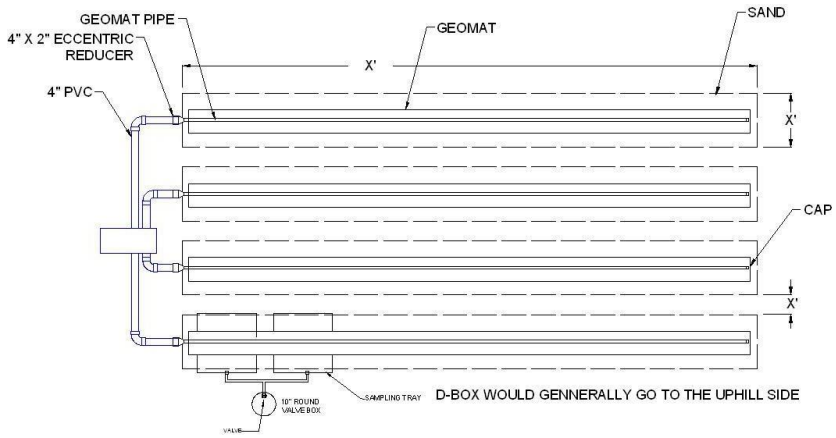
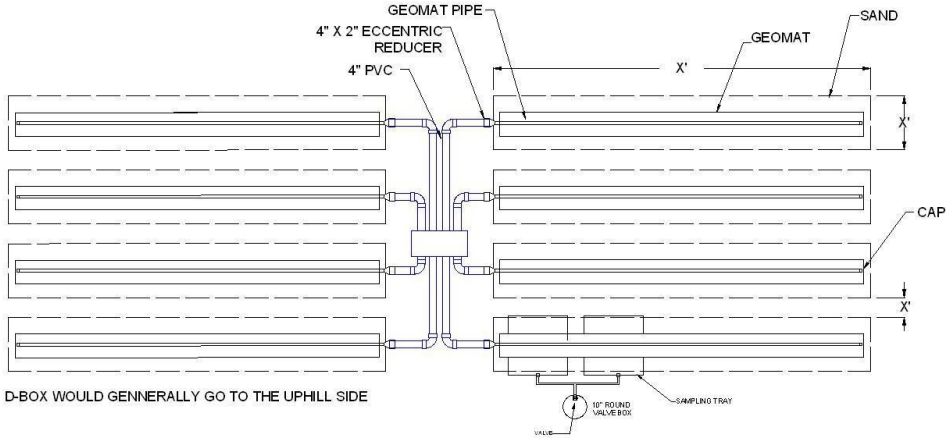
Virginia
Design Manual 2020
For
GeoMat™ Pressure and Gravity Leaching Systems





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Introduction

The GeoMat™ Leaching System (GeoMat) is a low profile modular wastewater infiltration system. GeoMat can be utilized for subsurface irrigation and wastewater reuse. GeoMat is comprised of a transmissive core of fused, entangled plastic filaments wrapped with a hygroscopic membrane. A pressure or gravity perforated distribution pipe line is incorporated into the product. GeoMat is installed in the shallow soil horizon for enhanced aeration, increased microbial activity, enhanced nutrient removal, enhanced plant uptake, and increased evapotranspiration. The GeoMat comes in variety of sizes and is nominally 12 or 39 inches wide and nominally 1 inch thick. The 12 inch width is most commonly utilized.

GeoMat functions differently than other wastewater infiltration and subsurface irrigation systems. A dose of wastewater is discharged from the piping network into the transmissive core. This core then transmits the water to the hygroscopic membrane which draws water away from the application point. The capillary force of the soil then pulls the water away from the membrane. This results in very uniform application of the water to the surrounding soil and eliminates the point loading associated with other technologies.

GeoMat is utilized in conjunction with time dosing, demand dosing, and gravity distribution. Time dosing and demand dosing enhances treatment and flow, but for small residential systems, the natural house cycle is enough to dose using gravity. Through a combination of the high surface area to void space ratio and dosing, microbial respiration byproducts such as carbon dioxide, methane, and hydrogen sulfide can be displaced with the wastewater dose; once the dose infiltrates, air is subsequently drawn into the system. Due to the high surface area to void space ratio, this gas exchange has been shown to be significantly greater than in other leach field technologies. This increased oxygen transfer rate results in increased removal of pathogens, B.O.D. and nutrients such as nitrogen and phosphorus in a shallower soil profile.

Geomatrix products are the result of intensive research and development, including in house and third party testing. Test reports are available by contacting Geomatrix, LLC.

Designing a GeoMat System

GeoMat Leaching Systems shall be designed in accordance with the Virginia TL-2 guidance, Chapter 613, REGULATIONS FOR ALTERNATIVE ONSITE SEWAGE SYSTEMS. Table 1 on page 6 should be used as a sizing guide for pressure trench or gravity/pad configurations. If a TL-3 ATU precedes the GeoMat system, a designer MAY use TL-3 sizing for pressure trench, however, GeoMat sq.ft. amounts will remain the same.

A minimum of 6" base of sand fill (page 8) will be utilized under the GeoMat. The basic system is considered to include the sand base and the GeoMat, for a combined profile of 8". However, if pretreatment is used before GeoMat, the bottom of the GeoMat becomes the measurement point for standoff distance. The sand is still required.

Maximum loading rate is two gallons per day per square foot of GeoMat. One bedroom (150GPD) uses 75 sq./ft.. Max loading rate per dose is .5 Gal/sq.ft.. If system is only gravity, dosing volume does not inherently apply. A siphon, HyAir or Flout may be used to better distribute dose to GeoMat.

Pump tank sizing for time dosed systems will have a minimum reserve of 1 times daily flow. Demand dosed systems will have a 25% reserve.
Maximum dosing volume per square foot, per dose is 0.50 gallons
Example:

600 gpd, 300 sq.ft. of GeoMat system
300' x 0.50 gal = 150 gallons per dose
600 gpd /150 gal = 4 doses a day, four (4) is a system minimum.

Pumps that are pumping to a D-box should have a flow rate less than 10 GPM per outlet used on the D-box.
A pressure filter, approved by Geomatrix, will be installed between the pump and laterals on all LPD/LPP systems. The Sim/Tech STF-100 is preapproved.

Pressure Systems

Treatment units must have a primary tank volume (trash tank) of at least 12 hours of retention. On a case by case basis other systems may be approved for specific project use by Geomatrix Systems, LLC . Geomatrix reserves the right to restrict any pretreatment product for any reason.

In LPP/LPD systems the designer is responsible for specifying the diameter of the distribution pipe used (typically 1" to 1 1/2"), the spacing (typically 3' to 6') of the 3/16" – 1/4" orifice holes, and the calculated head loss from pressurization. Distal head should be a **minimum** of 1 foot of residual head (static pressure) at the end of each drain field distribution lateral. System should balance within 10%.
In gravity systems, pipe will be Geomatrix 2" perforated pipe.

Pressure systems may be time dosed. All commercial applications will be time dosed. Dosing will be a minimum of four (4) times a day and a maximum of twelve (12) times a day. Dosing a gravity system will be the same.

The distal head pressure of the GeoMat can be fully adjustable through valving on the distribution manifold; this is often located in the pump station. Distal head is typically set between 24 and 48 inches of the water gauge. Distal heads on different laterals should be set as closely as possible with no more than a 10% differential. A cleanout/distal pressure monitoring port is installed on the terminal end of each of the lateral lines. The lateral lines can be readily brushed, flushed and jetted, should this be necessary; however, a pressure filter in the pump tank is also utilized to diminish or eliminate this maintenance frequency.

**Design software for pump, lateral line, transport pipe, manifold, and additional head losses is available by emailing request to info@geomatrixsystems.com.

Pressured trenches with Geomat will be 36" wide and 9' on center to utilize the pressure trench loading rates.

Gravity Systems

Configurations not pressurized will use Gravity/pad sizing.

For pads (any configuration wider than 3'), the maximum effective distance of sand bed from the edge line of the GeoMat is 2'.
Example: 1' to 5' would need one 12" wide GeoMat run, 5'-1" to 10' would need two. Or in faster soils the 39" wide GeoMat could be effectively 7.25' wide.

Flow equalizers will be used in all D-boxes.

GeoMat Sand Sizing

Sizing a GeoMat system is dependent on the soil absorption rate.

Maximum site loading rates are as prescribed by section 12 VAC 5-613-80(10) of the Regulations for Alternative Onsite Sewage Systems. Gravity or Pad Loading will maintain the minimum sq. ft. as required for TL-2 systems regardless of the use of TL-3 pretreatment before Geomat.

The soil absorption rate shall be the most restrictive soil horizon within one foot below the proposed base of the sand below the GeoMat.

Table 1

Soil Texture	Percolation Rate (mpi)	Pressure Trench Loading		Gravity or Pad Loading	
		sq.ft./Bedroom	gpd/sq.ft.	sq.ft./Bedroom	gpd/sq.ft.
Sand & Loamy Sand	5	**83.4**	**1.8**	88.2	1.7
	10	89.8	1.67	93.3	1.6
	15	98.7	1.52	103.4	1.45
Sandy Loam	20	**107.1**	**1.4**	111.1	1.35
	25	118.1	1.27	120	1.25
Loam & Sandy Clay Loam	30	**125**	**1.2**	130.4	1.15
	35	127.1	1.18	142.9	1.05
	40	131.6	1.14	157.9	0.95
	45	138.9	1.08	176.5	0.85
Silt Loam, Clay Loam & Silty Clay Loam	50	**187.5**	**0.8**	200	0.75
	55	205.5	0.73	214.3	0.7
	60	217.4	0.69	230.8	0.65
	65	227.3	0.66	250	0.6
	70	238.1	0.63	277.8	0.54
	75	250	0.60	300	0.5
	80	263.2	0.57	333.3	0.45
	85	272.7	0.55	375	0.4
	90	283	0.53	428.6	0.35
Sandy Clay, Silty Clay & Clay	95	**375**	**0.4**	468.7	0.32
	100	416.7	0.36	500	0.3
	105	454.5	0.33	555.5	0.27
	110	500	0.30	600	0.25
	115	535.7	0.28	681.8	0.22
	120	600	0.25	789.5	0.19

Basic Design Parameters

Minimum system elevations are as prescribed by section 12 VAC 5-613-80(12 &13) of the Regulations for Alternative Onsite Sewage Systems. The bottom elevation of the 6" deep sand fill beneath the GeoMat will maintain the minimum distance as required for TL-2 systems. Sand fill may be utilized to build up the elevation of the system, for basic systems the separation distance is measured from 6" below the mat. For systems with pretreatment it is the bottom of the GeoMat

Cover material must maintain a minimum of 8" above all portions of the system except elements that daylight (service risers, etc.) Use sandy fill material or native material, free of stones 3" or larger and heavy organic matter (stumps, branches, muck) as backfill. The cover material should be capable of growing grass and be graded to sheet flow stormwater away from all system components.

Minimum perimeter on any sand bed portion of the system that rises above original grade shall gently taper (2%) away two feet then provide a 3:1 slope to original grade.

Keep the top of the GeoMat shallow (8-12 inches below existing and finish grades). Maximum depth of cover is generally 18" See detail on page 15. Try to keep as level as possible to balance airflow rates through the soil.

Separation to the seasonal high water table is twelve (12) inches statewide unless otherwise specified by permit; (TL-3). Measured from the bottom of the 6" sand bed for basic systems.

Separation to restrictive layer shall be twelve (12) inches statewide (TL-2) unless otherwise specified by permit; (TL-3). Minimum system elevations are as prescribed by section 12 VAC 5-613-80 (12 & 13). Permit may require mounding analysis at 12". It is often simplest and most cost effective to raise system up 6 more inches so no mounding analysis would be needed.

When first reviewing a site and developing a design, it is best to position the GeoMat laterals parallel to ground surface contours. This will help make it easier to keep drain field base elevations uniform. Designing perpendicular to a surface contour will mean that the down gradient end of the drain field trench will be shallow-placed, whereas the up gradient end will be much deeper. This results in non-uniform water and air movement.

Minimum distances between rows of pads or trenches when separating for material savings, not including specific trenches taking advantage of Pressure Trench sizing are as follows.

Slope	Distance between Sand Edges
0-10%	0'
11-15%	3'
16-20%	6'

GeoMat as Dispersal – with Pretreatment

While conceived primarily as a stand-alone treatment system for wastewater, GeoMat also provides excellent dispersal qualities, offering an alternative to other dispersal options for shallow-placed systems. Designers are finding benefit in coupling gravity-fed GeoMat for dispersal with established TL-2 and TL-3 treatment systems that meet the NSF 245 protocol or are otherwise recognized as meeting the 50% reduction in total nitrogen required for all new alternative onsite sewage systems to be installed in Virginia's Chesapeake Bay watershed. Nitrogen reduction is also required for systems dispersing more than 1000 gallons per day in Virginia and pressurized GeoMat can be a valuable part of the design strategy for these systems as well.

When coupled with TL-2 nitrogen-reducing pretreatment, the 6" of sand required in the proprietary GeoMat design can be added to at least 6" of naturally occurring suitable soil above limiting features to comprise the minimum 12" standoff required inTable 2 of the 12VAC5-613-80.13(Regulations for Alternative Onsite Sewage Systems.) As the 6-inches of system sand is not being relied upon to achieve TL-2 treatment, it may be considered as 6-inches of vertical standoff as long as it is underlain by a 6-inch depth of natural soil.

In cases where the site provides less than 6" of naturally occurring suitable soil above limiting features, the designer must provide nitrogen-reducing TL-3 pretreatment plus disinfection when using GeoMat for dispersal. As the GeoMat system is being used for dispersal and not being relied upon for additional treatment, the six inches of system sand in the GeoMat system can be considered as additional vertical separation. However, in any instance where there is less than the 6-inches of natural soil beneath the proprietary GeoMat system, disinfection is required in accordance ith Table 2 of 12VAC5-613-80.13 regardless of the depth of the system sand provided.
As the requirements for vertical separation distances to limiting features of 12VAC5-613-80-13. are not specific to the type of dispersal provided - gravity or pressure, the above applies to both.

GeoMat as Dispersal – Reducing Nitrogen

Designers (PE) can use shallow-placed (12" deep or less) pressurized GeoMat systems to meet the Best Management Practices (BMPs) for reducing nitrogen discussed in GMP 2013-01 for systems dispersing less than 1000 gallons per day. For systems dispersing greater than 1000 gallons per day designers can use a shallow-placed GeoMat system as part of an overall nitrogen-reducing strategy that must be verified by sampling.

GeoMat Excavation Requirements

The soil between the trenches (if any) shall remain undisturbed when possible. If the presence of boulders or other obstacles make trench construction impractical, the entire system area may be excavated as necessary, backfilled with sand to the design elevation of the bottom of trench and the GeoMat constructed and backfilled with native soil material. All standoffs stated in Table 2 12VAC5-613-80 (13) apply to all portions of the GeoMat trench/pad.

Keep the bottoms of the individual GeoMat pads/trenches level whenever possible. The manufacturer prefers level trenches/ pads, however if doing so will cut into the water table or restrictive layer and it is not possible to divide the dispersal area into separate trenches/ pads, the designer may specify limited slope to maintain the necessary standoff for TL2 and TL-3 systems. The designer shall provide specific guidance in the plans to assure proper installation. Consult plan and designer if something is off. Bottom may slope as great as 8% on 5-60 MPI soil and up to 3% on 60-110 MPI soil.

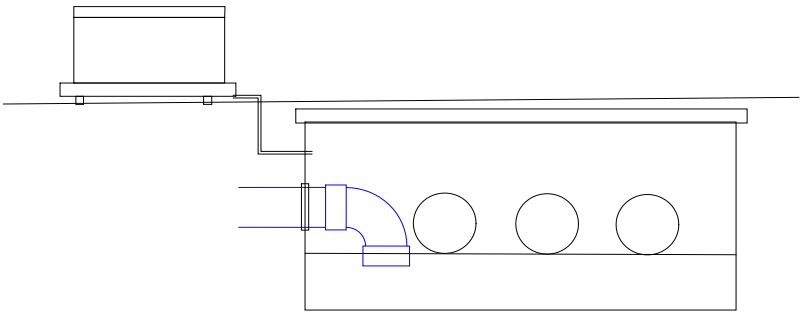
Avoid working soils that are moist or wet because they can easily smear and compact. Properly scarify the drain field base before installing components.

Preserving the native soil between trenches and minimizing its disruption and compaction during construction is essential to maintaining soil structure and therefore water and gas movement in the soil around the system.

Installing Deeper than a 18" Average

Systems installed deeper than 18" must provide a means to add supplementary air to the effluent if necessary.

For gravity-fed GeoMat systems, the designer can provide a 90 degree fitting on the inlet of an at-grade distribution box by with pipe that extends below the water level as a means to provide supplementary air. A linear air pump would be plumbed to inject air into the distribution box. Airline will need to be valved to create back pressure.



Sand and Fill

Sand must be coarse to very coarse, clean, granular, free of organic matter.
No stones over 3/8" in diameter
Percentage Restrictions (by total weight);
Minimum 75% passing a #8 sieve
Maximum 50% passing a #30 sieve
Maximum 10% passing a #100 sieve
Maximum 5% passing a #200 sieve

ASTM C-33 or "A sand" and other V-DOT sands may be acceptable for use as sand providing

that no more than 5% can pass a #200 sieve. If sand is not ASTM C-33 spec should be checked with GeoMat or its Representative before use.

Cover Fill will maintain a minimum of 8" above all portions of the system except elements that daylight (service risers, etc.) Use sandy fill material or native material, free of stones 3" or larger and heavy organic matter (stumps, branches, muck) as backfill.

Transport Lines (Pressure)

Generally the effluent transport pipe from the treatment unit to the GeoMat is 1 ½" to 2" schedule 40 PVC pipe. The actual pipe size will depend upon such factors as distance, pump head, scour velocity, frictional losses and desired pressure at the distal orifices. The transport pipe should be sloped either back to the pump basin or toward the GeoMat to clear the line after each dose. In some cases, it may be better to slope the transport line in both directions. In all cases this is done to prevent freezing in cold weather. An anti-siphon device should be used where any chance of siphoning of the pump tank may occur. If elevation head of the system is less than 40' no check valve should be used. This natural back-flush washes the pressure filter and will help lower system maintenance. In case of long run at high head a check valve should be used, a weep hole will be drilled just downstream of the check valve to back-drain for cold weather conditions.

Maximum Length

Maximum Gravity distribution pipe length should not exceed fifty feet; but pressure distribution piping can so long as there is less than a 10% flow differential between the first and last orifice in a given lateral. Actual lengths will vary between sites and will be influenced by site conditions. Manifolds for Pressure systems and D-boxes in gravity systems should be placed in the center of the system if possible. Centering will allow Gravity systems to be as long as 100' in length.
Note: Placement of the Dbox or Manifold in the center of a run up to 100' can result in two 50' gravity runs or two easy to balance pressure laterals instead of one 100' long pressure lateral.

Zoned Drain Fields and Trenches at Different Elevations (Pressure)

Smaller pumps can be used on larger drain fields and still maintain requisite distal head pressure by utilizing automatic sequencing valves. These valves automatically direct flow to each respective zone or distribution lateral, in a prescribed order.

Site conditions may not facilitate installing drain field trenches at the same elevation. In these situations valving can be utilized in conjunction with distal head measurements to adjust head uniformly to each lateral. If the distal head and orifice size and spacing is uniform, flow will be too. Access ports must be installed at the locations of gate valves. Valves can often be located in the pump tank. Alternatively, an automatic sequencing valve can be utilized to alternate doses to laterals at different elevations. When this is done, the dose volume should be based off the lowest lateral to avoid overloading it relative to the laterals at higher elevations.

Distribution Manifolds and Laterals (Pressure)

GeoMat distribution manifolds are typically, 2" to 4" schedule 40 PVC. Distribution laterals are typically 1" to 2" schedule 40 PVC. Size will vary depending on design and site conditions. For pressure systems, flow equalization valves are optional when distribution lines will be at the same elevation and are mandatory if laterals are installed at different elevations. Flow equalization valves are often installed in the pump chamber for easy operation, protection from damage and prevention of freezing. For gravity systems, a D-box will be used.

NOTE: Appropriate lateral and orifice sizes provide sufficient scouring velocity in the laterals, to minimize orifice clogging, providing as even distribution of wastewater as possible. The treatment system must operate at the specified performance standard or orifice clogging can result.

The lateral piping is available predrilled with 3/16" -1/4" diameter orifice holes and spaced according to the design requirements of the system, with GeoGuard™ orifice shields attached. The holes will be drilled facing downward (six o'clock position).

Designs should account for a minimum of two feet and a maximum of six (6) feet of head pressure at the distal end of each GeoMat distribution lateral.

Design software for pump, lateral line, transport pipe, manifold, and additional head losses is available by emailing a request to info@geomatrixsystems.com.

For pressure systems, schedule 40 PVC **sweep** elbows or two 45° fittings (also collectively called turn ups) shall be attached to the distal end of each GeoMat distribution lateral to facilitate maintenance and inspection. A standard 90° elbow should not be used because it will interfere with maintenance activities. The open end (upward end) of the turn-up needs to be closed off with either a ball valve or threaded plug or cap. The distal head ports are utilized for measuring and setting distal head on the GeoMat laterals. Distal head ports can also be used for cleaning the laterals with a bottle brush or jetter, should this be necessary.

Drain Field Cover

Drain field cover shall be a minimum of 8", maximum of 18" in sloping systems. Uniform cover depth over the drain field results in consistent oxygen transfer to the entire system. The final grade over and around the drain field should direct storm water sheet flow away from drain field. When backfilling the system, construction staples can be utilized to hold down piping components and mat, but they should not penetrate the top fabric. Care should be exercised to keep a minimum of 8" of cover material over the system before operation of low ground pressure equipment. Excavation equipment ground pressure should not exceed 10 psi. Turning excavation equipment on top of the GeoMat should be avoided. Excessive equipment travel over certain areas of the GeoMat should be avoided. Uniform travel results in uniform compaction and ultimately uniform air flow.

The area directly above and adjacent to any septic drain field should be protected from

heavy vehicle traffic and excess weight loads before, during and post construction. This is especially important when using GeoMat. Although fairly rugged, GeoMat systems are located close to the ground surface and can be damaged by abuse during and after construction.

On all new construction, the proposed drain field location should be staked and flagged/fenced to prevent encroachment during home construction. If vehicle encroachment is expected to be a problem after construction, some structure, such as garden timbers, railroad ties, fences or walls should be used to protect the drain field area. The drain field area should be free of debris and planted with grass. Impermeable materials and structures should not be installed or stored over the drain field. Trees and shrubs should be kept a minimum distance of ten (10) feet from the drain field. Roots from nearby moisture loving trees such as willow, black locust, and red maple may cause problems with roots clogging drain field lateral orifices. Greater setback distances are recommended for these tree species. If placement of the GeoMat closer than 10' is necessary, contact Geomatrix for design assistance of root barriers.

Venting

In the event of a system being installed deeper than 24", above the TOP of the GeoMat, a air system must be incorporated in design only.
Contact Geomatrix or your authorized representative for assistance.

Maintenance Requirements (Pressure)

The GeoMat distal head should be measured when the treatment unit is inspected. Distal head dropping can indicate that the pressure filter is clogging.

Sand filter and other approved advanced treatment systems' effluent is low in BOD and TSS; however, over time, accumulation of biosolids or slime can accumulate in GeoMat lateral pipes and orifices and create uneven wastewater distribution along the lateral. This is especially true if treatment units are not operating properly. A properly maintained pressure filter greatly extends service intervals. Distal head pressure increasing by more than 20% or pump run times increasing by greater than 20% relative to the number of doses can indicate that orifice clogging is occurring.

If it is necessary to clean the orifices, locate the distal port valve boxes and open the distal port on the end of each lateral line. Manually engage the pump to purge any loose solids. Once all noticeable solids are purged, shut off the pump. A bottle brush of the same size as the lateral pipe attached to a small plumber's snake can then be pushed down each lateral line. With the bottle brush removed, manually engage the pump again to flush out any loose solids in the lateral line. To increase the flushing action and velocity before and after bottle brushing, open only one equalization valve at a time. Alternatively a small jetter may be used to remove any accumulated solids.

The septic tank and treatment system should be pumped, maintained, and operated according to the requirements of the manufacturer and applicable regulatory agency.

Maintenance Requirements (Gravity)

The septic tank and pretreatment system should be pumped, maintained and operated according to the requirements of the manufacturer and any applicable regulatory agency.

Sampling Requirements

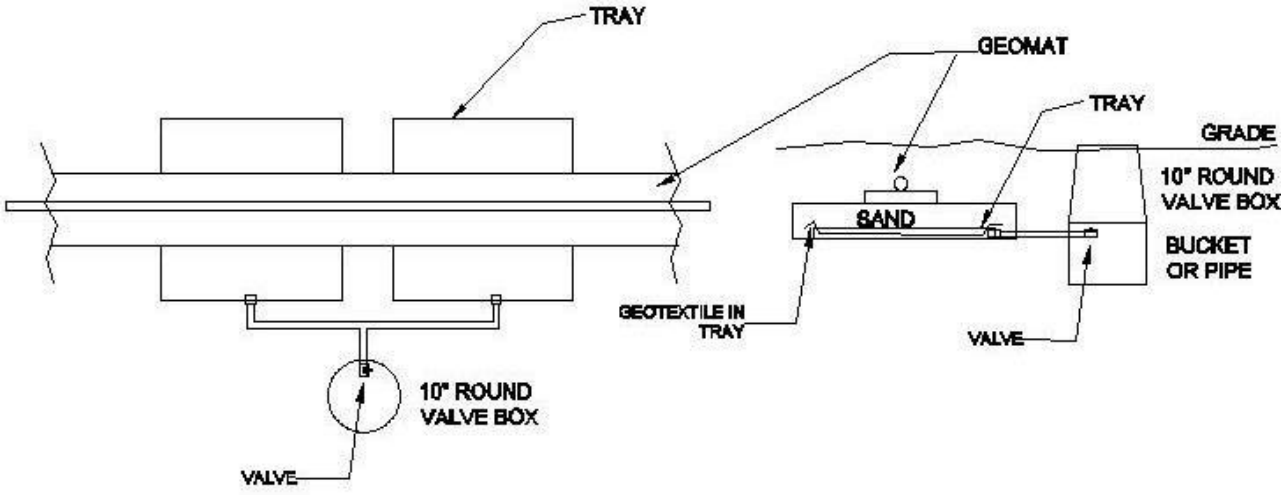
All Virginia AOSS Treatment Systems are subject to periodic sampling of treated effluent. Samples of treated effluent are obtained via a designed sampling device, which can be an included component. These instructions are to be used as a minimum guide. Other devices may be used.

Inside the Chesapeake Bay Watershed it is the pretreatment device that will be sampled. See that products specifications on sampling. It is best practice to be able to sample GeoMat as well.

Outside the Chesapeake Bay Watershed sampling will be done per regulation schedule.

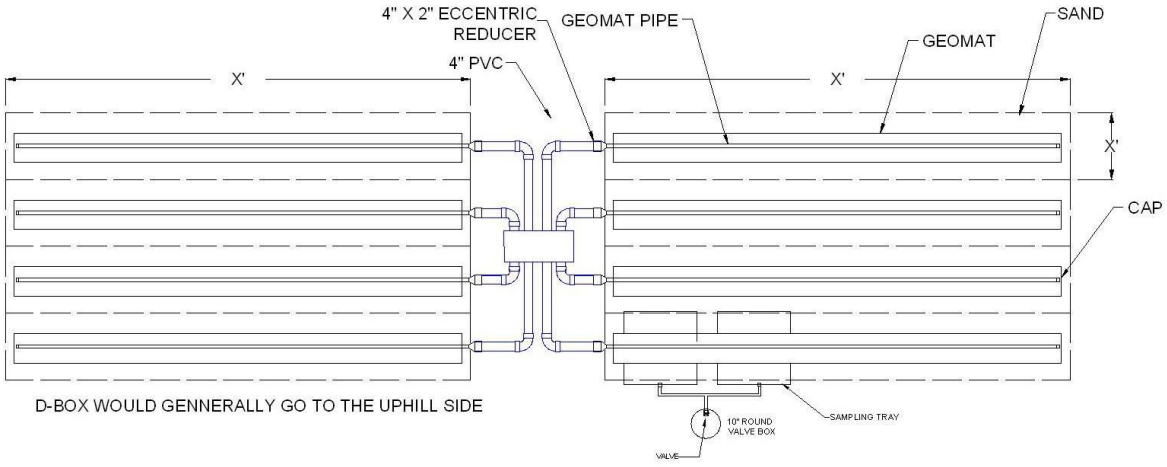
Simple sampling pan design, off the shelf

2 - 28" x 30" washing machine pans, or equivalent, with 1" pvc fitting
1 - 10 in. Round Valve Box
2 – 36" x 36" pieces of geotextile to cover pans
1 – 1" pvc valve
2 – 1" pvc 90's
1 – 1" pvc 'T'
1 – 10' stick of 1" pvc

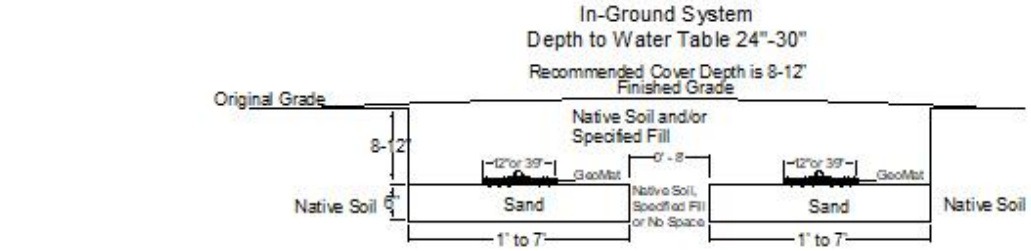


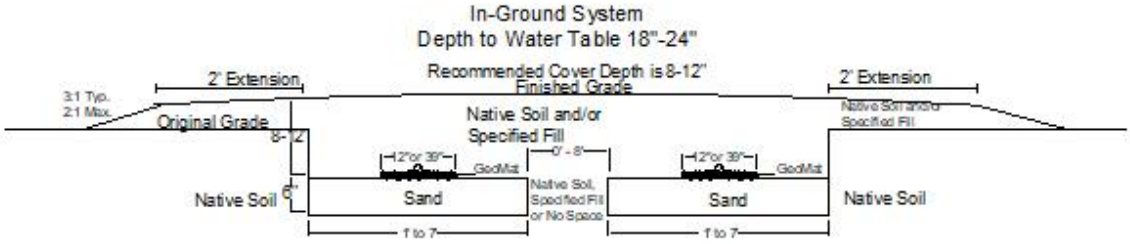
Taking a Sample

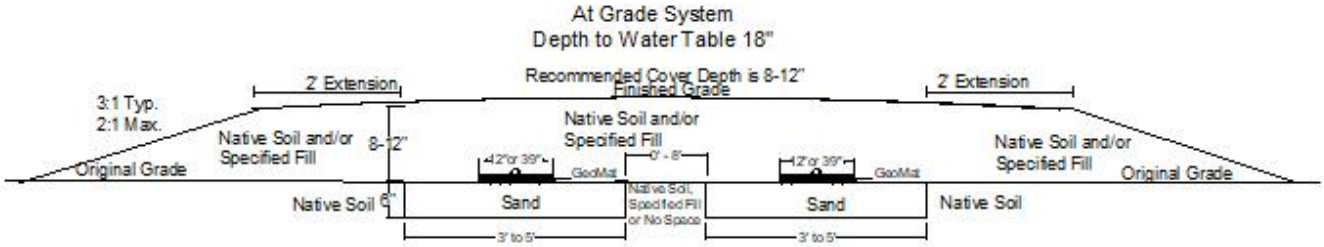
- These procedures are to be performed only by a trained technician.
- Use proper safety equipment, including gloves and eye protection.
- Open valve in Sampling Port.
- Let water drain out
- Place cup under valve and leave in place until a sufficient amount of treated effluent has been obtained.
- When obtaining samples, use care not to touch collection cup against the side walls or bottom of the sampling port to prevent contamination.
- Immediately perform visual and olfactory assessment of collected sample.
- Thoroughly wash hands and any equipment used.

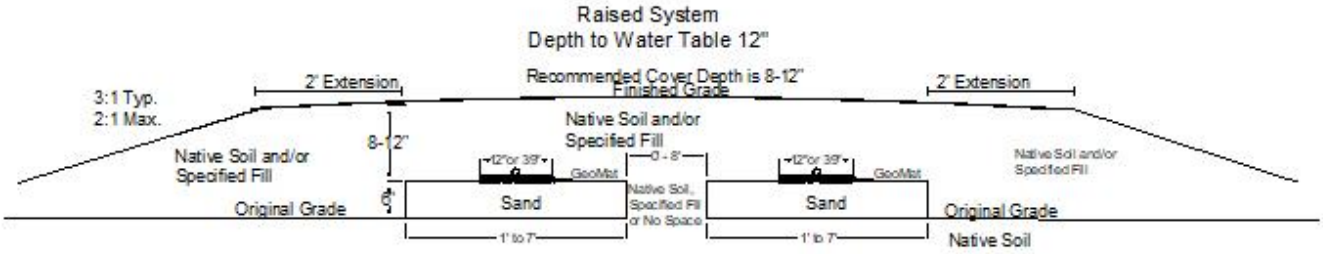


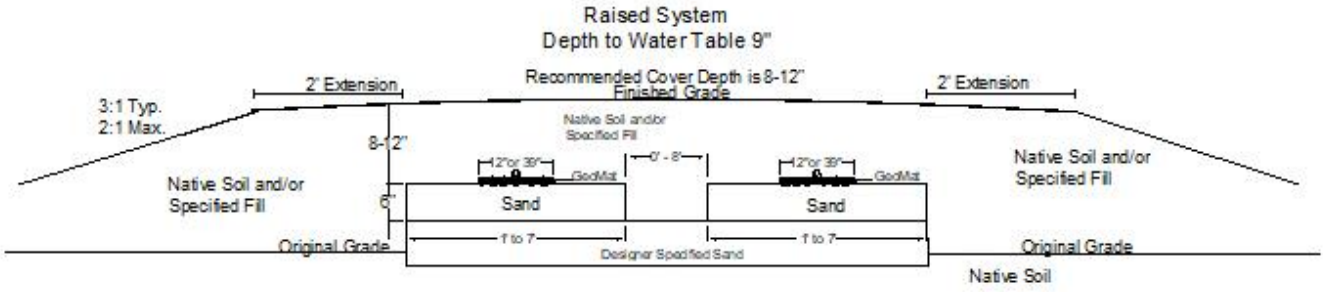
Drawings Cross Sections



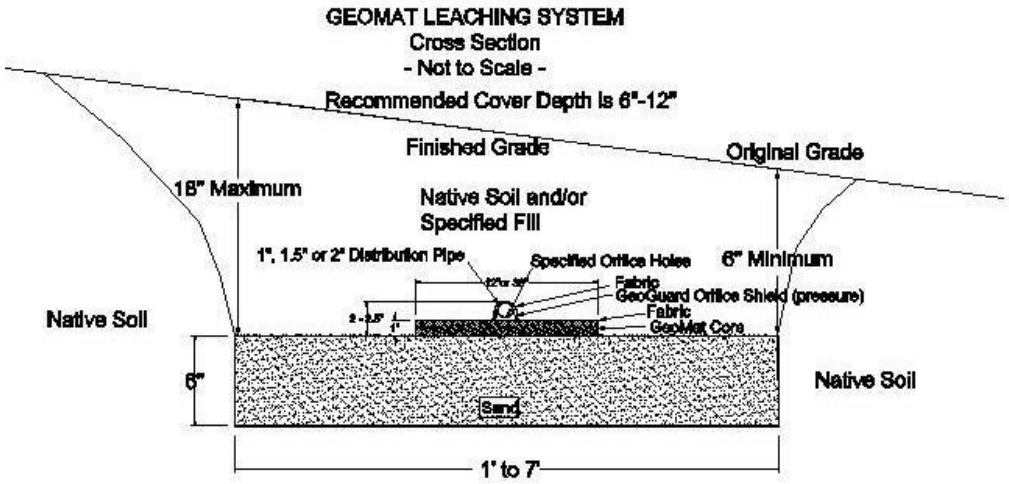




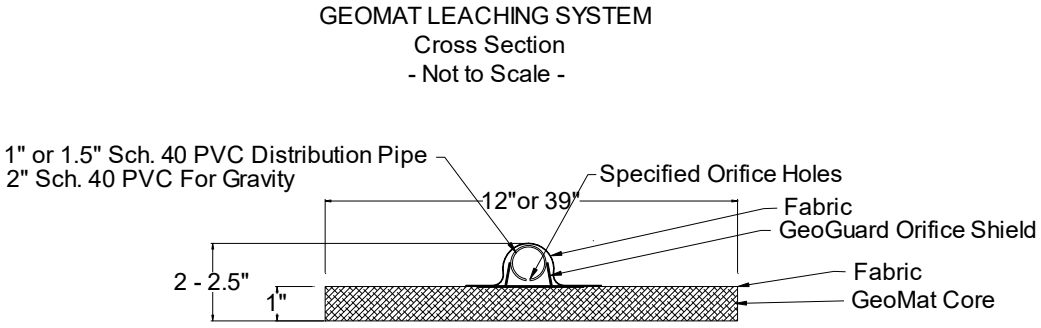




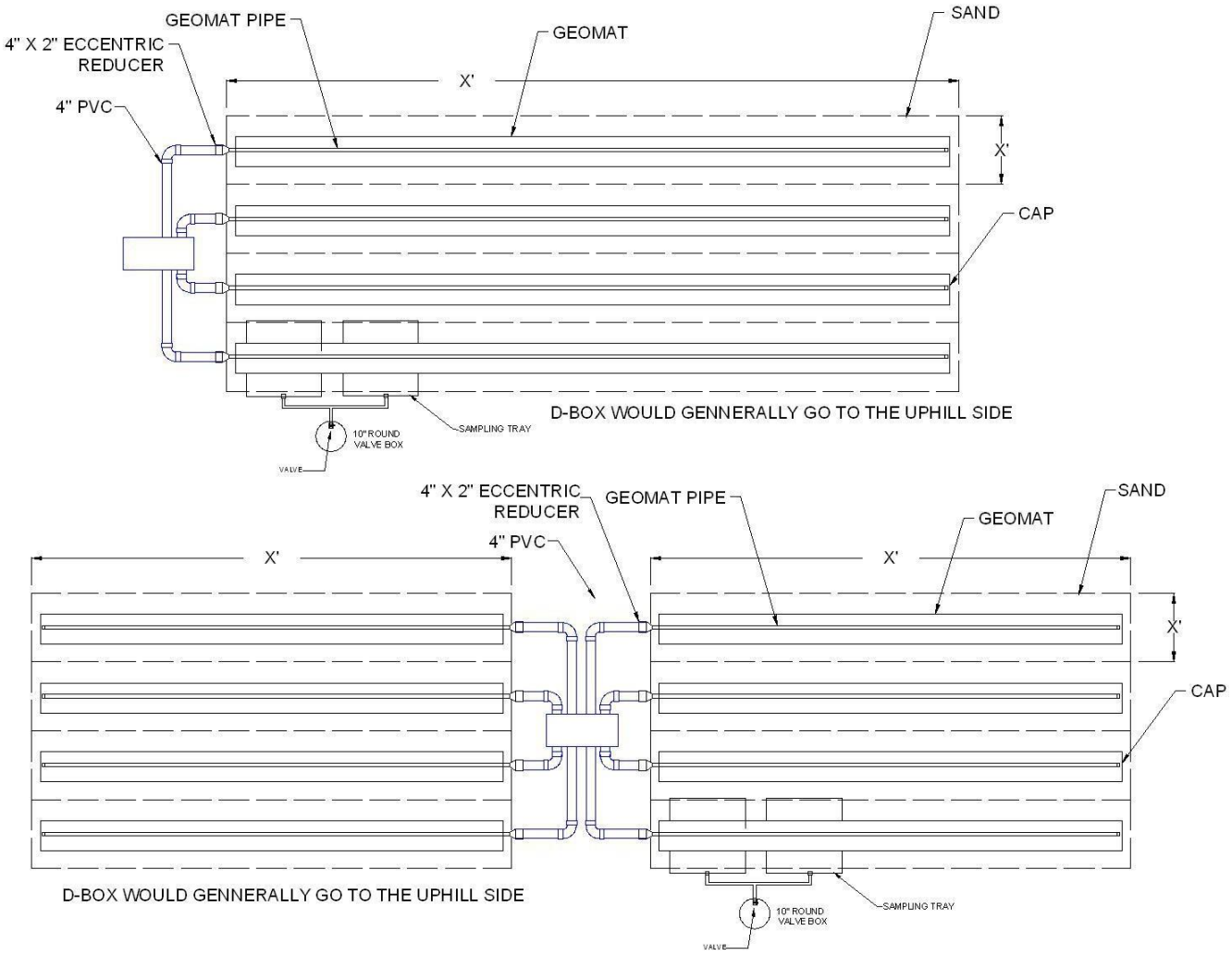
Sloping Detail



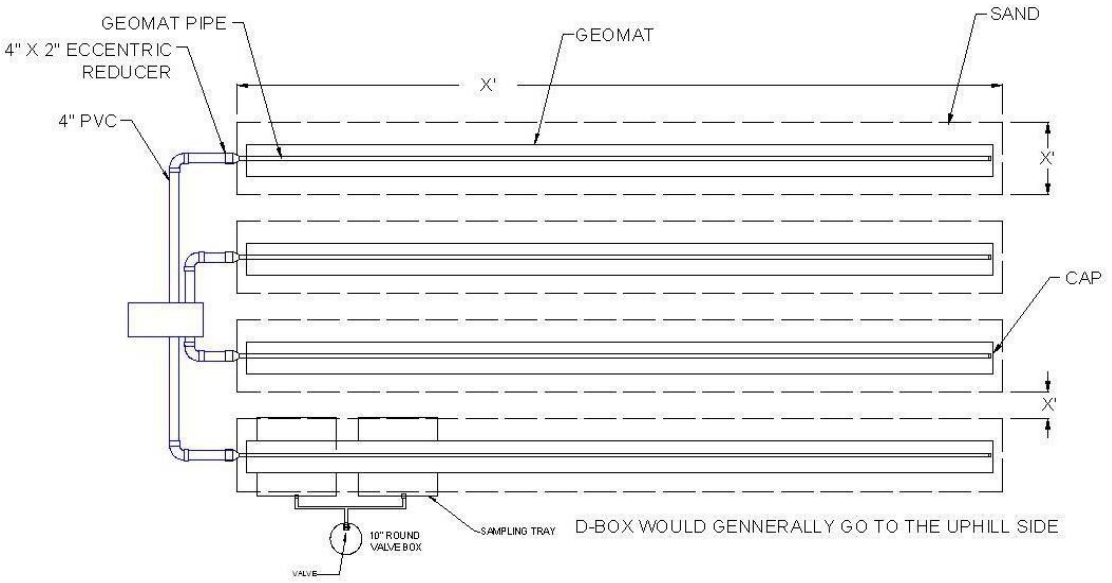
Parts

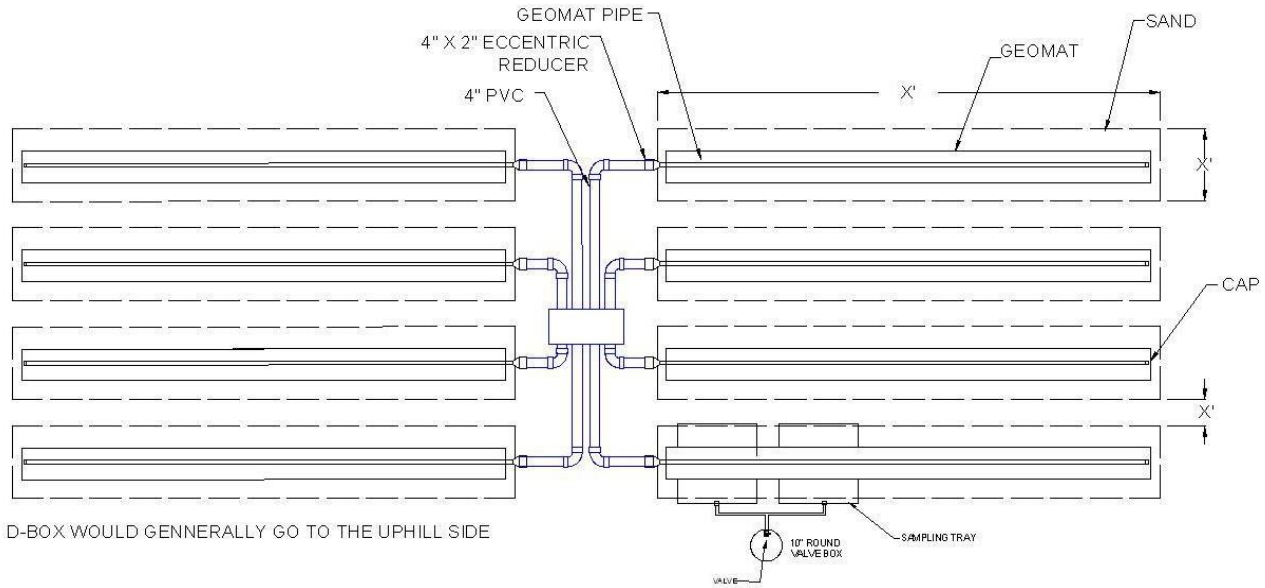


Plot Tight


GEOMAT PIPE
4" X 2" ECCENTRIC REDUCER
4" PVC
GEOMAT
SAND
X'
X'
CAP
D-BOX WOULD GENNERALLY GO TO THE UPHILL SIDE
10" ROUND VALVE BOX
SAMPLING TRAY
VALVE
4" X 2" ECCENTRIC REDUCER
GEOMAT PIPE
4" PVC
GEOMAT
SAND
X'
X'
X'
CAP
D-BOX WOULD GENNERALLY GO TO THE UPHILL SIDE
10" ROUND VALVE BOX
SAMPLING TRAY
VALVE

Plot Wide


GEOMAT PIPE
4" X 2" ECCENTRIC REDUCER
4" PVC
GEOMAT
SAND
X'
X'
CAP
X'
SAMPLING TRAY
10" ROUND VALVE BOX
VALVE
D-BOX WOULD GENNERALLY GO TO THE UPHILL SIDE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SAMPLING TRAY
10" ROUND VALVE BOX
VALVE

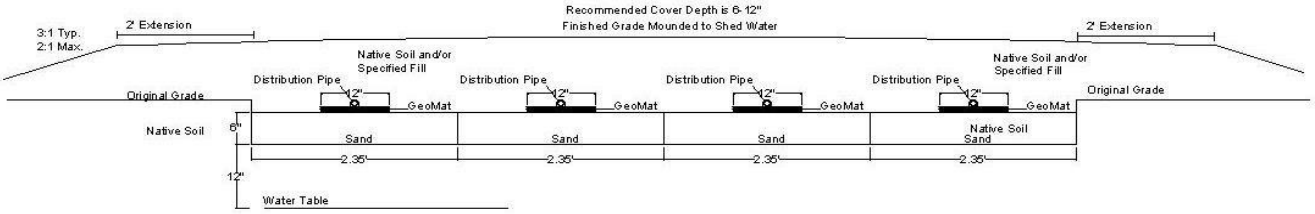
Design Example

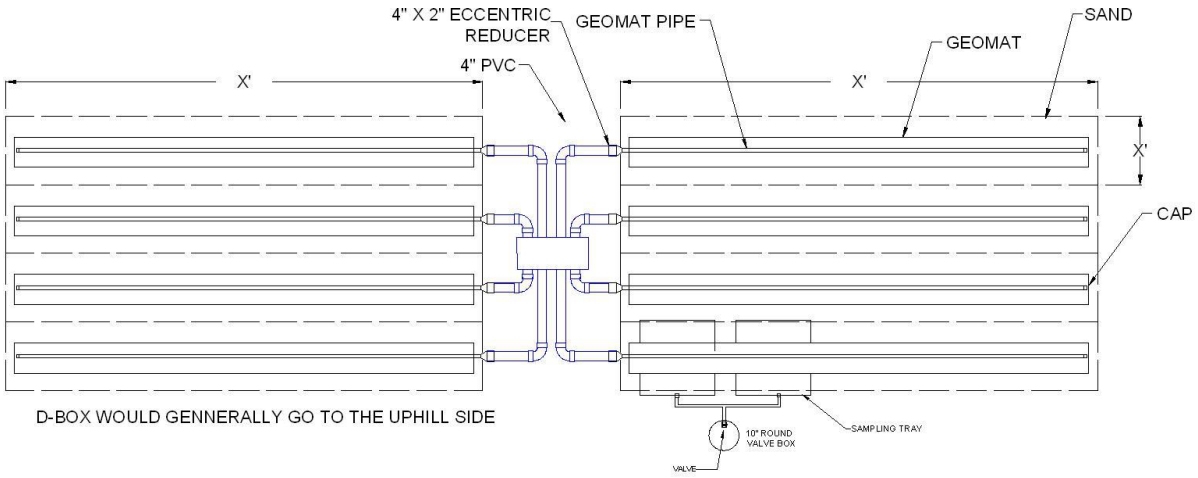
All of these units will be custom built for each project.
They will not be built until the Designer **AND** the Regional Rep agree on system.
There will be help all through the design process until Designer is comfortable with system.
There is a bunch of ways to do the math; here is one way that sizes each bedroom, then repeat for each one after.

A four bedroom house on 45 MPI soil. Water table at 20", slope less than 5%, gravity flow from D-box.

75 sq.ft. per bedroom of GeoMat, 12" wide will be used. 300' total.
176.5 sq.ft. of sand pad per bedroom. From sizing chart. 706sq.ft total.

Trench/Pad width: 176.5/75 = 2.35' wide trench per line spaced tight or wide.
75' is too long so split to 35' each side.





Septic Do's and Don'ts

Do:

Conserve water to reduce the amount of wastewater that must be treated and disposed.

Repair any leaking faucets and toilets.

Only discharge biodegradable wastes into system.

Restrict garbage disposal use.

Divert downspouts and other surface water away from your drain field & tanks.

Keep your septic tank cover accessible for tank inspections and pumping.

Have your septic tank pumped regularly and checked for leaks and cracks.

Call a professional when you have problems.

Compost your garbage or put it in the trash.

Don't:

Flush sanitary napkins, tampons, condoms, cigarette butts, diapers, "flushable" wipes an other non-decomposing products into your system.

Dump solvents, oils, paints, paint thinner, disinfectants, pesticides or poisons down the drain.

Dig in your drain field or build anything over it.

Plant anything other than grass over your drain field.

Drive over your drain field or compact it in any way.

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More Design Examples