

Site Suitability for Domestic Sewage Treatment and Disposal Systems

Pine Grove Church Road

Lot 4

Eagle Springs, NC

Moore County

Parcel ID#: 8509-00-38-5675

Prepared for: Pete Reese, ReelVest

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 4/1/2024

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Eagle Springs, NC for Lot 4. There was an area of suitable soils found on the property. The site evaluation revealed sufficient area for the installation of a conventional septic system for a four-bedroom dwelling. This report is intended to aid the permitting authority to evaluate the site.

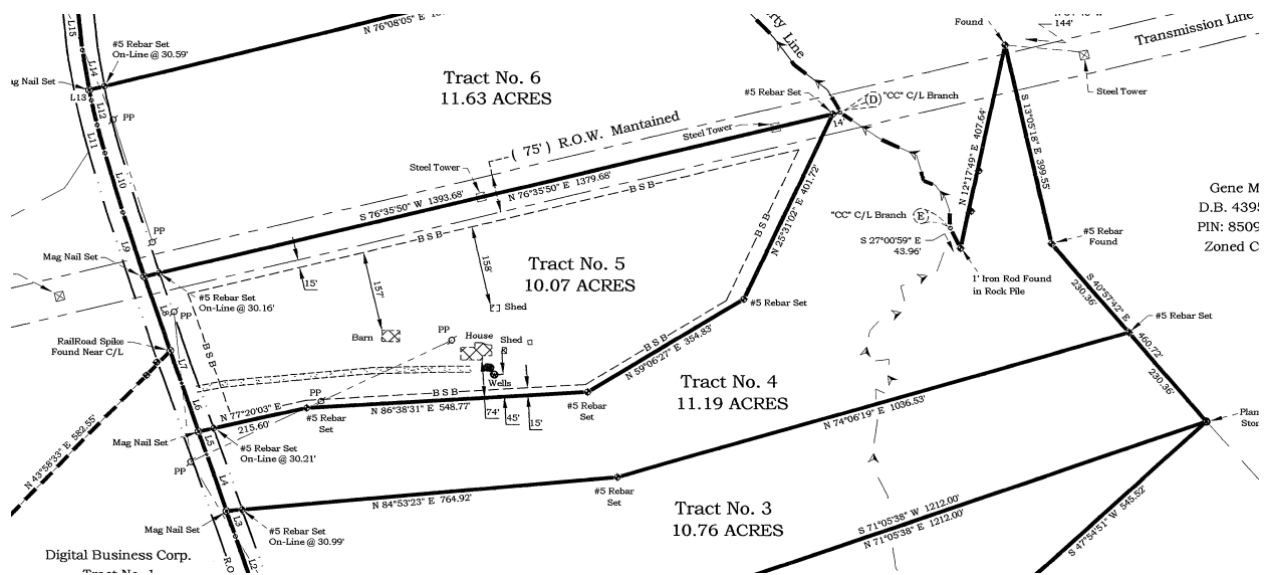


Figure 1. Property Location for Lot 4

Peete, 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 criteria in the Rules and Laws Governing Onsite Wastewater Systems (18E rules). From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate.

Site Description

The 11.19-acre tract was off of Pine Grove Church Road near Eagle Springs, NC (figure 1). The site lay in the Carolina Slate Belt region. There was one mapping unit of interest in the NRCS soil map, LgB, Lignum soils (usually unsuitable for conventional systems) and TnE, Taurus soils (figure 2), which are marginally suitable for conventional septic systems.



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

Soil Borings

Over 19 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 Georgeville Soil Series. The brown and yellow dots represented the Nanford soil with suitable depths to 20-24 inches (brown) and 18-19 inches respectively. The purple and black dots are the Lignum soil and are unsuitable for conventional septic systems. The recommended LTAR (long term acceptance rate) for the Georgeville soils are 0.3 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 four-bedroom dwelling (4-BR= 480 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).

$$[(480\text{gpd} / 0.3 \text{ gpd/ft}^2) / 3\text{ft wide trench}] \times 0.75 = 400 \text{ Linear Feet}$$

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 four 100-foot-long trench lengths, the minimum total area required would then be 10,000 ft² including primary and a 100% repair area (5,000 ft² x 2).

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

Usable Area

All soil observations would support a potential installation of a conventional septic system. The usable area was located in the middle of the lot on a gently sloping ridgetop. It was 2.6 acres, or 113,256 ft². This would be over 13 times the minimum space needed for a potential drainfield and repair for a 4-BR dwelling (see red outline figure 4). The highlighted red area is located on an upland ridgetop in the middle of the lot.

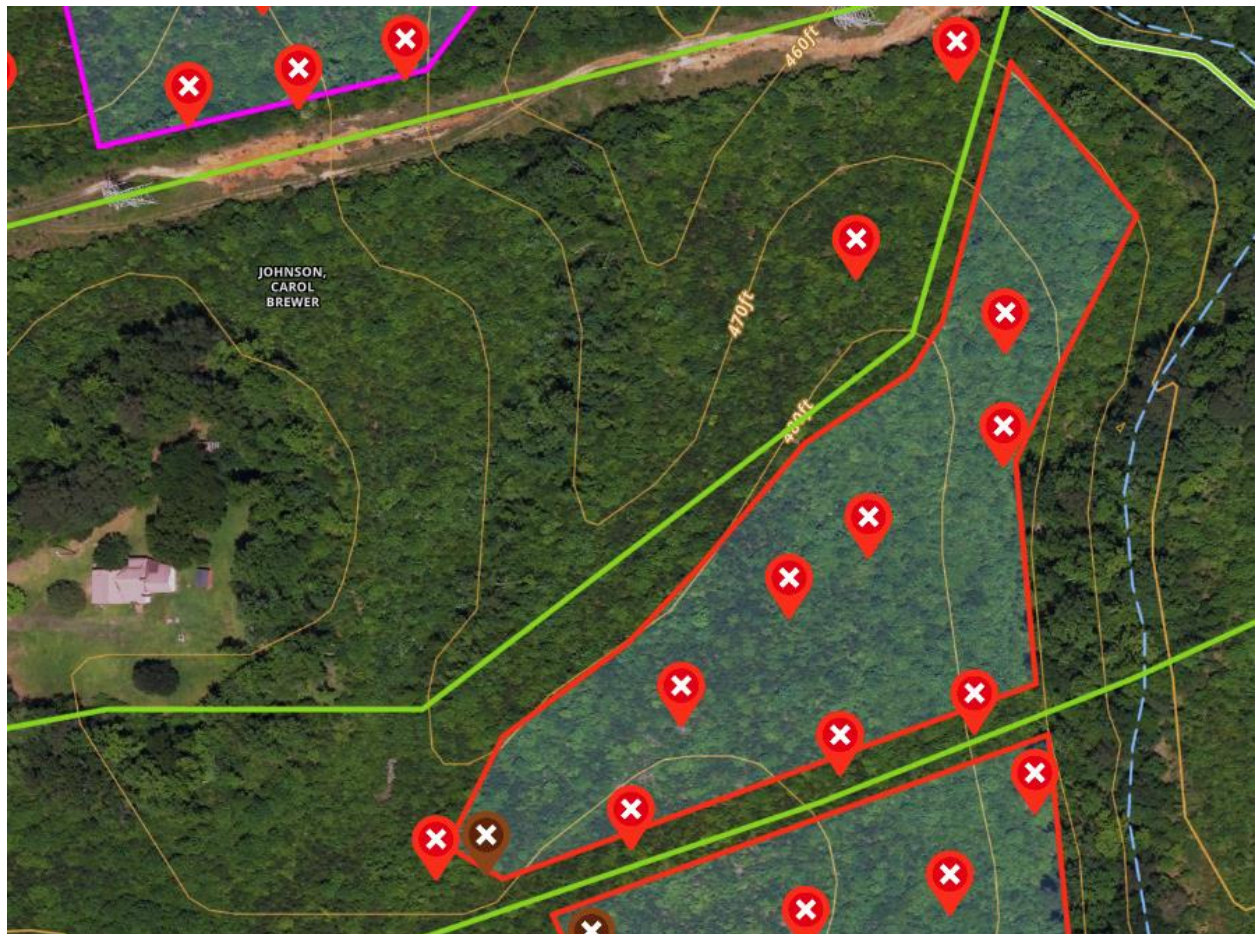


Figure 4. Usable soil area.

Permitting

Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Moore County Health Department or 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 13 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,

Erik D. Severson



Erik D. Severson, Ph-D., LSS
North Carolina Licensed Soil Scientist #1275