SEVERSON SOIL CONSULTING, PLLC

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

Indian Drive
Norlina, NC
Warren County
APN: B7 87

Prepared for: Lucas Dargis

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Report Date: 8/21/2023

# SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Warren County, NC. There was an area of provisionally suitable soils found on the property. The site evaluation revealed sufficient area for the installation of a conventional septic system for a three-bedroom dwelling.


Figure 1. Property Location for B7 87 (Warren Co, GIS).

Lucas, this is a summary of my findings:

Severson Soil Consulting, PLLC (SSC) conducted a preliminary onsite wastewater soil feasibility study on the above referenced parcel to determine the area of soils, suitable for a subsurface onsite wastewater disposal system. The soil and site evaluation were performed by using a hand auger boring during moist soil conditions based on the recommended criteria found in the "Laws and Rules for Sewage Treatment and Disposal Systems", 15NCAC 18A. 1900. From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate. The site was in pine cutover.

**Site Description**

The 3-acre tract off of Indian Drive Rd (figure 1) lay in the Piedmont physiographic province near the community of Axtell. There were two soil mapping units in the area of interest, CeB (Cecil) and PhC (Pacolet) in figure 2. These soils are generally suitable for conventional drainfields. There were two drainageways found on the uplands of this property.


Figure 2. Soil map of the of the subject property (SoilWeb).

**Soil Borings**

Over 23 soil borings and observations were advanced on the parcel as seen in figure 3 below. Their depths to suitable soils categorized the soils: the red dots represent suitable soils to 30" and were the Cecil and Pacolet Series. The blue dots indicated a drainageway or low-lying landform that were unsuitable.

Therefore, the site and soils are suitable for the potential installation of a conventional septic system. The recommended LTAR (long term acceptance rate) for Cecil and Pacolet soils are 0.3 gallons per day per foot squared (GPD/ft2).

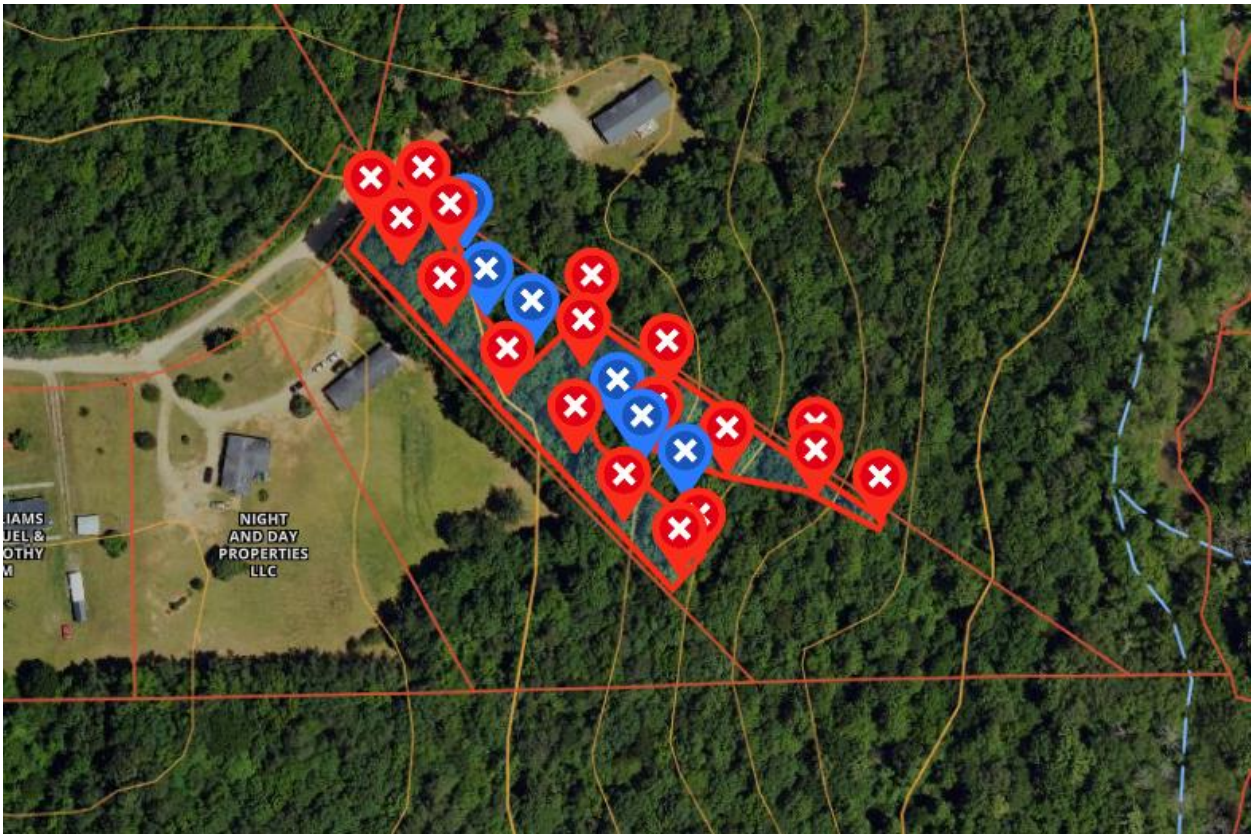



Figure 3. Soil boring locations within the lot as located by the onX Hunt application.

**Required Area**

The required linear footage needed for a conventional trench accepted status drainfield product is calculated by dividing the flow rate for a three-bedroom dwelling (3-BR= 360 gpd) by the long-term acceptance rate, LTAR (0.3 GPD/ft2). Then dividing that number by a 3-foot-wide trench bottom and finally multiplying that number by 0.75 (to account for a 25% reduction trench product).

[(360gpd / 0.3 gpd/ft2) / 3ft wide trench)] x 0.75= 300 Linear Feet

The required space of suitable soils was calculated based upon a 3-foot-wide trench and a 9-foot minimum center to center spacing of each trench. Assuming 100-foot-long trench lengths, the minimum total area required would then be 9,600 ft2 including primary and a 100% repair area (4,800 ft2 x 2). Accounting for trees and other unforeseen factors in the field would increase the minimum size needed by 20 percent to 11,520 ft2.

Other drainfield lengths and configurations could be employed, such as additional shorter lines.

**Usable Area**

All soil observations would support a potential installation of a conventional septic system. Usable area was 1.09 acres, or 47,480 ft2. This would be over 4 times the minimum space needed for a potential drainfield and repair for a 3-BR dwelling (see figure 4).

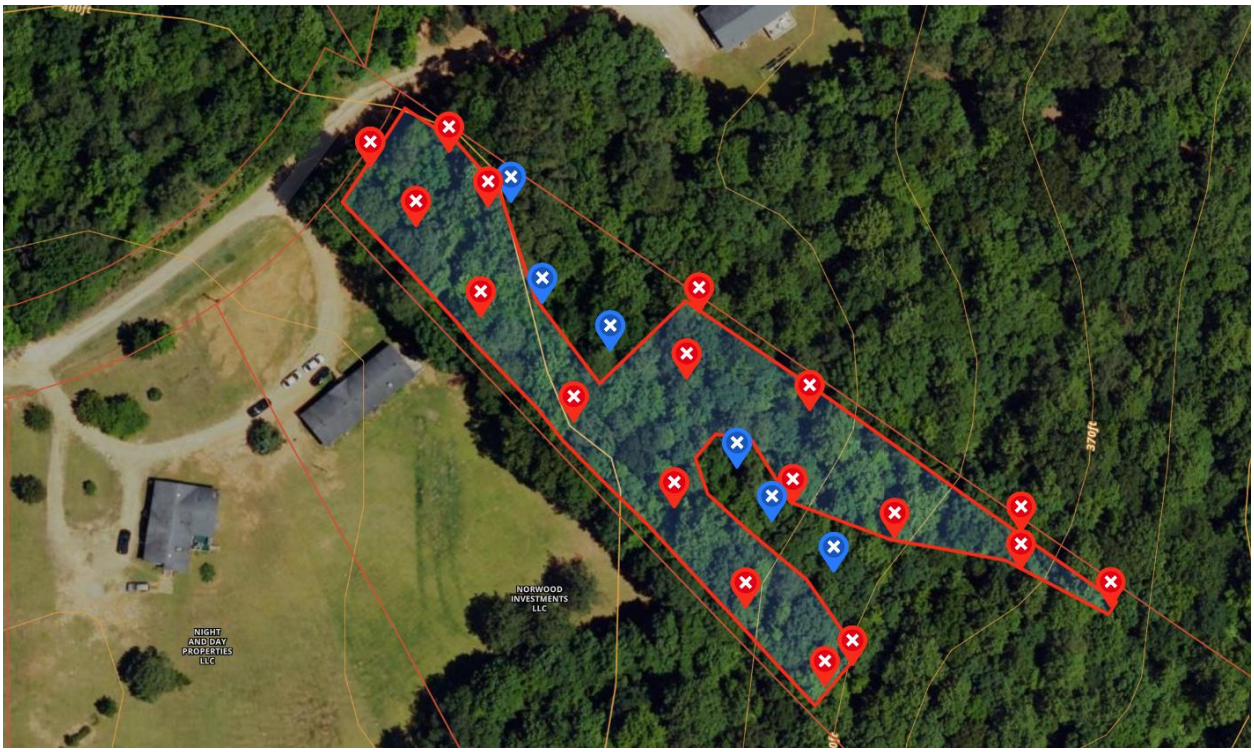



Figure 4. Usable soil area.

**Permitting**

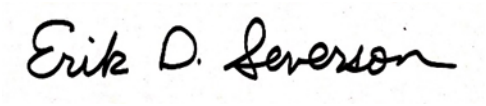
Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Warren County Health Department of other permitting authority. The specific trench product type and soil loading rate will be determined by their assessment. The areas for proposed drainfields shall not be impacted by home sites, pools, garages, nor be mechanically altered from the natural lay of the land. Regulatory setbacks to property lines, roads, wells, etc. are to be maintained.

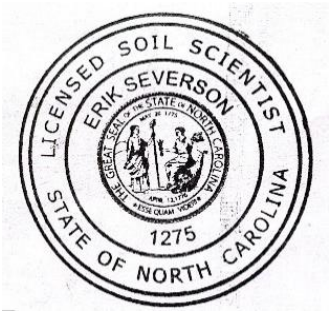
Exact locations of future drainfields, repair areas, buffer from property lines (current and future), building foundations, pools, decks, and well locations are not addressed in this report. Those items should be fully considered as the plans develop for the potential future use of the site. Depending on the position of the house location, house size, property lines and setbacks that may encroach on available usable space, this lot may require a septic system utilizing a pump.

Due to the subjective nature of the permitting process, zoning, variability of naturally occurring soil, and unforeseen circumstances, SSC cannot guarantee that areas delineated as suitable for on-site wastewater disposal systems will be permitted, as the permits are issued by the local governing agency. However, the areas of suitable soil have at least 4 times the needed space for a conventional system and repair depending on the loading rate. This report may be used to assist the local permitting agency to issue a septic permit.

Thank you for your business.  Please do not hesitate to ask for more information regarding this report.

Sincerely,



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