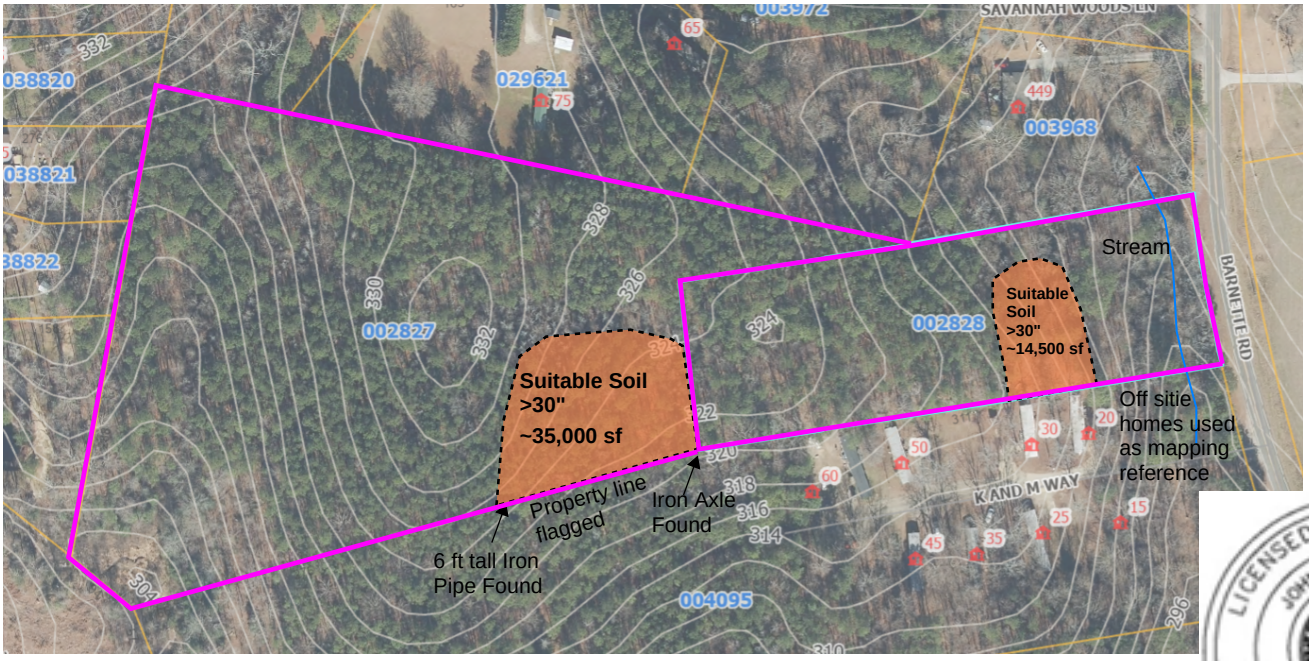
Soil Study for Septic System Suitability
October, 2025
John R. Davis, Jr. LSS
Parcels 002827 & 002828
Barnette Road Franklin County, NC

200 ft



LICENSED SOIL SCIENTIST
JOHN R. DAVIS, JR
1028
STATE OF NORTH CAROLINA

The soil areas shown in "Orange" are **Suitable** or **usable** for standard gravel or "Accepted" gravelless septic trenches and other alternative trenches. The soil is sandy loam topsoil over clay subsoil. A four bedroom house septic system generally requires about 10,000 square feet of usable soil for a complete septic system. The soil area shown on parcel # 002828 has at least one usable soil area with about 14,500 square feet of usable soil for a septic system. There may be other usable soil areas on this property too. The soil area shown on parcel # 002827 has at least two large usable soil areas with about 35,000 square feet of usable soil for one or more septic systems for four bedroom house(s). There may be other usable soil areas on this property too. If client wants to have the remaining areas of this parcel evaluated and mapped, the property lines will all need to be clearly marked. This additional task can be done for an additional fee if needed. You may submit this soil map along with an application to the local health department for a septic permit under the traditional permitting method.

Soil Horizons, LLC

PO Box 1063
Youngsville, North Carolina 27596

DATE October, 2026

TO Client, Lisa Bunn West

FROM John R. Davis, Jr. LSS, REHS

RE Summary/Explanation of the Preliminary Soil Study
Barnette Road Lots, Parcel # 002827 and Parcel # 002828, Franklin County

The purpose of the soil study commonly called “perc test” that was conducted on your property was to determine if the site and soil are **suitable** or **usable** for on-site subsurface septic systems. To make this determination, a licensed soil scientist with more than 30 years of experience made a site visit to walk over the property and observe the landforms such as ridges, side slopes, drains, gullies, ruts etc. and advance hand auger borings into the soil. The auger borings were advanced to approximately 3 feet below the surface to mainly observe the soil layers, texture, structure, color, clay mineralogy, restrictive horizons and soil wetness conditions based on the current regulations governing subsurface septic systems in North Carolina. The soil areas shown in "Orange" are Suitable or usable for standard gravel or "Accepted" gravelless septic trenches and other alternative trenches. The soil is sandy loam topsoil over clay subsoil. A four bedroom house septic system generally requires about 10,000 square feet of usable soil for a complete septic system. The soil area shown on parcel # 002828 has at least one usable soil area with about 14,500 square feet of usable soil for a septic system. There may be other usable soil areas on this property too. The soil area shown on parcel # 002827 has at least two large usable soil areas with about 35,000 square feet of usable soil for one or more septic systems for four bedroom house(s). There may be other usable soil areas on this property too. If client wants to

have the remaining areas of this parcel evaluated and mapped, the property lines will all need to be clearly marked. This additional task can be done for an additional fee if needed. You may submit this soil map along with an application to the local health department for a septic permit under the traditional permitting method.

Based on landform observations and hand auger borings, area(s) of **suitable** or **usable** soil, if found, are usually shown on Aerial GIS maps. The soil area(s) indicate the depth of **usable** soil in inches from the surface and the approximate area of the **usable** soil in square feet. The type of septic field that is appropriate for the **usable** soil area is also indicated on the map. The approximate area required for a complete septic field is based on the proposed use such as a 3 or 4 bedroom single family house. The required soil area is based on the soil type and prescribed daily design flow from the facility. For a house, the daily design flow is 120 gallons per bedroom, so the more bedrooms a house has the larger the septic field is required. North Carolina septic system regulations require a backup or replacement (repair) septic field so the soil area must be large enough for two fields, an active and a backup or replacement field. Once a **suitable** soil area is identified with adequate available space, the client may use the report to make purchase decisions, apply for a permit from the local health department or private engineer. Septic system permits require detailed site plans with size and location of the house or building, number of bedrooms or employees for daily design flow determination, proposed drive, water supply well etc. For the simpler, single family house site plans, the local permitting agency or local health department can site a septic system and issue permits that are valid for five years. Sites with more complicated buildings, limited **usable** soil areas, or complex slopes may require an engineer or other designer to create plans for pump septic systems or alternative septic systems with more advanced technology to address soil and site limitations and submit for permitting.

If the preliminary soil study does **not** find any **suitable** soil or limited **usable** soil areas then the client may not wish to pursue purchase of the property. This situation is generally simply expressed as the soil or site "not perking". Also, a client may not wish to move forward with alternative complex septic designs due the comparative cost to design, permit and install these more advanced septic systems. The preliminary soil study is the first step in determining if and how to develop the property for a particular use. The value in the study is in the findings of the soil scientist's description of the soil characteristics and quantification of available soil area. This information will greatly aid a regulator in conducting a regulatory assessment and permitting a site. On larger tracts of land with limited **usable** soil areas, the preliminary soil map will direct the regulator to the best soil area to be reviewed and evaluated. Soil assessments or studies are critical on marginal sites for the designer, engineer, architect etc. to create the most effective and economical design as possible for the client. Many times a more detailed soil study is required for a designer to maximize a limited soil area on a site. Soil studies that are entirely **unsuitable** will not require any additional tasks beyond the preliminary soil study and that task is adequate enough to inform to the client, (buyer, seller, builder, developer, etc.) to not pursue development or adjust their offer to purchase accordingly. If you have any questions about this topic, please give me a call to discuss.