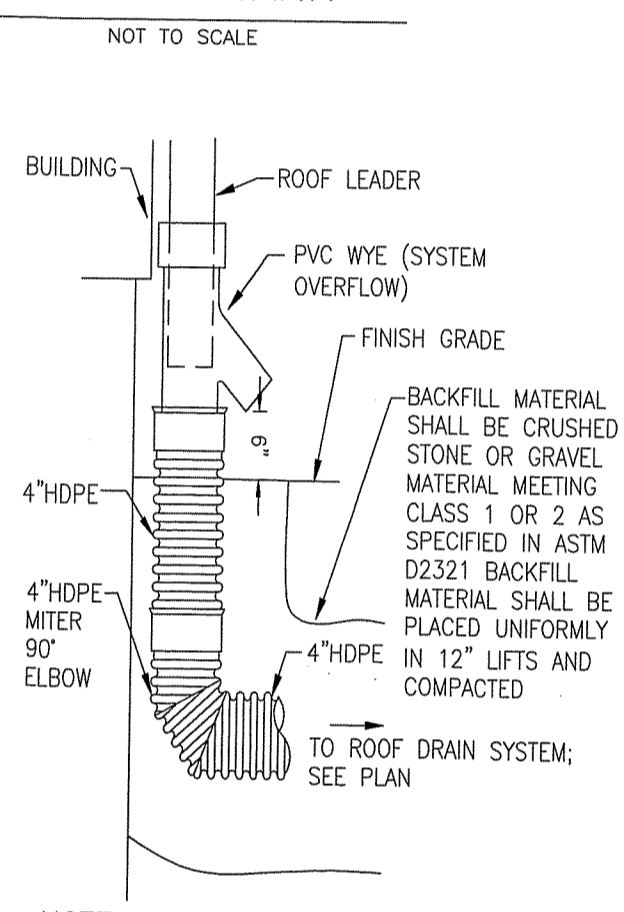
*Martin D. Wencsek*



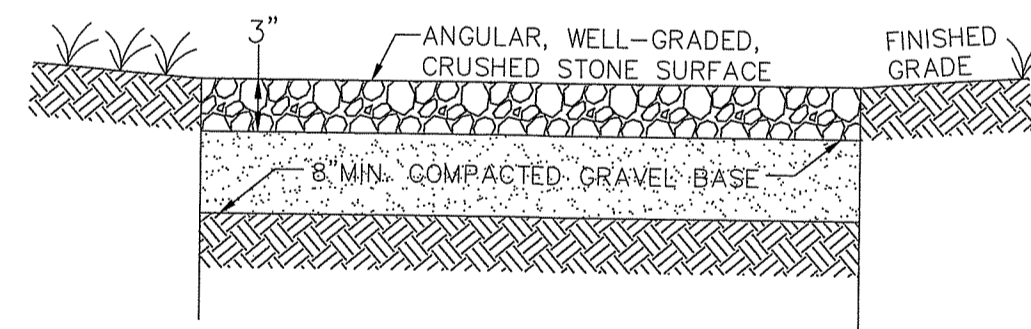
ELECTRIC CONTROL PANEL NOT TO SCALE



**1,500 GALLON 2-COMPARTMENT SEPTIC TANK**

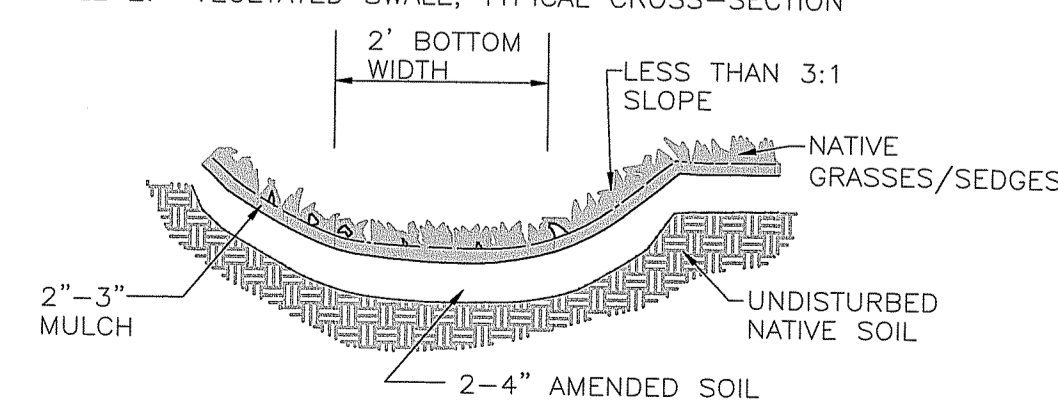


ROOF LEADER DETAIL NOT TO SCALE



PROPOSED DRIVEWAY SECTION DETAIL NOT TO SCALE

TABLE 2. VEGETATED SWALE, TYPICAL CROSS-SECTION



VEGETATED SWALE DETAIL NOT TO SCALE

OWNER/APPLICANT:  
 HOLLY & ANDREW DECASAR  
 25 DARCY LANE  
 BURRILLVILLE, RI 02859

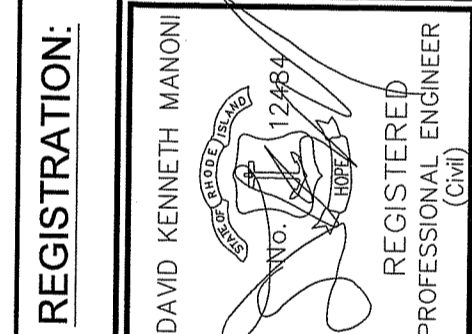
RI DEM APPLICATION PLAN  
 25 DARCY LANE

DETAIL SHEET

A.P. 209, LOT 7  
 BURRILLVILLE, RHODE ISLAND 02859  
 SCALE: AS SHOWN DATE: 12/02/21 SHEET 2 of 2

REVISIONS:

DATE	DESCRIPTION	BY



**GROUND BREAKING**  
**DESIGNS, LLC**  
 CIVIL ENGINEERING SOLUTIONS

90 HIGHLAND AVE., SOUTH KINGSTOWN, RI 02879 • PHONE: (401) 622-2932