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November 6, 2023

Conditionally
APPROVED
DEPT. OF SAFETY AND PROFESSIONAL SERVICES
DIVISION OF INDUSTRY SERVICES
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SEE CORRESPONDENCE

Geomatrix Systems LLC
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New Septic Solutions LLC
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Re: Description: POWTS Component Manual
Manufacturer: Geometry Systems LLC
Product Name: Geomatrix Systems LLC, Geomat Leaching System In-Ground Component Manual, May 2020
Model Number(s): Geomatrix Systems LLC, Geomat Leaching System In-Ground Component Manual, May 2020
eSLA PTO No.: PP-112300002-PTOVPCR

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an alternate approval to s. SPS 383.44 based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of August 2023. This alternate approval is contingent upon compliance with the following stipulation(s):

1. Installation of systems that conform to this POWTS component manual must consist of wastewater treatment tank(s) approved by the Division of Industry Services that meet the criteria listed in the manual. Tanks that are approved with options that allow the tank to meet the requirements of this manual, without further modifications to the tank, are considered approved tanks in accordance with this manual.

2. Approval of this POWTS Component Manual is for recognition for designs of systems that are covered by this manual. Systems that are designed, installed, and maintained in accordance with this manual will provide treatment and dispersal of domestic wastewater in conformance with s. SPS 383, Wis. Adm. Code.

3. Copies of this Component Manual are available through the submitter/manufacturer or downloaded from the department's webpage:

   https://esla.force.com/publiclookup

4. Approval of this design manual does not constitute approval of individual POWTS designs based on this manual; site-specific designs shall be submitted to the appropriate governmental unit for review and approval prior to installation.

The department is in no way endorsing this product or any advertising and is not responsible for any situation which may result from its use.

Sincerely,

Joshua Rowley

Joshua Rowley
POWTS Product Reviewer
POWTS Plan Reviewer
Division of Industry Services
715-634-5124
CST, POWTS Inspector, POWTS Maintainer, Designer of Engineered Systems-P

WISCONSIN

GeoMat™ Leaching System

In-Ground Component Manual

May 2020

GEOMATRIX

Patents: www.geomatrixsystems.com –
GeoMat is a trademark of Geomatrix Systems, LLC

Published by:
Geomatrix Systems, LLC
114 Mill Rock Road East
Old Saybrook, CT 06475

Geomatrix Systems, LLC reserves the right to revise this component manual according to changes in regulations or Geomatrix products installation instructions.

Version 1

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APPENDIX

The following documents are submitted as an attachment to GeoMat Leaching Systems In Ground Component Manual

In compliance with: Voluntary POWTS component review in accordance with s SPS 384.10 (3) No. 4. Testing Data.

A1. Onsite Wastewater Technology Testing Report

A2. Evaluation of Water Quality Functions and Advanced Soil-Based Onsite Wastewater Treatment Systems

I. INTRODUCTION AND SPECIFICATIONS

This component manual provides design, construction, inspection, operation, and maintenance specifications for GeoMat Leaching System In-ground ("GeoMat In-Ground") Soil Absorption Component.

The GeoMat Leaching System, is a low profile leaching system designed for maximum treatment and infiltration of wastewater into soil. GeoMat is nominally 1 inch thick and and 39 inches wide. It is comprised of an entangled filament core covered by a hydroscopic membrane with an incorporated distribution pipe.

Due to the shallow burial depth and the high surface area to void space ratio in the GeoMat, gas exchange has been shown to be significantly greater in GeoMat than in other leach field technologies. This increased oxygen transfer rate results in increased removal of pathogens, B.O.D., T.S.S., and nutrients such as nitrogen and phosphorus in a shallower soil profile.

The combination of the highly transmissive core and hygroscopic membrane draw the water between the application points and uniformly apply the water to the surrounding soil. The soil then draws the water away from the surrounding membrane through capillary action. This results in a much more uniform application of water to the soil and minimizes the point loading associated with other low profile systems.

In general, GeoMat can be utilized in many different configurations; please check with your regulatory agency or contact Geomatrix for the configurations that may be available in your area. GeoMat can be installed in trench and bed layouts and function with gravity, pump to gravity, and pressure distribution (PD) system configurations. GeoMat with 6 inches of ASTM C33 sand beneath it can be configured to acheive NSF Standard 40 treatment levels. GeoMat can also be used for subsurface irrigation and nutrient reuse.

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.

Geomatrix products are manufactured under one or more of the following U.S. patents; 6,485,647, 6,726,401, 6,814,866, 6,887,383, 6,923,905, 6,959,882, 6,969,464, 7,157,011, 7,309,434, 7,351,005, 7,374,670, 7,465,390; Also see patents at www.geomatrix systems.com.
GeoMat and GeoGuard are trademarks of Geomatrix Systems, LLC
SoilAir is a registered trademark of Geomatrix, LLC.

Table 1 **INFLUENT FLOWS AND LOADS**	
Design Wastewater flow (DWF)	≤ 5000 gal/day
Dosing of Effluent required when DWF	> 1500 gal/day
Monthly average value of Fats, Oil and Grease (FOG)	≤ 30 mg/L
Monthly average value of five day Biochemical Oxygen Demand (BOD_5)	≤ 220 mg/L
Monthly average value of Total Suspended Solids (TSS)	≤ 150 mg/L
Design loading rate of GeoMat	≤ 2.0 gpd/sq.ft.
Design loading rate of GeoMat Component (includng sand area)	≤ 1.6 gpd/sq.ft.
Wastewater particle size.	≤ 1/8 inch
Design wastewater flow (DWF) for flow from one- or two-family dwellings	Based on s. SPS 383.43 (3), (4) or (5), Wis. Adm. Code
Design wastewater flow (DWF) from public facilities	≥ 150% of estimated wastewater flow in accordance with Table 4 of this manual
GeoMat to have Tier 3 – downsizing & vertical separation credit	Column 2 on soil test, and 2 feet seperation to limiting factor when placed on 12 inches of ASTM C33 sand
Linear loading rate for systems with in situ soils having a soil application rate ≤0.3 GPD/sq.ft. (This is separate from downsizing credit and takes priority on any design, regardless of what product is used)	≤4.5 gal/ft/day
Linear loading rate for systems with in situ soils having a soil application rate >0.3 GPD/sq.ft. receiving effluent from GeoMat	None as long as (S) and (I) dimensions are followed
Volume of a single dose when a pressure distribution system is utilized to disperse effluent [Use of pressure distribution is dictated by s. SPS 383.44(5)]	½ gallon per linear foot of GeoMat
Volume of a single dose to soil absorption component when effluent is delivered to a non- pressure distribution system	½ gallon per linear foot of GeoMat
Distribution cell area (width of the GeoMat) per orifice when pressure distribution system is used	≤ 12 ft^2

Table 2 SIZE AND ORIENTATION	
Minimum area of infiltrative surface (basal area) (Teir 3-downsizing & vertical separation credit)	≥ Design wastewater flow ÷ soil application rate for the in situ soil at the infiltrative surface or a lower horizon if the lower horizon adversely affects the dispersal of wastewater in accordance with s. SPS 383.44 (4) (a) and (c), Wis. Adm. Code
Distribution component cell width	39 inch wide Geomat sections placed a minimun of 12 inches apart. Every 39 inch wide GeoMat section must have an individual distribution pipe. No limit on number of cells.
Distribution Component Basal Area (B X W) this is the sand under the GeoMat, S dimensionsm and the I dimensions. It is always 12 inches thick and is size to the extent of the basal area required.	GeoMat cell length X Infiltrative Width Total area required for basal area as per SPS 383.44-2 Column 2.
GeoMat Component Height	12 inches of ASTM C33 sand under GeoMat plus 1 inches GeoMat plus nominal pipe size.
.Depth of cover over top of distribution pipe	12 to 42 inches
Minimum amount of in situ soil needed to install in-ground system	≥ 37 inches
Vertical separation to limiting factor	≥ 2 feet as measured from bottom of GeoMat Component
Horizontal distance of GeoMat to sidewall (I)	≤4 feet

Table 3 OTHER SPECIFICATIONS	
.Slope of in situ soil .	≤ 25% in area of component
Max burial depth	42 inches
Vertical separation between GeoMat Component and seasonal saturation defined by redoximorphic features, groundwater, or bedrock	2 feet
Bottom of distribution cell	Level
Horizontal separation between distribution cells	≥ 12 inches
.Piping material in the distribution system	Meets requirements of Table s. SPS 384.30-4 or Table s. 384.30-5 WI Adm Code. NOTE: Pressure systems shall use Table s. SPS 384.30-5.

	Gravity systems may use Table s. SPS 384.30-4. WI Adm Code. If gravity systems use the minimum size of ASTM 1785 pipe allowed is 2 inches with a maximum of 4 inches. Additionally, ½ inch ofifices shall be drilled in the following manner: *The pipe shall have 2 rows, and only 2 rows, of orifices parallel to the axis of the pipe and 120 degrees+/- 5 degrees apart…in other words, the performations shall be at the nominal 4 and 8 o'clock positions when the pipe is installed. Perforations shall be spaced ever 12 inches. Last orifice sha be ≤ 12 inches from the end of the GeoMat. This promotes equal distributon in gravity systems. If Table s. SPS 384.30-4 is used, lateral cleanout will be needed.*
.Piping material for observation pipes	Meets requirements of sps. 384.30 Table 384.30-1, Wis. Adm. Code
.Infiltrative material	GeoMat 3900 Leaching System; GeoMat is a patented treatment systems that has successfully completed NSF 40 testing. It utilizes a hygroscopic membrane with a transmissive core. Physical properties consist of fused entangled plastic filaments wrapped in a hygroscopic membrane.
Slope of gravity flow perforated distribution lateral piping .	Pipes lay level
Location of gravity flow perforated distribution pipe in distribution cell	.Centered in the width of the GeoMat or equally spaced in the width of the GeoMat
Length of distribution pipe for components using gravity flow distribution	.≥ Equal to length of GeoMat
Distance between distribution pipe end orifice and end of distribution cell for components using gravity flow distribution	≤ 12 inches
.Length of GeoMat.	GeoMat extends to within 12 inches of the end walls of the distribution cell. K = 12 inches.
Number of observation pipes per distribution cell	≥2
.Location of observation pipes .	At the infiltrative surface at each end of the cell.
Design and installation of observation pipes installed in GeoMat System	1. Have an open bottom 2. Have a nominal pipe size of 4 inches 3. The lower 1 inch is slotted or perforated 4. Slots/holes are ≥ 1/4 inch and ≤ 1/2 inch in width and located on opposite sides 5. Anchored in a manner that will prevent the pipe from being pulled out – use toilet flange

	6. Extend from the infiltrative surface up to or above finish grade 7. Terminate with a removable watertight cap, or 8. Terminate with a vent cap if > 12 in above
Effluent application to distribution cell	1. If DWF < 1500 gpd, effluent may be applied by gravity flow, dosed to distribution cell or distribution box, then applied by gravity flow to the distribution cell, or by use of pressure distribution, unless pressure distribution is required in accordance with s. SPS 383.44 (5) (b) 2. If DWF ≥ 1500 gpd, effluent must be dosed to distribution cell or distribution box, then applied by gravity flow to the distribution cell, or by use of pressure distribution, unless pressure distribution is required in accordance with s. SPS 383.44 (5) (b) , Wis. Adm. Code
.Septic tank effluent pump system	Meets requirements of s. SPS 384.10, Wis. Adm. Code and this manual
Pressure Dosing effluent to GeoMat Component	Protection of the infiltrative surface must be provided to prevent erosion at the area where the effluent enters the GeoMat core by use of GeoGuard orifice shield
.Dose tank or compartment volume employing duplex pumps	≥ Volume of a single dose + drain back volume[a] + (6 inches x average gal/inch of tank)[b] Notes: a: Drain back volume ≥ volume of wastewater that will drain into the dose tank from the force main. b: Four inches of this dimension ≥ vertical distance from pump intake to bottom of tank. Two inches of this dimension ≥ vertical distance between pump on elevation and high water alarm activation elevation.
Siphon tank or compartment volume	≥ What is required to accommodate volumes necessary to provide dosing as specified in this manual
Distribution network for pressurized distribution systems. **Note:** Pressure distribution is required when soils or effluent meets parameters of s. 83.44 (5), Wis. Adm. Code..	By use of pressure distribution network conforming with the **sizing methods** of either Small Scale Waste Management Project publication 9.6, entitled "Design of Pressure Distribution Networks for Septic Tank – Soil Absorption Systems" or Dept. of Commerce publications SBD-10573-P or SBD-10706-P, entitled Pressure Distribution Component Manual for Private Onsite Wastewater Treatment Systems".
Vent pipes installed in GeoMat Component	Vent pipes are not recommended within the GeoMat Component.
Cover material over the hygroscopic membrane	.Soil that will provide frost protection, a media for vegetation, prevent erosion and excess precipitation or runoff infiltration and allow air to enter the distribution cell

Installation inspection	.In accordance with ch. SPS 383, Wis. Adm. Code
Management	.In accordance with ch. SPS 383, Wis. Adm. Code and this manual

II. DESCRIPTION AND PRINCIPLES OF OPERATION

Construction of GeoMat In-ground system must consist of the following components

1. In-ground soil absorption component operation is a two-stage process involving both wastewater treatment and dispersal. Treatment is accomplished predominately by physical and biochemical processes within the treatment/dispersal zone. The physical characteristics of the influent wastewater, influent application rate, temperature, and the nature of the receiving soil affect these processes.

   Physical entrapment, increased retention time, and conversion of pollutants in the wastewater are important treatment objectives accomplished under unsaturated soil conditions. Pathogens contained in the wastewater are eventually deactivated through microbial action, filtering retention, and absorption by in situ soil.

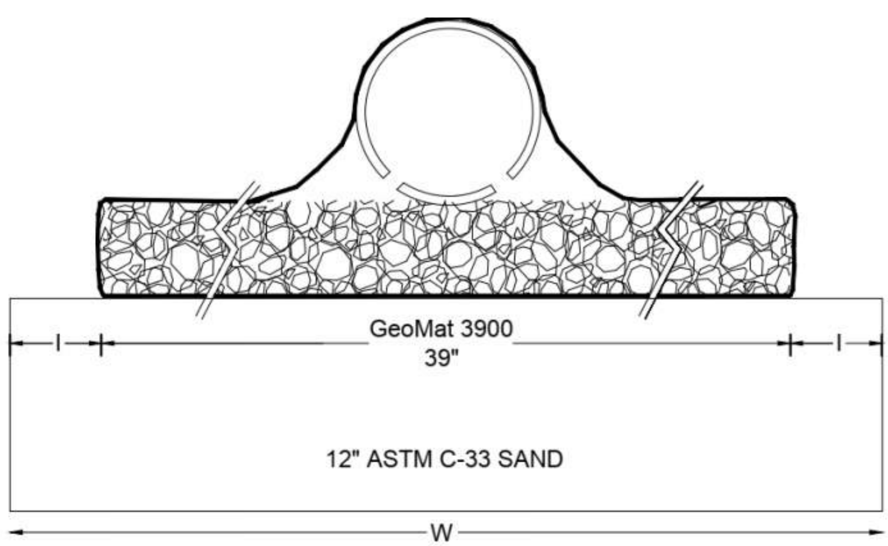
   Dispersal is primarily affected by the depth of the unsaturated receiving soil, the soil's hydraulic conductivity, influent application rate, land slope, and the area available for dispersal.

   The in-ground soil absorption component consists of a distribution cell. Influent is discharged to the perforated pipe, followed by the GeoMat, and then passing into the underlying 12 inches of ASTM C33 sand and then ultimately to the in situ soil for treatment and dispersal to the environment. The soil, to the prescribed depth, beneath the distribution cell is considered part of the cell known as the treatment/dispersal zone. See Figures 1 - 3.

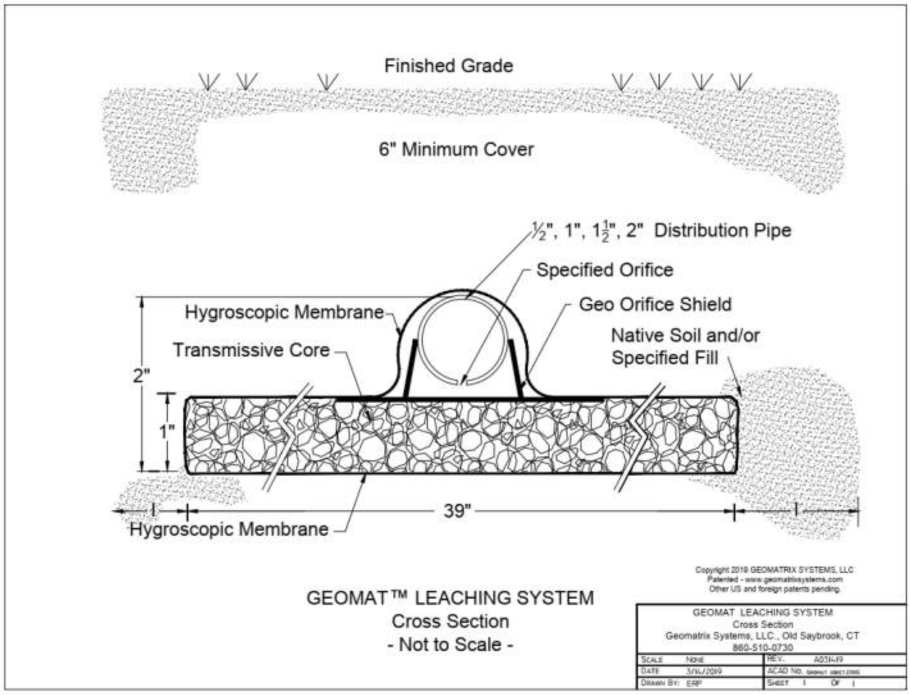
   Cover material over the hygroscopic membrane is to provide frost protection, a media for vegetation growth, erosion protection, a conduit for to excess precipitation or runoff infiltration, and allows oxygen transfer.

   The GeoMat component and in situ soil within the treatment/dispersal zone provide the physical and biochemical treatment for the influent.

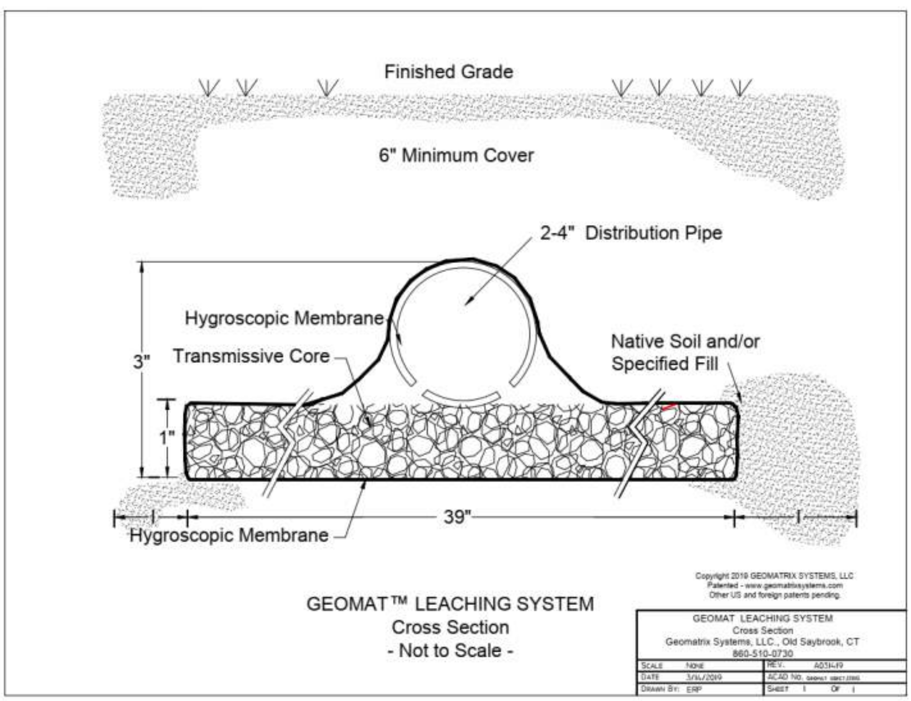
   Figure 1 – Level In Ground System Cross Section View



<u>Figure 2</u> Cross section of GeoMat in-ground (pressure dosed).



<u>Figure 3</u> Cross section of GeoMat in-ground (gravity).



2. **GeoMat 3900 Leaching System:** GeoMat is a patented soil-based treatment system that has successfully completed NSF 40 testing. It utilizes a hydroscopic membrane with a transmissive core. Physical properties consist of fused entangled plastic filaments wrapped in a hygroscopic membrane.

   GeoMat has a thin profile (1 inch nominal) that maximizes contact with the soil and enhances oxygen transfer. Together, the hygroscopic membrane and the entangled filament pull the water across the entire surface of the mat, maximizing oxygen transfer.

   A perforated pipe is installed on top of the core and surrounded with a hygroscopic membrane.

   GeoMat increases removal of BOD, TSS, pathogens, and nutrients such as nitrogen and phosphorus. When used with 12 inches ASTM C33 sand placed directly under the mat, GeoMat provides maximum treatment of effluent and infiltration of wastewater into soil.

3. **Filters.** 1 Required. A septic tank effluent shall be used for all gravity systems. A pressure filter shall be used on all systems with dose or pressure distribution.

4. **Orifice Shields. (PSI Distribution)** This orifice shield is designed for holes that point down. The GeoGuard orifice shields are designed to protect the discharge holes in pressurized systems and prevent jetting holes in the surrounding soil. The GeoMat POWTS Treatment System is designed with specific flow rates and pressure heads to obtain even distribution to the leach field. When installing the GeoGuard orifice shield on the pipe no part of the shield can block the distribution hole.

III. DEFINITIONS

Definitions not found in this section are located in ch. SPS 381, WI Adm. Code or the terms use the standard dictionary definition.

A. "Site plan" means a scaled or completely dimensioned drawing, drafted by hand or computer aided technology, presented in a permanent form that shows the relative locations of setback encumbrances to a regulated object. The site plan also includes a reference to north and the permanent vertical and horizontal reference point or benchmark.

B. "GeoMat" means a nominally 1 inch fused entangled plastic filament core with a hygroscopic membrane on the top and bottom.

C. "GeoMat Component" means GeoMat on top of 12 inches of ASTM C33 sand.

IV. SOIL AND SITE REQUIREMENTS

Every in-ground soil absorption component design is ultimately matched by the designer to the given soil and site.

The design approach presented in this manual is based on criteria that all applied wastewater is successfully transported away from the system, that it will not affect subsequent wastewater additions that the effluent is ultimately treated and the reaeration of the infiltrative surface will occur.

A. Minimum Soil Depth Requirements

The minimum soil factors required for successful in-ground soil absorption component performance are listed in the introduction and specification section of this manual.

Soil evaluations must be in accordance with ch. SPS 385 of the WI Adm Code. In addition, soil application rates and depth must be in accordance with ch. SPS 383 of the WI Adm Code.

B. Other Site Considerations

1. In-ground soil absorption component location – In open areas, exposure to sun and wind increases the assistance of evaporation and transportation in the dispersal of the wastewater.
2. Sites with trees and large boulders – Generally, sites with large trees, numerous smaller trees or large boulders are less desirable for installing an in-ground soil absorption component because of difficulty preparing the distribution cell area. As with rock fragments, tree roots, stumps and boulders occupy area, thus reducing the amount of soil available for proper treatment. If no other site is available, trees in the distribution cell area must be removed.
3. Setback distances – The setbacks specified in SPS 383 WI Adm Code for soil subsurface treatment/dispersal component, apply to in-ground soil absorption components. The distances are measured from the edge of the distribution cell area.

V. COVER MATERIAL

The cover material is of such quality as it is placed so that it will not damage the GeoMat. Clays are not recommended as they can restrict oxygen transfer. The cover material must not be compacted while being placed since compaction will reduce vegetative growth and oxygen transfer.

VI. DESIGN

A. Location, Size, and Shape – Placement, sizing and shaping of the GeoMat in-ground system must be in accordance with this manual.

B. Component Design – Design of the component is based upon the DWF and the soil characteristics. It must be sized such that it can accept the daily wastewater flow without causing surface seepage or groundwater pollution. Consequently, the basal area must be sufficiently large enough to absorb the effluent from the GeoMat component. The GeoMat Component must also be designed to avoid encroachment of the water table into the treatment and dispersal zone.

Figure 4 – Level In Ground System From Above

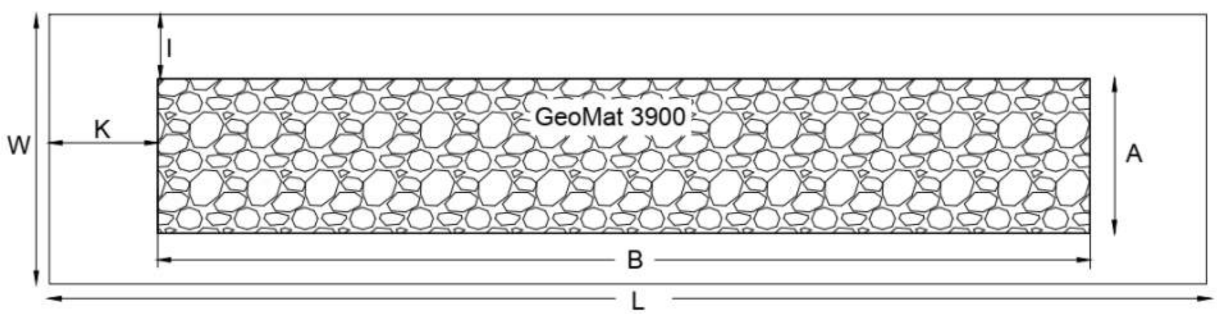


Figure 5 – Longitudinal Cross Section (Pressure Dosed)

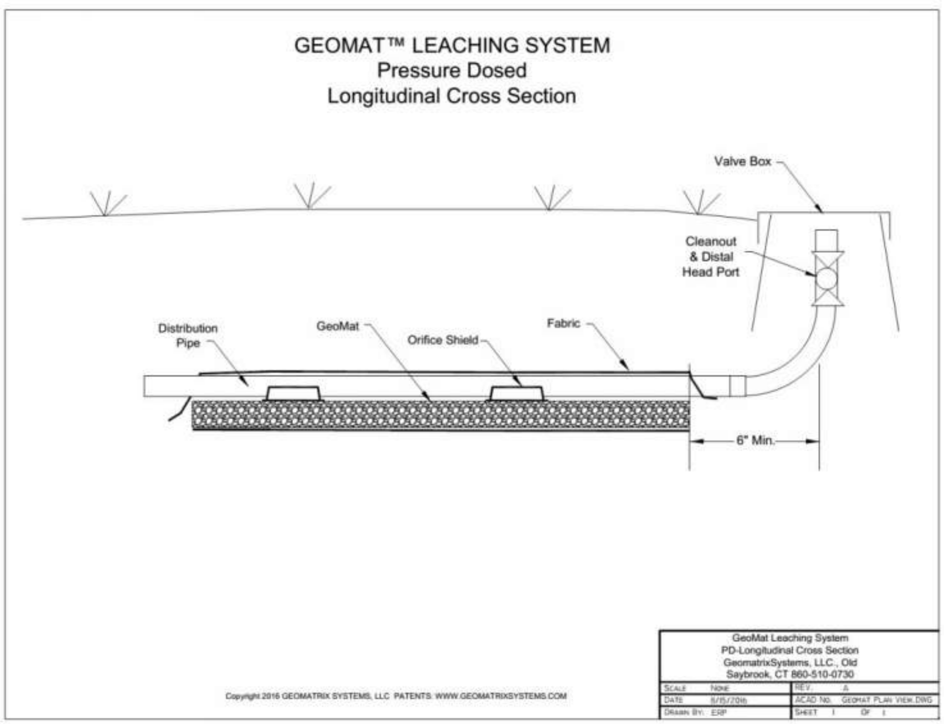
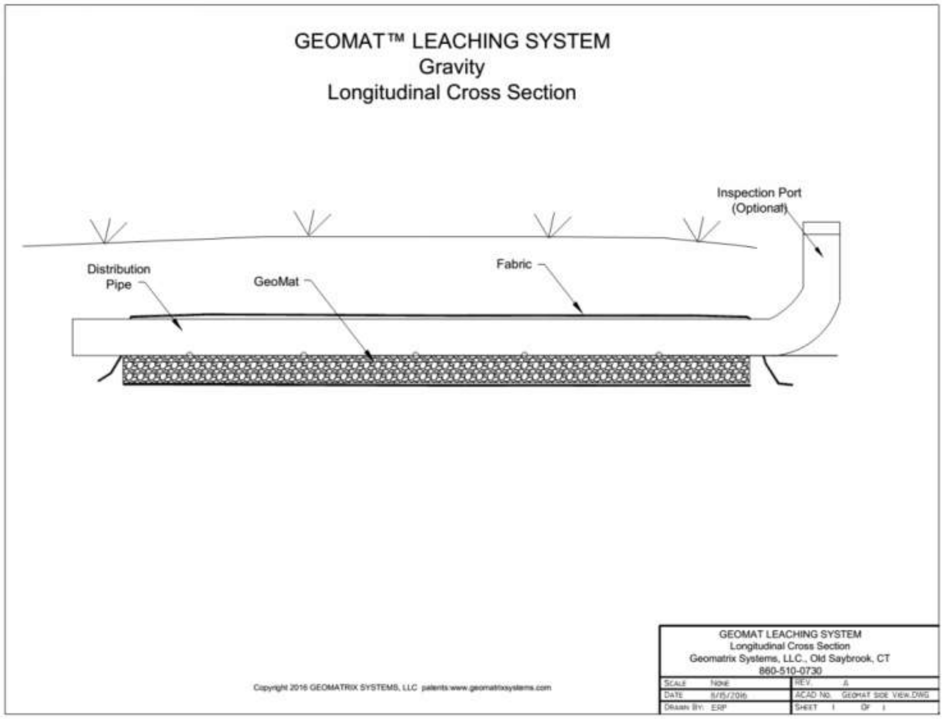


Figure 6 Longitudinal Cross Section (Gravity)



Design of the component includes four major steps, which are: (A) calculating DWF, (B) calculating soil infiltration area of in situ soil, for basal area, (C) design of the distribution cell, and (D) Sizing the In Ground system. Each step is discussed below.

Step A: Design Wastewater Flow Calculations
One and two-family dwellings
150 gal/day/bedroom

Public Facilities
Distribution cell size for public facilities application is determined by calculating the DWF using the appendix in SPS 383.

Sizing GeoMat In-Ground for Public Facilities is done on an individual site basis

Step B: Sizing the in situ soil basal Area – The required infiltrative basal area is based on the DWF and the slowest soil application rate of the in situ soil at the infiltrative surface or lower horizon if the lower horizon adversely affects the dispersal of wastewater in accordance with s. SPS 383.44 (4) (a) and (c). Wastewater application rates to the soil are found in ch. SPS 383, Tables 1 and 2, column 2, WI Adm Code.

Using the above information, the required distribution cell area can be determined using the following formula:

Basal Area = DWF ÷ Application rate of the in situ soil in accordance with s. SPS 383.44 (4) (a) and (c), WI Adm Code. Note: This area may include more than one dispersal cell.

Step C: Distribution Cell Component Configuration –GeoMat may be placed side by side with a minimum of 1 feet in between GeoMat. The loading rate for GeoMat is 2.0 GPD/sq.ft. Length and width of the distribution cell can be almost limitless with the exception that linear loading rates for soils with less than or equal to 0.3 GPD/sq.ft. loading, setback requirements of s. SPS 383.44 Table 2, WI Adm Code and soil evaluation results may restrict options. See Figure 7 for ideas.

The dimensions of the distribution cell are calculated using Formulas 1 or 2. Formula 1 is used when the in situ soil has a soil application rate of greater than 0.3-gal/sq.ft./day.

Formula 2 must be used to check for linear loading rate for the system when the in situ soil within 12 inches of the fill material has a soil application rate of ≤0.3 gal/sq.ft./day the linear loading rate may not exceed 4.5 gal/sq.ft. /day.

Formula 1
Area of distribution cell = A x B

Where: A = Distribution mat width:(Individual GeoMat cell width is 39 inches)

B = Distribution cell length
*Use formula 2 to confirm linear loading rate of cell is ≤4.5 gal/ln.ft. /day. If dictated by soil application rate ≤0.3 GPD/ln.ft.

Formula 2
Linear Loading Rate = DWF ÷ B

Where DWF = Design wastewater flow

B = Distribution cell length

Step D:Sizing the in ground system -

1. GeoMat Component Height (F) – GeoMat Nominal Thickness + nominal pipe size + a minimum of 12 inches ASTM C33 Sand

GeoMat Component Height = F

Note: Sand fill depth the same across whole component

2. Cover Material – The cover material (H) provides frost protection, a suitable growth medium for vegetation, and evapotranspiration. The design uses 12 inches above the distribution Component (H).

3. In situ soil basal Area (B X W) – The length and width of the entire component are dependent upon the distribution cell length (B) and width(A) of the distribution cell. The fill length consists of end slopes (K) and the distribution cell length (B). Where K is a constant 12 inches. The fill width consists of the GeoMat cell width (3.25 feet), # of Cells, cell spacing (S), and the(I) dimension (1 - 4 feet) needed to obtain the adequate basal area. See Formulas 1 and 2.

NOTE: I dimension is 1 – 4 feet
NOTE: K does not factor into basal area calculation

Basal Area = (Cell length) *[((3.25 * # Cells) + (2I) + (cell spacing * # cells-1))]
If only 1 cell:
Basal Area = (Cell length) *[((3.25 * # Cells) + (2I)

If more than 1 cell is to be used:
In this application all numbers are known except cell spacing. Use Formula 3 to solve for cell spacing:

Formula 3

Cell Spacing = [(Basal area needed ÷ cell length)] - [(Cell Width * # Cells) + (2 x (I)]
(# cells - 1)

Basal area is known
Cell length is known
Cell width is known
Cells is known
I dimension is 1 – 4 feet

Distribution cell to be centered in the infiltrative area

Distribution Cell Height (F)
The distribution cell height provides effluent storage, oxygen transfer and support of the piping within the distribution cell. The minimum height of the distribution cell, when GeoMat is used in gravity distribution components is 15-17 inches. Or pressure distribution is 13 inches plus nominal pipe size.

Cover Material
Final cover backfill material for placement over the sand should be clean and free of stones larger than 1½ inches and debris. This cover material should be suitable for growing grass.

Acceptable cover depth over the GeoMat distribution laterals should be from 6 – 24 inches. 12 inches is recommended. Whatever depth is selected, the depth of cover shall not vary by more than 15% across the entire system and shall extend a minimum of 18 inches beyond the sand bed footprint. Be careful to avoid smearing or excessive compaction. Final backfill should be such that surface water drains away from the

GeoMat system.

A minimum of 6 inches of cover material must be paced over the top of pipe. Finished grade of the cover material must be at or above the surrounding land surface elevation. Depressed areas over the distribution cell that collect and retain surface water runoff must be avoided.   H must be 6 inches across entire cell. And 6 inches above ASTM C33 sand (G) Where not over Cell.

Distribution Network and Dosing Component

Uniform application of wastewater is critical, all systems must be parallel distribution. Gravity distribution boxes or level headers must be used. Use of high level overflow or serial distribution systems is prohibited.

The effluent application to the distribution cell may be gravity or pressure. Distribution boxes or drop boxes may be used to distribute effluent to gravity feed distribution cells. Distribution piping for gravity component has a nominal inside diameter if 4 inches. The distribution header pipe is non perforated pipe. The slope of gravity flow perforated distribution piping is less than or equal to 1 inch per 100 feet away from distribution boxes, drop boxes or header. When a drop box design is used, the invert of the drop box overflow pipe must be at least 4 inches lower than the invert of the treatment tank outlet or force main connection.

The design and installation of distribution boxes must be watertight and capable of providing a means of providing equal distribution of effluent to each distribution cell. Drop boxes must be watertight and capable of distributing effluent to another distribution cell.

Components that are designed to receive a DWF greater than 1500 gal/day, dose the effluent to the distribution cell by means of a pump or siphon. The dose chamber shall contain sufficient volume to dose the distribution cell as required by its system design, retain drain back volume, contain a one day reserve zone, provide a minimum 2 inch separation between alarm activation and pump-on activation, and allow for protection of the pump from solids.

Drain back volumes can be calculated based on values listed in Table 5.

Table 5
VOID VOLUME FOR VARIOUS DIAMETER PIPES
BASED ON NOMINAL I.D.[a]

Nominal Pipe Size	Gallons per Foot
1-1/4	0.064
1-1/2	0.092
2	0.163
3	0.367
4	0.65
6	1.469

Note a: Table is based on - $p(d/2)^2$ x 12"/ft ¸ 231 cu.in./cu.ft.
Where: d = nominal pipe size in inches

A reserve capacity is required on a system with only one pump. The reserve volume must be equal to or greater than the estimated daily wastewater flow. Reserve capacity must be calculated using 100 gallons per bedroom per day for one and two family residences or the values computed by using Table 4.

The dose volume shall be included in the sizing of the dose chamber. (Volume of a septic tank effluent pump system is determined by department plumbing product approval.)

The pump alarm activation point must be at least 2 inches above the pump activation point.

Allow "dead" space below the pump intake to permit settling of solids in the dose chamber. This can be accomplished by placing the pump on concrete blocks or other material that can form a pedestal.

The pump manufacturer's requirement shall be followed. This may include the "pump off" switch being located high enough to allow for complete emersion of the pump in the dose chamber.

Observation pipes are installed in the sand portion of the distribution cells and are provided with a means of anchoring to prevent them from being lifted up. Observation pipes extend from the sand base to the point at or above the finished grade. The portion of the observation pipe below the distribution pipe is slotted while the portion above the distribution pipe is solid wall. Observation piping has a nominal pipe size of 4 inches. (See Figure 7)

VII. SITE PREPERATION AND CONSTRUCTION

Procedures used in the construction of an in-ground absorption component are just as critical as design of the component. A good design with poor construction results in component failure. It is emphasized that the soil only be worked when the moisture content is low to avoid compaction and smearing. Consequently, installations are made only when the soil is dry enough to prevent compaction and smearing of the infiltrative surface. The construction plan to be followed includes:

A. Equipment – Proper equipment includes track machines or other equipment that will not compact the infiltrative surface. Minimize foot traffic on infiltrative surface and avoid equipment traffic on or over infiltrative surface.

B. Sanitary Permit – Prior to the construction of the component, a sanitary permit, obtained for the installation, must be posted in a clearly visible location on the site. Arrangements for inspection(s) must also be made with the department or governing unit issuing the sanitary permit.

C. Construction Procedures

1. Check the moisture content and condition of the soil at system elevation and several inches below as needed. If the soil at the infiltrative surface can be rolled into a ¼ inch wire, the site is to wet, smearing and compaction will result, thus reducing the infiltrative capacity of the soil. If the site is too wet, do not proceed until it dries out. If the soil at or below the infiltrative surface is frozen, do not proceed.

2. Set up a construction level or similar device and determine all relative elevations in relationship to the benchmark. If it is necessary to determine the bottom elevation of the distribution cell, land surface contour lines, and appropriate component elevations critical to the installation.

3. Lay out the absorption area within the tested designated area. When possible lay out the absorption area(s) on the site so that the distribution cell runs parallel with the land surface contours. Reference stakes offset from the corner stakes are recommended in case corner stakes are distributed during construction.

4. Excavate the infiltrative cell (basal area) + K dimension to the bottom elevation (system elevation) taking care not to smear the infiltrative surface. If the infiltrative surface or sidewalls are smeared, loosen it up with the use of a rake or similar device. The infiltrative surface can be left rough and should not be raked smooth.

5. Place 12 inches of ASTM C33 sand on scarified non-compacted in situ soil that is free of debris and rocks. This will be over the entire area required based on basal loading rate. Ensure trees and shrubs are removed within 10 feet of the GeoMat to prevent root intrusion. No Weeping Willow, Black Locust or similar aggressive rooting trees or plants shall be within 30 feet of the GeoMat. These separation distances can be minimized through use of root barriers. Please contact Geomatrix for assistance.

6. Place GeoMat on Sand fill. GeoMat to be 12 inches from end walls and equally spaced from side wall depending on I dimension. See Formula 3.

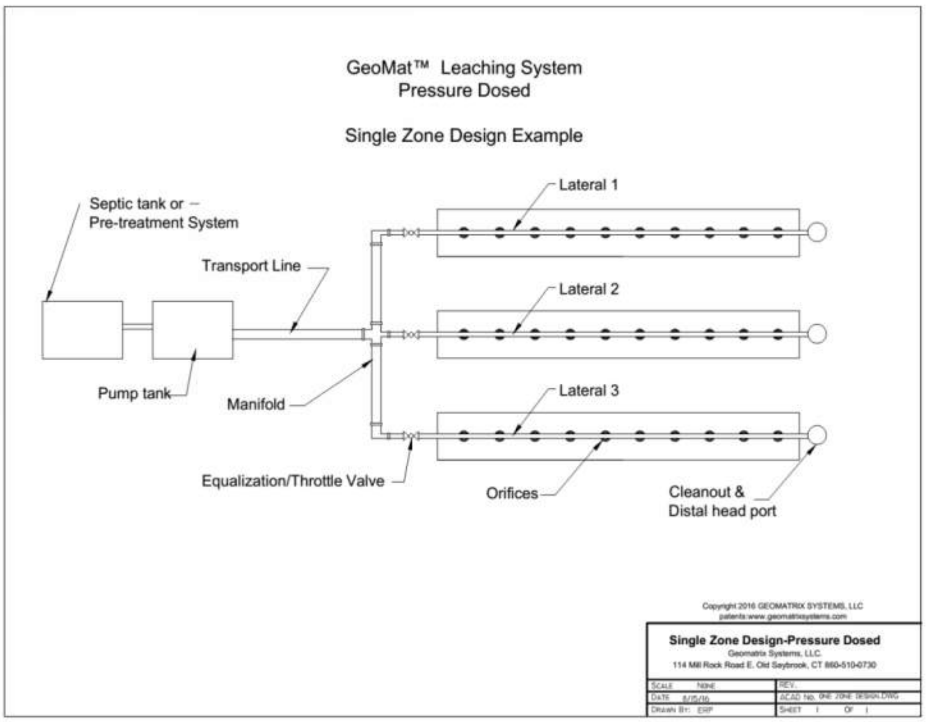
7. Install observation pipes with the bottom 1 inch of the pipe slotted. Installation of the observation pipe includes a suitable means of anchoring so the pipes are not dislodged during inspections. Observation pipes will be installed in each distribution cell so as to be representative of a cell's hydraulic performance.

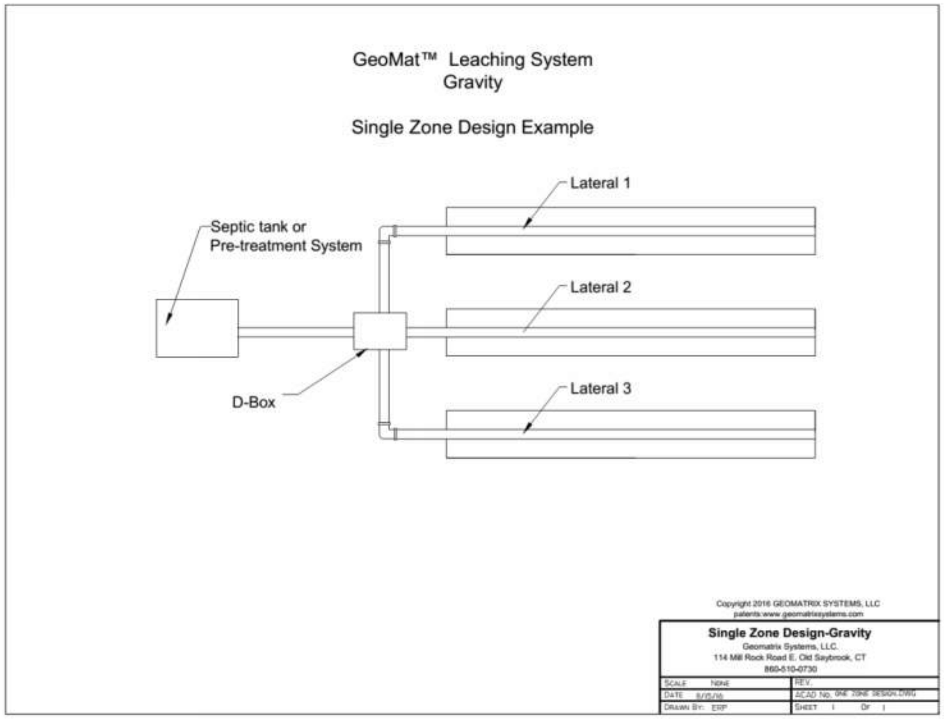
Observation pipes shall be located at least 4 feet from the end wall and sidewall; and be installed at an elevation to view the horizontal or level infiltrative surface within the dispersal cell. Use heavy utility knife to make cut outs for obs. pipes in GeoMat.

8. Place distribution pipes as determined from design, under fabric and on top of GeoMat material. Connect the distribution box, drop box or header from the treatment or dosing tank.

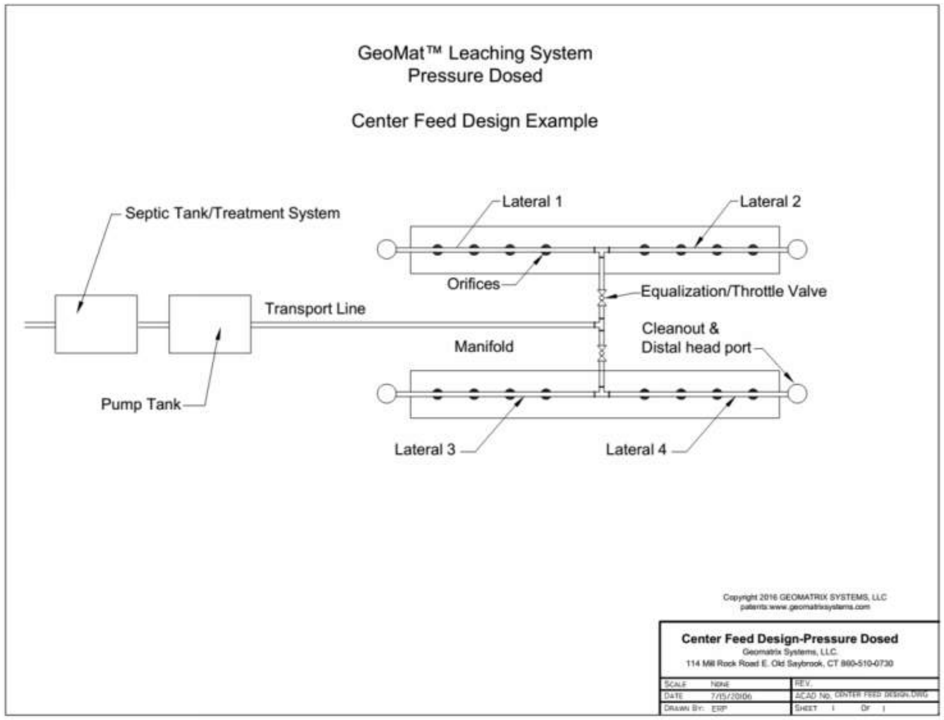
9. Place cover material over fabric. Avoid cobbles, stones or frozen material that could damage pipe, GeoMat, or fabric,

<u>Figure 7</u> - Typical GeoMat Design Examples





GeoMat™ Leaching System
Gravity
Single Zone Design Example
Lateral 1
Septic tank or
Pre-treatment System
Lateral 2
D-Box
Lateral 3
Copyright 2016 GEOMATRIX SYSTEMS, LLC
patents:www.geomatrixsystems.com
Single Zone Design-Gravity
Geomatrix Systems, LLC.
114 Mill Rock Road E. Old Saybrook, CT
860-510-0730
SCALE NONE
REV.
DATE
ACAD No.
DRAWN BY: ERP
SHEET 1 OF 1


GeoMat™ Leaching System
Pressure Dosed
Center Feed Design Example
Septic Tank/Treatment System
Lateral 1
Lateral 2
Orifices
Equalization/Throttle Valve
Transport Line
Cleanout &
Distal head port
Manifold
Pump Tank
Lateral 3
Lateral 4
Copyright 2016 GEOMATRIX SYSTEMS, LLC
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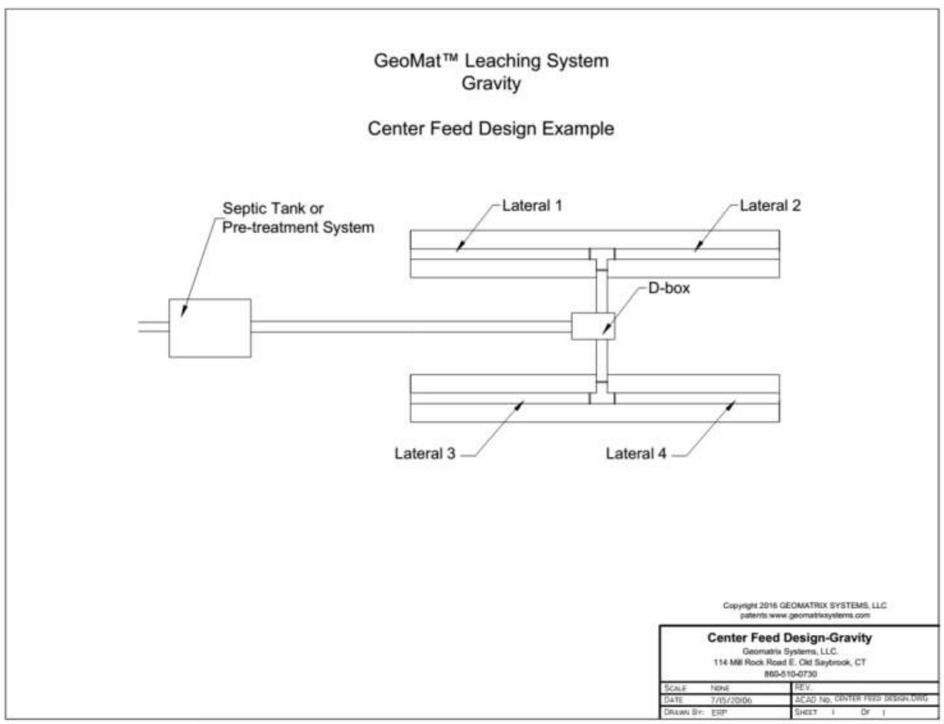
Center Feed Design-Pressure Dosed
Geomatrix Systems, LLC.
114 Mill Rock Road E. Old Saybrook, CT 860-510-0730
SCALE NONE
REV.
DATE 7/15/20106
ACAD No. CENTER FEED DESIGN.DWG
DRAWN BY: ERP
SHEET 1 OF 1


GeoMat™ Leaching System
Gravity
Center Feed Design Example
Septic Tank or
Pre-treatment System
Lateral 1
Lateral 2
D-box
Lateral 3
Lateral 4
Copyright 2016 GEOMATRIX SYSTEMS, LLC
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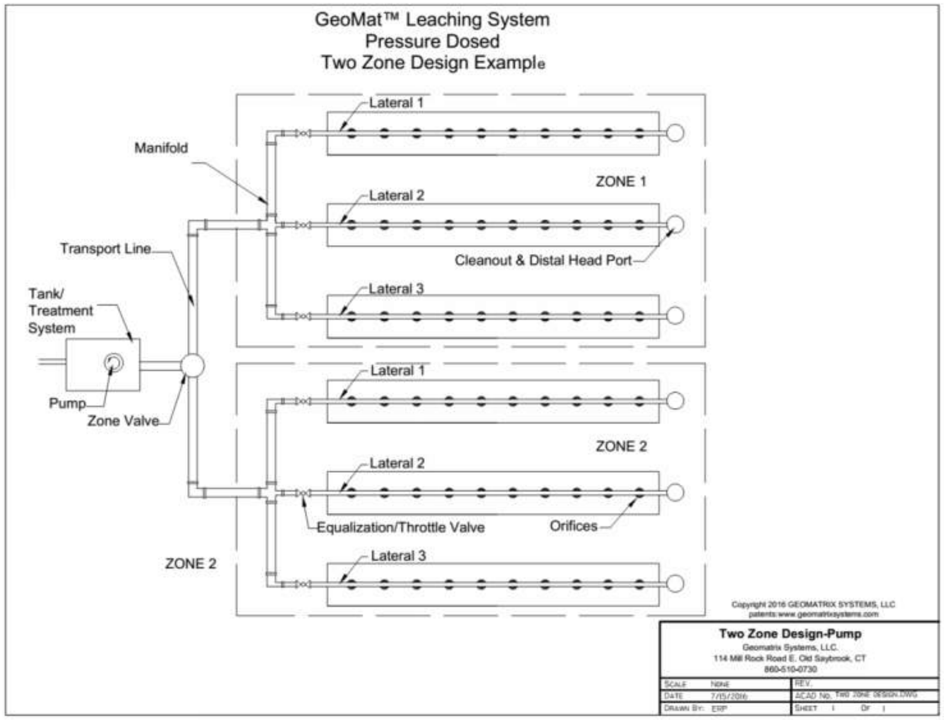
Center Feed Design-Gravity
Geomatrix Systems, LLC.
114 Mill Rock Road E. Old Saybrook, CT
860-510-0730
SCALE NONE
REV.
DATE 7/15/20106
ACAD No. CENTER FEED DESIGN.DWG
DRAWN BY: ERP
SHEET 1 OF 1


GeoMat™ Leaching System
Pressure Dosed
Two Zone Design Example
Lateral 1
Manifold
ZONE 1
Lateral 2
Transport Line
Cleanout & Distal Head Port
Tank/
Treatment
System
Lateral 3
Lateral 1
Pump
Zone Valve
ZONE 2
Lateral 2
Equalization/Throttle Valve
Orifices
Lateral 3
ZONE 2
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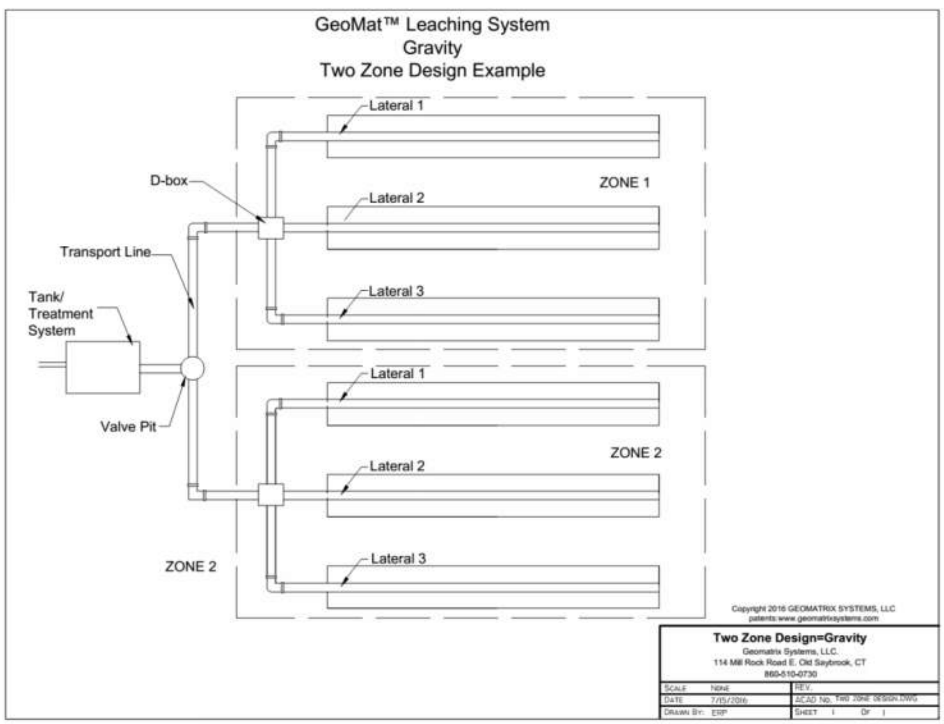
Two Zone Design-Pump
Geomatrix Systems, LLC.
114 Mill Rock Road E. Old Saybrook, CT
860-510-0730
SCALE NONE
REV.
DATE 7/15/2016
ACAD No. TWO ZONE DESIGN.DWG
DRAWN BY: ERP
SHEET 1 OF 1


GeoMat™ Leaching System
Gravity
Two Zone Design Example
Lateral 1
D-box
ZONE 1
Lateral 2
Transport Line
Tank/
Treatment
System
Lateral 3
Lateral 1
Valve Pit
ZONE 2
Lateral 2
Lateral 3
ZONE 2
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Two Zone Design=Gravity
Geomatrix Systems, LLC.
114 Mill Rock Road E. Old Saybrook, CT
860-510-0730
SCALE NONE
REV.
DATE 7/15/2016
ACAD No. TWO ZONE DESIGN.DWG
DRAWN BY: ERP
SHEET 1 OF 1

VIII. GEOMAT IN GROUND WORKSHEET

A. SITE CONDITIONS

Evaluate the site and soils for the following:

- Surface water movement.
- Measure elevations and distances on the site so that slope, contours, and available areas can be determined.
- Determine the limiting conditions such as bedrock, high groundwater level, soil application rates, and setbacks.
- Description of several soil profiles where the system will be located.

Slope - _____%

Occupancy – One or two-family dwelling: ________ (number of bedrooms)

Public facility gallons per day _______ (Estimated water flow)

Depth to limiting factor ________ inches

Minimum depth of unsaturated soil required by table 383.44-3, Wis. Adm. Code __24 inches

In Situ Soil application rate of in situ soil used ________ gal/sq.ft. /day

FOG value of effluent applied to component ≤ _20_ mg/L

BOD_5 value of effluent applied to component ≤ _180_ mg/L

TSS value of effluent tied to component ≤__50__ mg/L

Fecal coliform monthly geometric mean value of effluent tied to component ≥ 10^4 CFU /100mg

___X___Yes _________ No

Type of Dist. Cell---GeoMat

B. DESIGN WASTEWATER FLOW

One and two-family dwelling

Combined wastewater flow:

DWF = 150 gal/day/ bedroom x number of bedrooms

= 150 gal/day/bedroom x # of bedrooms

= 150 gal/day/bedroom x ___________bedrooms

= ______ gal/day

Clearwater and greywater only:

DWF = 90 gal/day/bedroom x # of bedrooms
= 90 gal/day/bedroom x _________ # of bedrooms

= ______gal/day

Blackwater only:

DWF = 60 gal/day/bedroom x # of bedrooms

= 60 gal/day/bedroom x _________ # of bedrooms

= ______gal/day

Public Facilities

DWF = Estimated wastewater flow x 1.5

= _________ gal/day x 1.5

= _________ gal/day

C. WIDTH AND LENGTH OF THE DISTRIBUTION CELL

1. Determine the Design Loading Rate (DLR) for the site.

From Table 383.44-2, WI Adm Code, select the soil application rate for the most restrictive soil horizon at the infiltrative surface or a lower horizon of the the lower horizon adversely affects the dispersal of wastewater in accordance with SPS 383.44 (4) (a) and (c).
The Design Loading Rate (DLR) is the soil application rate taken from Table 383.44-2 WI adm Code.

DLR = _________ gpd/ ft^2

2. Determine the Infiltrative basal area.

Calculate the distribution cell area by dividing the daily Design Wastewater Flow (DWF) by the Design Loading Rate (DLR).

Infiltrative basal area = DWF ÷ DLR

Infiltrative basal area = _________ gpd ÷ ___________ gpd/ft^2

Infiltrative basal area = ___________ ft^2

3. Determine size of GeoMat

Loading rate of GeoMat = ______ ≤ 2.0 gal/sq.ft./day if BOD5 or TSS ≤30 mg

b. Bottom area of GeoMat = Design wastewater flow ÷loading rate of GeoMat as determined in C.1 a.

Distribution cell area = _____ gal/day÷______ gal/ft^2./day

Distribution cell area =_______ ft^2

4. Distribution Cell Configuration
a. Distribution cell width(s) (A) = 3.25 feet and the number of distribution cells = _______cells.

b. Distribution cell length (B) = Bottom area of distribution cell ÷ width of distribution cell.

B = _______ ft^2. ÷ (Distribution cell area required) ÷ _______ft. (A)

B = ________or _______ft

c. Check distribution cell length (B)

5. Basal Area calculation

Basal Area required = (Cell length) *[(3.25 * # Cells) + (2 x (I)) + (cell spacing * # cells-1)]

If only 1 cell:
Basal Area = (Cell length) *[(3.25 * # Cells) + (2 x (I))]

If more than 1 cell is to be used:
In this application all numbers are known except cell spacing. Use Formula 3 to solve for cell spacing:

Formula 3

$$\text{Cell Spacing} = \frac{[(\text{Basal area needed} \div \text{cell length})] - [(\text{Cell Width} * \#\ \text{Cells}) + 2 \times (I)]}{(\#\ \text{cells} - 1)}$$

Basal area is known
Cell length is known
Cell width is known
cells is known
I dimension is 1 – 4 feet

Cell spacing(S) = _________ feet minimum S dimension is 1 foot

Now that S is Known:

Basal Area required = (Cell length) *[(3.25 * # Cells) + (2x (I)) + (cell spacing * # cells-1)]
If only 1 cell:
Basal Area = (Cell length) *[((3.25 * # Cells) + (2 x (I))

Basal Area = _________ Sq FT Check basal area _______ proposed, ________ required

6. Total Length and Width (L X W)
L = Cell length + 2K K is always 1
L = _____ feet

W = (Cell width * # Cells) + (2 x (I))+ (Cell spacing * (# Cells -1))
W = _______ feet

7. Linear loading rate

Linear loading rate ≤ Design wastewater flow ÷ Cell length (B) or effective cell length.

Linear loading rate ≤ _______ gal/day ÷ _______feet

Linear loading rate ≤ ________ gal/ft/day

Linear loading rate for systems with in situ soils having a soil application rate of ≤ 0.3 gal/ ft^2/day within 12 inches of original grade must be less than or equal to 4.5 gal/ft/day.

Is the linear loading rate ≤ what is allowed? ______ Yes ____ No -----If no, then the length and width of the distribution cell must be changed so it does.

Distribution cell length B = Design Wastewater Flow ÷ Maximum Linear Loading Rate

Distribution cell length B = _____ gal/day ÷ _____ gal/ft/day

Distribution cell length B = ________ ft.

IX. GEOMAT IN-GROUND WORKSHEET EXAMPLE

A. SITE CONDITIONS

Evaluate the site and soils for the following:

- Surface water movement.
- Measure elevations and distances on the site so that slope, contours, and available areas can be determined.
- Determine the limiting conditions such as bedrock, high groundwater level, soil application rates, and setbacks.
- Description of several soil profiles where the system will be located.

Slope - _____%

Occupancy – One or two-family dwelling: ____5__ (number of bedrooms)

Public facility gallons per day ____0____ (Estimated water flow)

Depth to limiting factor ____70_____ inches

Minimum depth of unsaturated soil required by table 383.44-3, Wis. Adm. Code__24 inches

In Situ Soil application rate of in situ soil used ___1.6_____ gal/sq.ft. /day

FOG value of effluent applied to component ≤ _20_ mg/L

BOD5 value of effluent applied to component ≤ _180_mg/L

TSS value of effluent tied to component ≤__50_ mg/L

Fecal coliform monthly geometric mean value of effluent tied to component ≥ 10^4 CFU /100mg

___X____Yes _________ No

Type of Dist. Cell---GeoMat

B. DESIGN WASTEWATER FLOW

One and two-family dwelling

Combined wastewater flow:

DWF = 150 gal/day/ bedroom x number of bedrooms

= 150 gal/day/bedroom x # of bedrooms

= 150 gal/day/bedroom x ___5_____bedrooms

= 750 gal/day

Clearwater and greywater only:

DWF = 90 gal/day/bedroom x # of bedrooms
= 90 gal/day/bedroom x _________ # of bedrooms

= gal/day

Blackwater only:

DWF = 60 gal/day/bedroom x # of bedrooms

= 60 gal/day/bedroom x _________ # of bedrooms

= gal/day

Public Facilities

DWF = Estimated wastewater flow x 1.5

= _________ gal/day x 1.5

= _________ gal/day

C. WIDTH AND LENGTH OF THE DISTRIBUTION CELL

8. Determine the Design Loading Rate (DLR) for the site.

From Table 383.44-2, WI Adm Code, select the soil application rate for the most restrictive soil horizon at the infiltrative surface or a lower horizon of the the lower horixz=zon adversely affects the dispersal of wastewater in accordance with SPS 383.44 (4) (a) and (c).
The Design Loading Rate (DLR) is the soil application rate taken form Table 383.44-2 WI adm Code.

DLR = ______1.6____ gpd/ ft^2

9. Determine the Infiltrative basal area.

Calculate the distribution cell area by dividing the daily Design Wastewater Flow (DWF) by the Design Loading Rate (DLR).

Infiltrative basal area = DWF ÷ DLR

Infiltrative basal area = ___750_______ gpd ÷ _____1.6_______ gpd/ft^2

Infiltrative basal area = ____469_______ ft²

10. Determine size of distribution cell (GeoMat)

Loading rate of GeoMat = _______≤ 1.0 gal/sq.ft./day if BOD_5 or TSS ≥ 30 mg/L
or = ___X_ ≤ 2.0 gal/sq.ft./day if BOD5 or TSS ≤30 mg
= ______ ≤ 2.2 gal/sq.ft./day if BOD5 or TSS ≤30 mg/L **&**
1.6 gal/sq ft/ day soil application rate

b. Sizing of distribution cell (GeoMat) = Design wastewater flow ÷loading rate of fill material as determined in C.1 a.

Distribution cell area = 750 gal/day÷ 2.0 gal/ft^2./day

Distribution cell area = 375 ft^2

11. Distribution Cell Configuration
OPTIONS—3.25 feet

a. Distribution cell width(s) (A) = 3.25 feet and the number of distribution

cells = 2 cells.

b. Distribution cell length (B) = Bottom area of distribution cell ÷ width of distribution cell.

B = 341 ft^2. ÷ (Distribution cell area required) ÷ 6.50 ft. (A)

B = 53.8 or 54 ft

c. Check distribution cell length (B)

12. Basal Area calculation

Basal Area required = (Cell length) *[(3.25 * # Cells) + (2 x (I)) + (cell spacing * # cells-1)]

If only 1 cell:
Basal Area = (Cell length) *[(3.25 * # Cells) + (2 x (I))

If more than 1 cell is to be used:
In this application all numbers are known except cell spacing. Use Formula 3 to solve for cell spacing:

Formula 3

Cell Spacing = [(Basal area needed ÷ cell length)] - [(Cell Width * # Cells) +(2 x (I))]
(# cells -1)

Basal area is known
Cell length is known
Cell width is known

cells is known
** I dimension is 1 - 4 feet
Cell Spacing (S) = [(469÷54)] - [(3.25 * #2) +2]
(2 -1)

Cell Spacing (S) = [(8.69)] - [(6.5) +2]
(1)

Cell Spacing(S) = [(8.69)] - [(6.5) +2]
(1)
Cell spacing(S) = .19 feet minimum S dimension is 1 foot

Now that S is known:

Basal Area required = (Cell length) *[((3.25 * # Cells) + (2 x (I)) + (cell spacing * # cells-1))]
If only 1 cell:
Basal Area = (Cell length) *[((3.25 * # Cells) + (2I)

Basal Area = (54) * [((3.25 * # 2) + (2 x (I)) + (1* # 2-1))]
= (54) * (6.5) + (2) +(1)
= (54) * (9.5)
= 513 Sq FT Check basal area 513 proposed, 469 required

13. Total Length and Width (L X W)
L = Cell length + 2K K is always 1
L = 53 + 2
L = 55 feet

W = (Cell width * # Cells) + (2x (I)) + (Cell spacing * (# Cells -1))
W = 3.25 * 2 + (2*1) +(1* (2-1))
W = 6.5 feet + 2 + 1
W = 9.5 feet

14. Linear loading rate

Linear loading rate ≤ Design wastewater flow ÷ Cell length (B) or effective cell length.

Linear loading rate ≤ 750 gal/day ÷ 54 feet

Linear loading rate ≤ 14 gal/ft/day

Linear loading rate for systems with in situ soils having a soil application rate of ≤ 0.3 gal/ ft^2/day within 12 inches of original grade must be less than or equal to 4.5 gal/ft/day.

Is the linear loading rate ≤ what is allowed? __X__ Yes ____ No -----If no, then the length and width of the distribution cell must be changed so it does.

Distribution cell length B = Design Wastewater Flow ÷ Maximum Linear Loading Rate

Distribution cell length B = _____ gal/day ÷ _____ gal/ft/day

Distribution cell length B = _________ ft.

X. GEOMAT IN-GROUND PLAN SUBMITTAL

A. Plan Submittal

Submit Plan File.

In addition to the Plan File, the following information is required to be submitted for review:

- Photocopies of soil report forms along with other documents required by the reviewing agent.
- Plans or documents must be originals or permanent copies.

B. Forms and Fees

- Application form for submittal provided by the reviewing agent, along with proper fees required by the reviewing agent.

C. Soils Information

- Complete soil and site evaluation report (Form # SBD-8330) for each soil boring described; signed and dated by Certified Soil Tester, with License Number.
- Separate sheet showing the location of all borings. The location of all boring and backhoe pits must be able to be identified on the plot plan.

D. Documentation

- Architects, engineers, or designers must sign, seal, and date each page of the submittal or provide an index page, which is signed, sealed, and dated.
- Mater Plumbers must sign, date, and include their license number on each page of the submittal or provide an index page, which is signed, sealed, and dated.
- Three complete sets of plans and specifications (clear, permanent, and legible); submittals must be on paper measuring at least 8.5 x 11 inches.
- Designs

E. Plot Plan

- Document plans or plans drawn to scale (scale indicated on plans) with parcel size or all property boundaries. Clearly marked.
- Slope directions and percent in system area.
- Benchmark and north arrow.
- Setbacks indicated as per appropriate code.

- Two-foot contours or other appropriate contour interval within the system area.

- Location information, legal description of parcel must be noted.
- Location of any nearby system or well.

F. Plan View

- Dimensions for distribution cells

- Location of observation pipes.

- Dimensions of trench.

- Pipe lateral layout, which must include the number of laterals, pipe material, diameter and length; and number, location and size of orifices.

- Manifold and force main locations, with materials, length and diameter of each.

G. Cross Section of System

- Include tilling requirement, distribution cell details, percent slope, side slope, and cover material.

- Lateral elevation, position of observation pipes, dimensions of distribution cell, and type of cover material such as filter fabric, if applicable.

H. System Sizing

- For one and two-family dwellings, the number of bedrooms must be included.

- For public buildings, the sizing calculations must be included.

I. Tank and Pump or Siphon Information

- All construction details for site-construction tanks.

- Size and manufacturer information for prefabricated tanks.

- Notation of pump or siphon model, pump performance curve, friction loss for force main and calculation for total dynamic head.

- Notation of highwater alarm manufacturer and model number.

- Cross section of dose tank / chamber to include storage volumes; connections for piping, vents, and power; pump "off" setting; dosing cycle and volume, highwater alarm setting; and storage volume above the highwater alarm; and location of vent and manhole.

- Cross section of two compartment tanks or tanks installed in a series must include information listed above.

Private Onsite Wastewater Treatment Systems (POWTS) Inspection Report

(Attach to Permit)

Industry Services Division

County
Sanitary Permit No:
State Plan Transaction ID#:
Parcel Tax No:

General Information

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04 (1)(m)]

Permit Holder's Name:		☐ City ☐ Village ☐ Town of:
CST BM Elev:	Insp BM Elev:	BM Description:

Tank Information

TYPE	MANUFACTURER	CAPACITY
Septic		
Dosing		
Aeration		
Holding		

Elevation Data

STATION	BS	HI	FS	ELEV
Benchmark				
Bldg. Sewer				
St / Ht Inlet				
St / Ht Outlet				
Dt Inlet				
Dt Bottom				
Installation Contour				
Header / Man.				
Dist. Pipe				
Infiltrative Surface				
Final Grade				

Tank Setback Information

TANK TO	P/L	WELL	BLDG	VENT TO AIR INTAKE	ROAD
Septic					NA
Dosing					NA
Aeration					NA
Holding					

Pump / Siphon Information

Manufacturer			Demand
Model Number			GPM
TDH Lift	Friction Loss	System Head	TDH Ft
Forcemain	Length	Dia	Dist. To Well

Dispersal Cell Information

DIMENSIONS	Width	Length	No of Cells	
SETBACK INFORMATION	P / L	Bldg	Well	OHWM of Nav Waters
CELL TO				

Type of System	LEACHING CHAMBER	Manufacturer:
		Model Number:

Distribution System

X Pressure Systems Only

Header / Manifold	Distribution Pipe(s)	X Hole Size	X Hole Spacing	Observation Pipes
Length ______ Dia ______	Length _____ Dia _____ Spac _____			☐ Yes ☐ No

Soil Cover

Depth Over Cell Center	Depth Over Cell Edges	Depth of Topsoil	Seeded / Sodded	Mulched
			☐ Yes ☐ No	☐ Yes ☐ No

COMMENTS: (Include code discrepancies, persons present, etc.)

Plan revision required? ☐ Yes ☐ No

Use other side for additional information

Date	POWTS Inspector's Signature	Cert No