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# *Soil Suitability for Domestic Sewage Treatment and Disposal Systems*

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Chesterfield Lake Road  
Angier, NC  
Harnett County

PIN 0671-99-6250

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Prepared For:	Edward Perakek, Buyer
Prepared By:	Sloan Griffin, L.S.S.
Report Date:	October 8, 2016



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## **Soil Suitability for Domestic Sewage Treatment and Disposal Systems Chesterfield Lake Road, Angier, NC (Harnett County)**

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Soil suitability for domestic sewage treatment and disposal systems was evaluated on September 15, 2016, for the property located Chesterfield Lake Road in Angier, NC. Sloan Griffin of Advanced Septic, Inc. (ASI) conducted the soil evaluation. The detailed soil evaluation of the land area will follow. A property reference map from Harnett County GIS is in Attachment 1. A review of the soil and landscape characteristics that dictate soil suitability for domestic sewage treatment and disposal systems can be found in Attachment 2.

The total property area is approximately 8 acres. The property is partially wooded with open grassed areas across the property. A drainage features and a pond are present within the property (Attachment 3).

### Soil Suitability for Domestic Sewage Treatment and Disposal Systems

The aerial map in Attachment 3 details the approximate property boundaries, soil boring locations, soil types, and soil areas for septic systems. Approximately 22 soil borings were advanced within the provisionally suitable soils area on the property (Attachment 3). A portion of the property contained a drainage feature, poor landscape position, disturbed soil, and/or unsuitable soils and, thus, are unsuitable for septic systems. However, this evaluation was merely a preliminary review to determine what potential this land might have for domestic sewage treatment and disposal systems. Therefore, specific types of septic systems, exact locations of future drainfields and repair areas, plus buffers from property lines (current and potential future lot lines), building foundations, wells, etc. are not fully considered. These things will need to be more fully considered as the plans develop for the potential future of this site. It is possible that additional soil evaluations will be required once lot layouts are considered and developed for this property so that septic system types and the location of a septic drainfield can be more fully and appropriately considered.

Three areas (see map in Attachment 3) exhibited soil characteristics and soil depths (24” or greater) that is provisionally suitable for conventional or shallow conventional trench septic systems. These areas together are approximately 18,573 ft<sup>2</sup>.

Typical profile descriptions of the provisionally suitable soil for this property are in Attachment 4.

The provisionally suitable soil borings had the following characteristics. Wetness features were found in some soil borings between 25” to 32” below the soil surface. Soil texture was provisionally suitable and was estimated to be loamy sand to loamy sand near the soil surface (A and E horizons) and a sandy clay loam to sandy clay in the subsoil (B horizons). Soil structure was provisionally suitable and was estimated to be granular near the soil surface (A horizons) and weak subangular blocky in the subsoil (B horizons). Clay mineralogy was provisionally suitable with very friable to friable moist soil consistence and non-sticky to slightly sticky and non-plastic to slightly plastic wet soil consistence.

The major soil type on this property is a Wagram Loamy Sand (map symbol WaB and WaC). The Harnett County Soil Survey indicates that moderate limitations exist for septic systems installed in these soils types (Attachment 5).

The land area required for a conventional or shallow conventional septic system is calculated based on the size of the proposed home and the Long-Term Acceptance Rate (LTAR) of the soil. The LTAR range for the provisionally suitable soils on this property is 0.3 – 0.6 GPD/ft<sup>2</sup> based on the most restrictive soil texture in the subsoil. Table 1 below presents estimated conventional or shallow conventional septic system land area requirements for several home sizes and LTAR’s on this property. The LTAR suggested by AWT for a majority of the provisionally suitable soil is 0.35 GPD/ft<sup>2</sup>, but the final LTAR for specific septic system types and septic drainfield locations will be set by the Harnett County Health Department. The detailed computations are in Attachment 6.

Table 1. Estimated Conventional Septic System Land Requirements (including repair area) for Several Home Sizes and Long-Term Acceptance Rates (LTAR) on this Property.

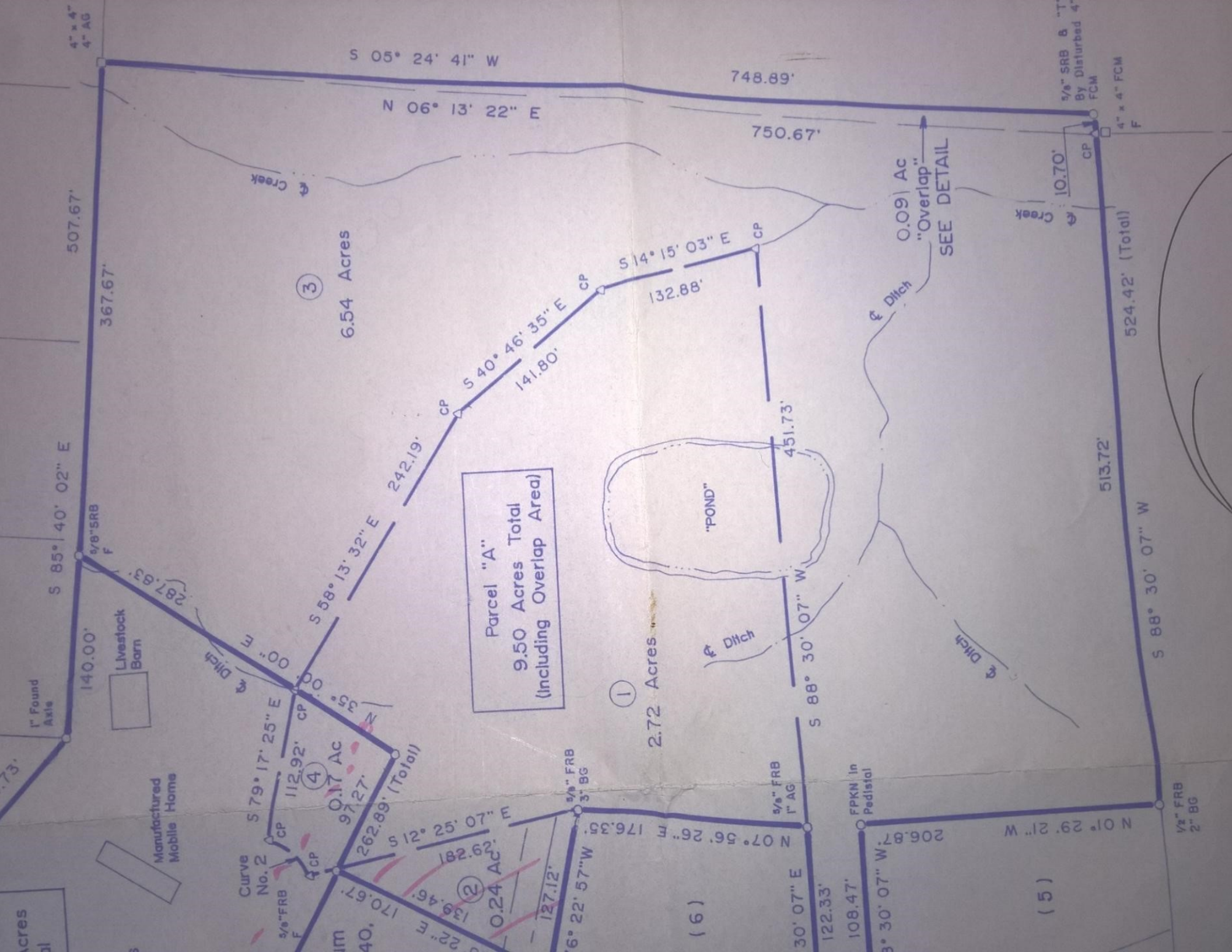
<u>House Size</u>	<u>Long-Term Acceptance Rate (LTAR)</u>	<u>Area Required for Conventional Septic System</u>	<u>Minimum Area Required for Innovative Conventional Septic System</u>
	-----GPD/ft <sup>2</sup> -----	-----ft <sup>2</sup> -----	-----ft <sup>2</sup> -----
3 bedrooms	0.3 – 0.6	4,500 – 9,000	3,375 – 6,750
3 bedrooms	0.35	~7,714	~5,786
4 bedrooms	0.3 – 0.6	6,000 – 12,000	4,500 – 9,000
4 bedrooms	0.35	~10,286	~7,714
5 bedrooms	0.3 – 0.6	7,500 – 15,000	5,625 – 11,250
5 bedrooms	0.35	~12,857	~9,643

Conclusions

Based on the results of this evaluation, the installation of conventional or shallow conventional septic systems seems very probable on this property in the area designated on the map in Attachment 3.

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

**ATTACHMENT 1: Property Reference Map**



Parcel "A"  
 9.50 Acres Total  
 (Including Overlap Area)

(3)  
 6.54 Acres

(1)  
 2.72 Acres

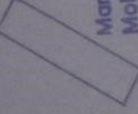
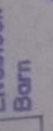
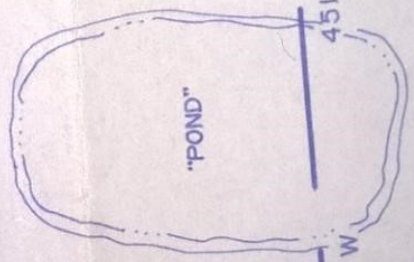
(2)  
 0.24 AC

(4)  
 0.17 AC

(5)

(6)

0.09 Ac  
 "Overlap"  
 SEE DETAIL



1" Found Axle

Manufactured Mobile Home

Livestock Barn

Creek

Creek

Ditch

Ditch

FPKN in Pedestal

5/8" SRB & "T" By Disturbed 4" FCM

4" x 4" FCM

1/2" FRB 2" BG

5/8" FRB 1" AG

5/8" FRB 3" BG

4" x 4" 4" AG

Acres

bl

Curve No. 2

170.67'

139.46'

127.12'

6° 22' 57" W

176.35'

127.12'

182.981'

120.52' 01 S

262.89' (Total)

97.27'

112.92'

579° 17' 25" E

140.00'

287.83'

140.00'

S 85° 40' 02" E

507.67'

367.67'

287.83'

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

Ditch

367.67'

507.67'

748.89'

750.67'

141.80'

242.19'

132.88'

451.73'

10.70'

513.72'

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

524.42' (Total)

**ATTACHMENT 2: Review of Rules Pertaining to Domestic  
Sewage Treatment and Disposal Systems**

Five categories of soil and landscape characteristics are evaluated to determine soil suitability for domestic sewage treatment and disposal systems and include: topography and landscape position, soil morphological characteristics, soil wetness conditions, soil depth, and restrictive horizons. The soil and landscape characteristics found in a particular location dictate the type(s) of domestic sewage treatment and disposal system that can be used on a parcel of land. The detailed rules can be found in Section .1900 – Sewage Treatment and Disposal Systems, but a general review of the five categories and other relevant rules can be found in the sections below.

#### .1940 TOPOGRAPHY AND LANDSCAPE POSITION

Uniform slopes less than 15 percent are considered suitable, uniform slopes between 15 and 30 percent are considered provisionally suitable, and slopes greater than 30 percent are considered unsuitable for domestic sewage treatment and disposal systems. Complex slope patterns and slopes dissected by gullies and ravines are considered unsuitable for domestic sewage treatment and disposal systems. Depressions and wetlands are also considered unsuitable for domestic sewage treatment and disposal systems.

#### .1941 SOIL MORPHOLOGICAL CHARACTERISTICS

Sandy and coarse loamy textured soils (sand, loamy sand, sandy loam, and loam) are considered suitable for domestic sewage treatment and disposal systems. Fine loamy and clayey textured soils (silt, silt loam, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay) are considered provisionally suitable for domestic sewage treatment and disposal systems.

Crumb, granular, and single-grained soil structures are considered suitable for domestic sewage treatment and disposal systems. Blocky soil structures are considered provisionally suitable for domestic sewage treatment and disposal systems. Platy, prismatic, and massive soil structures are considered unsuitable for domestic sewage treatment and disposal systems.

Slightly expansive clay mineralogy is considered suitable for domestic sewage treatment and disposal systems. Slightly expansive clay minerals exhibit loose, very friable, friable, or firm moist soil consistence. Expansive clay mineralogy is considered unsuitable for domestic sewage treatment and disposal systems. Expansive clay minerals exhibit very firm or extremely firm moist soil consistence. Organic soils are considered unsuitable for domestic sewage treatment and disposal systems.

#### .1942 SOIL WETNESS CONDITIONS

Soil wetness conditions are caused by seasonal high water table, perched water table, tidal water, seasonally saturated soils, or lateral water movement. Soil wetness conditions are indicated by soil colors, either in mottles or mass, with a chroma of 2 or less according to the Munsell color charts. Soil wetness conditions detected 48 inches in depth or deeper are considered suitable for domestic sewage treatment and disposal systems. Soil wetness conditions detected between 36 to 48 inches in depth are considered provisionally suitable for domestic sewage treatment and disposal systems. Soil wetness conditions detected 36 inches in depth or shallower are considered unsuitable for domestic sewage treatment and disposal systems.



#### .1943 SOIL DEPTH

Soil depths to rock, parent material, or saprolite greater than 48 inches are considered suitable for domestic sewage treatment and disposal systems. Soil depths to rock, parent material, or saprolite between 36 and 48 inches are considered provisionally suitable for domestic sewage treatment and disposal systems. Soil depths to rock, parent material, or saprolite less than 36 inches are considered unsuitable for domestic sewage treatment and disposal systems. Saprolite has a massive, rock-controlled structure, and retains the mineral arrangement of its parent rock in at least 50 percent of its volume. Saprolite only forms from metamorphic and igneous rock parent materials and is typically referred to as “rotten rock”.

#### .1944 RESTRICTIVE HORIZONS

Restrictive horizons are capable of perching ground water or sewage effluent and are strongly compacted or cemented. Restrictive horizons resist soil excavation or augering. Soils with restrictive horizons three inches or more in thickness at depths greater than 48 inches are considered suitable for domestic sewage treatment and disposal systems. Soils with restrictive horizons three inches or more in thickness at depths between 36 and 48 inches are considered provisionally suitable for domestic sewage treatment and disposal systems. Soils with restrictive horizons three inches or more in thickness at depths less than 36 inches are considered unsuitable for domestic sewage treatment and disposal systems.

#### .1950 LOCATION OF SANITARY SEWAGE SYSTEMS HARNETT COUNTY

ENVIRONMENTAL HEALTH DEPARTMENT No area for domestic sewage treatment and disposal system installation (or repair in Harnett County) may be disturbed by clearing, excavation, filling, vehicle or equipment traffic, or storage of building materials.

#### .1947 DETERMINATION OF OVERALL SITE SUITABILITY

##### .1948 SITE CLASSIFICATION

All of the criteria for the five categories above are to be determined and classified as suitable, provisionally suitable, or suitable according to the respective rules described above. If all criteria are classified the same, that overall site classification will prevail. If there is a variation in the classification of several criteria, the most limiting classification will be used to determine the overall site classification.

A suitable classification generally indicates soil and landscape conditions favorable for the operation of a domestic sewage treatment and disposal system or slight limitations that can be readily overcome by proper design and installation. A provisionally suitable classification indicates soil and/or landscape conditions have moderate limitations for the operation of a domestic sewage treatment and disposal system, but modifications and careful planning, design, and installation can result in satisfactory system function. An unsuitable classification indicates severe soil and/or landscape limitations for the operation of a domestic sewage treatment and disposal system.

#### SUMMARY

Suitable/provisionally suitable landscapes and soils to a depth of 36 inches can, in general, be used for conventional gravity driven septic systems. Suitable/provisionally suitable landscapes

and soils to a depth of 24 –36 inches can, in general, be used for alternative septic systems such as shallow conventional and low pressure pipe systems, among others. All alternative systems for provisionally suitable landscapes and soils must be proposed to and approved by the Harnett County Environmental Health Department. Any landscapes or soils classified as unsuitable may be reclassified as provisionally suitable by the Harnett County Environmental Health Department after a site investigation by department personnel.


**ATTACHMENT 3: Property Map Detailing Soil Suitability  
for Septic Systems and Soil Types**








**Lot Evaluation for Soil Suitability**

**Edward Perakek  
1378 Chesterfield Lake Road  
Angier, NC**

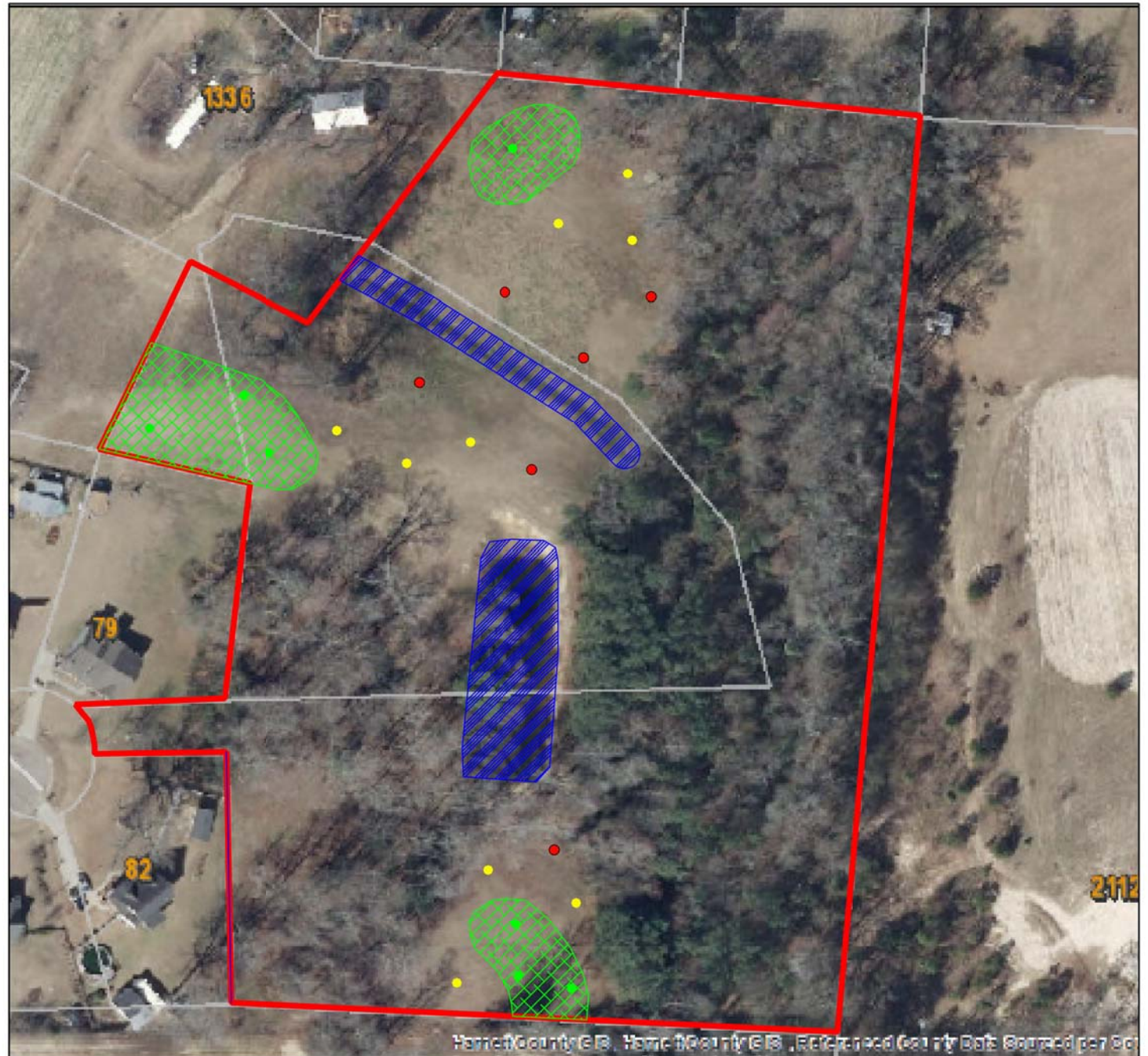
Water/Drainage Feature 

Suitable Soils Area   
18,573 sq. ft.

- >36" 
- 24"-36" 
- 18"-24" 
- 12"-18" 
- < 12" 

Drawing By:  
**Sloan Griffin**

Date: Oct. 1, 2016



1" = 150'

**ATTACHMENT 4: Typical Profile Descriptions of  
Provisionally Suitable Soil**



.1940 Landscape Pos/Slope %		Profile LTAR	
.1942 Wetness Condition		System Type	
.1943/.1956 Saprolite			
.1944 Restrictive Horizon			
.1948 Profile Classification			

Comments: \_\_\_\_\_

EVALUATED BY: Sloan Griffin

COMMENTS: \_\_\_\_\_

**LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM**

<u>LANDSCAPE POSITION</u>	<u>TEXTURE GROUP</u>	<u>TEXTURE CLASS</u>	<u>.1955 LTAR</u> (gal/day/sqft)
CC - Concave Slope CV - Convex Slope DS - Debris Slump D - Depression DW - Drainage Way FP - Flood Plain FS - Foot Slope H - Head Slope I - Interflueve L - Linear Slope N - Nose Slope P - Pocosin R - Ridge S - Shoulder T - Terrace	I	S - Sand LS - Loamy Sand	1.2 - .08
	II	SL - Sandy Loam L - Loam	0.8 - 0.6
	III	SCL - Sandy Clay Loam CL - Clay Loam SiL - Silt Loam Si - Silt SiCL - Silt Clay Loam	0.6 - 0.3
	IV	SC - Sandy Clay C - Clay SiC - Silty Clay O - Organic	0.4 - 0.1
<u>STRUCTURE</u>	<u>MOIST CONSISTENCE</u>	<u>MOTTLES</u>	<u>WET CONSISTENCE</u>
G - Single Grain M - Massive CR - Crumb GR - Granular SBK - Subgranular Blocky ABK - Angular Blocky PL - Platy PR - Prismatic	Vfr - Very Friable Fr - Friable Fi - Firm Vfi - Very Firm Efi - Extremely Firm	1 - Few 2 - Common 3 - Many  F - Faint D - Distinct P - Prominent  f - Fine m - Medium c - Coarse	NS - Non Sticky SS - Slightly Sticky S - Sticky VS - Very Sticky  NP - Non Plastic SP - Slightly Plastic P - Plastic VP - Very Plastic

**ATTACHMENT 5: Soil Survey Information**



TABLE 10.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AnB----- Alpin	Slight-----	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AtA----- Altavista	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness, too clayey.
Au----- Augusta	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
AyA----- Aycock	Severe: percs slowly.	Moderate: seepage, wetness.	Moderate: too clayey.	Slight-----	Fair: too clayey.
AyB----- Aycock	Severe: percs slowly.	Moderate: seepage, slope, wetness.	Moderate: too clayey.	Slight-----	Fair: too clayey.
Eb----- Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
BnB----- Blaney	Severe: percs slowly, poor filter.	Severe: seepage.	Slight-----	Severe: seepage.	Good.
BnD----- Blaney	Severe: percs slowly, poor filter.	Severe: seepage, slope.	Moderate: slope.	Severe: seepage.	Fair: slope.
CaB----- Candor	Slight-----	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
CaD----- Candor	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
CeB----- Cecil	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
CeD----- Cecil	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope, hard to pack.
Ch*: Chewacla-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ch*: Congaree-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: thin layer.
Co----- Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
DoA----- Dothan	Severe: wetness, percs slowly.	Moderate: seepage.	Moderate: wetness.	Slight-----	Good.
DoB----- Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight-----	Good.
DtB----- Dothan	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Severe: seepage.	Fair: too clayey, wetness.
DyF. Dystrochrepts					
EnB----- Enon	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
EnD----- Enon	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
ExA----- Exum	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
FaB----- Fuquay	Severe: percs slowly, poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
FuB----- Fuquay	Severe: percs slowly, poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: small stones.
GaA, GaB----- Gilead	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, hard to pack.
GaD----- Gilead	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, hard to pack, slope.
GoA----- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
Gr----- Grantham	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
HaB----- Helena	Severe: wetness, percs slowly.	Slight-----	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
LaB----- Lakeland	Slight-----	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LnB----- Lillington	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: small stones.
LnD----- Lillington	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Poor: small stones.
LnE----- Lillington	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: small stones, slope.
LoF----- Louisa	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: seepage, depth to rock, slope.	Poor: slope, depth to rock, thin layer.
Ly----- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
MaA----- Marlboro	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight-----	Fair: too clayey.
MaB----- Marlboro	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
Na----- Nahunta	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
NeD----- Nason	Moderate: slope, depth to rock, percs slowly.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack.
NeE----- Nason	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: slope, too clayey, hard to pack.
NoA, NoB----- Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
NoC----- Norfolk	Moderate: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope.
NuB*: Norfolk-----	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
NuB*: Urban land.					
OrB----- Orangeburg	Slight-----	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
PaE----- Pacolet	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Pc----- Pactolus	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: seepage.
Pd*: Pits.  Dumps.					
Pf----- Pocalla	Moderate: wetness.	Severe: seepage.	Slight-----	Severe: seepage.	Good.
Pn----- Polawana	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
Ps----- Portsmouth	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Ra----- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Rb*: Rains-----  Urban land.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ro----- Roanoke	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
StA----- State	Moderate: flooding, wetness, percs slowly.	Severe: seepage.	Severe: seepage, wetness.	Moderate: flooding, wetness.	Fair: too clayey, thin layer.
To----- Toisnot	Severe: cemented pan, ponding, percs slowly.	Severe: seepage, cemented pan, ponding.	Severe: ponding.	Severe: ponding, cemented pan.	Poor: cemented pan, ponding.
VaB----- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
VaD----- Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
VeB----- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
VeD----- Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
VeE----- Vaucluse	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
WaB----- Wagram	Moderate: percs slowly.	Severe: seepage.	Slight-----	Severe: seepage.	Good.
WaC----- Wagram	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Severe: seepage.	Fair: slope.
We----- Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
WfB----- Wakulla	Severe: poor filter.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: seepage.
Wh----- Wehadkee	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness, thin layer.
WkB----- Wickham	Moderate: flooding, percs slowly.	Moderate: seepage, slope.	Moderate: flooding, too clayey.	Moderate: flooding.	Fair: too clayey.
WkD----- Wickham	Moderate: flooding, percs slowly.	Severe: slope.	Moderate: flooding, slope,	Moderate: flooding, slope.	Fair: slope, too clayey.

\* See description of the map unit for composition and behavior characteristics of the map unit.

**ATTACHMENT 6: Septic System Area Computation  
Spreadsheets**

### Conventional Septic System Area Computation

Created by: SG  
Created on: 10/8/2016

Client Name: *Pekarek*  
Number Bedrooms: 3  
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.3  
Trench Bottom Area (ft<sup>2</sup>): 1200 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 400

Minimum Field Area Required (ft<sup>2</sup>): 3600 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 2700 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 9000 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 6750 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 10800 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 8100 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 3  
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.6  
Trench Bottom Area (ft<sup>2</sup>): 600 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 200

Minimum Field Area Required (ft<sup>2</sup>): 1800 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 1350 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 4500 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 3375 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 5400 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 4050 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 3  
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.35  
Trench Bottom Area (ft<sup>2</sup>): 1028.571 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 342.8571

Minimum Field Area Required (ft<sup>2</sup>): 3085.714 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 2314.286 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 7714.286 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 5785.714 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 9257.143 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 6942.857 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

### Conventional Septic System Area Computation

Created by: SG  
Created on: 10/8/2016

Client Name: *Pekarek*  
Number Bedrooms: 4  
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.3  
Trench Bottom Area (ft<sup>2</sup>): 1600 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 533.3333

Minimum Field Area Required (ft<sup>2</sup>): 4800 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 3600 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 12000 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 9000 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 14400 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 10800 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 4  
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.6  
Trench Bottom Area (ft<sup>2</sup>): 800 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 266.6667

Minimum Field Area Required (ft<sup>2</sup>): 2400 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 1800 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 6000 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 4500 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 7200 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 5400 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 4  
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.35  
Trench Bottom Area (ft<sup>2</sup>): 1371.429 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 457.1429

Minimum Field Area Required (ft<sup>2</sup>): 4114.286 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 3085.714 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 10285.71 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 7714.286 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 12342.86 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 9257.143 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.



### Conventional Septic System Area Computation

Created by: SG  
Created on: 10/8/2016

Client Name: *Pekarek*  
Number Bedrooms: 5  
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.3  
Trench Bottom Area (ft<sup>2</sup>): 2000 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 666.6667

Minimum Field Area Required (ft<sup>2</sup>): 6000 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 4500 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 15000 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 11250 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 18000 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 13500 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 5  
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.6  
Trench Bottom Area (ft<sup>2</sup>): 1000 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 333.3333

Minimum Field Area Required (ft<sup>2</sup>): 3000 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 2250 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 7500 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 5625 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 9000 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 6750 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Pekarek*  
Number Bedrooms: 5  
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)  
LTAR (gal/day/ft<sup>2</sup>): 0.35  
Trench Bottom Area (ft<sup>2</sup>): 1714.286 (Design flow/LTAR)  
Trench Width (ft): 3  
On-center distance between trenches (ft): 9  
Trench Bottom Length (ft): 571.4286

Minimum Field Area Required (ft<sup>2</sup>): 5142.857 (Trench Bottom Length\*Trench on-center distance)  
Minimum Field Area Required (Innovative) (ft<sup>2</sup>): 3857.143 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 12857.14 (Minimum field area\*2.5)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 9642.857 (25% reduction from above)  
Total Field Area Required (ft<sup>2</sup>)<sup>(1)</sup>: 15428.57 (Minimum field area\*3)  
Total Field Area Required (Innovative) (ft<sup>2</sup>)<sup>(1)</sup>: 11571.43 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.