

NOTES

Septic Tank and Building Sewer (Lot 3):

- 1) Use a 1000 gallon concrete septic tank with an access riser to grade, and an effluent filter.
- 2) Place tank a minimum of 10' from the building.
- 3) Use 4" cast iron or sch 40 pvc from building to tank with one pipe joint placed on undisturbed soil to absorb settling.
- 4) Slope pipe from building to tank at 1/4" per foot.

Septitech (Lot 3):

- 1) Use Septitech Model M400 pretreatment system.
- 2) Contact local distributor, S.T. Griswold at (800) 339-4565 for purchase and installation information.
- 3) Install Septitech in accordance with manufacturer's installation instructions.
- 4) Septitech shall be installed downslope of septic tank with 1/4" per foot minimum grade on connecting pipe.
- 5) Septitech shall be supplied with pump to deliver 24 gpm @ 10' TDH.
- 6) Septitech shall be placed on 6" of clean sand.
- 7) Septitech cover shall remain above grade and accessible.
- 8) Heavy objects shall not be placed on or near the pretreatment system.

Septic Discharge (Lot 3):

- 1) Test pump on and off levels to verify dose volumes.
- 2) Test alarm level.
- 3) Test pump to verify minimum 28" discharge height at leachfield orifices.

Force Main (Lot 3):

- 1) Perform a hydrostatic leakage test of the force main at 50 psi and hold pressure for two hours.

Design Calculations (Lot 3):

- 1) Assume a four bedroom house. Daily Flow (DF) @ 140 gpd/br for the first three, and 70 gpd for the remaining bedroom = 490 gpd
- 2) Percolation rate = 12 minute/inch
- 3) Application rate (AR) = $\{(3/\sqrt{1}) \times 0.8\} \times 2 = \{(3/\sqrt{4}) \times 0.8\} \times 2 = 1.38 \text{ gal/st/day}$
Maximum application rate for filtrate in at grade trench = 2.0 gal/st/day
- 4) Required trench area: DF/AR = 490/1.38 = 355 sf
- 5) Actual area: two trenches @ 6' x 40' = 480 sf
- 6) Induced groundwater mounding, $h = ll/r$, where
 h = induced groundwater mound (ft)
 ll = linear loading rate (gpd/ft) = 490/40 = 12.25 gpd/ft
 r = linear loading rate factor for coarse sand with a 6.6% ground slope (from table 1) = 52.4 gpd/ft/ft
therefore, $h = 12.25/52.4 = 0.23' = 2.8"$
- 7) Separation between the bottom of the trench and the top of the induced groundwater mound, $sr = sr - h$, where
 sr = depth to limiting layer = 28"
 h = induced groundwater mound = 2.8"
therefore, $sr = 28" - 2.8" = 25.2" > 18"$ required

Leachfield - Construction Notes (Lot 3):

- 1) Construction of the at-grade system shall not take place in the winter or if the soil moisture content is high. If questionable contractor to contact designer prior to construction.
- 2) Bottom of trenches to be at grade.
- 3) Plow surface of ground prior to placing stone.
- 4) Place 6" of 1-1/2" clean hard crushed stone or washed stone on plowed surface.
- 5) Place 1/2" SDR 26 PVC pipe on top of stone as per detail.
- 6) Install a flushing valve on each end of the lateral.
- 7) Cover distribution lateral with a minimum of 2" of stone.
- 8) Cover stone with filter fabric.
- 9) Grade surface of leachfield to direct surface water away from leachfield.
- 10) Topsoil, seed, and mulch all disturbed areas to establish vegetation.

Water Supply Basis of Design (Lot 3):

- a) Average day demand = 4 bedroom house @ 490 gpd
- b) Maximum day demand (gpm) = 0.68
- c) Instantaneous peak demand (gpm) = 5 gpm
- d) Source capacity = to be determined
- e) Storage capacity = not required for single family residence
- f) Pump capacities = to be determined
- g) Operating pressure ranges = 30-50 psi
- h) Reference to the floodplain = this project is not in the floodplain

Water Supply Well (Lot 3):

- 1) Install well in the location shown on the plan.
- 2) Provide well driller's log.
- 3) Provide well driller's certification as specified below.

Inspections and Certifications:

- 1) It is the owner's/ contractor's responsibility to contact the consultant and local health inspector for the following:
 - a) For stakeout of the well and leachfield locations.
 - b) For inspection of the scarification of the soil prior to placing stone.
 - c) For inspection of the pressurization of the force main to 50 psi.
 - d) To observe pump operation and to verify discharge height at the leachfield.

- 2) The septic system installer will provide the consultant with a signed and dated statement as follows:

"I hereby certify that the installation-related information submitted is true and correct, and that in the exercise of my reasonable professional judgment, the wastewater system has been installed in accordance with the permitted design and all permit conditions, was inspected, was properly tested, and has successfully met those performance tests.

Inspections and Certifications (continued):

- 3) The well driller will provide the consultant with a signed and dated statement as follows:

"I hereby certify that the installation-related information submitted is true and correct, and that in the exercise of my reasonable professional judgment, the potable water supply has been installed in accordance with the permitted design and all permit conditions, was inspected, was properly tested, and has successfully met those performance tests.

- 4) The certification of construction as required by section 1-303(c) of the Environmental Protection Rules may not be provided by the designer if the procedures outlined herein are not followed.

Maintenance:

Septic Tank and Leachfield

- (1) At least once a year, the depth of sludge and scum in the septic tank should be measured. The tank should be pumped if:
 - (a) The sludge is closer than twelve inches to the outlet baffle, or
 - (b) The scum layer is closer than three inches to the septic tank outlet baffle.
 (c) Following septic tank cleaning in units over 5,000 gallons, all interior surfaces of the tank should be inspected for leaks and cracks.

- (2) At least once a year, the outlet filter on the septic tank should be removed and cleaned by spraying it with water under normal household pressure.
- (3) At least once a year, dosing tanks and distribution boxes should be opened and settled solids removed as necessary and the dosing tank or distribution box checked for levelness.
- (4) At least once a year, pump stations should be inspected.

- (a) Remove settled solids as necessary. Solids and scum accumulation in the pump station may be indicative of a septic tank outlet filter malfunction, septic tank overloading, or other cause that should be investigated and remedied.
- (b) On/off and alarm floats should be tripped to ensure proper operation.
- (c) Inspect delivery of effluent to the distribution box. Slow delivery may indicate impending pump failure.

- (5) Toxic or hazardous substances should in general not be disposed of in septic systems. These substances may pass through the system in an unaltered state and contaminate groundwater or remain in the septicage and subsequently contaminate the soil or crops at the site of ultimate disposal.
- (6) The leachfields are not designed for the disposal of filter backwash or other byproducts of water treatment, filtration or purification systems.

Septitech M400 Pretreatment System:

- 1) The owner shall have a valid maintenance contract in force at all times. The minimum length of any contract shall be for a period of two years. A copy of the initial and each succeeding contract shall be submitted to the appropriate Regional Environmental Office of the Agency. Maintenance shall be performed by, or shall be supervised by, a Vermont Registered Professional Engineer or a Certified Class B Site Technician, approved by the vendor, who shall provide written inspection reports detailing the maintenance performed on the specific system, any problems that have occurred since the previous inspection, any modifications made to the system, the date of the inspection, and any work required to ensure the system operates in compliance with Innovative/Alternative System Approval #2002-03.

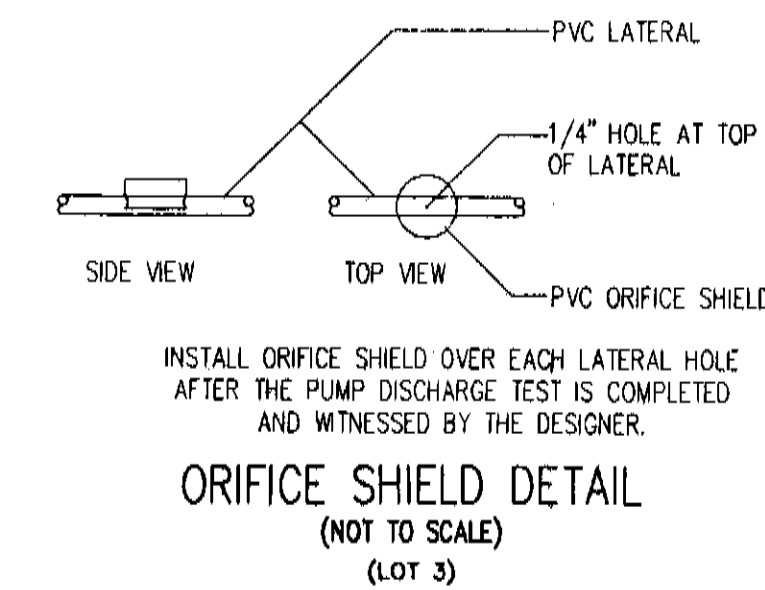
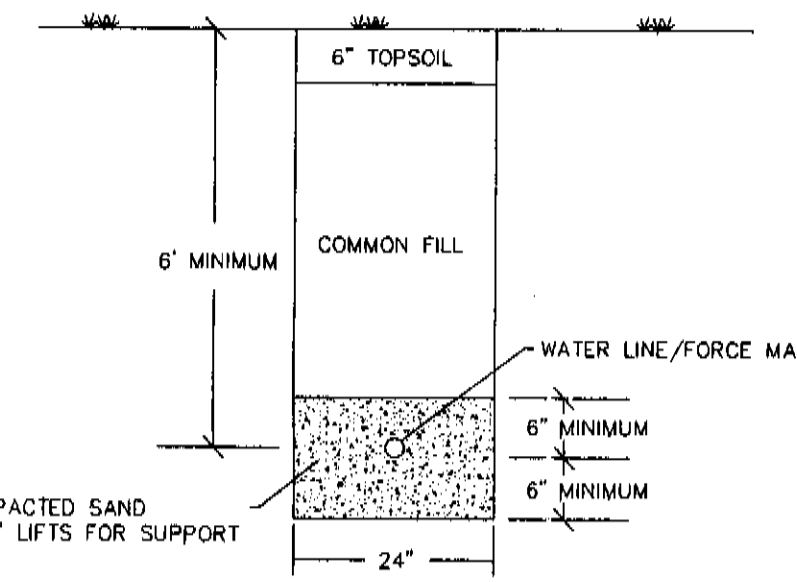
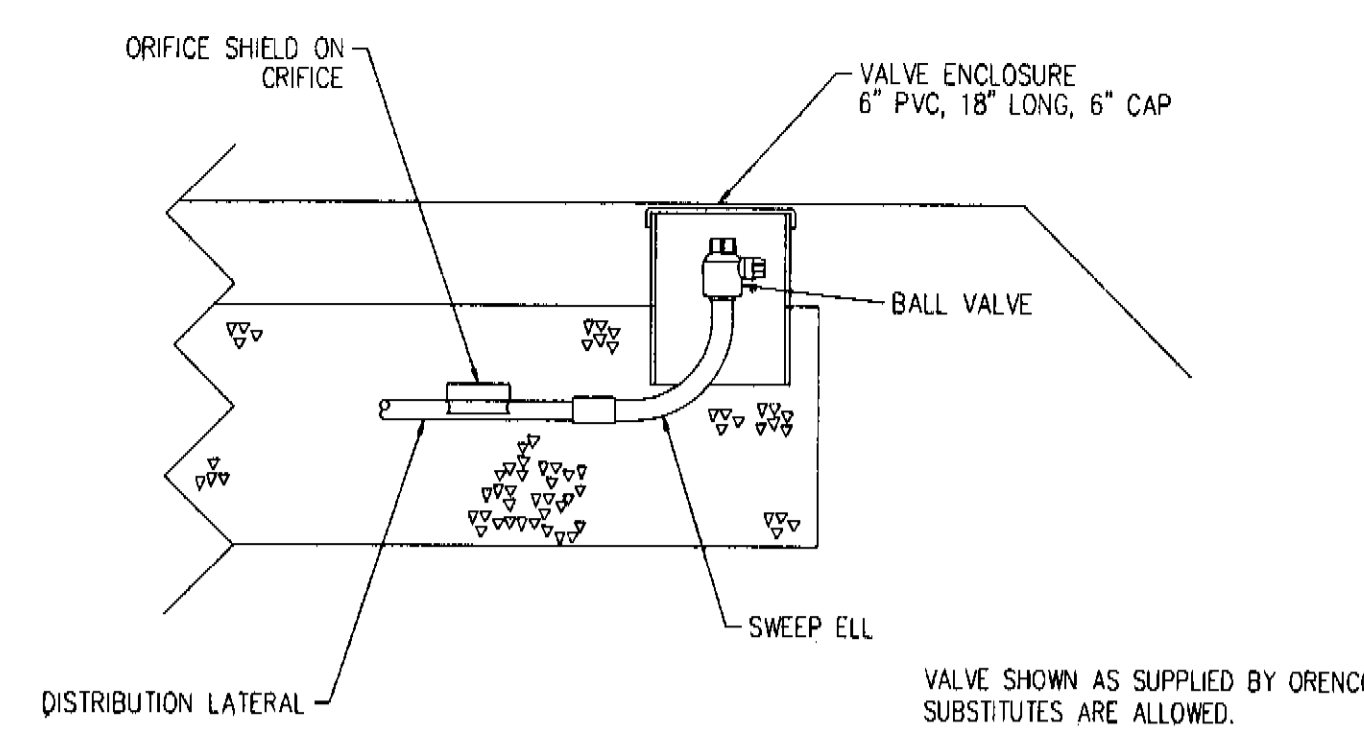
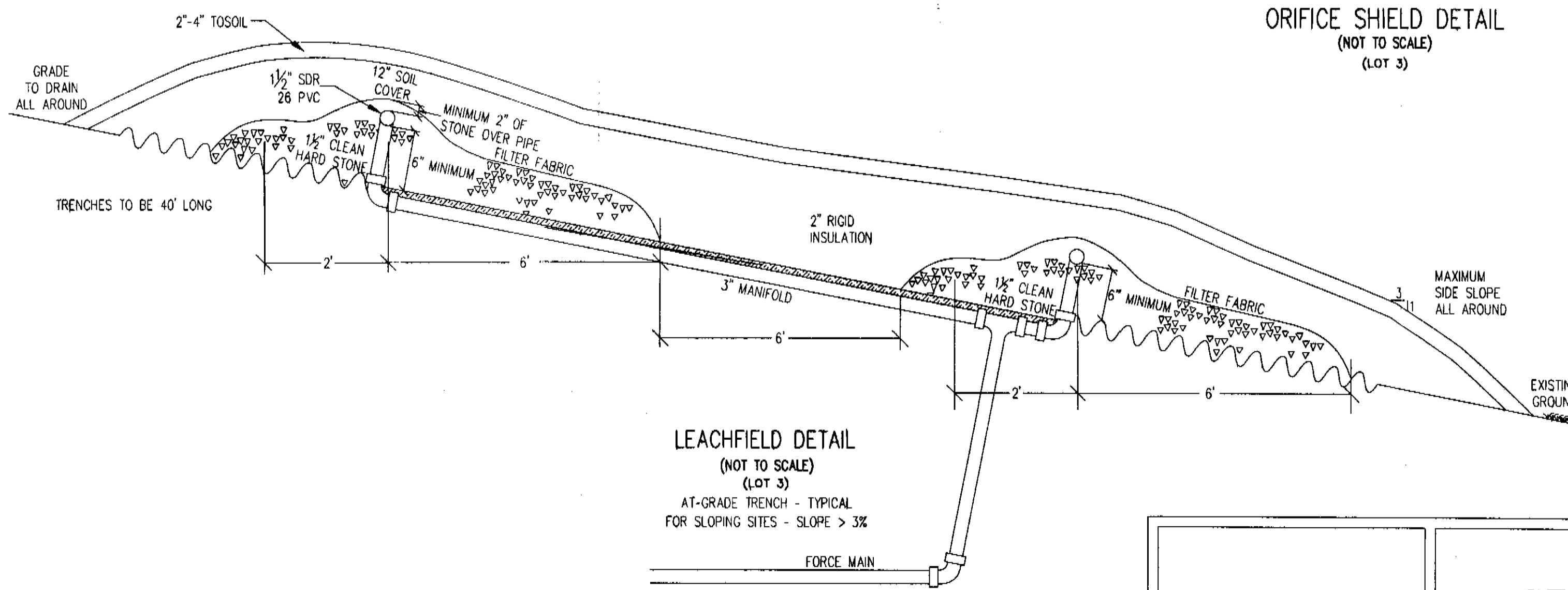
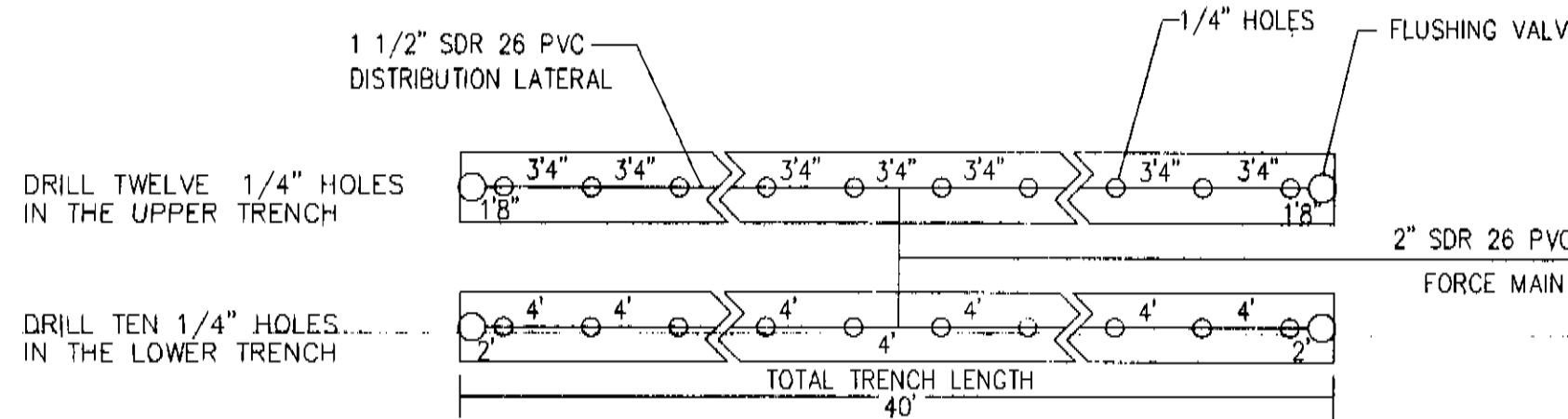
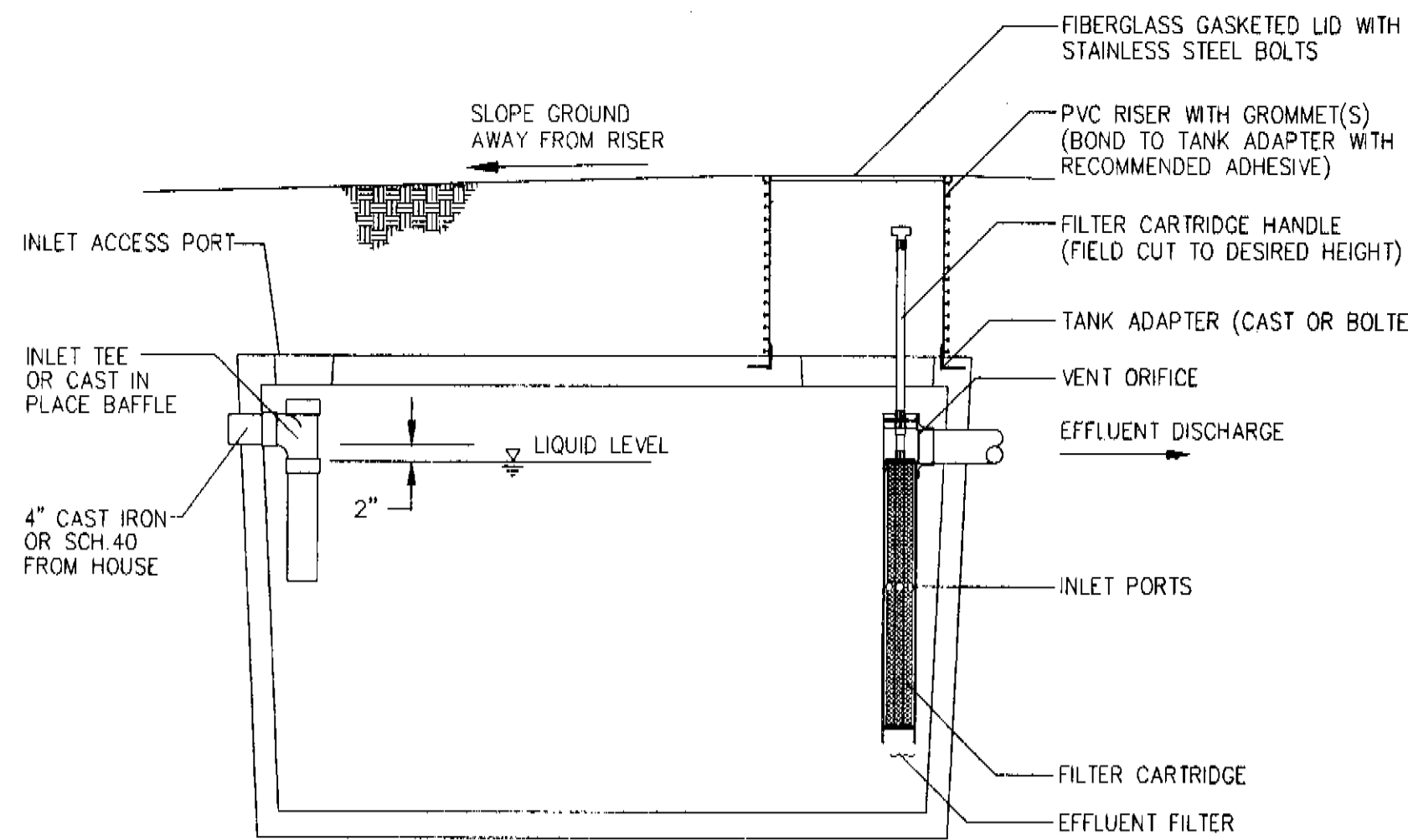
- 2) The inspection shall be performed in accord with the manufacturer's Operation and Maintenance Manual submitted as part of the Innovative/Alternative System application package. If at any inspection the effluent is cloudy or pungent smelling, a sample shall be collected and tested for BOD and TSS. The results of any testing shall be submitted with the annual inspection report.

- 3) The first inspection shall be completed no later than 6 months after placing the system in service.

- 4) The second inspection shall be completed no later than 12 months after placing the system in service.

- 5) Subsequent inspections shall be completed at least once per year based on the date when the system was first placed in service.

- 6) All inspection reports shall be filed with the appropriate Regional Environmental Office of the Agency and the landowner no later than 30 days after the date of inspection.



Soil Information

Test pits excavated on June 8, 2004 by backhoe Kate Peyerl, ANR Barre, Present

SB-4
0' -9" Brown topsoil fine loam
9' -24" Brown loamy fine sand
24' -49" Gray brown loamy fine sand, firm
Gravelly on one side of pit
Seepage @ 36"
Standing water at bottom

SB-5
0' -12" Reddish brown topsoil loam
12' -30" Gravelly medium to coarse sand
30' -51" Gravelly coarse sand, moist
Distinct staining

SB-6
0' -12" Reddish brown topsoil loam
12' -28" Gravelly medium to coarse sand
28' -50" Gravelly coarse sand, moist
Distinct staining

SB-7
Mottles @ 16"

SB-8
Mottles @ 20"
Very moist
Gray fine silty sand

SB-9
Mottles @ 16"-18"
Very moist
Gray fine silty sand

SB-10
Seepage @ 24"

Test pits excavated by backhoe on 9/16/04
Kate Peyerl, ANR, Barre, Present

SB-11
0' -24" Brown loamy fine sand
24' -63" Gray brown silty fine sand
Mottles @ 24"

SB-12
0' -30" Brown loamy fine sand
30' -44" Gray brown silty fine sand
Common faint mottles @ 24"

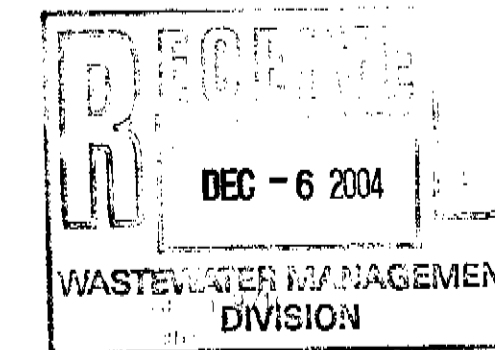
Percolation Tests

PT-3 12 Min/in @ 18"
PT-4 6 Min/in @ 18"
PT-5 10 Min/run @ 24"

Latitude/Longitude

Lot 3 Proposed well location N 44°-07'-13.6"; W 072°-53'-07.9"
Lot 3 Primary leachfield N 44°-07'-14.4"; W 072°-53'-06.4"
Lot 3 Replacement leachfield N 44°-07'-10.1"; W 072°-53'-10.3"

Approved: [Signature]
Date: [Date]



DETAILS - LOT 3
GEORGE & CYNTHIA COLPITTS
THREE LOT SUBDIVISION

WEST HILL ROAD WARREN, VT

SCALE: NTS PROJECT: #23010
DESIGNED BY: PCL DRAWN BY: PCL CHECKED BY: GNM/NPN

DATE: SEPTEMBER 27, 2004 SHEET 4 OF 4

McCain Consulting, Inc.
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