

MOUNTAIN SOILS, INCORPORATED

71 LEDFORD DRIVE FRANKLIN, NC 28734
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OFFICE/FAX: (828) 524-5962 CELL: (828) 551-9903

ON-SITE SOIL AND SITE EVALUATION

**Lot #17 – Lace Falls Subdivision
104 Gossamer Court
Henderson County, North Carolina
Parcel ID# 9557-17-9041
4-Bedroom (480 GPD)**

Prepared for:

Prepared by:
MOUNTAIN SOILS, INC.
71 Ledford Drive
Franklin, NC 28734



Steven J. Melin #1254

Steven J. Melin, LSS

September 1, 2020

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Lot #17 – Lace Falls Subdivision (104 Gossamer Court)

09-01-2020

PIN# 9557-17-9041 (Henderson County, NC)

Saprolite System: No

Onsite Wastewater Septic System Overview:

The following report has been prepared by Mountain Soils, Inc. (MSI) for Lot #17 in the Fox Run Preserve Subdivision in Valley Hill (Henderson County), NC. Please note that a 4-bedroom house is proposed (480 GPD). The following report prepared by MSI is intended to be permitted under the privatization rules. Please note that the report / application needs to be submitted by a professional engineer (PE).

Application Type:	NOI (EOP) (4-BDR)					
Number of Bedrooms:	Proposed Septic System	GPD	Soil Group	Soil Texture	LTAR	Linear Feet Required Calculation (in Square and Linear Feet)
Initial Septic System:	25% Reduction	480	III	Sandy Clay Loam	0.50	$480 \text{ gpd} / 0.50 \text{ gpd/ft}^2 = 960 \text{ ft}^2$ $960 \text{ ft}^2 / 4.0 \text{ ft trench eq} = 240 \text{ ft}$ (See calculations below)
Repair Septic System:	25% Reduction	480	III	Sandy Clay Loam	0.50	$480 \text{ gpd} / 0.50 \text{ gpd/ft}^2 = 960 \text{ ft}^2$ $960 \text{ ft}^2 / 4.0 \text{ ft trench eq} = 240 \text{ ft}$ (See calculations below)
Easement Required:	No					

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Onsite Wastewater Septic System Configuration and Recommendations:

The following recommendations are proposed for Lot #17 off of Lace Falls Subdivision in Valley Hill (Henderson County), NC. The proposed system design/layout is for a four-bedroom house. The septic area has been evaluated and determined to contain Group III soils (the most restrictive texture being sandy clay loam). A long-term acceptance rate (LTAR) of 0.50 has been assigned to these soils (*See attached soil descriptions*).

It is recommended to utilize a 25% Reduction type system for the septic drainfield. The (initial) septic system will require 240 linear feet of material to accommodate the 4-bedroom septic system. The recommended trench depth is 28-inches. It is anticipated that gravity flow can be maintained to the drainfield. The square and linear footage required for installation of this system is illustrated below.

4 bedroom home x 120 gallon per bedroom per day = 480 gallons per day (gpd)
Group III, Sandy Clay Loam, 0.50 gallons per square foot per day (LTAR)
Square Footage required: 480 gpd / 0.50 LTAR = 960 square feet
960 ft²/4.0' trench equivalency= 240 Linear Feet

It is recommended to utilize a 25% Reduction type system for the repair septic drainfield. The repair system will require 240 feet of material to accommodate the 4-bedroom repair septic system. The recommended trench depth is 28-inches. The square and linear footage required for installation of this system is illustrated below.

4 bedroom home x 120 gallon per bedroom per day = 480 gallons per day (gpd)
Group III, Sandy Clay Loam, 0.50 gallons per square foot per day (LTAR)
Square Footage required: 480 gpd / 0.50 LTAR = 960 square feet
960 ft²/4.0' trench equivalency= 240 Linear Feet

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The proposed septic system area has been delineated in the field (with laser level). It is recommended to utilize 240 linear feet of drainline for the septic drainfield. *(See attached site plan for detail.)* It is also recommended to delineate the system again prior to installation.

Onsite Wastewater Septic System Setbacks (Buffers) and Site Recommendations:

The following items are recommended to preserve the integrity of the proposed site and surrounding area.

1. It is recommended to encase all septic system supply lines where they cross roads, drives and/or power lines *(pursuant to Laws and Rules for Sewage Treatment, and Disposal Systems 15A NCAC 18A .1960)*
2. It is recommended to divert all stormwater runoff away from all proposed septic areas.
3. A 1,000 gallon septic tank is recommended. The septic tank is proposed to feed two-hundred forty feet (240') of drainline by a distribution box with speed levelers (3 x 80') (Attached Map).
4. The proposed septic system designs/layouts are based on dodging large trees or other obstacles that may hinder the installation or operation of the septic system.
5. The proposed onsite wastewater system is based off of theoretical calculations based on data obtained at the site. Actual system performance is not guaranteed.
6. The proposed initial septic system and repair system must maintain a setback (Buffer), specified by North Carolina Department of Environment and Natural Resources (NCDENR), including: 5' horizontal from the house and all foundations, 50' horizontal from any surface water, 100' horizontal minimum from all wells (can be reduced to 50' under circumstances), 10' horizontal from all property lines and water lines, 20' horizontal from any other septic system (except repair) and 15' horizontal from cut banks (unless filled and compacted, 5' horizontal setback).

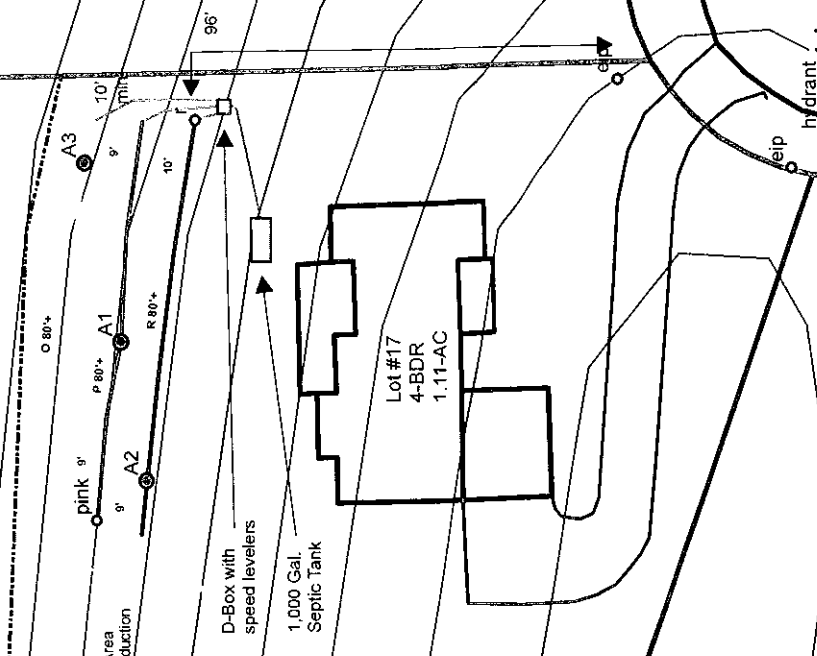
Soils and Onsite Wastewater Evaluation. Lot #17 - Fox Run Preserve (104 Gossamer Court), PIN# 9557-17-9041. Valley Hill (Henderson Co.), NC (MSI (September 2020))

- Auger Boring
- GPS Points
- Ditchway
- Road
- Wet Slope Break
- Surface Water
- Approximate Boundary
- Initial Ditchline - Red Pin Flags
- Initial Ditchline - Pink Pin Flags
- Initial Ditchline - Orange Pin Flags
- Repair Area
- Tank
- Supply Line
- Approximate House
- Topography (S (NGDOT))
- Topography (G (MCDOT))

Lot 17 -
 Fox Run Preserve
 4-BDR (480 GPD)

Initial System:
 25% Reduction
 0.50 LTA; 3 x 80'
 28" trench depth

Repair System:
 25% Reduction
 0.50 LTA; 240 LF
 28" trench depth



Illustrative maps generated are for soil information and onsite wastewater data only. Maps generated are not surveys and any level of accuracy is not claimed. All locations are approximate; this map is not a survey. Illustrative maps produced cannot be used as legal documentation for land transfers or other situations that require a legally surveyed boundary. The map was generated from survey marks, as well as GPS Points, aerial photography from NC Checkup, and Henderson County GIS data.



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Lot #17 - Fox Run Preserve (104 Gossamer Court)
PIN# 9557-17-90410603-31-7822 (Henderson County)
4-BDR (480 GPD)
Saprolite System: No

9/1/2020

Septic System Calculation Worksheet

Initial System = 25% Reduction

Recommended Trench Bottom Depth: 28"

Gal / Day	Trench Width (Inches)	Trench Equivalency (Feet)	Soil Depth on 0% Slope
480	36	4	40

Slope	Auger#	Suitable Soil Depth (in.)	Total Suitable Depth/ Sap. Depth (in.)	Soil Needed (slope adjusted) (in.)	¹ Total Depth of Saprolite Required (2:1 ratio) factoring Soil		Morphological Based Field LTAR
					Depth (in.)	Fill Material Required (in.)	
22%	1	50	50	47.9	N/A	0	0.5
25%	2	50	50	49.0	N/A	0	0.5
22%	3	50	50	47.9	N/A	0	0.5
LTAR Utilized							0.50
Linear Feet Required							240

Repair System = 25% Reduction

Recommended Trench Bottom Depth: 28"

Gal / Day	Trench Width (Inches)	Trench Equivalency (Feet)	Soil Depth on 0% Slope
480	36	4	40

Slope	Auger#	Suitable Soil Depth (in.)	Total Suitable Depth/ Sap. Depth (in.)	Soil Needed (slope adjusted) (in.)	¹ Total Depth of Saprolite Required (2:1 ratio) factoring Soil		Morphological Based Field LTAR
					Depth (in.)	Fill Material Required (in.)	
22%	1	50	50	47.9	N/A	0	0.5
25%	2	50	50	49.0	N/A	0	0.5
22%	3	50	50	47.9	N/A	0	0.5
27%	4	50	50	49.7	N/A	0	0.5
LTAR Utilized							0.50
Linear Feet Required							240

¹ [(soil depth needed-soil depth) x 2] + Soil depth = sap. Depth needed.

Above equation only to be used if the difference in soil depth needed and actual soil depth present = 12" or less

SOIL/SITE EVALUATION

(Continuation Sheet)

Sheet of

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

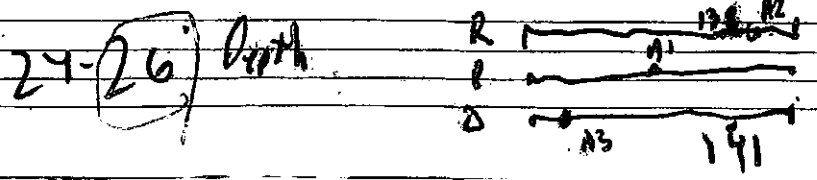
LICENSED SOIL SCIENTIST
STEVEN J. MELIN

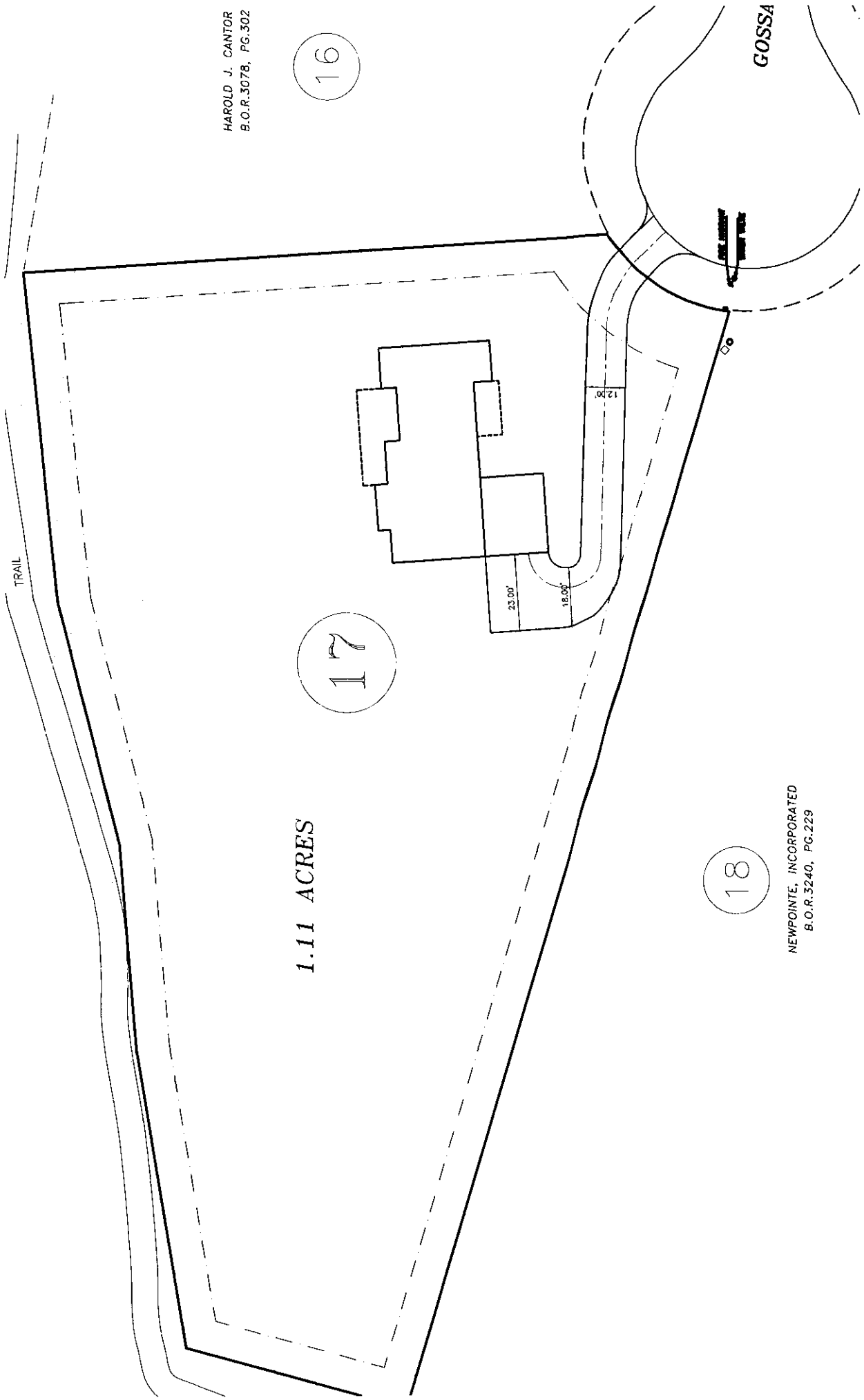
DATE OF EVALUATION: 9-1-20
COUNTY: Harris

Lot 17 Fox Run Pass

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZ ON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE				PROFILE CLASS & LTAR
			.1941 STRUCTURE/TEXTURE	.1941 CONSISTENCE/MINERALOGY	.1942 SOIL WETNESS/COLOR	.1943 SOIL BENTHIC CLASS	.1955 Sapro Class	.1944 RESTR HORIZ	
1	L ₁₀ 22+	A ₁ 0-6	lmsr / sl	FA					III 0.5
		B ₁ 6-18	2msbr / cl	FA (5 st)	10x 3/4				
		B ₂ 18-30	2msbr / sl	FA (5 st)	10x 4/6	150			
		B _{2c} 30-50	1/2 msbr / sl	FA	" 4/6				
2	L ₁₀ 25+	A ₁ 0-5	lmsr sl	FA	10x 3/4				III 0.5
		B ₁ 5-19	1msbr / cl	FA (5 st)	10x 5/4				
		B ₁₂ 19-27	2msbr / sl	FA (5 st)	10x 4/6	150			
		B ₂ 27-40	1/2 msbr / sl	FA	7.5x 4/6				
3	L ₁₀ 22+	A ₁ 0-5	lmsr / sl	FA	10x 3/4				IV 6.5
		B ₁ 5-13	2msbr / cl	FA (5 st)	7.5x 5/4				
		B ₁₂ 13-40	2msbr / sl	FA (5 st)	7.5x 4/6	150			
		B ₂ 40-50	1/2 msbr / sl	FA	" 4/6				
4	L ₁₀ 27+	A ₁ 0-8	lmsr / sl	FA	10x 3/4				III 0.5
		B ₁ 8-14	2msbr / cl	FA (5 st)	10x 4/4				
		B ₂ 14-50	1msbr / sl	FA (5 st)	10x 4/6	150			

COMMENTS:





HAROLD J. CANTOR
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GOSSA

17

1.11 ACRES

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