

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

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Fentress Road  
Robbins, NC  
Moore County  
Property#: 8621-00-17-9908

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Report Date: 1/8/2025

## SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Moore County, NC. The site evaluation revealed sufficient area for the installation of an anaerobic drip septic system for a four-bedroom dwelling. This type of system will require a maintenance contract with a certified subsurface operator. This report is intended to aid the design and permitting authority to evaluate the site.

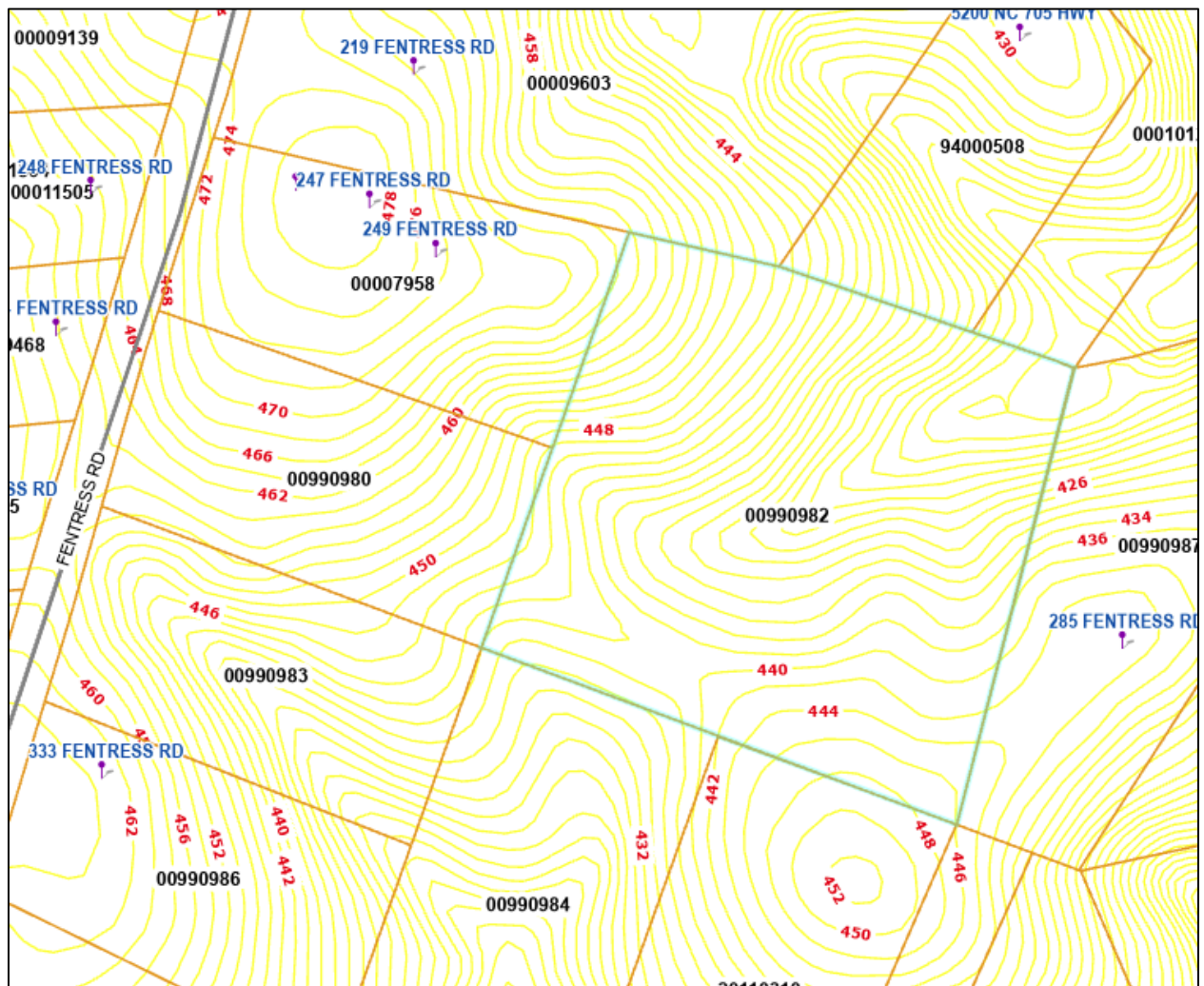


Figure 1. Property Location (Moore Co. GIS)

**James**, 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 9-acre tract was off of Fentress Road near Robbins, NC. The site lay in the Slate Belt physiographic province. There were two mapping units of interest in the existing soil map, NaB, Nanford silt loam, 2 to 8 percent slopes and GoC, Goldston very channery loam, 2 to 15 percent slopes (figure 2). The property was located off a gravel road which led to a house on the eastern adjacent property (285 Fentress Road– see figure 1).



Figure 2. Soil map of the of the subject property (Moore Co. GIS).

## Soil Borings

Over 26 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 Soils. The brown dots were suitable soils from 20 to 24" and were the Nanford Soils. The yellow dots were the Goldston Soils and were suitable to 18 to 19". The black dots were soils that were impacted by cattle traffic and were unsuitable for an onsite system. The recommended LTAR (long term acceptance rate) for the Georgeville and Nanford soils are 0.15 gallons per day per foot squared (GPD/ft<sup>2</sup>).

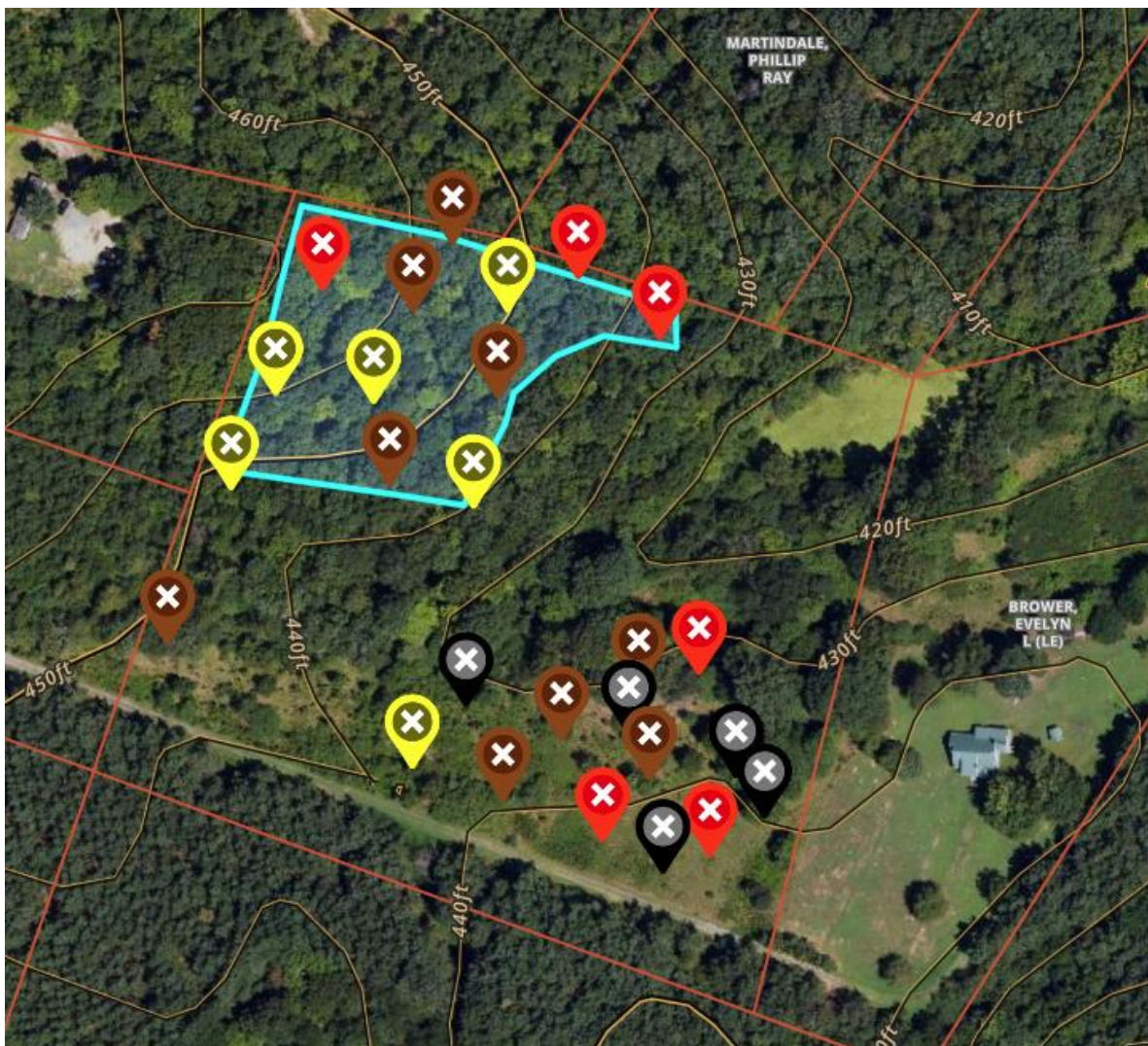


Figure 3. Soil boring locations within the lot as located by the onX Hunt application.



Figure 4. Nanford soil at 24 inches

## Required Area

The minimum dispersal field area was calculated by dividing the daily design flow by the LTAR (480gpd / 0.15 gpd/ft<sup>2</sup>) for a total of 3,200 ft<sup>2</sup>. Then by multiplying that number by 1.2, a safety factor is provided (to account for topographic and vegetative obstacles in the field), for a subtotal of 4,000 ft<sup>2</sup> for the primary area. The minimum total area required would then be 8,000 ft<sup>2</sup> including primary and a 100% repair area (4,000 ft<sup>2</sup> x 2).

The required minimum dripline length (in feet) needed for a drip product is calculated by dividing the flow rate for a four-bedroom dwelling (4-BR= 480 gpd) by the long-term acceptance rate, LTAR (0.15 GPD/ft<sup>2</sup>). Then dividing that number by a 2-foot-wide center-to-center spacing and finally multiplying that number by 1.2 (to provide for a 20% safety factor to account for unforeseen obstacles in the field).

$$[(480\text{gpd} / 0.15 \text{ gpd/ft}^2) / 2\text{ft wide centers}] \times 1.2 = 1,920 \text{ Linear Feet}$$

The septic system configuration and design would need to be performed by an authorized designer. This system will also require a maintenance contract with a subsurface operator.

## Usable Area

The usable soil area encompasses the northwestern corner of the property (see figure 5 below). It was located on a 10–12% linear and convex sideslope that was in mature trees. It was 1.56 acres or 67,953 ft in size. This area is over 8 times the needed space for a drainfield and repair area servicing a four-bedroom property.

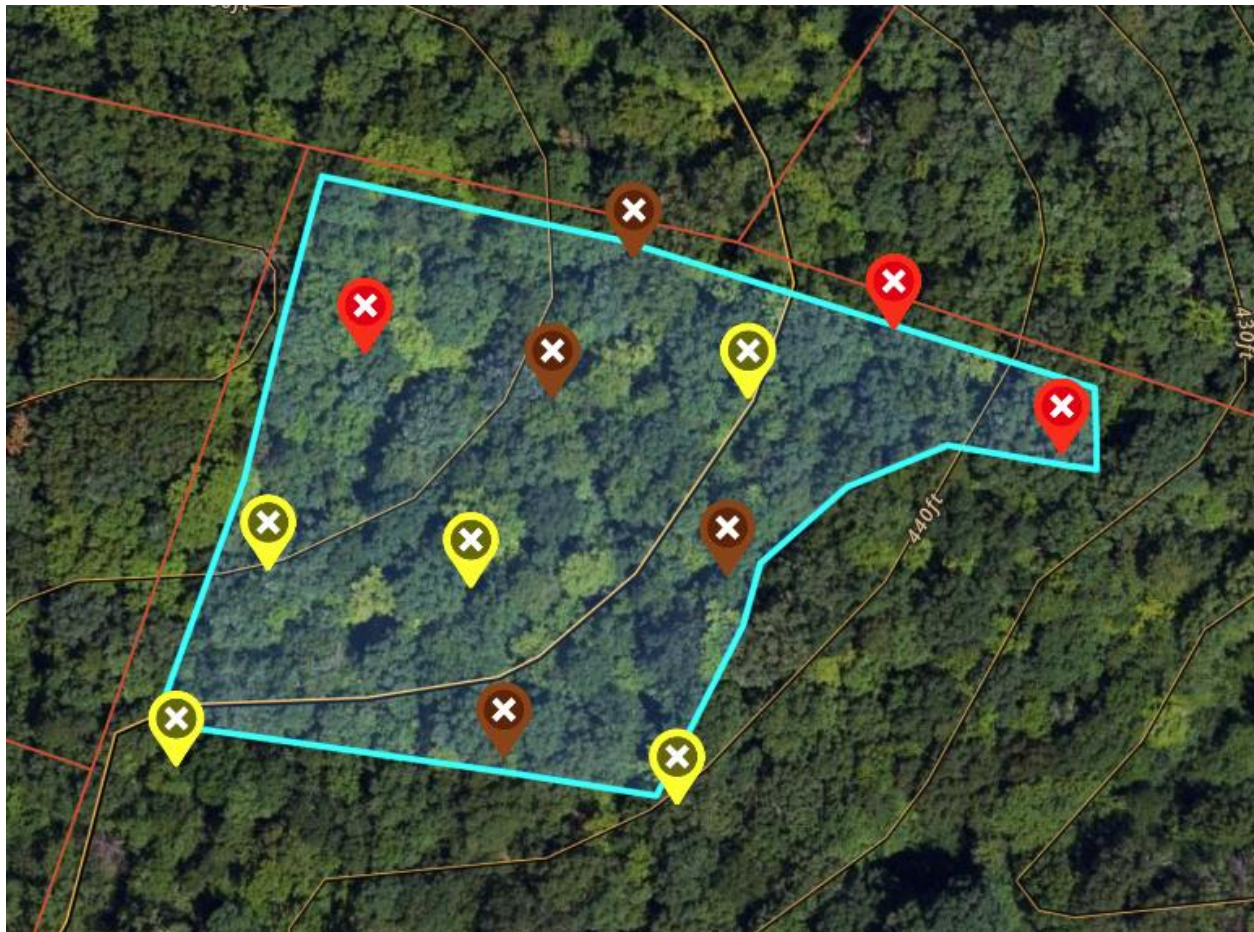


Figure 5. Usable soil area

## 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 8 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*



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