

LEGEND:

EXISTING CONTOUR	---
EDGE OF PAVEMENT	---
WETLAND EDGE	---
50' PERIMETER WETLAND	---
WETLAND FLAG	● A6
EXISTING WELL	⊕
SPOT ELEVATION	462x0
TEST HOLE (9813-1250)	■ 98-3
OLD TEST HOLE	■ A
STONE RETAINING WALL	⊖
STONE WALL	⊖
LEDGE/ROCK	⊖
EX. CONTOUR	193
HAYBALE / SILT FENCE	---

GENERAL NOTES

1. THE EXISTING TOPOGRAPHIC INFORMATION IS BASED ON FIELD WORK PERFORMED BY INTERNATIONAL MAPPING & SURVEYING CORP., INC IN OCTOBER 2007.
2. THIS SITE IS NOT LOCATED WITHIN A CRITICAL RESOURCE AREA.
3. THE OWTs INSTALLER SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES DEPICTED ON THIS PLAN.
4. THE INSTALLER SHALL NOTIFY THIS DESIGNER 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
5. THE DESIGNER SHALL BE CONTACTED IF ANY DISCREPANCIES ARE FOUND IN THE FIELD.
6. THE INSTALLER SHALL CONTACT THE DESIGNER AT LEAST 24 HOURS IN ADVANCE FOR BOTTOM AND COVER INSPECTIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR DEWATERING DURING EXCAVATION OF ALL COMPONENTS OF THE OWTs.

ZONING A-4

MINIMUMS:
AREA: 4 ACRES

SETBACKS:
FRONT: 75'
SIDE: 50'
REAR: 100'

DESIGN CRITERIA

- PEAK FLOW = 3 BEDROOMS @ 115 GALLONS PER DAY / BEDROOM = 460 GPD
- CATEGORY 1 SYSTEM USE 3.0 GAL/SF/DAY LOADING RATE
- SIZE A BOTTOMLESS SAND FILTER:
- 460 GPD / 3.0 GAL/SF/DAY = 153 S.F.
- USE A 10' X 15.5' BOTTOMLESS SAND FILTER

INVERT SCHEDULE

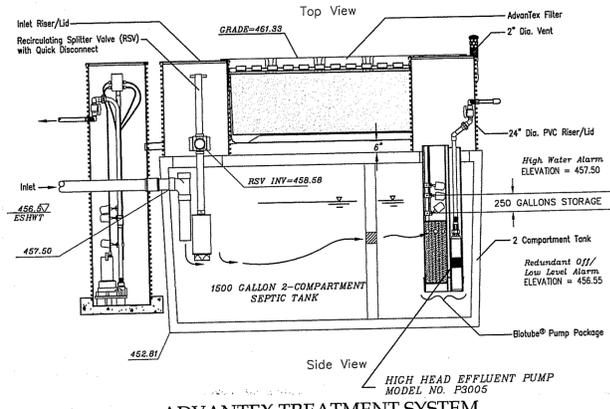
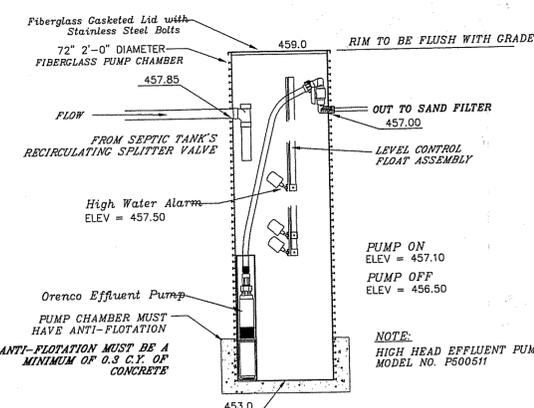
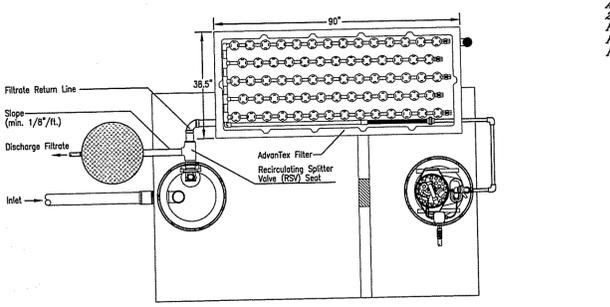
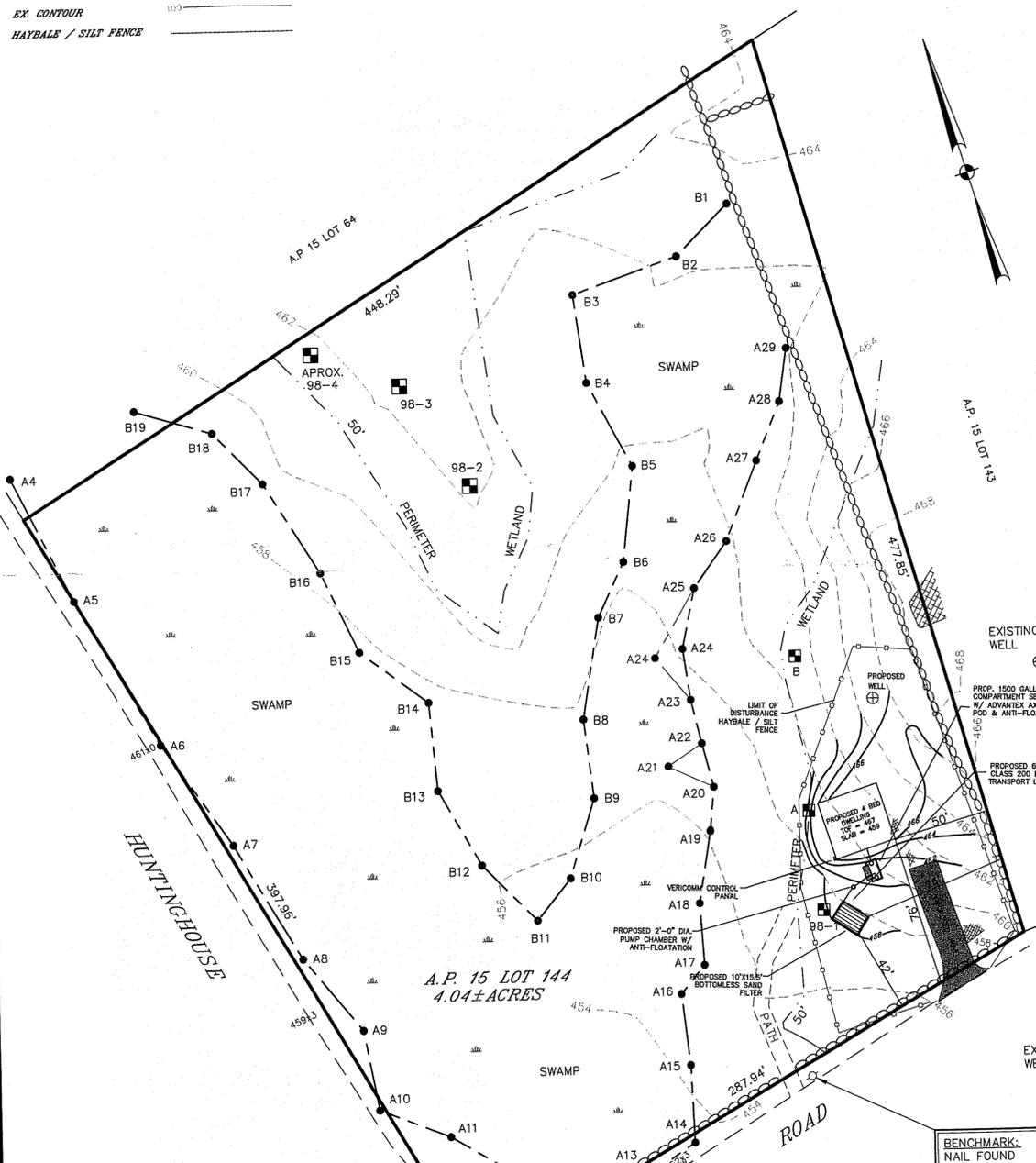
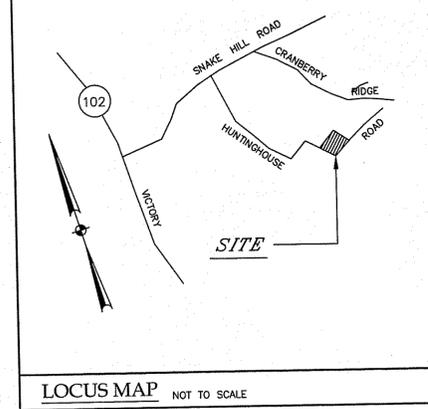
DESIGN GWL @ BSF	EL. 454.50
DESIGN GWL @ SEPTIC TANK	EL. 456.50
FOUNDATION SLAB	EL. 458.02
PROP. SEPTIC TANK IN	EL. 458.50
TOP OF SEPTIC TANK	EL. 458.55
RSV SEAT	EL. 458.55
AKED FILTER ROD INLET	EL. 458.55
TOP OF ADVANTEX FILTER	EL. 461.33
PUMP CHAMBER INLET	EL. 457.00
PUMP CHAMBER OUT	EL. 457.00
BOTTOM OF SAND	EL. 456.00
BOTTOM OF PEA GRAVEL	EL. 456.00
FLUSHING VALVE	EL. 458.35
BSF MANHOLE	EL. 458.25
TOP OF PEA GRAVEL	EL. 458.67

PUMP CHAMBER

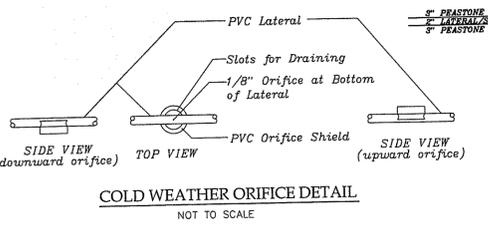
BOTTOM OF CHAMBER	EL. 453.00
REDUNDANT OFF	EL. 456.50
PUMP ON	EL. 457.10
HIGH WATER ALARM	EL. 457.50

ADVANTEX AX20 SYSTEM FLOAT LEVELS

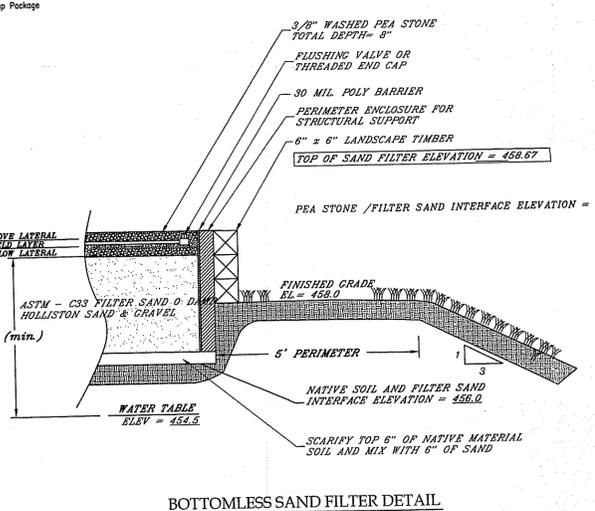
HIGH WATER ALARM	EL. 457.50
EL. OF RSV CASE	EL. 457.00
NORMAL LOW LIQUID LEVEL	EL. 456.88
LOW WATER ALARM/REDUNDANT OFF	EL. 456.55



ADVANTEX TREATMENT SYSTEM
AX20 SERIES - MODE 3b
NOT TO SCALE



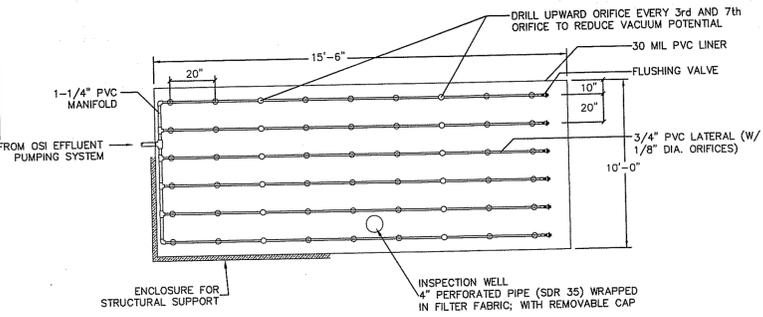
COLD WEATHER ORIFICE DETAIL
NOT TO SCALE



BOTTOMLESS SAND FILTER DETAIL
NOT TO SCALE

DOSING FOR BSF

54 ORIFICE • 0.23 GAL PER ORIFICE = 12.42 GALLONS
1.5" TRANSPORT LINE VOLUME = 0.38 GALLONS
TOTAL DOSED = 12.8 GALLONS PER CYCLE

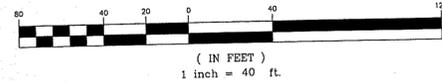


10' x 15.5' BOTTOMLESS SAND FILTER
PLAN VIEW
NOT TO SCALE

BOTTOMLESS SAND FILTER (BSF) CONSTRUCTION NOTES

1. THE PROPOSED BOTTOMLESS SAND FILTER (BSF) SHALL BE STAKED OUT AND PROTECTED PRIOR TO ANY SITE PREPARATION ACTIVITIES OVER DIGGING THE SAND FILTER SHOULD BE AVOIDED. MINIMAL BACKFILLING ON BOTTOM AND SIDES PROVIDES A MORE STABLE ENCLOSURE.
2. SOIL VEGETATION AND DEAD OR DECAYING ORGANIC LITTER SHALL BE REMOVED FROM THE AREA PLANNED FOR THE BSF INSTALLATION. TWELVE (12) INCHES OF THE NATIVE SOIL SHALL BE SCARIFIED AND MIXED WITH 12 INCHES OF SAND MEDIA. PERIMETER STRIPING AND EXCAVATION OF SOIL 12" BENEATH THE NATIVE SOIL/FILTER SAND INTERFACE IS PROHIBITED.
3. A PERIMETER SUPPORT FRAME OF PLYWOOD AND 2x4 CONSTRUCTION IS USED TO HOLD THE LINER IN PLACE DURING INSTALLATION. TREATED WOOD IS NOT NECESSARY. DURING CONSTRUCTION OF THE SAND FILTER, IT IS IMPORTANT THAT SAND BE PLACED BETWEEN THE EXCAVATED SOIL AND THE SUPPORT FRAME. ALL NAILS OR STAPLES USED MUST HAVE THEIR SHARP ENDS POINTED AWAY FROM THE LINER.
4. A PERMANENT TOP FRAME STRUCTURE (SUCH AS DECAY RESISTANT LANDSCAPE TIMBERS) MUST BE PROVIDED ON ANY PORTION OF A BSF THAT IS INSTALLED ABOVE GRADE. BELOW GRADE USE OF TIMBERS IS PROHIBITED TO PREVENT SOIL SLUMPING AFTER TIMBERS HAVE ROTTED.
5. MAINTAIN CONSTANT ELEVATION FOR 5 FEET MINIMUM PERIMETER AROUND BSF.
6. THE 30 MIL PVC LINER IS UNFOLDED FROM THE CENTER OF THE EXCAVATION AND DRAPED OVER THE TOP EDGES OF THE PERIMETER SUPPORT FRAME. CARE MUST BE TAKEN TO ENSURE THAT THE LINER IS IN FULL CONTACT WITH SIDES AND THAT NO BRIDGING OCCURS.
7. FILTER SAND IS PLACED AND COMPACTED WHILE IT IS DAMP. IF THE SAND IS NOT DAMP, IT WILL NOT COMPACT WELL AND SETTLEMENT MAY CAUSE DISLOCATION AND BRIDGING OF THE DISTRIBUTION LATERALS. THE SAND SURFACE MUST BE FLAT. SEE THE APPROPRIATE SAND GRADATION GRAPH FOR SPECIFICATIONS.
8. THREE INCHES OF 3/8 INCH PEA STONE IS PLACED ON TOP OF THE COMPACTED SAND. DISTURBING THE SAND AS LITTLE AS POSSIBLE. SEE PEA STONE SPECS. AFTER THE LATERALS ARE INSTALLED AND PRESSURE TEST IS PERFORMED, PLACE PEA STONE OVER THE DISTRIBUTION LATERALS TO PROVIDE 3 INCHES DEPTH OF PEA STONE OVER ALL UPPER ORIFICE SPACES. NO FILTER FABRIC OF ANY KIND SHOULD BE PLACED BETWEEN THE SAND AND OVERLYING PEA STONE.
9. THE LINER'S PVC BOOT PERMITS A WATER TIGHT PENETRATION OF THE LINER FOR THE TRANSPORT PIPE DELIVERING EFFLUENT TO THE SAND FILTER'S DISTRIBUTION SYSTEM. IN THE EVENT THE GROUND WATER REACHES THAT ELEVATION, THE BOOT WILL PREVENT INFILTRATION. THE MANUFACTURER'S GUIDES MUST BE FOLLOWED EXACTLY WHEN INSTALLING THE PVC BOOTS.
10. THE 1/8 INCH DIAMETER ORIFICES SHOULD BE DRILLED WITH A DRILL PRESS OR DRILL GUIDE USING A NEW 1/8 INCH DRILL BIT AND SHOULD NOT HAVE ANY VISIBLE BURRS. ALL PVC JOINTS SHOULD BE GLUED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
11. ORIFICE SHIELDS ARE PLACED ON THE LATERALS TO PREVENT THE PEA GRAVEL FROM BLOCKING THE FLOW OUT OF THE ORIFICES AND TO OBTAIN UNIFORM EFFLUENT DISTRIBUTION OVER THE SAND. COLD WEATHER ORIFICE SHIELDS SHOULD BE USED IN COLD WEATHER CLIMATES TO PREVENT THE FREEZING OF THE LATERALS.
12. AS PART OF THE COLD WEATHER REQUIREMENT, TWO (2) OF THE ORIFICES IN EACH DISTRIBUTION LATERAL MUST BE DRILLED POINTING UPWARD AND THE REST ARE DRILLED POINTING DOWNWARD. UP-POINTING ORIFICES SHALL BE LOCATED AT POINTS APPROXIMATELY 1/3 AND 2/3 ALONG THE LENGTH OF EACH DISTRIBUTION LATERAL. INSTALL COLD WEATHER ORIFICE SHIELDS AT ALL ORIFICES (UPWARD AND DOWNWARD POINTING).
13. THE ELECTRICAL SPLICE BOX MUST BE UL OR CSA LISTED AND CORROSION-PROOF WITH THE PROPER NUMBER OF COLD WEATHER INSTALLED. HELD STRIKE AND OR WATER TIGHT WIRE NUTS MUST BE USED ON THE INDIVIDUAL WIRE SPLICES. WITHIN THE BOX TO ENSURE THE INTEGRITY OF THE SPLICES IF THE BOX BECOMES FLOODED. SUFFICIENT LENGTH OF WIRES MUST BE PROVIDED IN THE BOX TO ALLOW FOR FUTURE REPAIRS.
14. THE CONDUIT SEAL MUST BE UL OR CSA LISTED AND MUST BE INSTALLED USING PROPER CONDUIT SEALANT AS RECOMMENDED BY THE MANUFACTURER. SILICONE IS NOT ALLOWED. THE SEAL PREVENTS WATER FROM DRAINING INTO THE SPLICE BOX AND GASES FROM ESCAPING THE TANK.
15. THE ELECTRICAL CONDUIT MUST BE UL OR CSA LISTED. THERE ARE ELECTRICAL CODE RULES RESTRICTING THE NUMBER OF BENDS BETWEEN PANELS AND JUNCTION BOXES. REFER TO NEC 1993 SECTION 347-14.
16. INSTALL LID INSULATION ON ALL LIDS TO PREVENT FREEZING.
17. THE CLASS 200 TRANSPORT PIPE SHALL BE ALLOWED TO DRAIN BACK COMPLETELY TO PUMP CHAMBER. MAXIMIZE PITCH OF TRANSPORT PIPE TO ACHIEVE DRAINBACK AND PROVIDE FURTHER FREEZE PROTECTION AS CONDITIONS WARRANT.
18. IN AREAS WHERE THE BSF MAY BE ACCESSIBLE TO CHILDREN, THE PEA STONE SURFACE MAY BE COVERED WITH A BROAD WEAVE FILTER FABRIC AND AN ADDITIONAL LAYER OF PEA STONE OR LARGER WASHED STONE, NO GREATER THAN 2" IN THICKNESS, TO DISCOURAGE PHYSICAL DISTURBANCE TO OR CONTACT WITH THE TREATMENT ZONE.
19. PROVIDE A PERMANENT 10' MINIMUM BUFFER BETWEEN BSF AND ANY TREES OR SHRUBS.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATE: #08-0344 PAK JAN 1 2 2009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
Nancy L. Freeman



PLAN & DETAILS
OWTS DESIGN PLAN
AP 15 LOT 144
HUNTINGHOUSE ROAD
GLOCESTER, RI
PREPARED FOR:
ROBERT & PEGGY NOVICK

NICHOLAS J. PAMPIANO
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
No. 000005512

NO.	DATE	DESCRIPTION
1	12/30/08	PER RIDEM

DATE: JULY 3, 2008
SCALE: AS NOTED
DESIGN/CHECK BY: CSR / NJP
SHEET NO.

ADVANCED CIVIL DESIGN, INC.
CIVIL ENGINEERS
7 COUNTRYSIDE LANE
SCITUATE, RI 02857
P1: (401) 644-8656
P2: (401) 473-4404



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JAN 2 2009