Richard Scharf, CPSS
The Soil Guy, LLC
9455 Neumann Circle
Ypsilanti, MI 48197
(252) 402-7354

December 5, 2021

Ms. Vickie Pant
Automatic Septic and Well Corp.
1529 Kieswetter Road
Holland, Ohio 43528

Re: Soil evaluation for 2419 Larkin Drive, Toledo, Ohio.

Dear Vickie:

As requested, I investigated the soils on your client's property on Larkin Drive. It is understood that they need a septic drain field replacement area for an existing 3-bedroom home. My findings are described in this report.

Summary

Three borings were made in the locations shown on the attached diagram. The shallowest depth to the perched water table was 12 inches from the surface. No restrictive layer was found within 49 inches of the surface.

The area has soils composed of silt loam surface horizons overlying silty clay loam subsoils. The perched water table is found at the top of the heavier subsoil horizon.

The rear yard slopes down to a dry swale, before rising in elevation. South of the lawn, the lot descends into the floodplain of Swan Creek. The infiltration loading rate is 0.6 gpd/ft^2. The linear loading rate 3.0 gpd/ft.

Soils

The soils in the depicted drain field appear to be similar to the Del Rey series soils. These are deep, somewhat poorly to poorly drained soils formed in silty-clayey parent materials.

The perched water table was found at 12, 16 and 12 inches below the surface in borings 1, 2 and 3, respectively. No restrictive layer was found within 49 inches of the surface.

The slope of the land ranges from 6 – 10% in the area available for the drain field.

See the following table for system design parameters (next page):

Design Parameters

Texture	Structure/ Grade	Depth to Seasonal Saturation	Depth to Restrictive layer	Slope	Infiltration Loading Rate	Hydraulic Linear Loading Rate
Silt Loam (SiL)	SBK/2	12 inches	>49 inches	6-10%	0.6 gpd/ft^2	Sep. <12": 3.0 gpd/ft. Sep. 12-24": 3.5 gpd/ft.

The required distribution line length for a 3-bedroom home is 120 feet, unless the system design includes depth credits.

Soil boring sites are marked with orange pin flags. The corners of the area available for a drain field are not marked. The northern area extends from the 10-foot setback from the western property boundary to the woods east of boring 3 for the northern outlined area on the diagram. The southern area ends where the topography changes.

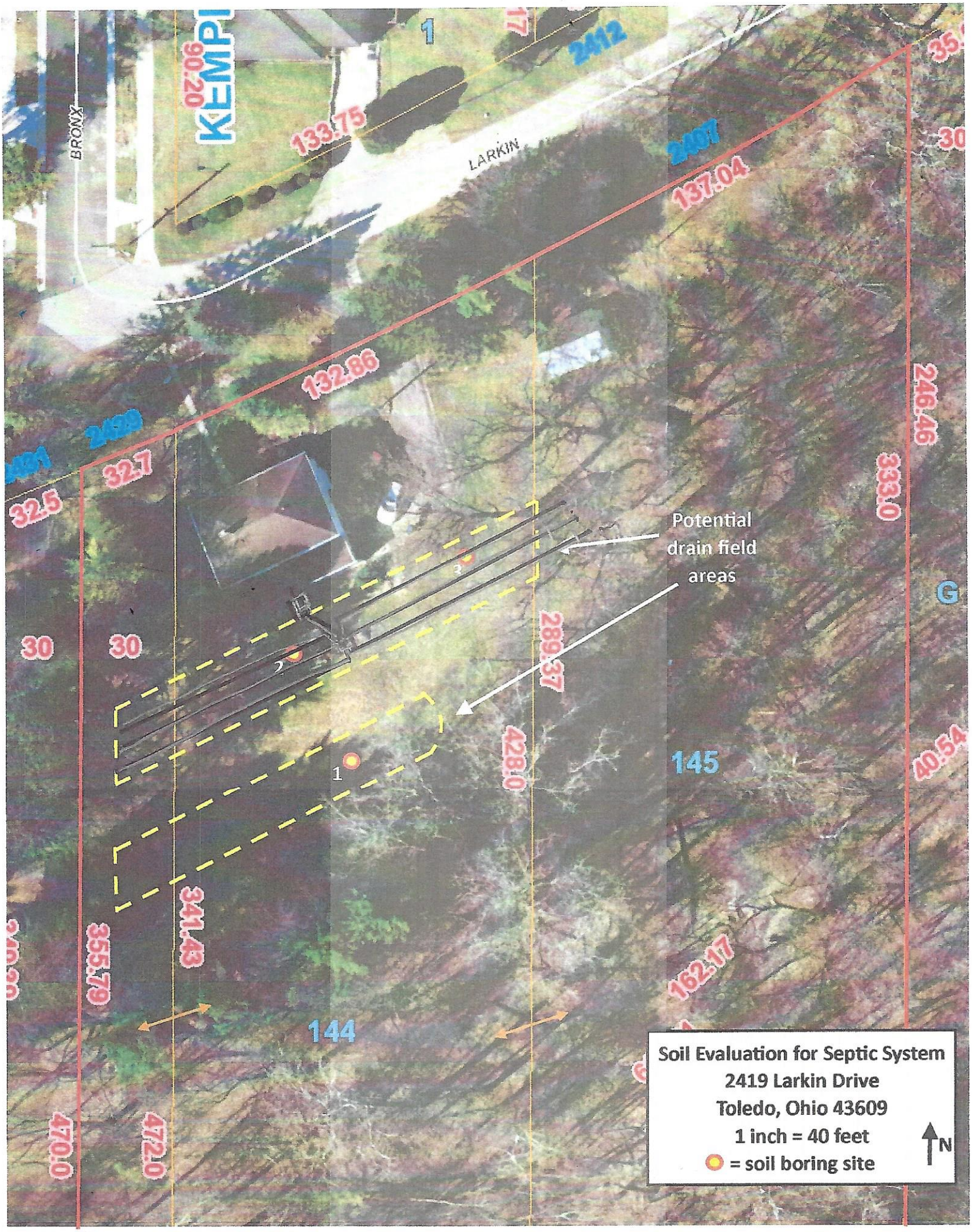
Obviously, the swale between the two depicted areas are excluded from any drain field.

If you or the county health department have any questions regarding this report, please contact me at (252) 402-7354 or rlscharfisol@gmail.com.

Sincerely,

Richard Scharf
CPSS #37167

CPSS
Certified Professional
Soil Scientist
RICHARD L. SCHARF
37167


Potential
drain field
areas
Soil Evaluation for Septic System
2419 Larkin Drive
Toledo, Ohio 43609
1 inch = 40 feet
= soil boring site
N

Site and Soil Evaluation for Sewage Treatment and Dispersal

County: Lucas
Township / Sec.: Toledo, city
Property Address/Location: 2419 Larkin Dr. Toledo OH 43609
Applicant Name: Stacy & Benjamin Jurich
Address: (Same)
Phone #:
Lot #:
Test Hole #: 1
Latitude/Longitude:
Method: ___ Pit X Auger ___ Probe

Land Use / Vegetation: RES/grass
Landform: hillslope
Position on Landform: Shoulder
Percent Slope: 6
Shape of Slope: linear

Date: 11/29/21
Evaluator: Richard Scharf
9455 Neumann Cir.
Ypsilanti, MI 48197

CPSS
Certified Professional Soil Scientist
RICHARD L. SCHARF
37167

Certification Stamp or Certification #:
Signature:
Phone#: (252) 402-7354

Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							
		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	Other Soil Features
Ap	0-9	10YR 3/2	-	-	SiL	15	0	2	f	GR-SBK	v. fr.	
BE	9-12	10YR 5/3	10YR 3/2	-	SiL	15	0	2	f	SBK	v. fr.	
Bt1	12-23	10YR 5/3	10YR 4/3	10YR 4/1	SiCL	30	0	2	m	SBK	fr.	
Bt2	23-46	10YR 5/3	10YR 4/4	10YR 4/2	SiCL	35	0	2	m	SBK	fr	

Limiting Conditions	Depth to (in.)	Descriptive Notes	Remarks / Risk Factors:
Perched Seasonal Water Table	12		
Apparent Water Table	n.a.		
Highly Permeable Material	none		
Bedrock	>46		
Restrictive Layer	>46		

Note : The evaluation should include a complete site plan or site drawing.

Site and Soil Evaluation for Sewage Treatment and Dispersal

County: Lucas
Township / Sec.: Toledo City
Property Address/Location: 2419 Larkin Dr. Toledo, OH 43609
Applicant Name: Stacy and Benj. Jurich
Address: (Schmee)
Phone #:
Lot #:
Test Hole #: 2
Latitude/Longitude:
Method: ___ Pit x Auger ___ Probe

Land Use / Vegetation: res/grass
Landform: hillslope
Position on Landform: Backslope
Percent Slope: 9
Shape of Slope: linear
Date: 11/29/21
Evaluator: Richard Scharf
9455 Neumann Cir.
Ypsilanti, MI 48197

CPSS
Certified Professional Soil Scientist
RICHARD L. SCHARF
37167

Certification Stamp or Certification #:
Signature:
Phone#: (252) 402-7354

Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							
		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	Other Soil Features
	0-16	10YR 3/2	-	-	SiL	15	0	2	f	SBK	v. fr.	
	16-27	10YR 4/3	-	10YR 5/2	SiL	20	0	2	f	SBK	v. fr.	
	27-49	10YR 4/3	-	10YR 5/2	SiCL	35	0	2	m	SBK	fr.	

Limiting Conditions	Depth to (in.)	Descriptive Notes	Remarks / Risk Factors:
Perched Seasonal Water Table	16		
Apparent Water Table	n.a.		
Highly Permeable Material	None		
Bedrock	>49		
Restrictive Layer	>49		

Note : The evaluation should include a complete site plan or site drawing.

Site and Soil Evaluation for Sewage Treatment and Dispersal

County: Lucas
Township / Sec.: Toledo City
Property Address/Location: 2419 Larkin Dr. Toledo, OH 43609
Applicant Name: Stacy Jurich
Address: (Same)
Phone #:
Lot #:
Test Hole #: 3
Latitude/Longitude:
Method: ___ Pit X Auger ___ Probe

Land Use / Vegetation: res/grass
Landform: Hillslope
Position on Landform: Backslope
Percent Slope: 10
Shape of Slope: linear

Date: 11/29/21
Evaluator: Richard Scharf
9455 Neumann Cir.
Ypsilanti, MI 48197

Certification Stamp or Certification #:
Signature:
Phone#: (252) 402-7354

CPSS
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Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							
		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	Other Soil Features
	0-8	10YR 3/2	-	-	SiL	15	0	2	f	SBK	v.fr.	
	8-12	10YR 3/2	10YR 5/3	-	SiL	20	0	2	f	SBK	fr.	
	12-44	10YR 4/3	10YR 4/4	10YR 5/1	SiCL	30	0	2	f	SBK	fi	

Limiting Conditions	Depth to (in.)	Descriptive Notes	Remarks / Risk Factors:
Perched Seasonal Water Table	12		
Apparent Water Table	N.A.		
Highly Permeable Material	None		
Bedrock	>44		
Restrictive Layer	>44		

Note : The evaluation should include a complete site plan or site drawing.

Chamber system

Calculation of the minimum leaching trench bottom area and trench length required for an approved non-gravel, fines free distribution system

Owner Stacey Jurich site 2419 Lackin Toledo, OH

Designer Vickie Pant installer

Design perimeters: # of bedrooms 3 soil texture silty loam soil grade moderate

Soil shape granular, subangular blocky infiltrative distance 6" slope 6

1) Calculate daily design flow,# of bedrooms 3 x 120 gal= 360
2) Infiltrative soil loading rate from soil table referencing the septic tank effluent BOD/TSS 30mg/l Column, the soil type has a design infiltration rate of .6 gal per day/square foot Soil loading rate .6
3) Calculate the required minimum trench bottom area; .75 x total gal per day, then divide by soil loading rate: .75 x 360 = 270 divided by .6 equals 450 square feet
4) Determine hydraulic loading rate(HLLR). Soil table referencing the loading rate, infiltrative distance and slope HLLR= 3
5) Calculate the minimum required length of the trenches along the contour: 10% reduction Daily design flow 360 divided by HLLR 3 equals (120) 108 feet in length round to 112'
6) Calculate resting trench bottom area: Resting area must be equal to 25% of the required minimum trench bottom area or the area of one trench whichever is greater Step#3 450 x .25= 112.5/113 square feet
7) Calculate the total trench bottom area and the resting trench bottom area by adding step 3 and step 6; 450 + 113 = 563 square feet
8) Calculate total component width divide step 7 by step 5. 563 / 108 = 5.21/6 ft
9) Calculate number of trenches; divide the number of trenches in step 8 by the trench width proposed: step 8 6' divided by trench width 3' = 2 round up 3
10) Summary: trench width(ft) 3' bedrooms 3 gpd 360 design trench length 108 min # of trenches 3 SILR .6 HLLR 3 minimum resting area(sq) 113 min active area 450

Product name: Quick4 Plus LP chamber, ~~22"~~ 36" Optional design: (Y) N

Trench width 3' total lineal feet of system 1008 trench length 112' # of trenches 3

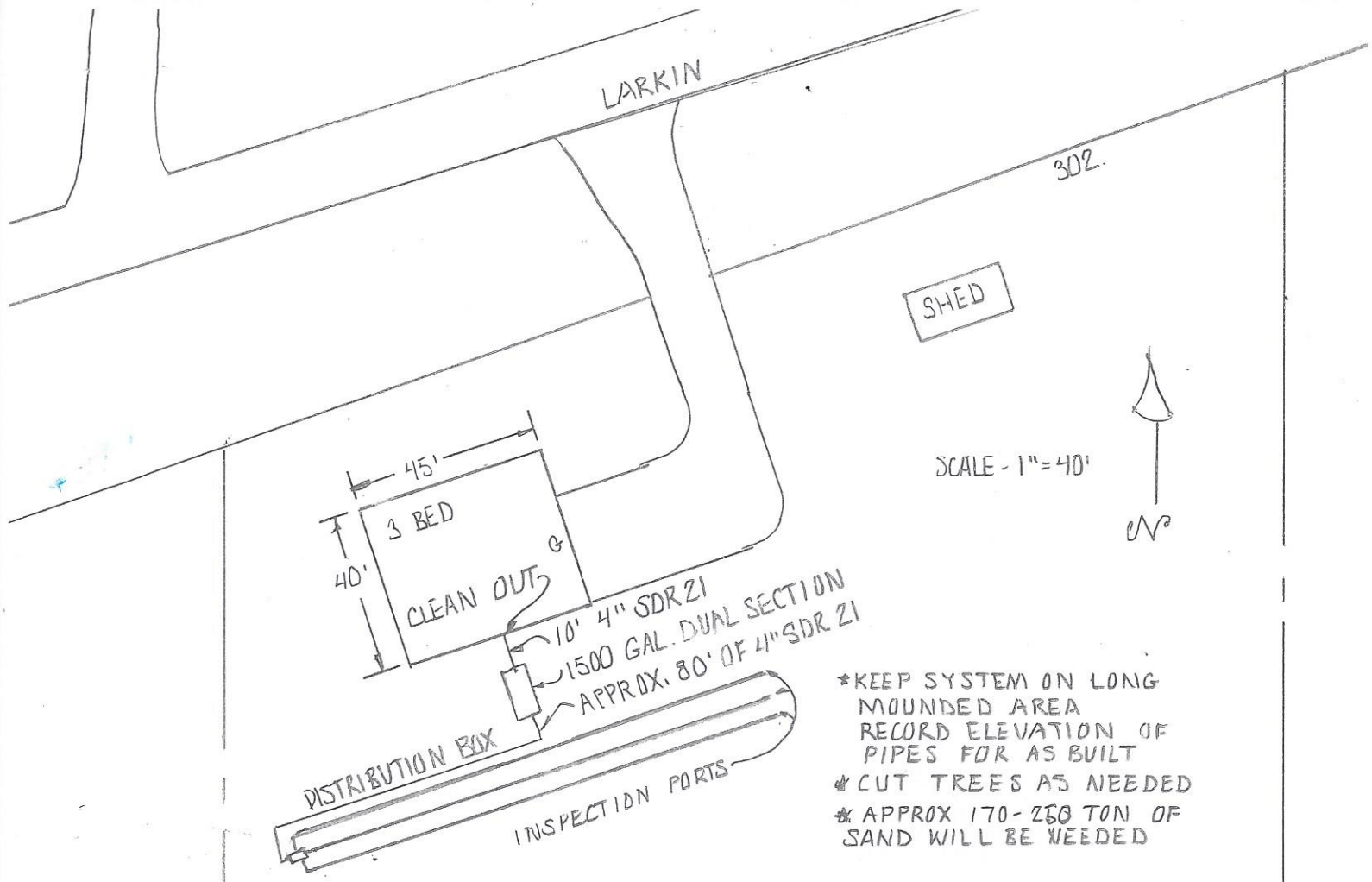
Active trenches 2 resting trenches 1 actual trench length 112'

ALL MATERIAL AND LABOR PRACTICES SHALL CONFORM TO OHIO ADMINISTRATIVE CODE CHAPTOR 3701-29.

resting area = 336

active area = 672

total 1008



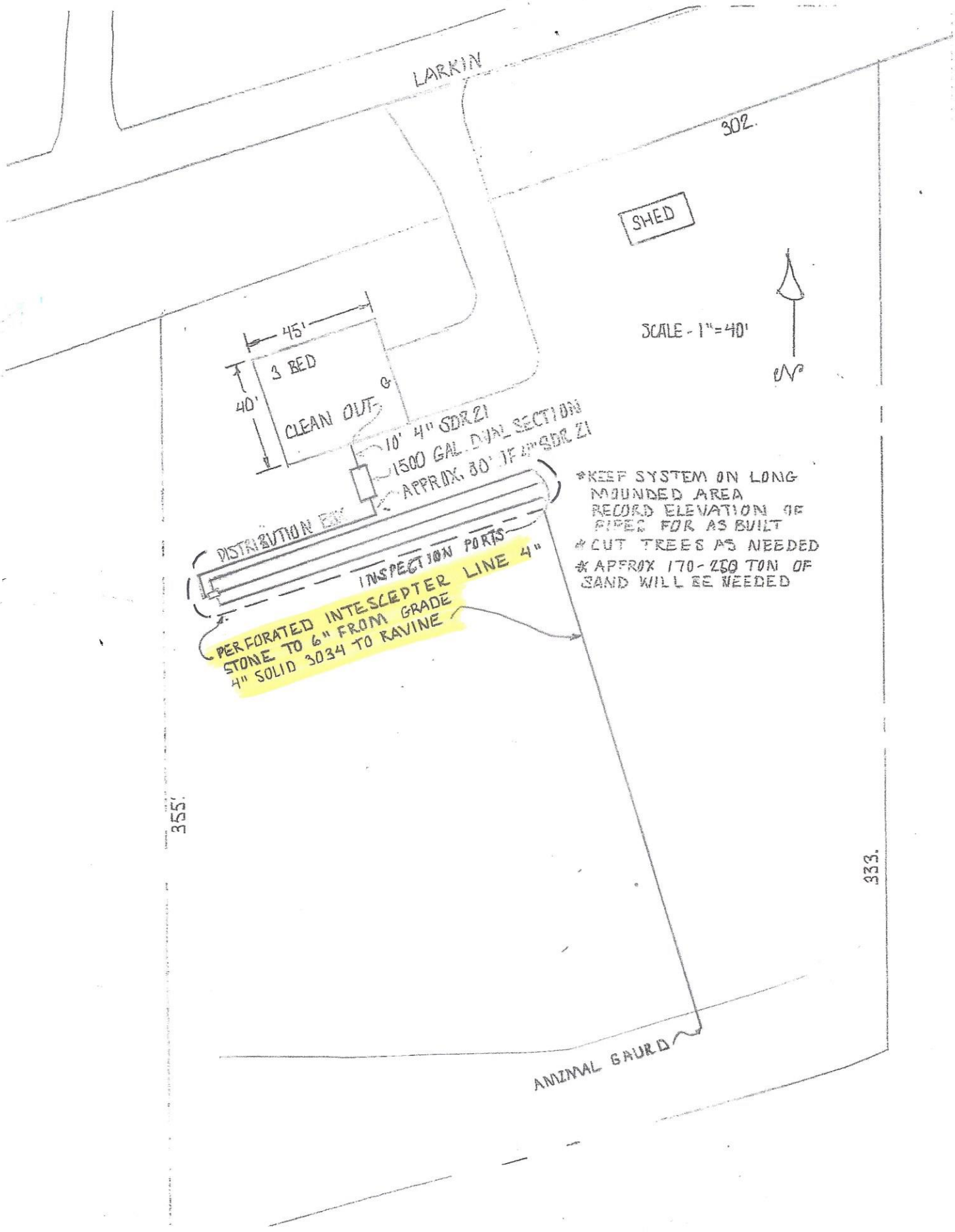
*KEEP SYSTEM ON LONG MOUNDED AREA RECORD ELEVATION OF PIPES FOR AS BUILT

* CUT TREES AS NEEDED

* APPROX 170-250 TON OF SAND WILL BE NEEDED

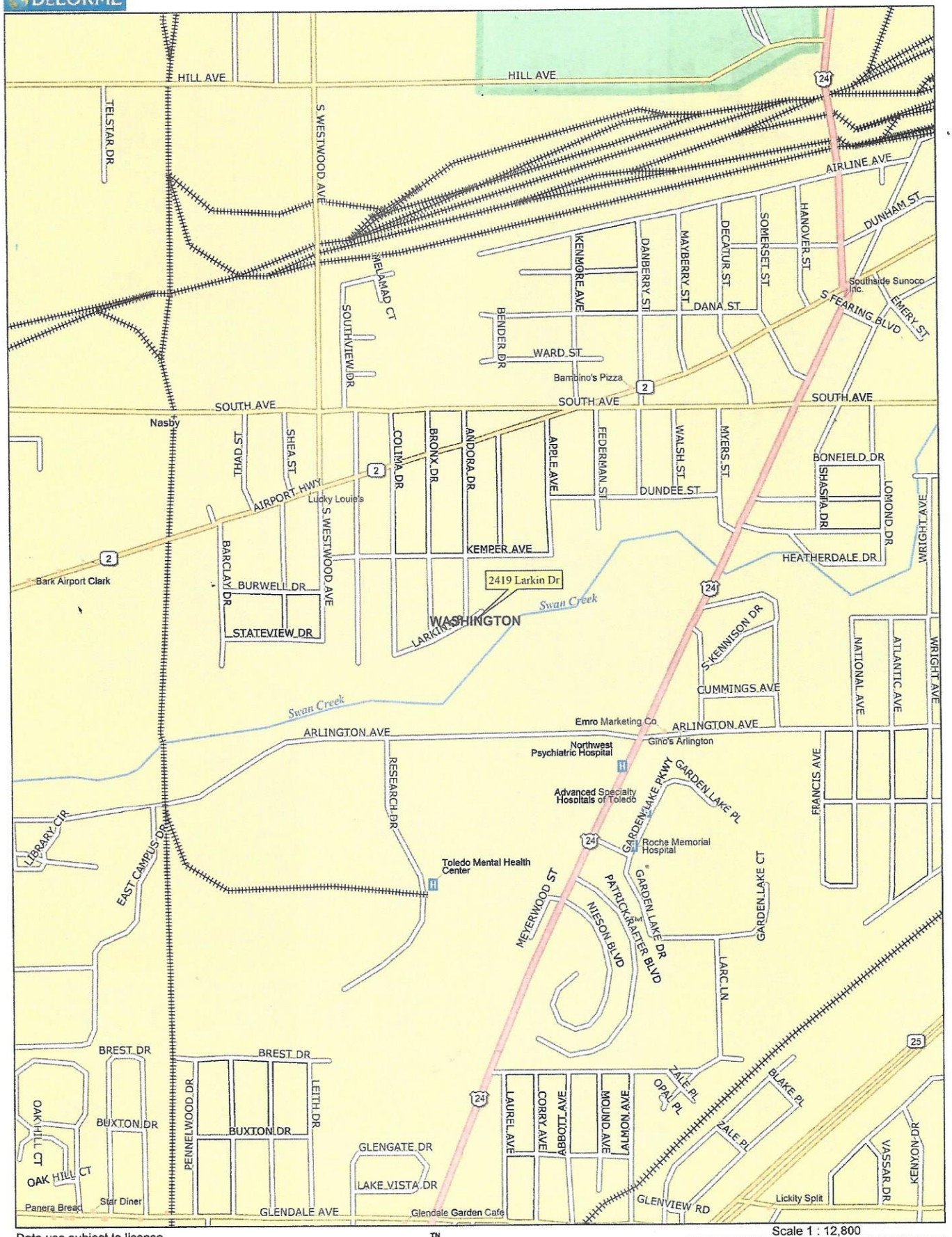
PUMP AND ABANDON OLD TANK
INSTALL CLEAN OUT AND NEW LINE TO NEW TANK
4" SDR 21 TO LEACH HEADER
INSTALL DIST. BOX AND THREE 112' x 3' CHAMBERS
INSPECTION PORTS 2" ABOVE GRADE MIN.
KEEP SYSTEM IN HIGHEST AREA
WILL BE NO DEEPER THAN 2" INTO INSITU SOIL
12" OF CLEAN COARSE SAND TO COVER
STRAW TRENCHES BEFORE COVERING
4' BETWEEN WALLS OF CHAMBERS

SITE: 2419 LARKIN TOLEDO, OH 43609
LUCAS COUNTY CITY OF TOLEDO
STACEY JURICH 419-290-1259
3 BED 360 GPD SILR=.6 HLLR=3
3 RUNS OF 3' CHAMBERS x 112' EACH = 1008 SQ.FT. IN ALL
ALL SHALL COMPLY WITH OHIO ADMINISTRATIVE CODE CHAPTER 3701-29
DESIGN - V. PANT AUTOMATIC SEPTIC & WELL
419-865-3456 419-250-9683
CALL WITH QUESTIONS OR CHANGES


LARKIN
302.
SHED
SCALE - 1"=40'
45'
40'
3 BED
CLEAN OUT
10' 4" SDR 21
1500 GAL DUAL SECTION
APPROX. 30' 1F 4" SDR 21
DISTRIBUTION BOX
INSPECTION PORTS
PERFORATED INTESCEPTER LINE 4"
STONE TO 6" FROM GRADE
4" SOLID 3034 TO RAVINE
*KEEP SYSTEM ON LONG MOUNDED AREA RECORD ELEVATION OF PIPES FOR AS BUILT
* CUT TREES AS NEEDED
* APPROX 170-250 TON OF SAND WILL BE NEEDED
355'
333.
ANIMAL GAURD

DeLORME

XMap® 7



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www.delorme.com

TN

MN (7.2°W)

Scale 1 : 12,800

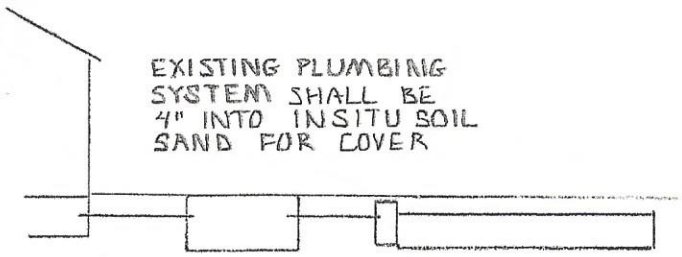
0 200 400 600 800 1000 ft

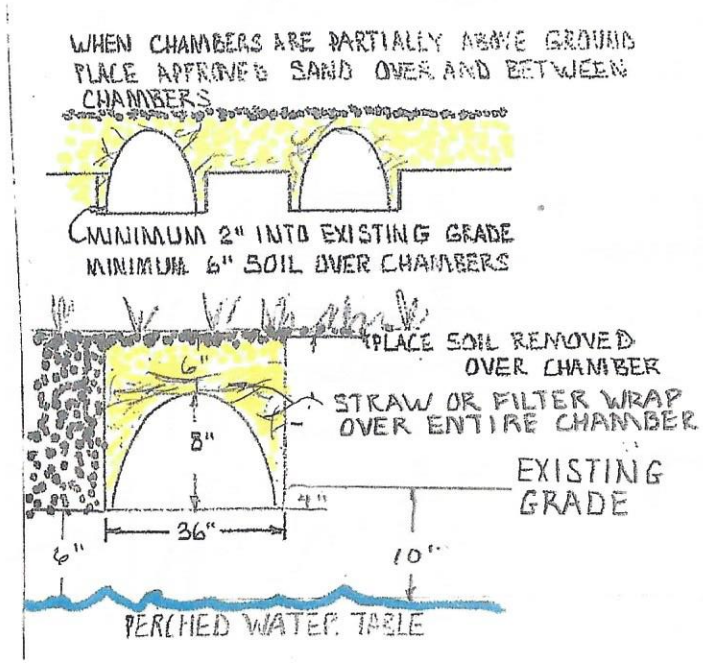
0 100 200 300 400 500 m

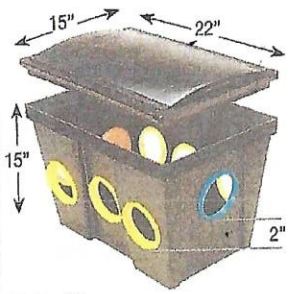
1" = 1,066.7 ft

Data Zoom 14-0

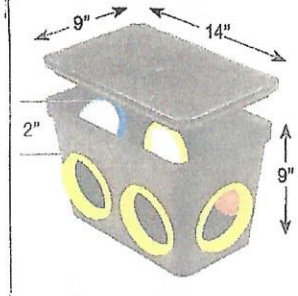
BOTTOM OF PIPE ELEVATIONS

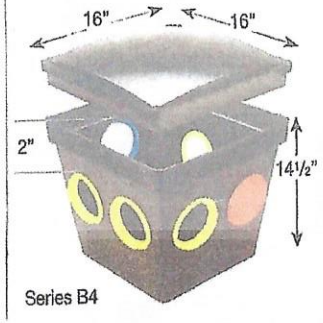




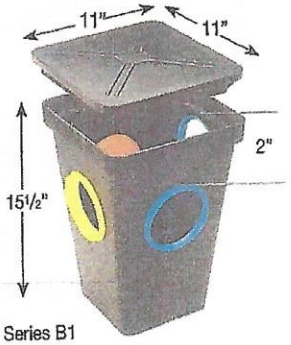


Series B3



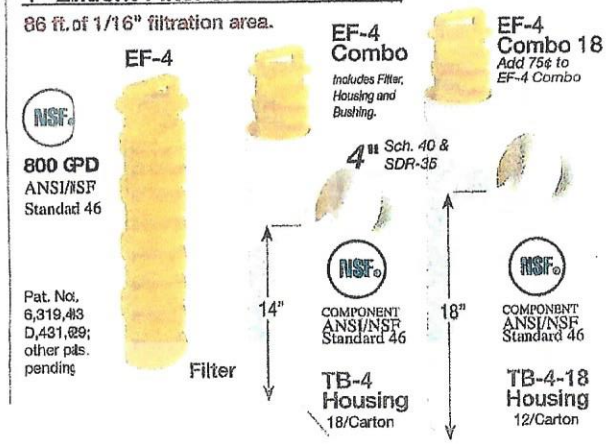


Series B4

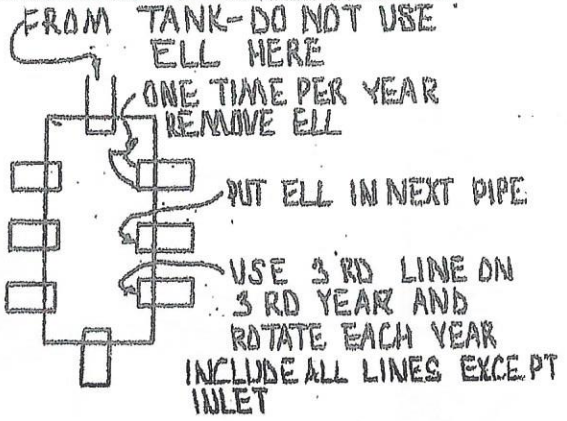


Series B1

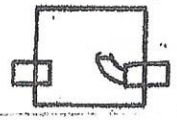
4" Effluent Filter and 4" T-Baffle™



CHANGE ELL ONE TIME PR YEAR



SIDE VIEW



NOTE: IF 2 BOXES, DO THE SAME OR CONFER WITH INSTALLER

SITE: 2419 LARKIN TOLEDO, OH 43609

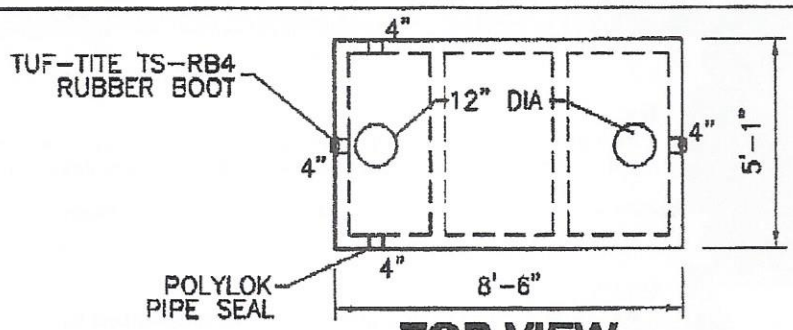
COUNTY: LUCAS TWP.: TOLEDO CITY

DRAWING: VICKIE PANT AUTOMATIC SEPTIC AND WELL

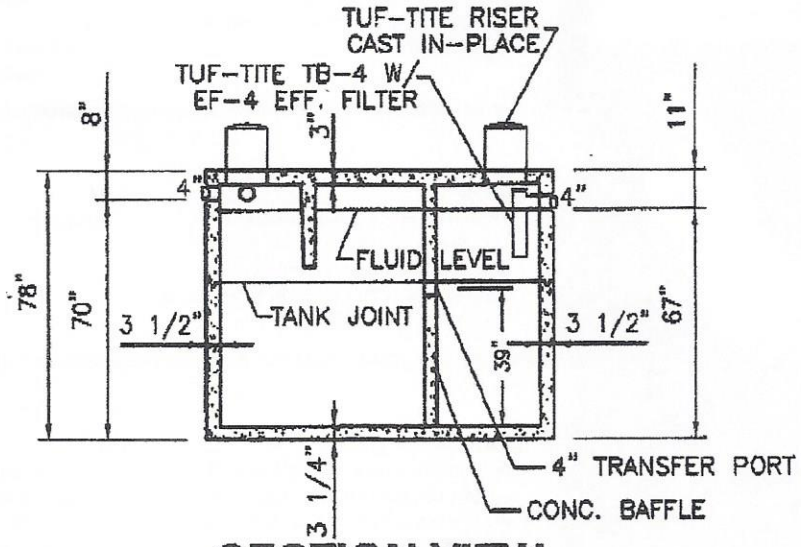
DATE: 12-27-21

SEISLOVE BURIAL VAULT SERVICE

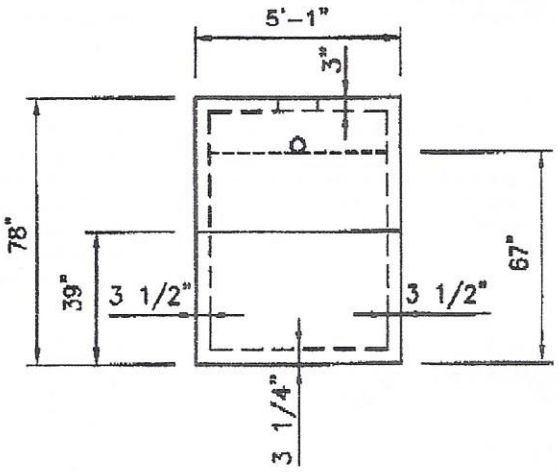
2188 SOUTH STATE ROUTE 100, TIFFIN, OHIO PH. (419)447-5473 FAX (419)447-6477



TOP VIEW



SECTION VIEW



END VIEW

NOTES:
5000 PSI CONCRETE
6x6x10 GA. WIRE MESH ON SIDES
#3 REBAR ON TOP & BTM.
KEYED JOINTS SEALED W/ 5/8x1
BUTYLE SEALANT MT 0343-0213

DRAWN BY: TRW	SCALE: 1/4"=1'-0"	**1500 GALLON SEPTIC / DOSING TANK**
DATE: 5/14/12	REV: 2/13/16	