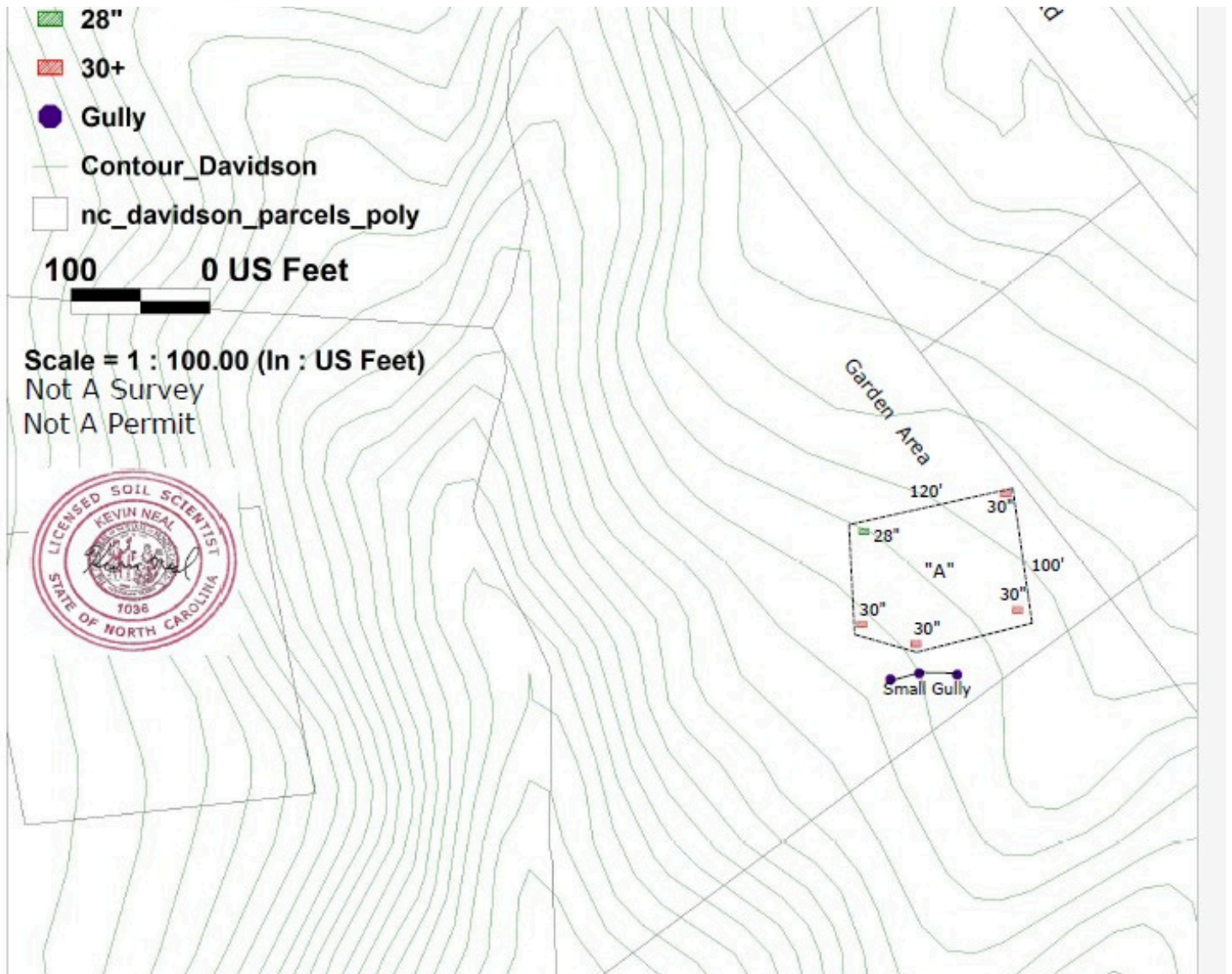
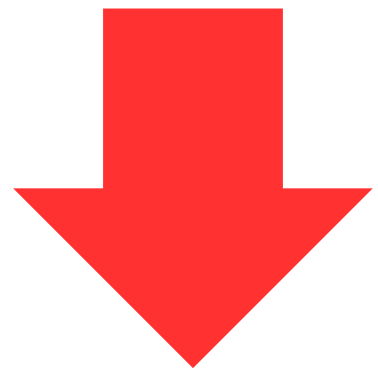
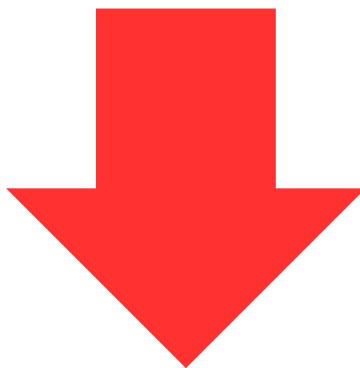
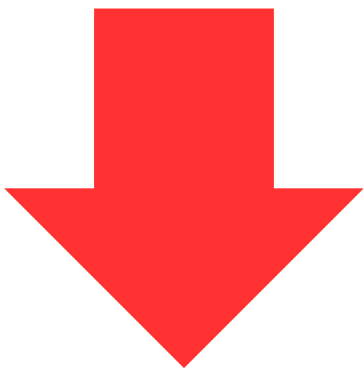


Soil Evaluation Map & Report



**Please scroll down to see
full report.**



Neal Soil Consulting, PLLC
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Lexington, NC 27292

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Soil/Site Evaluations-Septic Systems Layouts-Preliminary Evaluations

May 18, 2026

Lana Hedgecock

Phone Number – 336-423-2435

Email – lanahedgecock@gmail.com

RE: Johnson Road

PIN ID# - 6861-04-62-0995

Property Size – 3.52 Acres

Davidson County, NC

Ms. Hedgecock:

On May 13, 2026, I conducted a preliminary soil/site evaluation on a portion of the property referenced above on Johnson Road in Davidson County for the purposes of an on-site wastewater system for a single-family residence. Site suitability for on-site sewage disposal (septic) systems in accordance with *15A NCAC 18E Wastewater Treatment and Dispersal Systems* was determined by advancing soil borings and observing the landscape positions. These borings were made using a hand auger. A total of five borings were made in a transect-type sampling pattern on the left front of the property. Under state regulations, sites for subsurface sewage disposal systems are evaluated for landscape position and topography, soil characteristics (structure, mineralogy, and texture), soil depth, soil wetness, restrictive horizons, and available space. The house site was not staked at the time of the evaluation. This property appears to be land locked and an easement would be needed for access to the property, unless the two properties were combined. Water will be obtained from Davidson Water.

This preliminary evaluation of the property was for the purpose of determining if the soil on the property would support on-site wastewater system for a single-family residence. This report and accompanying site map will help identify the usable soil area for further evaluation and permitting by the Davidson County Environmental Health Department or Neal Soil Consulting, PLLC. The available space required is a function of system type, trench length, grade, and topographic features. I recommend 3,000 to 4,000 square feet per bedroom of area for drain fields. 3,000 square feet per bedroom for a level site and 4,000 square feet per bedroom needed for a sloping site, terraced sites, site with large trees and root mass, and sites with large surface boulders to work around. For example, a four-bedroom dwelling, 12,000 to 16,000 square feet of usable soil are needed for conventional gravel trenches or low-profile chambers. This square footage will also allow and include area for a repair field of equal size for use in the future.

Typical Septic Systems in Piedmont NC:

The most common septic systems used in the North Carolina Piedmont are listed with the corresponding minimum usable soil depth required and any trench length reduction if allowed noted in parentheses: conventional (30"), shallow conventional systems (24" with soil cap), chamber systems (24" with soil cap and 25% drain field reduction), polystyrene systems (24" with soil cap and 25% drain field reduction), vertical panel block systems (requires at least 34" of usable soil and allows 50% drain field reduction), horizontal panel block systems (requires at least 26" of usable soil with soil cover and allows 50% drain field reduction) large diameter pipe (24"), low pressure pipe (24"), low profile chamber (20" with soil cover), low pressure fill (18") and drip irrigation (18"). A pump can be used to deliver effluent to the usable soil area if gravity flow cannot be achieved. Also, a pump is required on any system with over 750' of drain field. The percent reduction means the amount of drain field trench length reduction allowed for that product as compared to conventional trenches. Certain models of chamber systems and polystyrene bundle systems are considered accepted trench products. Accepted trench products (chamber and polystyrene) can be substituted in lieu of conventional gravel trenches and receive the previously 25% drain field reduction.

Septic System Setbacks (15A NCAC 18E .0601 Location of Wastewater Systems*):

The following setbacks must be taken into consideration in identifying a septic system area for flows less than 3000 gallons per day.

A private drinking water well:	50'
Public Water Supply Source:	100'
WS-1 Streams from ordinary high-water mark:	100'
SA Coastal waters:	100'
Shared water supply well or water supply spring:	100'
Other streams, ponds, canals, marshes, or surface waters:	50'
Class I and II reservoirs, from normal water level:	100'
Building foundation and deck supports:	5'
Basement, cellar, or in-ground pool:	15'
Property line:	10'
Gullies > 2' deep:	15'
Any water line:	10'
Interceptor Drains and surface water diversions:	
Upslope:	10'
Side slope:	10'
Down slope:	15'
Groundwater lowering ditches:	25'
Above ground swimming pool and appurtenances that require a building permit:	5'
Any other nitrification field:	20'

Findings:

Soil borings were advanced on the left front of the property as shown on the site map. Once the soil borings are completed areas are denoted based on the usable soil depths. **The soil depths indicated on the preliminary site map have slope correction taken into consideration.** Soils with depths of 30" or more are usable for conventional, shallow trench conventional systems, chamber systems (25% drain field reduction), polystyrene systems (25% drain field reduction) and panel block systems (requires at least 34" of usable soil for vertical and 26" of usable soil with soil cover and allows 50% drain field reduction). There was one soil boring located on the right rear of the approved area that had a depth of 28". All the systems stated above (except vertical PPBPS) could be utilized, with the addition of 2 – 6 inches of soil cover after the system is installed. Soil borings depths 30" + are flagged with red ribbon and the 28" boring is flagged with blue and red ribbon on the property are considered to be suitable for a septic field.

The soils denoted as "A" was found to have usable soil depths of predominantly 28" - 30" or more suitable soil. When permitting is desired, a detailed site plan along with a system layout would need to be performed to determine the actual location and system type for the single-family dwelling. I would recommend utilizing the septic field in the "A" soils area for the initial system and repair area. The long-term acceptance rate based on soil texture for this area would be in the range of .1 - .4 gpd/ft² for clay-textured soils with typical loading rates in the range of 0.25 – 0.275 gpd/ft².

Conclusions:

The "A" area is approvable for a three-bedroom on-site wastewater system. A detailed site plan will be required when permitting is desired showing the house location (out of the approved area), driveway, and any other site plan considerations. **A system layout would be required to obtain the actual system location and system type for the initial and repair system.** No driveways, grading, cutting, filling, or land disturbing activities should be allowed in the "A" area where septic fields are proposed, as it will affect the site's suitability. The local planning and zoning authority shall review and approve any proposed development site plan. The property would need to be surveyed, properly marked and systems designed before permitting can be achieved. An effluent pump may be necessary if gravity can't be achieved from the potential house location.

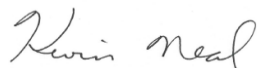
In North Carolina, two primary options for septic system permitting exist. In the traditional option, the local county health department can evaluate and permit any site. A new version of the traditional permit is now allowed by **G.S. 130A-335 (a2)/SL 2023-90**. In this version, a NC Licensed Soil Scientist can evaluate a lot and submit soil information on each lot to the Health Department in lieu of the Health Department evaluation. A Licensed Soil Scientist that is also an Authorized Onsite Wastewater Evaluator (AOWE) can prepare the design elements for the Construction Authorization. In the traditional permitting model, the county in the form of an Improvement Permit grants site approval. A Construction Authorization for a Wastewater System for the system design is issued once the Improvement Permit is issued. The county issues an Operation Permit after the system has been installed to meet the specifications of the Construction Authorization.

In the traditional permitting model, the local county health department in the form of an Improvement Permit grants site approval. A Construction Authorization for a Wastewater System is issued once building floor plans and site plans are reviewed and the Improvement Permit is issued. The county issues an Operation Permit after the system has been installed to meet the specifications of the Authorization to Construct. Septic layouts and system design can be performed as needed. The totally private permitting options are the Engineer Option Permit (EOP) and Authorized Onsite Wastewater Evaluator (AOWE). A NC Licensed Engineer, a NC Licensed Soil Scientist, NC Authorized Evaluator, and a NC Registered Septic Installer can evaluate, design, and install a septic system without Health Department involvement other than record keeping.

The attached soil map is based on soil boring locations collected using an EOS Arrow Gold GPS, iCMTGIS Pro app and PCGISX software. The collected data is then overlain over the Davidson County contour layers. The coordinate system used was NC State Plane NAD 83 3200. A one inch to 100' scale version of the map will be provided. The GPS locations can be accurate to submeter but should not be considered as accurate as survey located points.

This preliminary evaluation was conducted using accepted soil science and environmental health practices. This does not guarantee that the local health department or other professionals will agree with these findings since soil/site evaluations are an interpretation of the state regulations, but all current sampling methods, technologies, and practices were used. Please be aware of any local codes, setbacks, ordinances, and existing easements along with any permitting requirements. The site map and report are provided to you as part of this evaluation and should be used in conjunction with each other.

Please contact me if you have any further questions.



Kevin Neal

NC Licensed Soil Scientist #1036

NC Registered Environmental Health Specialist #1343

NC Onsite Wastewater Evaluator #10048E

