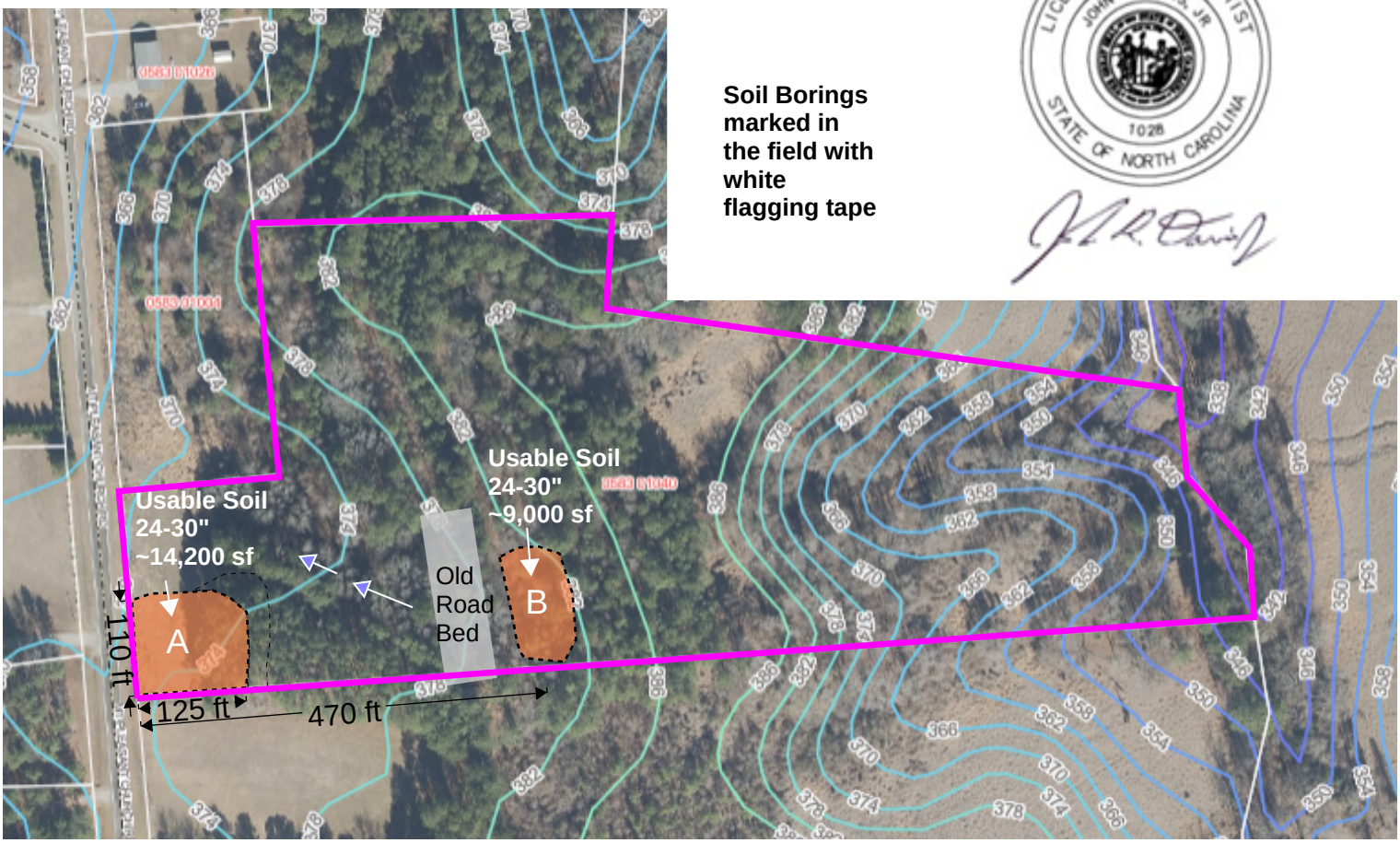
Soil Study for Septic System Suitability
January, 2026
John R. Davis, Jr. LSS
Mt. Pleasant Church Road Parcel # 0583 0104
Vance County, NC

200 ft



Soil Borings marked in the field with white flagging tape

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

The soil areas shown in "Orange" are **Suitable** or **Usable** for shallow gravel or "Accepted" gravelless septic trenches. The soil is sandy loam topsoil over sandy clay loam and clay subsoil. A four bedroom house septic system generally requires about 8,000 square feet of usable soil for a complete septic system on this soil type. Both areas A and B are adequate for a complete septic system, so there are at least two good soil areas for septic systems on this property and may be more. You may use this soil map as a planning tool to subdivide the property in accordance with planning and zoning regulations or include it with an application for septic permits with the County Health Department.

Soil Horizons, LLC

PO Box 1063
Youngsville, North Carolina 27596

DATE January, 2026

TO Client, Brandon Gates

FROM John R. Davis, Jr. LSS, REHS

RE Summary/Explanation of the Preliminary Soil Study
Pleasant Church Road Parcels 0583 01040

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 attached soil map indicates that the soil areas shown in "Orange" are **Suitable** or **Usable** for shallow gravel or "Accepted" gravelless septic trenches. The soil is sandy loam topsoil over sandy clay loam and clay subsoil. A four bedroom house septic system generally requires about 8,000 square feet of usable soil for a complete septic system on this soil type. Both areas A and B are adequate for a complete septic system, so there are at least two good soil areas for septic systems on this property and may be more. You may use this soil map as a planning tool to subdivide the property in accordance with planning and zoning regulations or include it with an application for septic permits with the County Health Department.

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.