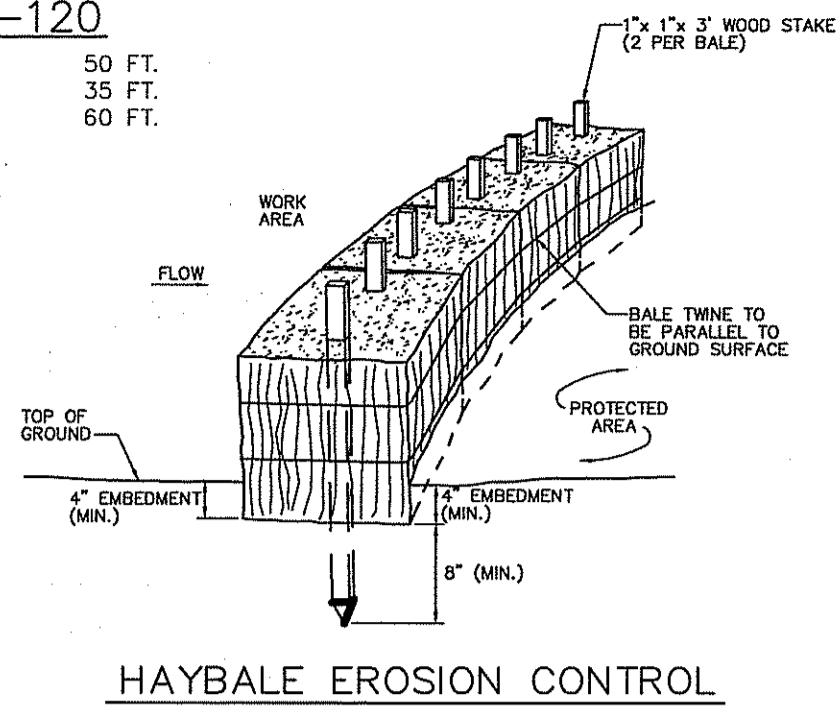
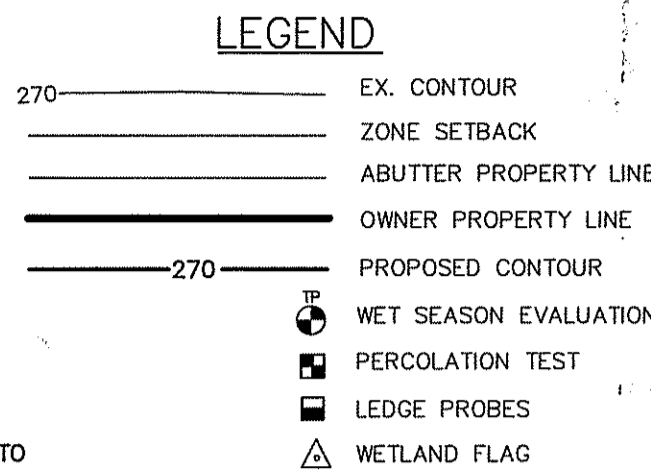


**FLOOD PLAIN & SURVEY NOTE:**  
 SUBJECT PARCEL IS LOCATED IN A ZONE X  
 AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN  
 FLOOD INSURANCE RATE MAP PANEL #44007C0260G.

**ZONE: RR-120**  
 FRONT SETBACK 50 FT.  
 SIDE SETBACK 35 FT.  
 REAR SETBACK 60 FT.

BASE LINE DATA OBTAINED BY ONSITE SURVEY.  
 PROPERTY LINE AND TOPOGRAPHICAL DATA CONFORM TO CLASS IV  
 STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION  
 FOR PROFESSIONAL LAND SURVEYORS

**ADVANTEK NOTE:**  
 PRODUCTS CAN BE OBTAINED FROM OSI PRODUCT  
 DISTRIBUTOR:  
 ATLANTIC SOLUTIONS, LTD.  
 2417 EAST MAIN ROAD  
 PORTSMOUTH, RI 02871  
 PHONE (401) 293-0178  
 FAX (401) 293-0178



**CRITICAL RESOURCE NOTE:**  
 THIS SITE LIES WITHIN THE SCITUATE RESERVOIR WATERSHED.

**SITE CONTRACTOR NOTES:**

- THE CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL CONTACT DIG-SAFE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
- INSTALL ALL EROSION CONTROLS AS DEPICTED PRIOR TO CLEARING & GRUBBING.

**DESIGN CRITERIA**

- PEAK FLOW = 4 BEDROOMS @ 115 GALLONS PER DAY / BEDROOM = 460 GPD
- CATEGORY 1 SYSTEM & SOIL CATEGORY 3 = 3.0 GAL/SF/DAY LOADING RATE
- SIZE BOTTOMLESS SAND FILTER (BSF):
  - 460 GPD / 3.0 GAL/SF/DAY = 153 S.F.
  - USE A 10' X 15.5' BOTTOMLESS SAND FILTER = 155 S.F.

**INVERT SCHEDULE**

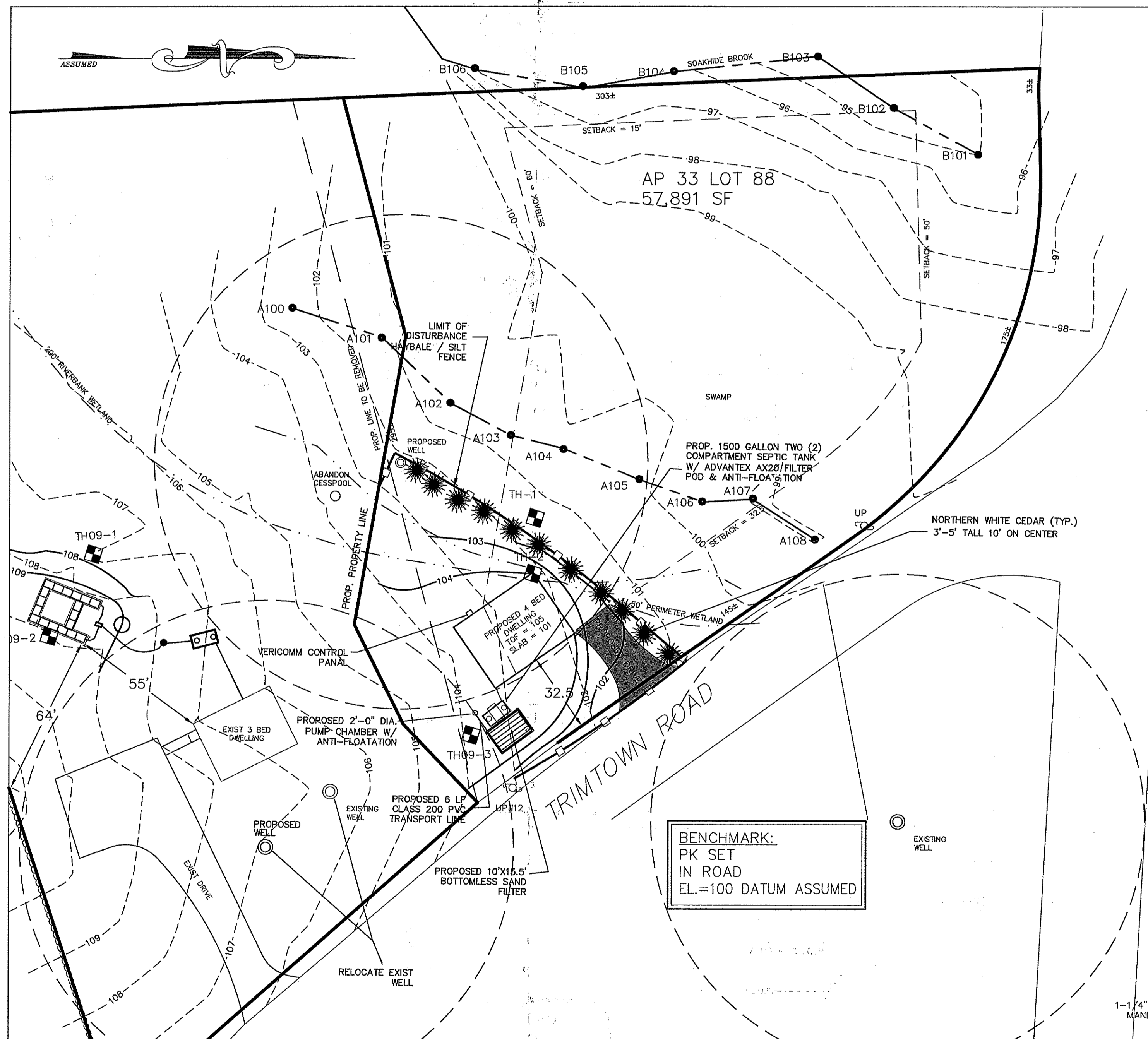
DESIGN G.W.T.	EL. 97.50
FOUNDATION SLAB	EL. 101.00
TOP OF FOUNDATION	EL. 105.00
BUILDING SEWER	EL. 100.10
SEPTIC TANK IN	EL. 100.00
TOP OF SEPTIC TANK	EL. 101.17
R.S.V. TO PUMP CHAMBER	EL. 101.42
AX20 FILTER POD INLET	EL. 103.17
TOP OF ADVANTEK FILTER	EL. 104.17
PUMP CHAMBER INLET	EL. 101.33
PUMP CHAMBER OUT	EL. 102.00
BOTTOM OF SAND	EL. 102.00
BOTTOM OF PEA GRAVEL	EL. 104.00
FLUSHING VALVE	EL. 104.25
BSF MANIFOLD	EL. 104.35
TOP OF PEA GRAVEL	EL. 104.70

**PUMP CHAMBER**

BOTTOM OF CHAMBER	EL. 98.00
REDUNDANT OFF	EL. 100.33
PUMP ON	EL. 100.75
HIGH WATER ALARM	EL. 101.00

**ADVANTEK AX20 SYSTEM FLOAT LEVELS**

HIGH WATER ALARM	EL. 99.92
TOP OF RSV CAGE	EL. 101.42
NORMAL LOW LIQUID LEVEL	EL. 99.30
LOW WATER ALARM/REDUNDANT OFF	EL. 99.00

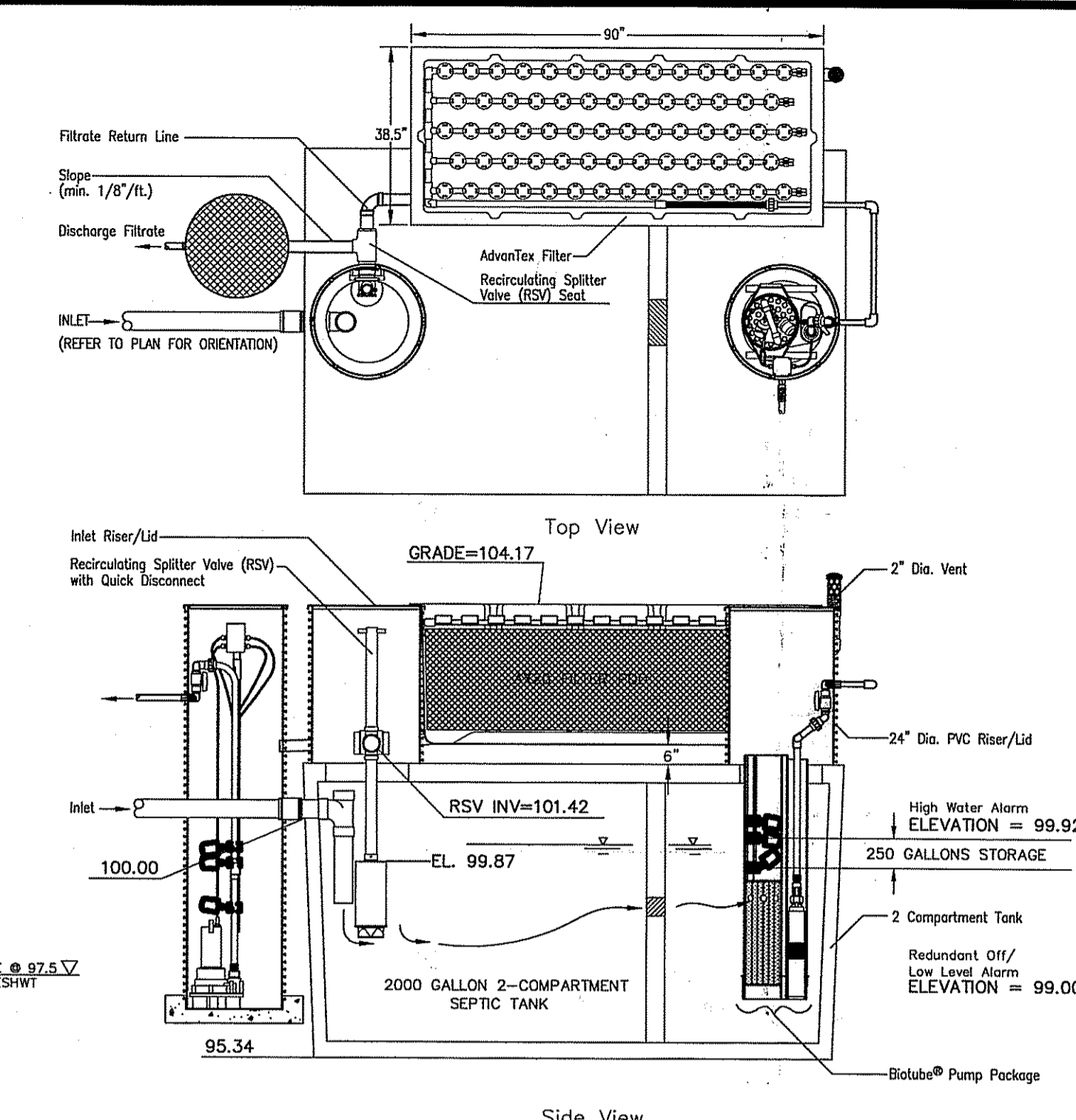


**SOIL DATA**

TEST HOLE #09-3  
 0-14" Ap  
 14"-19" Bw1  
 19"-32" Bw2  
 32"-45" Bw3  
 45"-110" C  
 (SOIL CATEGORY 2)  
 72" WATER TABLE  
 TEST HOLE EXCAVATED ON 4-14-09

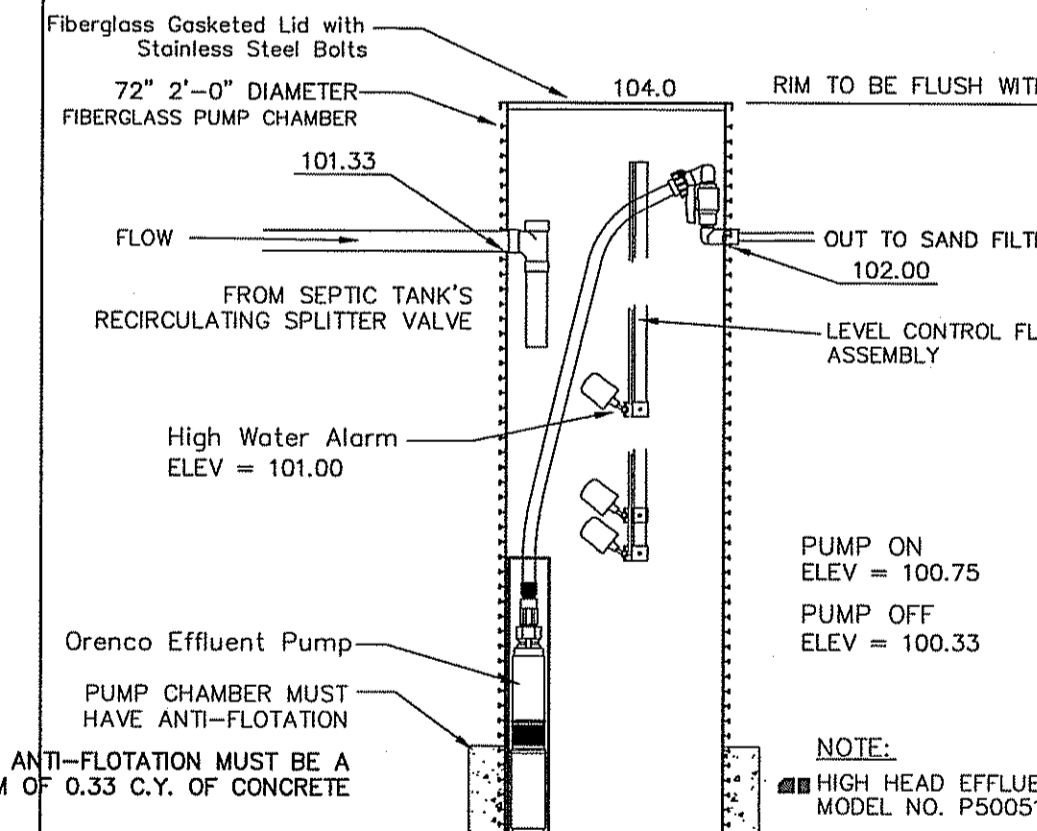
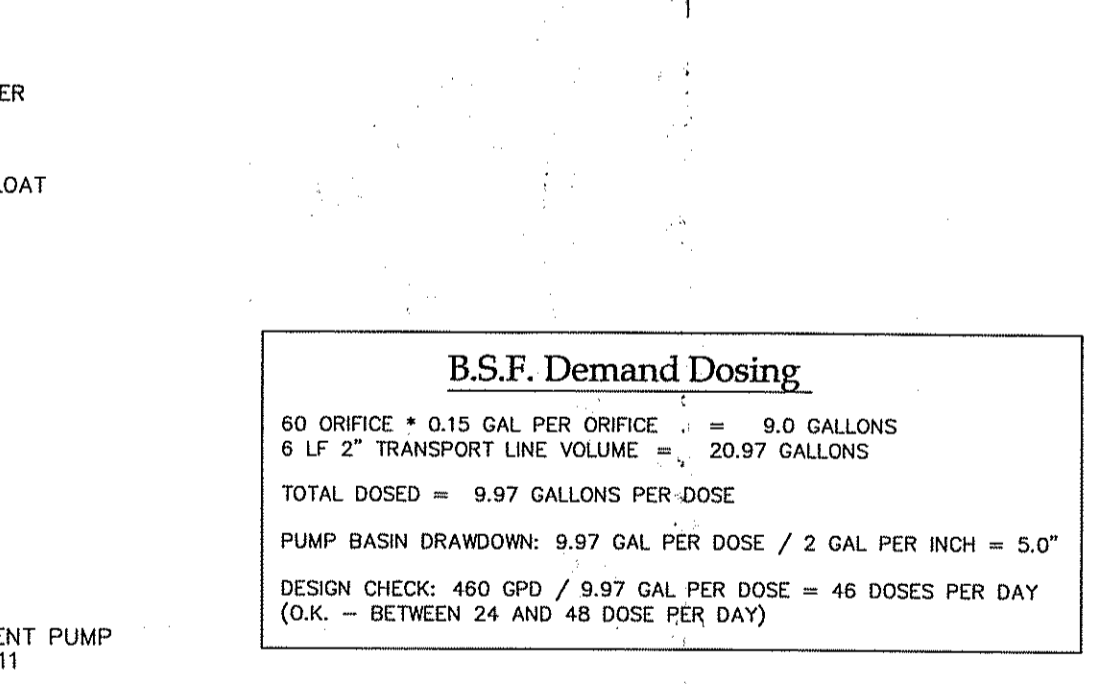
**ADVANTEK TREATMENT SYSTEM**

AX20 SERIES - MODE 3b  
 NOT TO SCALE



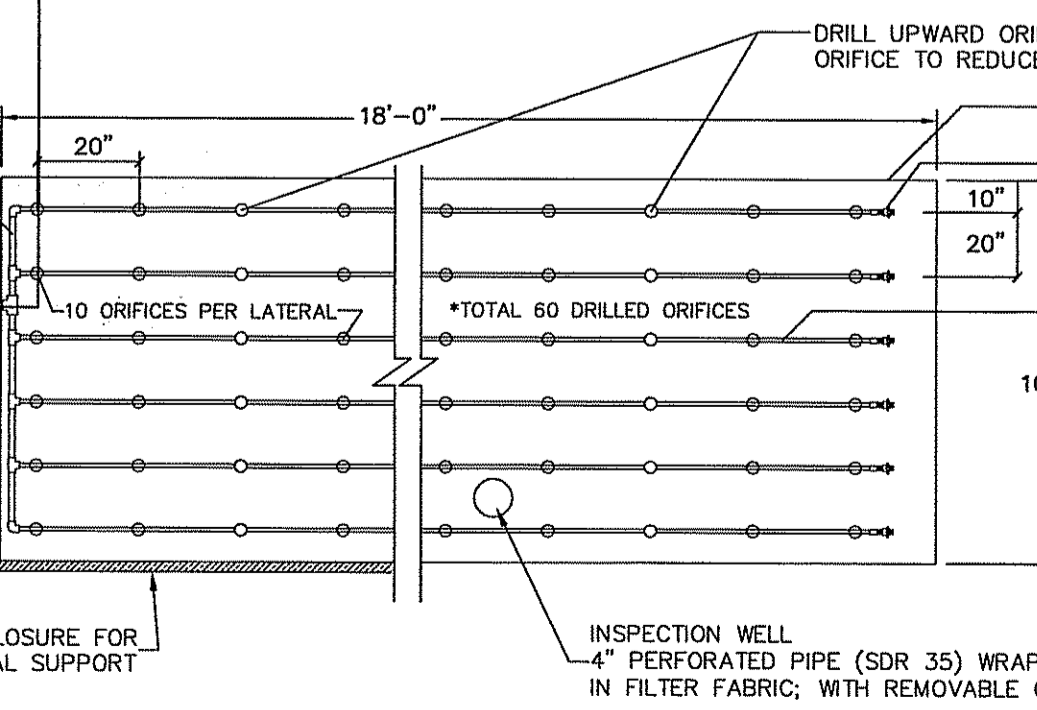
**BOTTOMLESS SAND FILTER DETAIL - SECTION**

NOT TO SCALE



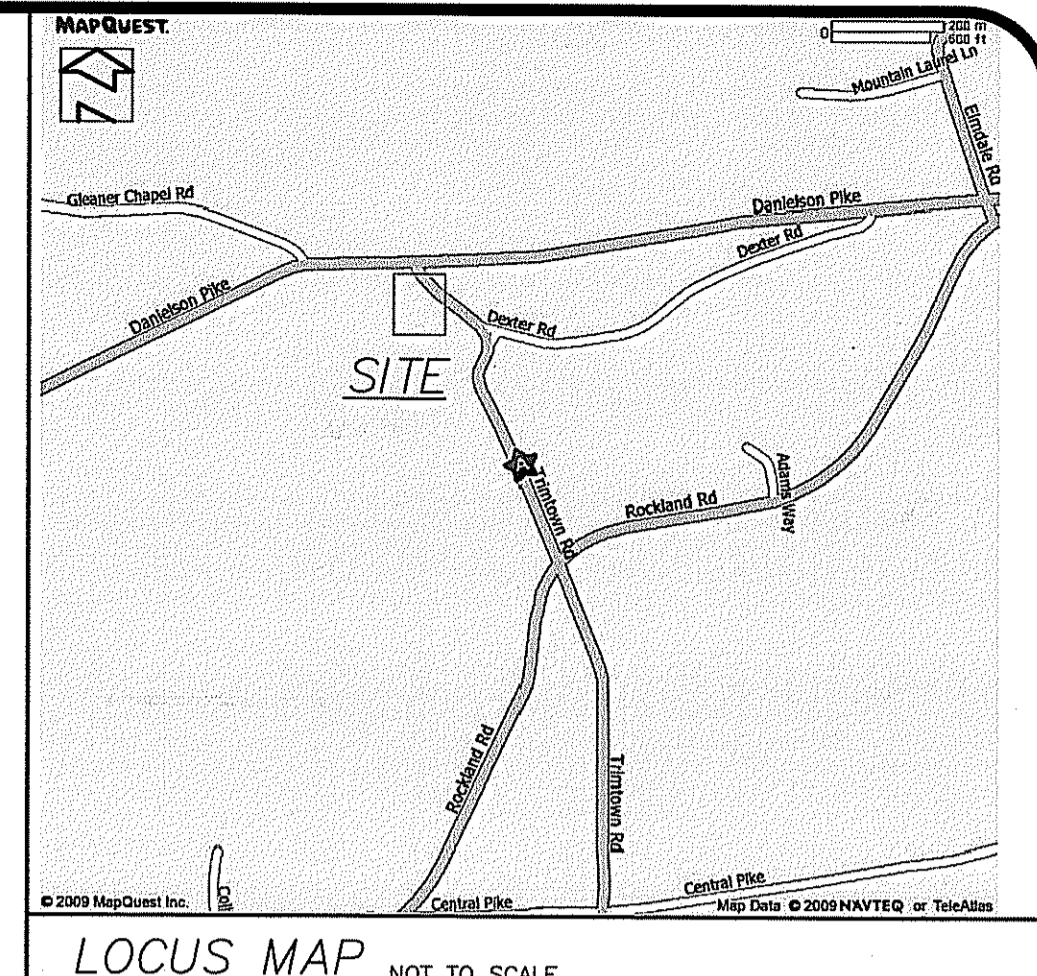
**PUMP CHAMBER DETAIL - 24" DIA.**

NOT TO SCALE



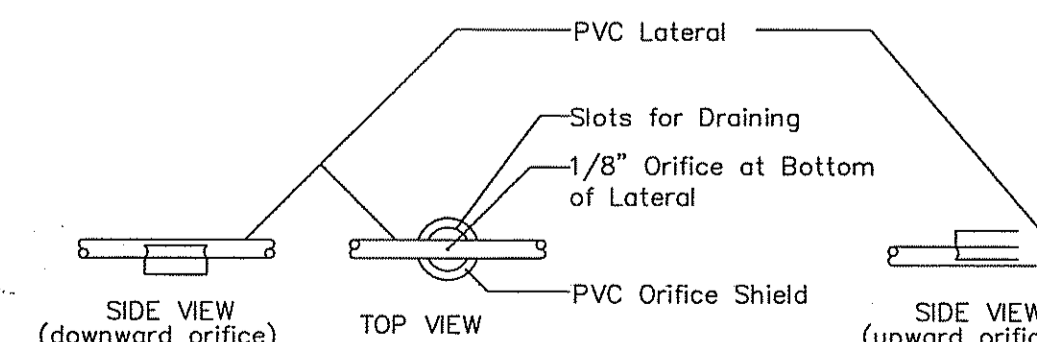
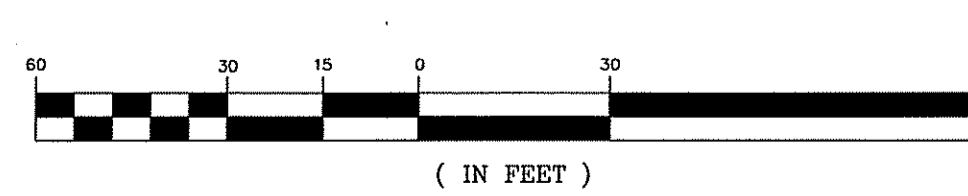
**BOTTOMLESS SAND FILTER - PLAN VIEW**

NOT TO SCALE



**BOTTOMLESS SAND FILTER (BSF) NOTES**

- 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.
- SOD, VEGETATION AND DEAD OR DECAYING ORGANIC LITTER SHALL BE REMOVED FROM THE AREA PLANNED FOR THE BSF INSTALLATION. THREE (3) INCHES OF THE NATIVE SOIL SHALL BE SCARIFIED AND MIXED WITH 3 INCHES OF SAND MEDIA. PERIMETER STRIPPING AND EXCAVATION OF SOIL BENEATH THE NATIVE SOIL/FILTER SAND INTERFACE IS PROHIBITED.
- 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.
- 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.
- MAINTAIN 5 FOOT LEVEL PERIMETER AROUND BSF.
- 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.
- 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 BREAKAGE OF THE DISTRIBUTION LATERALS. THE SAND SURFACE MUST BE FLAT. SEE THE APPROPRIATE SAND GRADATION GRAPH FOR SPECIFICATIONS.
- 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 SHIELDS. NO FILTER FABRIC OF ANY KIND SHOULD BE PLACED BETWEEN THE SAND AND OVERLYING PEA STONE.
- 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 GUIDE MUST BE FOLLOWED EXACTLY WHEN INSTALLING THE PVC BOOTS.
- 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.
- ORIFICE SHIELDS ARE PLACED ON THE LATERALS TO PREVENT THE PEA GRAVEL FROM BLOCKING THE FLOW OUT OF THE ORIFICES AND TO OBTAIN BETTER EFFLUENT DISTRIBUTION OVER THE SAND. COLD WEATHER ORIFICE SHIELDS SHOULD BE USED IN COLD WEATHER CLIMATES TO PREVENT THE FREEZING OF THE LATERALS.
- 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).
- THE ELECTRICAL SPICE BOX MUST BE UL OR CSA LISTED AND CORROSION-PROOF WITH THE PROPER NUMBER OF CORD GRIPS INSTALLED. HEAT SHRINK AND OR WATER TIGHT WIRE NUTS MUST BE USED ON THE INDIVIDUAL WIRE SPICES. WITHIN THE BOX TO ENSURE THE INTEGRITY OF THE SPICES IF THE BOX BECOMES FLOODED. SUFFICIENT LENGTH OF WIRES MUST BE PROVIDED IN THE BOX TO ALLOW FOR FUTURE REPAIRS.
- 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 SPICE BOX AND GASES FROM ESCAPING THE TANK.
- 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.
- INSTALL LID INSULATION ON ALL LIDS TO PREVENT FREEZING.
- 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.
- IN AREAS WHERE THE BSF MAY BE ACCESSIBLE TO CHILDREN, THE PEA STONE SURFACE MAY BE COVERED WITH A BROAD WEAVE FILTER FABRIC OR AN ADDITIONAL LAYER OF PEA STONE OR LARGER WASHED STONE, NO GREATER THAN 2" IN THICKNESS, TO DISCOURAGE PHYSICAL DISTURBANCE AND CONTACT WITH THE TREATMENT ZONE.



**COLD WEATHER ORIFICE DETAIL**

NOT TO SCALE

**OWTS SITE PLAN & DETAILS**  
**OWTS DESIGN**  
 A.P. 33 LOT 88  
 TRIMTOWN SCITUATE, RI  
 PREPARED FOR:  
 JANICE MOWREY  
 22 ST MARY'S ROAD SCITUATE, RI 02857

**NICHOLAS J. PIAMPANO**  
 No. 6512  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

DATE: JUNE 28, 2009  
 SCALE: AS NOTED  
 DESIGN/CHECK BY: C.S.R.

**ADVANCED CIVIL DESIGN, INC.**  
 CIVIL ENGINEERS

7 COUNTRYSIDE LANE  
 SCITUATE, RI 02857  
 (401) 644-8656  
 (401) 473-4404

DATE: JUL 22 2009  
 FILE # 09-0164  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

SHEET NO. **1** OF 1