

ONSITE SEPTIC SYSTEM SITE EVALUATION & DESIGN

CLIENT:

JEFFREY CARTER | WPCLF

5868 REGA DRIVE, TOLEDO, OH
43623

419.392.0461

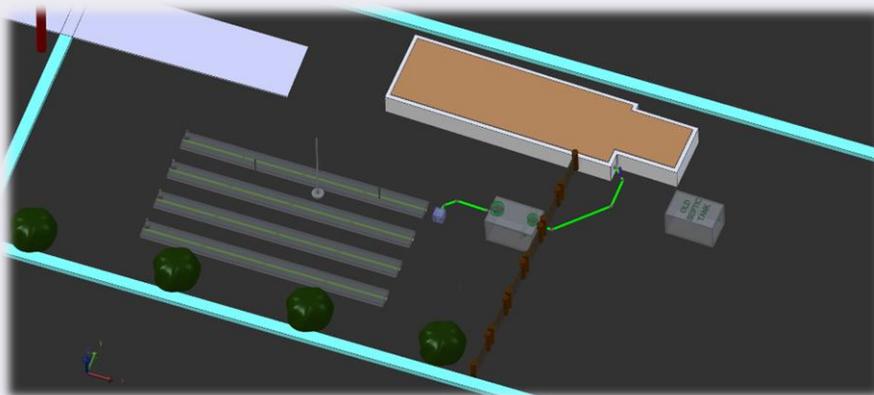
PROPERTY:

5868 REGA DRIVE, TOLEDO, OH
43623

TOWNSHIP: COUNTY:
SYLVANIA LUCAS

SYSTEM TYPE:

2 BEDROOM STONE AND PIPE LEACH FIELD



- 1 DISCLAIMER
- 2 LAYOUT MAP
- 3 SOIL REPORT
- 4 CALCULATION SHEETS
- 5 3D CAD LAYOUT
- 6 TOP CAD LAYOUT
- 7 ELEVATION CAD LAYOUT
- 8 BILL OF MATERIALS
- 9 COMPONENT SPEC SHEETS

BY:

NATHAN WRIGHT (SOIL SCIENTIST)
CALEB LAYNE (SOIL SCIENTIST APPRENTICE)
SETH V. LAYNE (SEPTIC DESIGNER)

GEOPHYTA INC.
2685 COUNTY ROAD 254, VICKERY, OH 43464
419.547.8538

OCTOBER 22ND, 2025

To The Homeowner:

A septic system is designed based on all the information you provide and Geophyta Inc collects at the site. It must be accurate. This information includes local soil limits and topography, plus existing and future locations of your home, number of bedrooms, out buildings, driveways, drinking water wells, ponds, septic systems, and property lines. Geophyta Inc. relies on this information to construct detailed design drawings that must meet local health department regulations before installation.

Any design changes required by the local health department to meet existing regulations are the responsibility of Geophyta Inc.

Any information changes made by you after the initial site inspection are your responsibility and will result in additional charges to you above the original quote for services. These charges may include additional site inspection work, system redesign, and resubmitted drawings.

To The Installer:

The registered installer of this septic system design is responsible for preparing an “as-built” record, as stated in the Ohio Administrative Code Chapter 3701-29-09, Par. F (p.32) of the “Sewage Treatment System Rules,” Ohio Department of Health, January 1, 2015. Additionally, the installer is responsible for measuring and recording distal pressure head and float switch settings as baseline measures for future operation and maintenance of any pressure distribution system (3701-29-15, Appendix B, Par. VI(p.93) of above referenced rules.

If the installer requests “as-built” record creation from Geophyta Inc., additional charges will be billed to the installer by Geophyta Inc. and must be arranged prior to installation.

Geophyta Inc. must assume that any registered installer has the knowledge, equipment, ability, and experience to properly layout, install, and create as-built drawings for any septic system design approved by a local board of health. This includes the ability to read detailed design prints with an associated bill of materials. For this reason, any Geophyta Inc project supervision prior to or during installation will be billed to the installer.

Any product substitution made by the installer that is not specifically permitted in the design prints may result in Health Dept. disapproval and will result in additional re-design costs billed to the installer.

HSTS Replacement Layout - 5868 Rega Drive 10.22.25

- Pump, Crush & Backfill Existing Tank
- Disregard Stakes Onsite.
- Flag Pole Will Need Relocated.
- Stone And Pipe Leach Required by LCHD. Variance Required to be 3 FT Edge to Edge Instead of 4 FT.

- Evaluation Points (3)
- Elevations (6)
- Approx_Parcel_Lines
- Existing_2_Bedroom_Residence
- shapefiles_Road_And_Drive
- Area_Equal_to_Soil_Core_A
- HSTS_Replacement
- HSTS_Lines
- HSTS_10_FT_MIN
- Approx_Public_Water
- - - Overhead_Electric

REGA

BENCHMARK = 10.00 FEET
ROAD EDGE ACROSS
FROM UTILITY POLE



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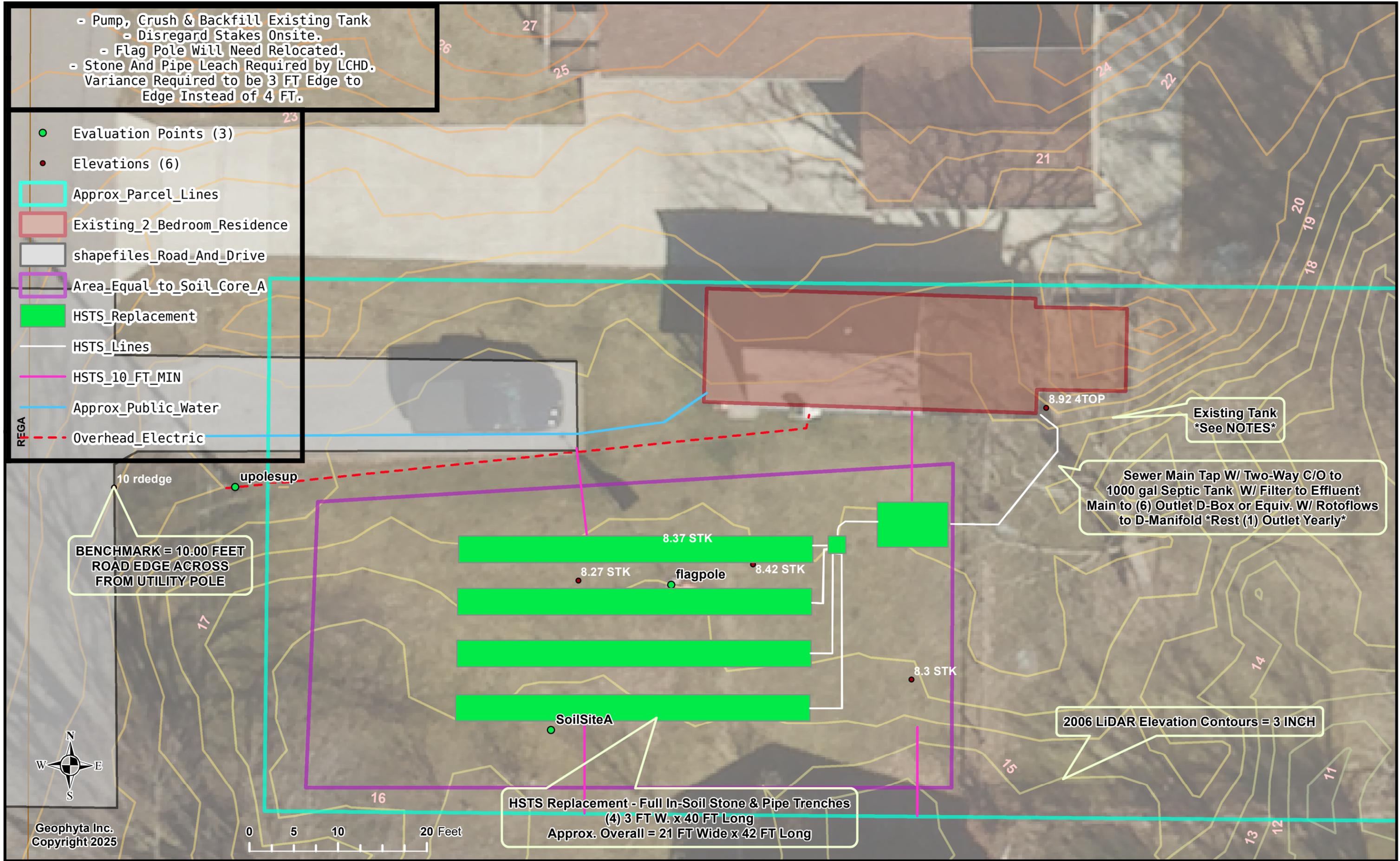


HSTS Replacement - Full In-Soil Stone & Pipe Trenches
(4) 3 FT W. x 40 FT Long
Approx. Overall = 21 FT Wide x 42 FT Long

Existing Tank
See NOTES

Sewer Main Tap W/ Two-Way C/O to
1000 gal Septic Tank W/ Filter to Effluent
Main to (6) Outlet D-Box or Equiv. W/ Rotoflows
to D-Manifold *Rest (1) Outlet Yearly*

2006 LiDAR Elevation Contours = 3 INCH



Site and Soil Evaluation for Sewage Treatment and Dispersal

County: Lucas
 Township / Sec.: Sylvania
 Property Address: 5868 Rega Dr
 OR Location: Toledo, OH 43623
 Applicant Name: Jeffrey Carter
 Address: 5868 Rega Dr
Toledo, OH 43623
 Phone #: 419-392-0461
 Lot #: _____
 Test Hole #: A
 Latitude/Longitude: 83°38'46.751"W 41°43'19.632"N
 Method: _____ Pit ___ Auger Probe; 1 1/4" dia.

Land Use / Vegetation: Residential Turf
 Landform: Glacial Lake Plain
 Position on Landform: Local Depression
 Percent Slope: 0-1
 Shape of Slope: Linear - Linear
 Approximate Soil Type: Fill / Tedrow LS
 Date: 9-Sep-25
 Evaluator: Nathan Wright
Geophyta, Inc.
2685 C.R. 254
Vickery, OH 43464
 Phone#: 419-547-8538

Control #: 25- LUC - 12A - 283



Certification #: 19395

Signature: *Nathan Wright*

Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							Other Soil Features
		Munsell Color (hue, value, chroma)			Redoximorphic Features		Texture			Structure		
Horizon	Depth (inches)	Matrix Color	Concentrations	Depletions	Class	Approx. % Clay	Approx. % Fragments	Grade	Size	Type (shape)	Consistence	
Fill 1	0.0-10.0	10YR 3/1	none	none	S	< 5	0	0-none	-	sg	loose	
Fill 2	10.0-21.0	10YR 4/3	none	none	S	< 5	0	0-none	-	sg	loose	
Fill 3	21.0-27.0	10YR 6/3	none	none	S	< 5	0	0-none	-	sg	loose	
Ab	27.0-39.0	10YR 2/1	none	none	LS	< 5	0	2-med	med	gr	v. friable	
Bw	39.0-54.0	10YR 5/6	none	none	S	< 5	0	0-none	-	sg	loose	
C	54.0-60.0	10YR 5/6	none	20% 10YR 5/2	S	< 5	0	0-none	-	sg	loose	
Limiting Conditions		Depth to (in.)	Descriptive Notes			Remarks / Risk Factors: Values For Elgin System						
Perched Seasonal Water Table		54.0	Restricted below C			Tyler Table: Fill2-Bw horizon (14.0 - 54.0) ILR: S , HLLR: LS						
Apparent Water Table		>60				ILR(>30mg/L) = xxx gal/day/ft ² , ILR(<30mg/L) = 1.6 gal/day/ft ²						
Highly Permeable Material		>60				HLLR = 6.0 gal/day/ft						
Bedrock		>60				2 bedroom min. required absorption area = 150 sq.ft.						
Other Restrictive Layer		>60				5xW Soil Absorption Box: 48' W x 40' L						

Note : The evaluation shall include a complete site plan or site drawing including all requirements in paragraphs (B)(1) through (B)(4) of OAC 3701-29-08.

Landforms
Upland*
Terrace
Flood Plain
Lake Pain
Beach Ridge
*Includes glacial till plain and end moraine

Position on Landform
Depression
Flat
Knoll
Crest
Hillslope
Footslope

Shape of Slope
Convex
Concave
Linear
Complex

Horizon Nomenclature			
Master Horizons		Horizon Suffixes	Horizon Modifiers
O	Predominantly organic matter (litter & humus)	a	
A	Mineral, organic matter (humus) accumulation, loss of Fe, Al, clay	b	Buried genetic horizon
E	Mineral, loss of Si, Fe, Al, clay, organic matter	d	Densic layer (physically root restrictive)
B	Subsurface accumulation of clay, Fe, Al, Si, humus; sesquioxides; loss of CaCO ₃ ; subsurface soil structure	e	Moderately decomposed organic matter
C	Little or no pedogenic alteration, unconsolidated earthy material, soft bedrock	g	Strong gley
R	Hard bedrock	i	Slightly decomposed organic matter
		p	Plow layer or artificial disturbance
		r	Weathered or soft bedrock
		t	Illuvial accumulation of silicate clay
		w	Weak color or structure within B
		x	Fragipan characteristics
			Numerical Prefixes: Used to denote lithologic discontinuities.
			Numerical Suffixes: Used to denote subdivisions within a master horizon.

Soil Texture			
Texture Class Abbreviations		Textural Class Modifiers	
Course Sand	cos	Gravelly	GR
Sand	s	Fine Gravelly	FGR
Fine Sand	fs	Medium Gravelly	MGR
Very Fine Sand	vfs	Coarse Gravelly	CGR
Loamy Coarse Sand	lcos	Very Gravelly	VGR
Loamy Sand	ls	Extremely Gravelly	XGR
Loamy Fine Sand	lfs	Cobbly	CB
Loamy Very Fine Sand	lvfs	Very Cobbly	VCB
Coarse Sandy Loam	cosl	Extremely Cobbly	XCB
Sandy Loam	sl	Stony	ST
Fine Sandy Loam	fsl	Very Stony	VST
Very Fine Sandy Loam	vfsl	Extremely Stony	XST
Loam	l	Bouldery	BY
Silt Loam	sil	Very Bouldery	VBY
Silt	si	Extremely Bouldery	XBY
Sandy Clay Loam	scl	Channery	CN
Clay Loam	cl	Very Channery	VCN
Silty Clay Loam	sicl	Extremely Channery	XCN
Sandy Clay	sc	Flaggy	FL
Silty Clay	sic	Very Flaggy	VFL
Clay	c	Extremely Flaggy	XFL

*Estimate approximate clay percentage within 5 percent

Soil Structure					
Grade		Size		Type (Shape)	
Structureless	0	Very Fine	vf	Granular	gr
Weak	1	Fine	f	Angular Blocky	abk
Moderate	2	Medium	m	Subangular Blocky	sbk
Strong	3	Coarse	co	Platy	pl
		Very Coarse	vc	Prismatic	pr
		Extr. Coarse	ec	Columnar	cpr
		Very Thin*	vn	Single Grain	sg
		Thin*	tn	Massive	m
		Thick*	tk	Cloddy	CDY
		Very Thick*	vk		

* The sizes Very Thin, Thin, Thick, and Very Thick, are used when describing platy structure only. Substitute thin for fine, and thick for coarse when describing platy structure.

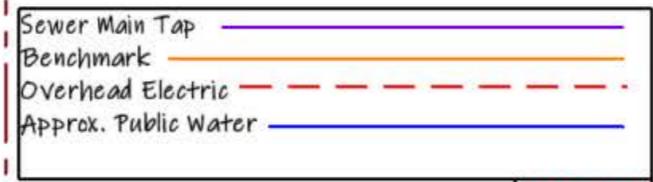
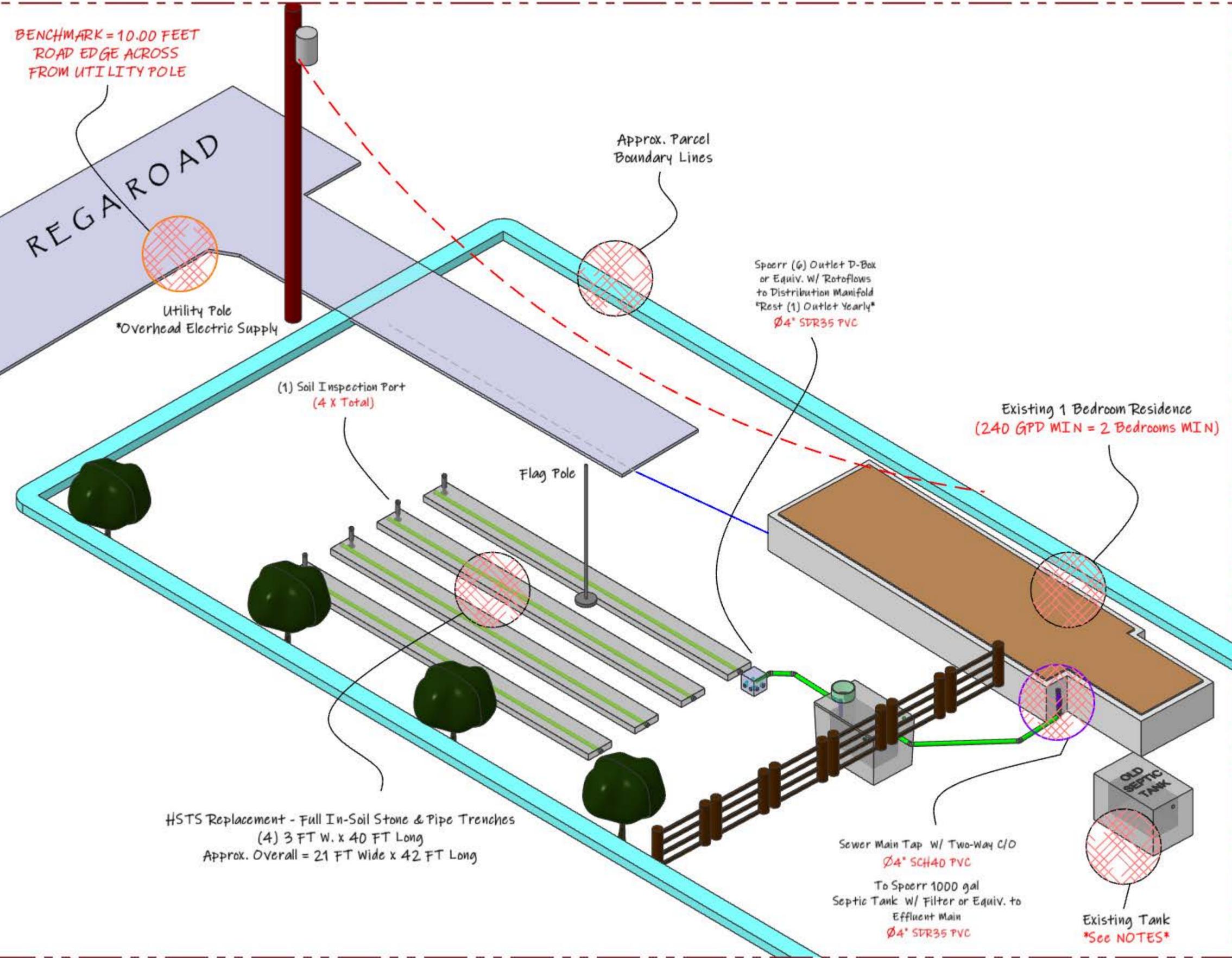
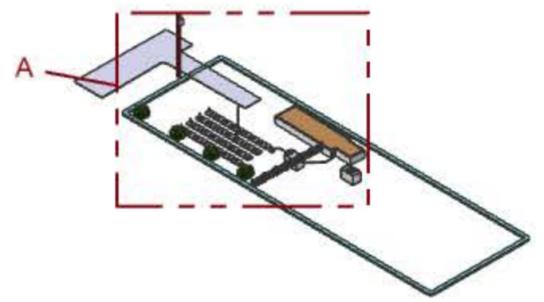
Moist Consistence	
Loose	l
Very Friable	vfr
Friable	fr
Firm	fi
Very Firm	vfi
Extremely Firm	efi

For a more detailed explanation on describing and sampling soils, please refer to the "Field Book for Describing and Sampling Soils" Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors) 2002. Field book for describing and sampling soils, version 2.0. Natural Resources Conservation Service, USDA, National Soil Survey Center, Lincoln, NE.

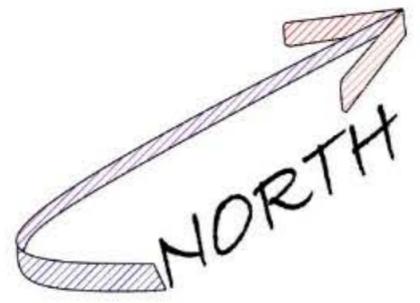
IN-SOIL LEACH FIELD CALCULATIONS - HSTS						
CLIENT / LOCATION		CARTER	5868 REGA DRIVE			
1	TOTAL NUMBER OF BEDROOMS IN HOME		2	BEDS		
2	DAILY DESIGN FLOW PER 3701-29 <i>(NUMBER OF BEDROOMS * 120 GALLONS)</i>		240	GPD		
3	SOIL BOUNDARY OR CORE LOCATION USED FOR LEACH FIELD DESIGN		SOIL SITE A			
4	MOST IMPACTFUL LIMITING CONDITION		PERCHED SEASONAL WATER TABLE			
5	DEPTH TO LIMITING CONDITION		54.0	IN		
6	LOCAL HEALTH DEPARTMENT / 3701-29 MINIMUM SEPARATION		6.0	IN		
7	AVERAGE DEPTH OF LEACH TRENCHES <i>(MINIMUM 2 INCHES PER 3701-29)</i>		AVG	21.0	IN	
8	TOTAL SOIL INFILTRATION FROM TRENCH BOTTOM TO LIMITING CONDITION			33.0	IN	
9	AVERAGE COVER SOIL OVER LEACH TRENCHES <i>(MINIMUM 6 INCHES PER 3701-29)</i>		AVG	N/A	IN	
10	WILL THIS SYSTEM UTILIZE PRETREATMENT TECHNOLOGIES?		NO			
11	SOIL INFILTRATION LOADING RATE <i>(MOST LIMITING IN SITU SOIL LAYER WITHIN SIX INCHES OF THE INFILTRATIVE SURFACE PER 3701-29)</i>		TEXTURE	S		
12			STRUCTURE (GRADE)	0SG		
13	HYDRAULIC LINEAR LOADING RATE <i>(MOST RESTRICTIVE SOIL HORIZON WITHIN THE INFILTRATIVE DISTANCE SHALL BE USED PER 3701-29)</i>		TEXTURE	S		
14			STRUCTURE (GRADE)	0SG		
15			LAND SLOPE	0-4%		
16			INFILTRATIVE DISTANCE	24-48 IN		
17	CHOSEN SOIL INFILTRATION LOADING RATE		0.8	GPD/FT. ²		
18	CHOSEN HYDRAULIC LINEAR LOADING RATE		6.0	GPD/FT.		
19	WILL THIS LEACHFIELD UTILIZE GRAVELLESS CHAMBERS?		NO			
20	TOTAL MIN. ACTIVE LEACHING TRENCH INFILTRATIVE SURFACE AREA <i>(BOX 2 / BOX 17)</i>		300	FT. ²		
21	IF ANSWER TO BOX 19 IS YES, WILL DESIGN UTILIZE NON-GRAVEL, FINES-FREE 25% AREA CREDIT? <i>*CANNOT COMBINE THIS CREDIT WITH PRETREATMENT TECHNOLOGIES CREDIT*</i>		NO			
22	ADJUSTED MINIMUM ACTIVE LEACHING TRENCH INFILTRATIVE SURFACE AREA		300	FT. ²		
23	25% ADJUSTED AREA FOR RESTING PER 3701-29 IF NOT UTILIZING LOW PRESSURE PIPE		75	FT. ²		
24	MINIMUM LENGTH ALONG CONTOUR <i>(BOX 2 / BOX 18) *MUST BE SPLIT IF EXCEEDING 150 FT.*</i>		40	FT.		
25	ADJUSTED LENGTH OF LINES <i>*10% LENGTH REDUCTION ONLY ALLOWED ON NEW BUILD PRIOR TO PARCEL CREATION 2007. 20% ALLOWED ON REPLACEMENTS. 30% IF LOW PRESSURE PIPE IS UTILIZED* *MOST GRAVELLESS CHAMBERS RUN IN 4 FOOT SECTIONS*</i>		40	10% Max	36	FT.
26				20% Max	32	FT.
27				30% Max	28	FT.
28	TRENCH WIDTH <i>*3 FT. ONLY ON REPLACEMENTS WHEN 2 FT. WIDE NOT POSSIBLE*</i>		3	FT.		
29	ACTIVE LEACH TRENCH LINES		3			
30	RESTING LEACH TRENCH LINES		1			
31	TOTAL LEACH TRENCH LINES		4			
32	ACTUAL TOTAL ACTIVE LEACHING TRENCH INFILTRATIVE SURFACE AREA		360	FT. ²		
33	ACTUAL TOTAL RESTING LEACHING TRENCH INFILTRATIVE SURFACE AREA		120	FT. ²		
34	MAXIMUM FLOW RATE BASED ON ACTIVE AREA PER SOIL INFILTRATION LOADING RATE		360	GPD		
35	EDGE-EDGE SEPARATION PER 3701-29 <i>*4' WITH GRAVITY, 3' WITH LPP, 2' WITH LPP & COS, S, LCO, LS, FS, VFS, LFS, LVFS*</i>		3	FT.		
36	FINAL WIDTH OF LEACH FIELD		21	FT.		
37	FINAL LENGTH OF LEACH FIELD		40	FT.		
38	COMMENTS	STONE AND PIPE LEACH REQUIRED BY LCHD. VARIANCE REQUIRED FOR BOX 35 TO BE 3 FT INSTEAD OF 4 FT				
39						

DESIGNER: SETH V. LAYNE,
GEOPHYTA INC.

22.OCT.25



LEGEND



- ▷ Pump, Crush & Backfill Existing Tank
- ▷ Disregard Stakes Onsite.
- ▷ Flag Pole Will Need Relocated.
- ▷ Stone And Pipe Leach Required by LCHD. Variance Required to be 3 FT Edge to Edge Instead of 4 FT.

NOTES

HSTS Replacement - Full In-Soil Stone & Pipe Trenches
(4) 3 FT W. x 40 FT Long
Approx. Overall = 21 FT Wide x 42 FT Long

BENCHMARK = 10.00 FEET
ROAD EDGE ACROSS
FROM UTILITY POLE

Utility Pole
*Overhead Electric Supply

(1) Soil Inspection Port
(4 X Total)

Flag Pole

Spoerr (6) Outlet D-Box
or Equiv. W/ Rotoflows
to Distribution Manifold
Rest (1) Outlet Yearly
Ø4" SDR35 PVC

Existing 1 Bedroom Residence
(240 GPD MIN = 2 Bedrooms MIN)

Sewer Main Tap W/ Two-Way C/O
Ø4" SCH40 PVC
To Spoerr 1000 gal
Septic Tank W/ Filter or Equiv. to
Effluent Main
Ø4" SDR35 PVC

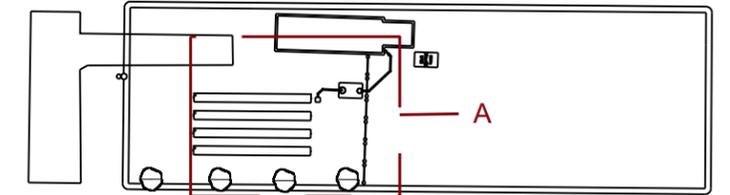
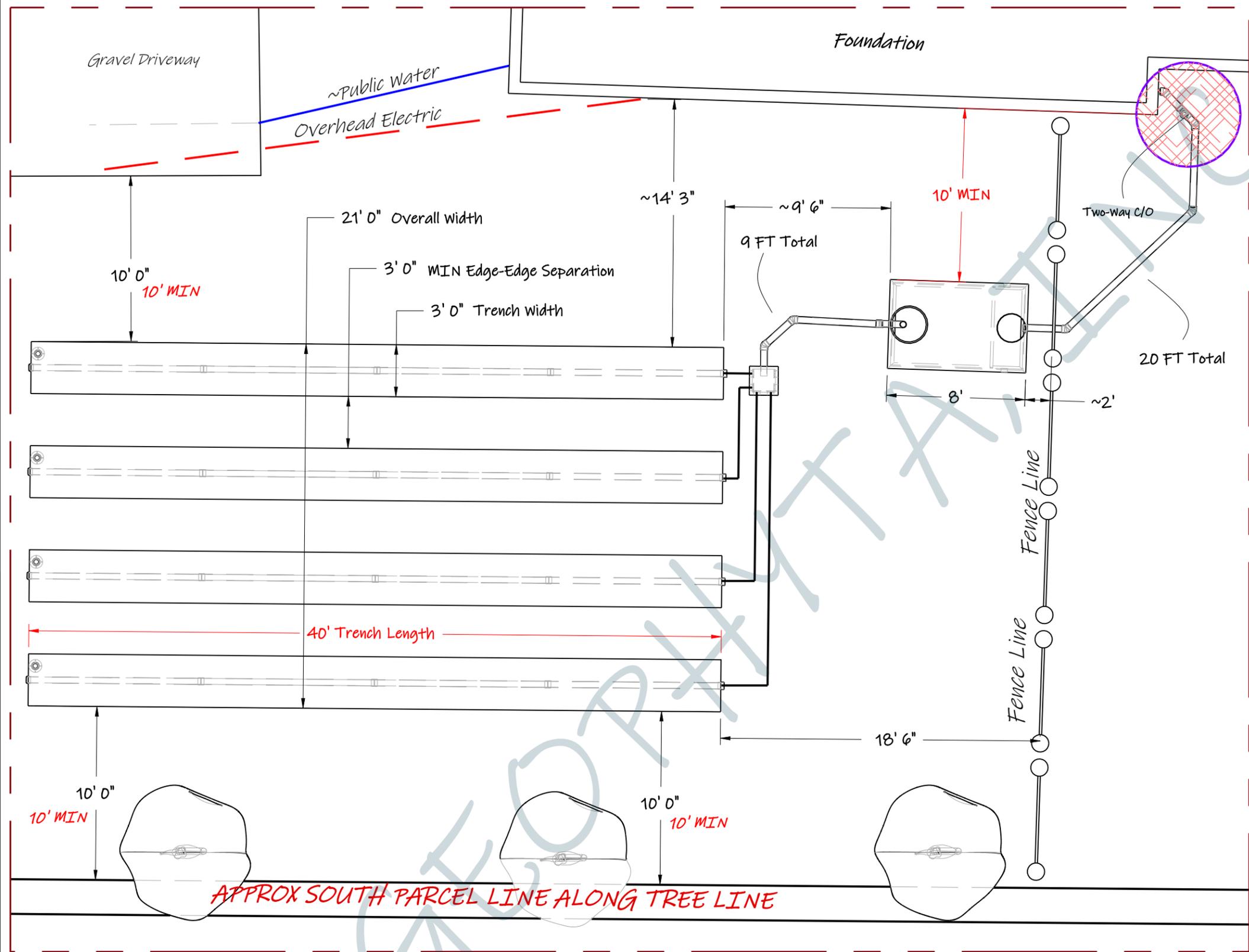
Existing Tank
See NOTES

Detail A SCALE 1:110

5868 REGA ROAD - HSTS_3D_LAYOUT

DESIGNER: SETH V. LAYNE,
GEOPHYTA INC.

22.OCT.25

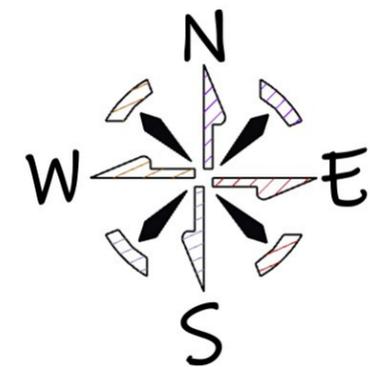


NOTES

System Layout by: South Property Line (Small Tree Line) & House Driveway & Fence Line.

LEGEND

Sewer Main Tap	—
Approx. Overhead Electric	- - - -
Approx. Public Water	—



Detail A

SCALE 1:75

- ▷ Trench Depth Along System Centerline Markers:
Avg. = 21.0"
 - ▷ Sewer Main MIN Fall 1 % or 0.125 INCH / 1 FT
 - ▷ Effluent Main MIN Fall 0.1 % or 1.2 INCH / 10 FT
- NOTES**

Native Soil Surface 
 Zero Elevation Reference  **LEGEND**

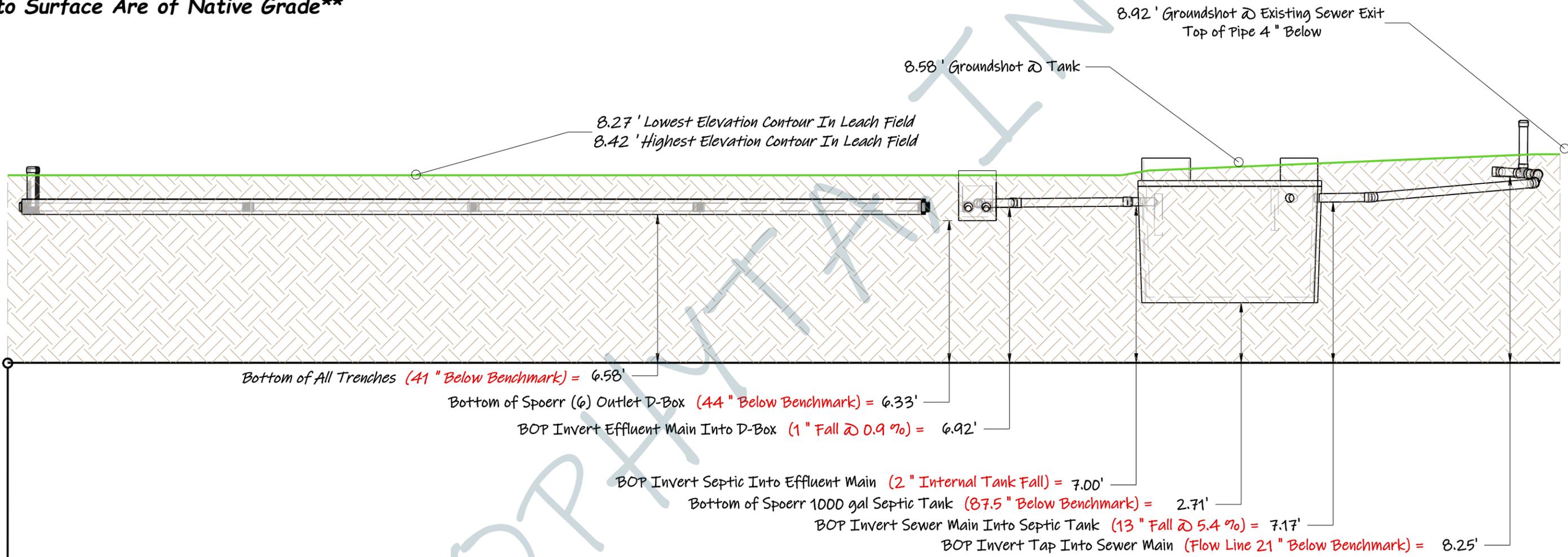
ELEVATION VIEW - SOUTH LOOKING NORTH
 **WEST**

DESIGNER: SETH V. LAYNE,
 GEOPHYTA INC.

22.OCT.25

****All Elevation Values Pointing to Surface Are of Native Grade****

***ALL INSPECTION PORTS/
 RISERS TO BE ABOVE GRADE***



**ZERO ELEVATION REFERENCE / BENCHMARK = 10.00 FT;
 ROAD EDGE ACROSS FROM UTILITY POLE / SEE LAYOUT MAP**

SCALE 1:55

5868 REGA ROAD - HSTS_ELEVATION

BILL OF MATERIALS - STONE AND PIPE LEACH FIELD

OWNER / ADDRESS

5868 REGA DRIVE

SECTION	DIA(IN)	PIPE MATERIAL	TYPE	LENGTH (FT)	QUANTITY	COMMENT
SEWER MAIN	4 IN	SCH40	2-WAY C/O	-	1	TWO-WAY CLEANOUT
			CAP	-	1	
			PIPE	2 FT	1	
			45 ELBOW	-	4	
			PIPE	10 FT	2	
TOTAL LENGTH = ~ 20 FEET						
SEPTIC TANK	-	-	-	-	1	SPOERR 1000 GAL SEPTIC TANK OR EQUIV. W/ 12" RISERS
SEPTIC FILTER	4 IN	-	FILTER	-	1	POLYLOK PL-122 EFFLUENT FILTER
EFFLUENT MAIN	4 IN	SDR35	COUPLER	-	1	TOTAL LENGTH = ~ 9 FEET
			45 ELBOW	-	2	
			PIPE W/ BELL	10 FT	1	
DISTRIBUTION BOX ASSEMBLY	-	-	BOX	-	1	SPOERR 6 OUTLET D-BOX OR EQUIV. W/ 18 INCH RISER
	4 IN	-	FLOW CONTROL	-	4	POLYLOK ROTOFLOW OR EQUIV. *REST (1) TRENCH YEARLY ROTATION*
	4 IN	SDR35	90 ELBOW	-	4	SEE DESIGN
			PIPE W/ BELL	10 FT	5	
LEACH FIELD	-	-	GRAVEL	-	1	~ 12.0 yd. ³ @ 16.0 Tons (#57 washed stone)
	4 IN	SD PERF.	PIPE	10 FT	16	SEWER AND DRAIN PIPE
		PVC	CAP	-	4	CAP ENDS
	-	-	GEOFABRIC	-	1	480 ft. ² INSTALLER PREFERENCE GEOFABRIC
OBSERVATION PORT	4 IN	SCH40	TOILET FLANGE	-	4	SEE DETAILT SHEET
			CAP	-	4	
				2.0 FT	4	
SEEDING OF SYSTEM	-	-	SEED	-	~	2 lbs./1000 ft. ² K. Bluegrass ~ 1000 ft. ² @ 2.0 lbs.
	-	-	STRAW	-	~	Homeowner's Choice ~ 1000 ft. ²
	-	-	FERTILIZER	-	~	10 lbs. 20-10-10/1000 ft. ² ~ 1000 ft. ² @ 10.0 lbs.

ADDITIONAL NOTES

PUMP, CRUSH AND BACKFILL EXISTING TANK.

Disregard Stakes Onsite.

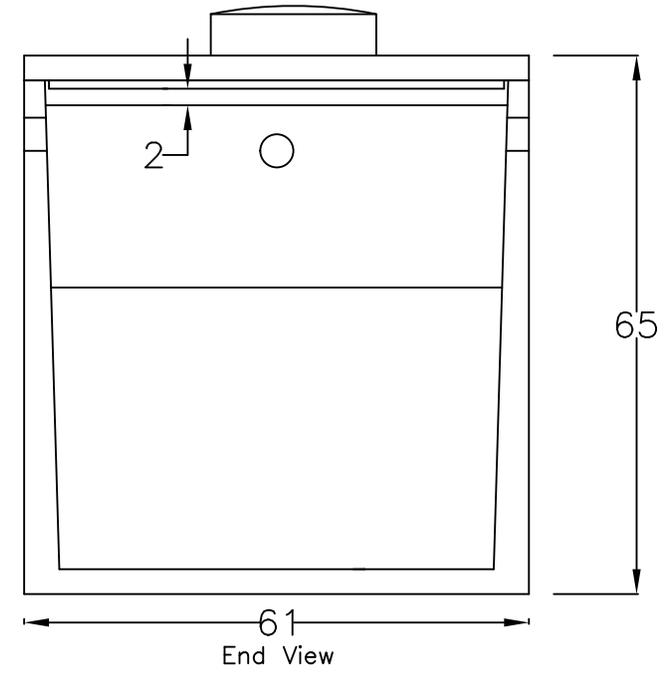
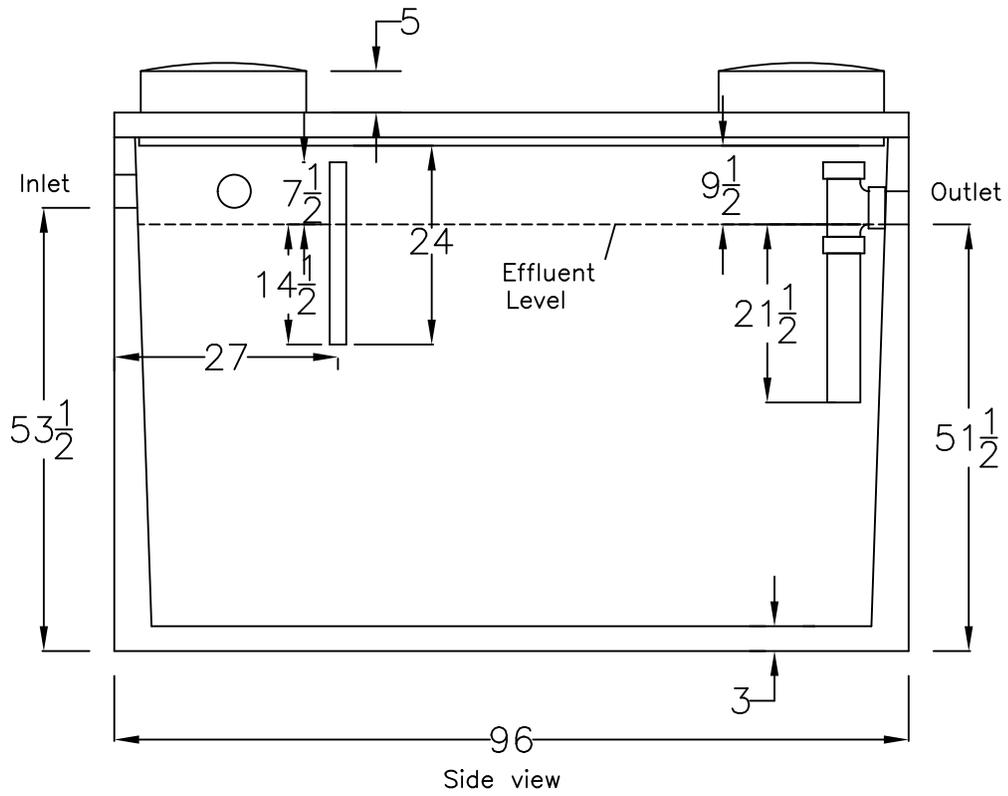
Flag Pole Will Need Relocated.

Stone And Pipe Leach Required by LCHD. Variance Required to be 3 FT Edge to Edge Instead of 4 FT.

Call OUPS before you dig.

Installer substitution of materials not specified in this Bill Of Materials may void Health Dept. approval of this design and will result in a re-design fee and is the sole responsibility of the installer.

Design Prints Take Precedence Over This Bill of Materials. This is a best estimate of materials required and is provided as a convenience to installers. This BUM is not required for design approval.



Proprietary and Confidential

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Spoerr Precast Concrete Inc.
 2020 Caldwell St
 Sandusky, OH 44870
 800-252-5205

Concrete 5000 PSI @ 28 Days
 All Dimensions in Inches
 Max cover on top of tank 48"
 Minimum cover 6"
 Inlet/Outlet boots for 4" pipe
 Boots: Meet ASTM C923
 Sealant: Meets ASTM C990
 Outlet Filter: Meets ANSI/NSF 46

1000 Gallon Septic Tank
 Excavation 6' x 9'

		11/26/15	

PL-122 Filter

The PL-122 was the original Polylok filter. It was the first filter on the market with an automatic shut-off ball installed with every filter. When the filter is removed for regular servicing, the ball will float up and prevent any solids from leaving the tank. Our patented design cannot be duplicated.

Features:

- Offers 122 linear feet of 1/16" filter slots, which significantly extends time between cleaning.
- Has a flow control ball that shuts off the flow of effluent when the filter is removed for cleaning.
- Has its own gas deflector ball which deflects solids away.
- Installs easily in new tanks, or retrofits in existing systems.
- Comes complete with its own housing. No gluing of tees or pipe, no extra parts to buy.
- Has a modular design, allowing for increased filtration.

PL-122 Installation:

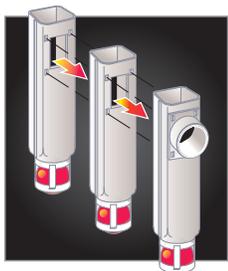
Ideal for residential waste flows up to 1,500 gallons per day (GPD). Easily installs in any new or existing 4" outlet tee.

1. Locate the outlet of the septic tank.
2. Remove the tank cover and pump tank if necessary.
3. Glue the filter housing to the outlet pipe, or use a Polylok Extend & Lok if not enough pipe exists.
4. Insert the PL-122 filter into tee.
5. Replace and secure the septic tank cover.

PL-122 Maintenance:

The PL-122 Effluent Filter will operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped, or at least every three years.

1. Do not use plumbing when filter is removed.
2. Pull PL-122 cartridge out of the tee.
3. Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
4. Insert filter back into tee/housing.



Polylok offers the only filter on the market where you can get more GPD by simply snapping our filters together!

- 1 Filter = 1500 GPD
- 2 Filters = 3000 GPD
- 3 Filters = 4500 GPD

Patent Numbers
 6,015,488 & 5,871,640



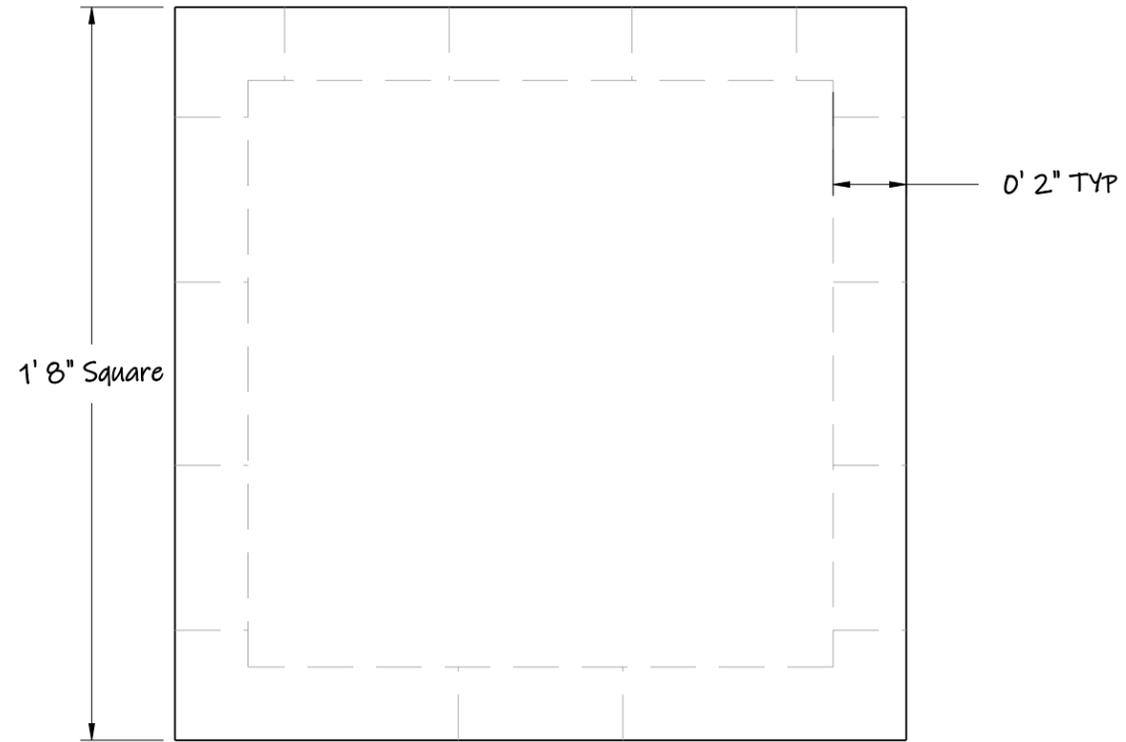
1/16" Filtration Slots

1,500 GPD

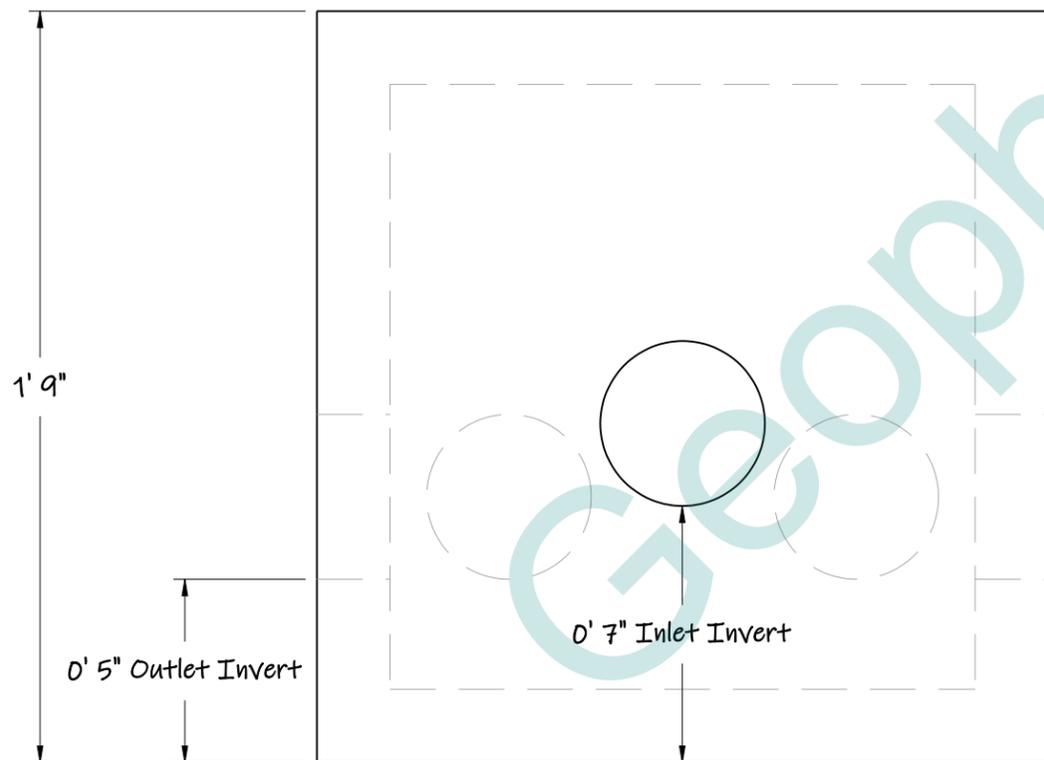


Filter Ready Adapter
 Connects to Septic Tank Wall

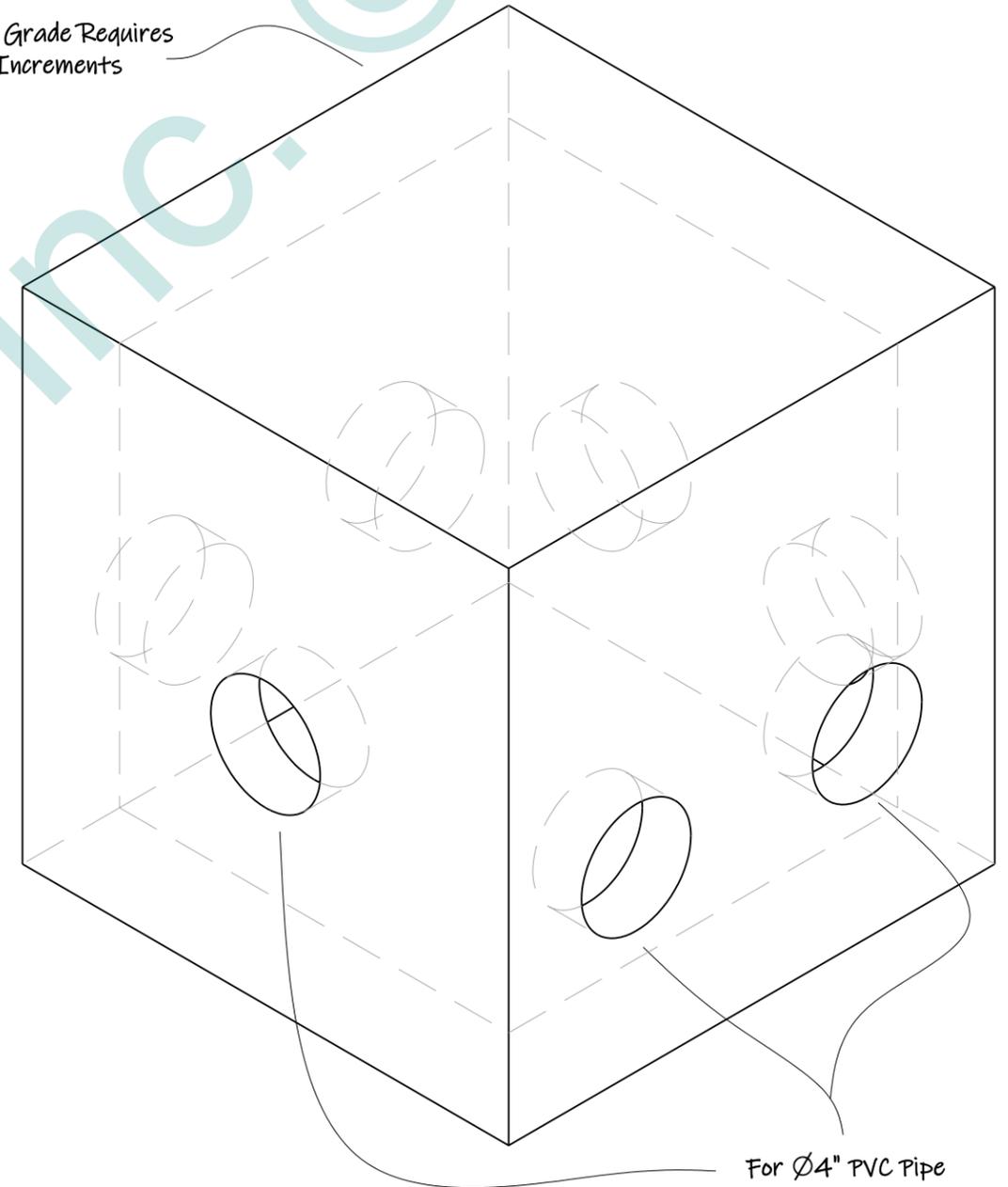
Outdoor SmartFilter® Alarm
 Polylok, Zabel & Best filters accept the SmartFilter® switch and alarm.



Add on Risers as Grade Requires
in 6 INCH Increments



SCALE 1:5



SCALE 1:5

Roto-Flow



Roto-Flow enables equal distribution to your leaching fields. Available in 3" and 4" sizes.

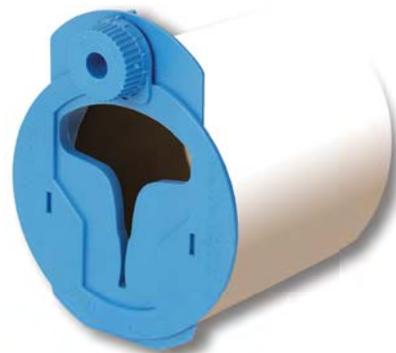
The Roto-Flow is the low cost solution to your D-Box flow regulating problems. The simple Roto-Flow for D-Box outlet pipes gives you the easiest "set & forget" flow regulator available.

The Roto-Flow fits Schedule 40, SDR 35 and thin wall pipe sizes. Both 3 inch and 4 inch sizes are available. Simply place the Roto-Flow into the D-Box outlet pipe then adjust to equalize flow.

The Roto-Flow is made from HDPE; it is designed to stand up in the septic environment without failing. Our Roto-Flow design ensures a good fit in all pipe sizes.

The Roto-Flow is made to fit pipes without collapsing or creating a loose fit. This will guarantee equal flow performance.

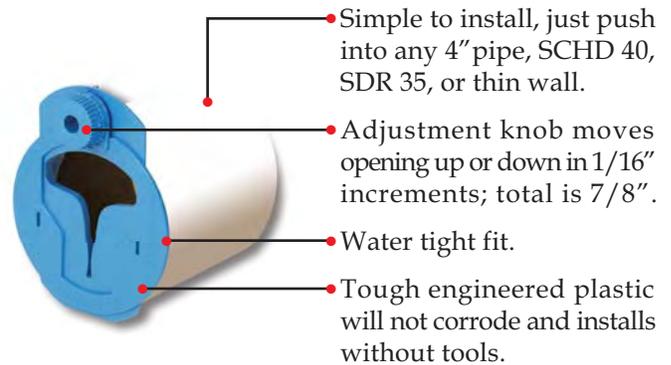
Equalizer



The Equalizer's patented weir opening maintains equal flow, even in unlevel D-Boxes that continue to move their entire lives.

Equalizer Features:

- Maintains equal flow from distribution box.
- Automatically compensates for box movement.
- Engineered plastic is non-corrosive.
- Extends septic system life.
- Inserts without tools.
- Resets equal flow when D-Box has moved.

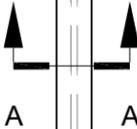


PATENTS: U.S.A. - 5,680,989 - 5,154,353 - 5,107,892



Custom Distribution Boxes with Equalizers installed

DO NOT DIG TRENCHES IF SOIL SMEARS.
IF TRENCH SIDEWALL & BOTTOM SMEARING OCCURS
DURING INSTALLATION, THEN RAKE SIDEWALLS & BOTTOMS TO BREAK SMEAR LAYER.



Ø4" PVC Inspection Port with Cap
with Toilet Flange Installed at
Trench Bottom @ End of Trench

Grass Seeded & Straw Covered Immediately After Installation

Geotextile Fabric Covering

ADS Ø4 x 10' 2 Hole Triple Wall Pipe
or Equiv. Meeting ASTM D1782, ASTM D2729,
ASTM F405, or ASTM FB10 Standards

Cover Soil Above and Between Trenches to be
Silt Loam, Loam, Sand, Loamy Sand or Sandy Loam
Texture. NO Manufactured Sand Allowed.

Per Design

0' 6" MIN

0' 2" Gravel Above Pipe

0' 4" Diameter Pipe

0' 2" Gravel Below Pipe

VSD Per Code

2' 0"

Section A-A

SCALE 1:4

SCALE 1:125

STONE & PIPE LEACH TRENCH DETAIL

Operation and Maintenance Procedures

Home Septic Treatment Systems With Effluent Distribution Through In-Soil Leach Trenches

Home septic treatment systems are biologically based systems. They rely on both anaerobic and aerobic microorganisms to process human waste. These systems may utilize processing, storage, and pumping tanks. A soil absorption component, the leachfield, also processes, treats, and disperses septic effluent. Any abuse of this biological treatment system will result in less efficient sewage treatment and early failure of your new system.

Improper operation and/or maintenance of your home septic treatment system will result in its failure.

Geophyta, Inc. strongly recommends that a homeowner hire a professional service provider to inspect and maintain your system. Your county health department has a list of registered service providers. Make sure that your service provider has septic tank and leachfield maintenance experience.

1) Homeowner Responsibility:

- a) The system owner is responsible for the continuous operation and maintenance of this home septic treatment system
- b) Your county health department may require third-party inspection and maintenance of your home septic treatment system.
- c) Home Interior Design & Appliance Selection:
 - i) Install water conserving fixtures such as low flow shower heads, low flow toilets, and front loading washers.
 - ii) Space out water use throughout the day and week. Avoid doing all laundry in one day.
 - iii) Repair all water leaking fixtures.
 - iv) Eliminate garbage disposals, or limit their use. Collect food scraps with sink strainers for disposal as trash or for composting; this includes coffee grounds.
 - v) DO NOT pipe sump pump output into your sewer line.
- d) Home Landscaping Limitations:
 - i) Do not pipe roof downspouts or any other rainwater drainage into the septic or dose tanks.
 - ii) Divert all downspouts or other rainwater drainage away from your entire septic system.
 - iii) Divert all downspouts or other rainwater drainage away from the leachfield area.
 - iv) Do not drive or park cars, boats, heavy equipment, or other vehicles on or near septic system tanks and leachfield areas.

- v) Do not add additional soil fill on or near the leachfield. This will limit air movement into the soil needed for effluent treatment and may cause system failure.
 - vi) Limit lawnmower traffic on the leachfield when soil is excessively wet.
 - vii) Do not plant any deep rooted plants on top of or near your leachfield soil absorption area.
- e) Home Resident Responsibilities:
- i) Only flush or drain bio-degradable human waste, toilet paper, laundry and dish and personal care soaps, and water into your home septic treatment system.
 - ii) Severely limit disposal of food fats, oils, and greases. These will clog your system.
 - iii) Do not flush or drain undiluted bleach, cleansers, or drain cleaners.
 - iv) Do not flush any non-biodegradable items. For example, plastic items.
 - v) Do not flush or drain motor oils, greases, anti-freezes, cleaners, etc.
 - vi) Do not flush cat litter.
 - vii) Do not flush paper towels, facial tissue, cigarette butts, disposable diapers, sanitary napkins, tampons, or condoms.
 - viii) Do not flush prescription or over-the-counter drugs. Antibiotics and cancer treatment drugs are very harmful to your home septic treatment system.
 - ix) Do not dump solvents like dry cleaning fluid, pesticides, photographic chemicals, paint thinner down the drain.
 - x) Don't use septic tank additives, unless health department approved.
 - xi) Don't drain a hot tub or large amounts of water into your septic system.
- f) Home Improvement/Expansion:
- i) Contact your county sanitarian before adding new driveways, decks, patios, pools, and outbuildings not identified on your original layout plan to make sure all setback distances from your septic system tanks and mound are met.
 - ii) Contact your county sanitarian before adding bedrooms and/or increasing your home occupancy. This may overload your septic system. Septic system expansion may be required to prevent failure.
- g) Homeowner Cautions:
- i) **DO NOT ENTER TANKS WITHOUT PROPER SAFETY EQUIPMENT.** Septic and dose tanks contain noxious and deadly gases.
 - ii) Pump or dose tanks and control boxes contain electrical components. **ELECTRICAL SHOCK HAZARD CAN EXIST WITH IMPROPERLY WIRED OR FAILING COMPONENTS.**
 - iii) Always keep tank fall guards in place, except for the time needed to replace components when safety equipment is present.
 - iv) Always replace and secure septic and dose tank lids after completing any inspection.
 - v) Any disconnection or removal of filters, screens, floats, alarms, and/or control panels will result in system failure.
 - vi) Contact your county sanitarian for allowed homeowner maintenance and repair of your septic system.

2) Inspection & Maintenance Requirements:

- a) Perform inspection & maintenance **every six months**.
- b) Review Baseline Operation and Maintenance Data:
 - i) The installer of your system set and recorded all float/liquid level heights, pump down times, cycles per day, and distal head pressures required in the design specifications.
 - ii) Review all previous six month inspection data.
- c) Identify any house additions, patios, pools, ponds, driveways, outbuildings, etc. added since the last inspection that may impact the home septic treatment system. Draw a sketch of these differences.
- d) Inspect the house sewer main two-way cleanout tee bottom:
 - i) Check for clogging.
 - ii) Check for continuous clear water flows from the home.
- e) Evaluate Septic Tank & Pump Tank:
 - i) Measure sludge and scum depths; pump tank when cumulative thickness is 1/3 of the tank depth.
 - ii) Look for signs of clogging and tank damage.
 - iii) Look for signs of tank and riser leakage.
 - iv) Clean & inspect septic tank outlet filter.
 - v) Make sure lids are securely attached to risers.
- f) Evaluate Pump/Dose Tank & Pumping Equipment:
 - i) Measure sludge and scum depths; pump tank when septic tank is pumped.
 - ii) Look for signs of clogging and tank damage.
 - iii) Look for signs of tank and riser leakage.
 - iv) Inspect and assure proper functioning of floats or other liquid level controls.
 - v) Clean and inspect dose pump outlet filter. May not be present in some designs.
 - vi) Inspect and assure proper condition and functioning of the effluent pump.
 - vii) Make sure lids are securely attached to risers.
- g) Evaluate Drain Fields:
 - i) Inspect all leachfield soil inspection tubes for surface condition, surface color, and depth of ponded effluent, if present.
 - ii) Look for surfacing effluent.
 - iii) Look for excessively moist soil around leachfield area.
 - iv) Identify appropriate vegetative cover.
 - v) Look for surface disturbances, compaction, abnormal settling, and erosion.
 - vi) Identify any deep rooted vegetation recently planted near the leachfield area.
- h) Switch leachfield resting trench in D-box:
 - i) Determine a rotation sequence for closing off flow to the resting trench/trenches.
 - ii) Open the previously rested leach trench.
 - iii) Close the next trench in sequence for resting.
- i) Measure Pump Run Time and/or Drawdown:
 - i) For demand dosed systems, verify original design effluent drawdown depth.

- ii) For time dosed systems, verify original design pump run time.
- iii) For systems with a cycle counter or run time meter, record the current values.
- j) Test Alarms:
 - i) Evaluate proper function of low liquid level alarm.
 - ii) Evaluate proper function of high liquid level alarm and warning light.

3) Findings & Repairs:

- a) All findings during inspection and maintenance must be recorded.
- b) Any system adjustments must be recorded.
- c) Any system deficiencies, worn out components, and/or damage must be repaired to return your septic system to a properly functioning state.
- d) All repairs must be recorded.

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