

# PRELIMINARY SOIL & SITE EVALUATION

Lot 54  
Stonewood Loop Lane  
Henderson, NC

Prepared For:

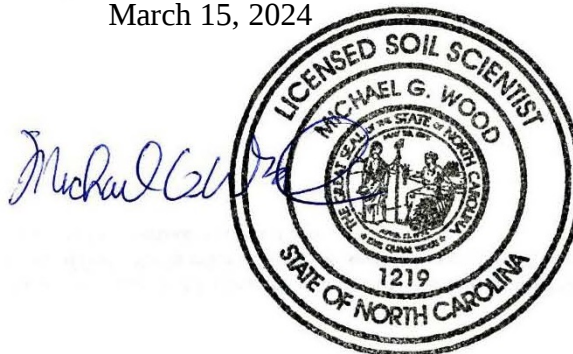
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March 15, 2024



Michael G. Wood, LSS

## INTRODUCTION AND SITE DESCRIPTION

A Preliminary Soil & Site Evaluation was performed on the 1.35-acre Lot 54 on Stonewood Loop Lane, Henderson, NC (Warren County PIN: 3012C01005). Wood Soil Consultants (WSC) was retained to evaluate the soil and site conditions and identify suitable areas for placement of an on-site subsurface wastewater system for installation of a kitchen facility in the Vaughn Store. The property was evaluated in accordance with the working copy of North Carolina statutes for waste disposal 15A NCAC 18E, effective January 1, 2024.

The study is a mix of open field and woods. There is a concave slope that leads to a drainage way that is noted Unsuitable Topography on Figure 1. The property will be served by a private well.

## INVESTIGATION METHODOLOGY

The field survey was conducted on March 15, 2024, by Michael G. Wood. Soil borings were advanced with hand-augers and soil color determined using a Munsell Soil Color Chart. Observations of the landscape as well as soil properties (depths, texture, structure, soil wetness, restrictive horizons, etc.) were recorded. Soil borings were described per the USDA-NRCS, *Field Book for Describing and Sampling Soils, Version 3.0*. Soil borings and site features are noted in Figure 1.

## FINDINGS

Seven (7) soil borings were advanced their placements located on Figure 1. They were placed into one of the following categories:

**Provisionally Suitable for Conventional Type Systems.** Borings Provisionally Suitable for Conventional Systems include Gravel, Accepted, Alternative, Shallow-Placed, and prefabricated permeable block panel systems. While the particulars and costs between the system types can vary considerably, these are generally the preferred system types. This soil appeared adequate to support a long-term acceptance rate (LTAR) of 0.25 GPD/sq-ft.

**Provisionally Suitable for Low-profile Chamber Systems.** Low-Profile Chamber systems are designed similarly to Conventional Type systems but are not allotted any reduction in drainfield size, thus will require more space than the typical Conventional Type systems. These soils require a minimum of 20" of suitable soil when factoring in slope corrections. This soil appeared LTAR of 0.25 GPD/sq-ft.

**Provisionally Suitable for Subsurface Drip Systems.** Subsurface Drip systems require a minimum of 13" of suitable soil. Soil with a restriction less than 17" will require the septic system to include a pretreatment unit that treats the wastewater to Treatment Standards II. Subsurface Drip systems are substantially more costly to install than Conventional Type and Low-Profile Chamber Systems. LTAR often need to be confirmed via in-situ hydraulic conductivity measurements, but these are expected to support an LTAR of 0.10 GPD/sq-ft.

**Unsuitable.** Borings were rated as Unsuitable due to a restrictive horizon occurring within 12 inches of the ground surface.

## **DISCUSSION**

An approximately 8,500 ft<sup>2</sup> area was identified that was determined to be Suitable for a Conventional Type or Low-Profile Chamber system; it is noted as “Target Septic Area” on Figure 1. This area should be targeted for the septic drainfield. While it is anticipated that the area will be large enough to accommodate a 4-bedroom house, a drainfield layout will be required to determine the system particulars, LTAR, drainfield type, trench depth, etc., which will determine the number of bedrooms the area can accommodate. It is most likely that this area will only be large enough for the initial system for a new single-family residence and the repair field would be a Drip System.

## **CONCLUSION**

The findings presented herein represent WSC’s professional opinion based on our Preliminary Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in Granville County and North Carolina. Additional field investigations, including, a drainfield layout, supplement soil borings, and potentially hydraulic conductivity tests, will be required to determine what type of system and how many bedrooms the Study Area can accommodate.

This Preliminary Soil and Site Evaluation is for general information purposes only. The data collected will not meet the standards of the Engineered Option Permit (EOP) process. Soils naturally change across a landscape and contain many inclusions. As such, attempts to quantify them are not always precise and exact. Due to this inherent variability of soils and the subjectivity when determining limiting factors, there is no guarantee that a regulating authority will agree with the findings of this report.

March 15, 2024

Unsuitable Topography

Target Septic Area

- Conventional Type
- Low-Profile Chamber
- Drip
- Unsuitable

March 15, 2024