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Project # 25-004

2/12/2025

Premier Land Hub, LLC

Attn: Margaret Ahluwalia

margie@premierlandhub.com

RE: Preliminary Lot Evaluation in Nash County located off of Red Road (PIN:
380300637114U)

Dear Premier Land Hub, LLC:

The following Preliminary Lot Evaluation technical report is submitted to assist in the development of the tract of land located off of Red Road (PIN: 380300637114U) Nash County, North Carolina.

Triangle Soil Consulting, PLLC conducted the preliminary lot evaluations on February 9th, 2025, to evaluate the soil/site conditions and determine if any potential suitable soil areas for subsurface on-site wastewater systems that would support a residential dwelling are present on two tracts of land. The properties traversed and soil borings were conducted with a hand auger in suitable topographic areas. The topography and vegetation communities were considered to postulate any possible consistent soil patterns. The soil was evaluated for the following morphological characteristics: soil texture, soil structure, soil depth, depth and thickness of any restrictive horizon(s), soil wetness conditions, soil mineralogy, topography, and landscape position. With these factors considered the areas evaluated were judged based on the "North Carolina Laws and Rules for Wastewater Treatment and Dispersal Systems (15A NCAC 18E)".

The above referenced parcel is located in the Piedmont physiographic region of North Carolina and located in the Eastern Slate Belt geologic region of Nash County. The soils that have formed on the parcel evaluated by Triangle Soil Consulting that are potentially suitable for subsurface on-site wastewater systems are similar to the Goldsboro soil series. The attached soils map indicates the areas of potentially suitable soils. The Goldsboro soil series are generally suitable for shallow placed subsurface wastewater systems and is generally shallow to a soil wetness condition.

Estimated design sewage flow from a house is 120 gallons per bedroom per day. The available space needed is a function of trench length, grade, and topographic features. It would be our suggestion to allocate at least 3,000 to 4,000 square feet of usable soil area per bedroom for the design and layout of residential septic system areas. This square footage will also allow and include sufficient area for a repair field of equal size for use in the future. 3,000 square feet per bedroom is usually sufficient for a level site. 4,000 square feet per bedroom is typically needed for a sloping site, terraced sites, sites with large trees and root mass, and sites with large surface boulders to work around. So, for example a three-bedroom dwelling, 9,000 to 12,000 square feet of usable soil are needed for conventional gravel trenches. These soil area estimates are based upon soil application rates for a clay textured subsoil with a site LTAR of 0.25-0.30 gallons per day/square foot for conventional type systems. The ultimate application rate will be assigned by the local county health department based on an individual soil & site evaluation of the lot. If the water supply is proposed to be well water, well setbacks must meet 15A NCAC 02C .0107 requirements, 15A NCAC 18E .0600 setback requirements to septic systems and any local well regulations. If the water supply is proposed to be public/municipal water, setbacks to waterlines must meet 15A NCAC 18E .0600 setback requirements to septic systems.

Typical Septic Systems in the Piedmont of 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), horizontal panel block systems (requires at least 26" of usable soil and allows 50% drain field reduction), low pressure pipe (24"), low profile chamber (20"), and anaerobic 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 needed 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 can be substituted in lieu of conventional gravel trenches and receive the 25% drain field reduction.

Septic System Location & Setbacks:

The location of a septic system shall comply with the setback requirements of 15A NCAC 18E .0601 LOCATION OF WASTEWATER SYSTEMS.

Findings:

The tract of land is wooded and undeveloped. Multiple, potential surface water features (streams) were identified during the site evaluation and are shown on the attached soil map. There is a required, 50' minimum setback to surface water features from a septic system. Surrounding properties are utilizing private drinking water wells as their primary water source. There is a required, 50' minimum setback to private drinking water wells. The location of adjacent wells will need to be identified, prior to permitting a septic system on this property. Soil borings were advanced in multiple locations across the project site, but the scope of the evaluation was limited to the areas delineated on the attached Preliminary Lot Evaluation map. Since the evaluation was limited to these areas, it is possible that additional areas of potentially suitable soil may exist on the property and were not evaluated.

Once the soil borings are completed, areas are delineated based on the potentially usable soil depths. Soils with depths of 30" or more are potentially 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 36" of usable soil and allows 50% drain field reduction). These borings are flagged with red survey ribbon on the property. Soils with depths between 24-29" are potentially usable for shallow/ultra shallow conventional and/or LPP systems and are flagged in the field with red + red/white striped survey ribbon. These systems would require a soil cap when used with shallow/ultra shallow conventional type trenches. Soils with depths between 18-23" are potentially usable for anaerobic drip and are flagged in the field with red/white striped survey ribbon. A subset of soils with depths between 20-23" are potentially usable for low-profile chamber type systems and are also flagged in the field with red/white striped survey ribbon. Soils with depths between 13-17" are potentially usable for aerobic drip (with advanced pretreatment) and are flagged in the field with red/blue survey ribbon.

Please note, soil areas identified that are potentially suitable for anaerobic or aerobic drip systems will require a special site evaluation, which includes hydraulic conductivity testing to determine the soil application rate and system sizing requirements. These systems may also be required to be designed by a licensed professional engineer.

The attached soils map indicates the areas of soils which are potentially suitable for subsurface wastewater systems. Table 1 below, provides a list of the soil areas delineated with the approximate size of the soil areas expressed in square feet.

The “**green, hatched soil units**” on the attached map indicate the areas of soils that have 24 or more inches of suitable soil material. These areas have potential for shallow/ultra-shallow conventional or LPP septic systems. There may be inclusions of soils (18-23 inches) that may support low-profile chamber or anaerobic drip septic systems in the areas mapped as shallow/ultra-shallow conventional or LPP.

The “**yellow, hatched soil units**” on the attached map indicate the areas of soils that have 20-23 inches of potentially suitable soil material. These areas have potential for low profile chamber septic systems. There may be inclusions of soils (<20 inches) that may support anaerobic or aerobic drip septic systems in the areas mapped as low profile chamber.

The “**blue, hatched soil units**” on the attached map indicate the areas of soils that have 18-23 inches of provisionally suitable soil material. These areas have potential for anaerobic drip septic systems. There may be inclusions of soils that may support low-profile chamber (20-23 inches) or aerobic drip septic systems (13-17 inches) in the areas mapped as anaerobic drip. Soils in this category will require a special site evaluation, which includes hydraulic conductivity testing to determine the soil application rate and system sizing requirements.

The “**purple, hatched soil units**” on the attached map indicate the areas of soils that have 13-17 inches or more of potentially suitable soil material. These areas have potential for Aerobic Drip Systems with TS-II Advanced Pretreatment. There may be inclusions of soils (18-23 inches) that may support Anaerobic Drip Systems without advanced pretreatment. Soils in this category will require a special site evaluation, which includes hydraulic conductivity testing to determine the soil application rate and system sizing requirements.

TABLE 1		
Area ID	Possible System Type(s)	Size of Area (square feet)
B1	Shallow/Ultra Shallow Conventional & LPP	~2,341 ft ²
C1	Low Profile Chamber	~21,918 ft ²
D1	Anaerobic Drip system without Advanced Pretreatment	~2,907 ft ²
D2	Anaerobic Drip system without Advanced Pretreatment	~57,237 ft ²
E1	Aerobic Drip System with Advanced Pretreatment	~48,566 ft ²

Please note these potential areas may need additional refining with more soil work, field staking (layout) of the initial and repair systems in the field, and design of the septic system(s) to determine system type combinations and final number of bedrooms. Triangle Soil Consulting cannot guarantee that every square foot of area shown as potentially suitable for septic systems will be permitted by the local health department due to the variability of naturally occurring soils.

Conclusions:

This tract of land has the potential for further development using a septic system, but would require additional evaluation to determine the feasibility of subdividing the parcel for development. It would be our recommendation to maximize the use of the delineated low profile chamber system area "C1". Depending on the final house location(s)/footprint(s), number of bedrooms desired per residence, and the final septic system layouts, this area is potentially large enough to support a four-bedroom, residential dwelling.

Soil areas identified that are potentially suitable for anaerobic or aerobic drip systems will require a special site evaluation, which includes hydraulic conductivity testing to determine the soil application rate and system sizing requirements, prior to determining final suitability. Keep in mind that a residential dwelling can be built and the sewage can be pumped to the areas identified using a septic effluent pump if gravity flow cannot be achieved. Also, a pump is needed if more than 750' of drainfield is required. No driveways, grading or land disturbing activities should be allowed in the area where septic fields are proposed, as it will affect the site's suitability. The local planning and zoning authority prior to approval shall review and approve any proposed development site plan. The attached soil map is based on soil boring locations collected using an EOS Arrow 100 GPS, ArcGIS and/or AutoCAD. The coordinate system used was NC State Plane NAD 83 3200. The GPS locations can be accurate to submeter but should not be considered as accurate as survey located points. The soil map is scaled to print on 8.5 x 11 Letter type paper in landscape format.

In North Carolina, three primary options for septic system permitting exist. In the "traditional" permitting option, 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 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. In the traditional option, the local county health department can evaluate and permit any site.

NC Session Law 2023-90 now allows a "hybrid" version of the traditional permitting option. 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. If the soil

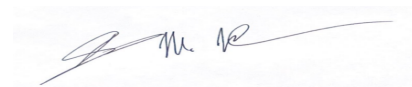
scientist is also an Authorized Onsite Wastewater Evaluator (AOWE), then the soil scientist can prepare the design elements for a Construction Authorization. **This report does not meet the requirements for permitting under NC Session Law 2023-90, commonly referred to an “A2” permit.**

The “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. **This report does not meet the requirements for private permitting under the Engineer Option Permit or Authorized Onsite Wastewater Evaluator permitting options.**

A preliminary lot evaluation is done as part of the due diligence process where the level of detail for an Improvement Permit is not desired. A preliminary is often done to determine if there are usable soils on property before purchasing. This preliminary evaluation was conducted using accepted soil science and environmental health practices. This does not guarantee that the local health department 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 before making a financial commitment on a property. The soil map and report are provided to you as part of this evaluation. Please feel free to contact me if you have any further questions.

Sincerely,

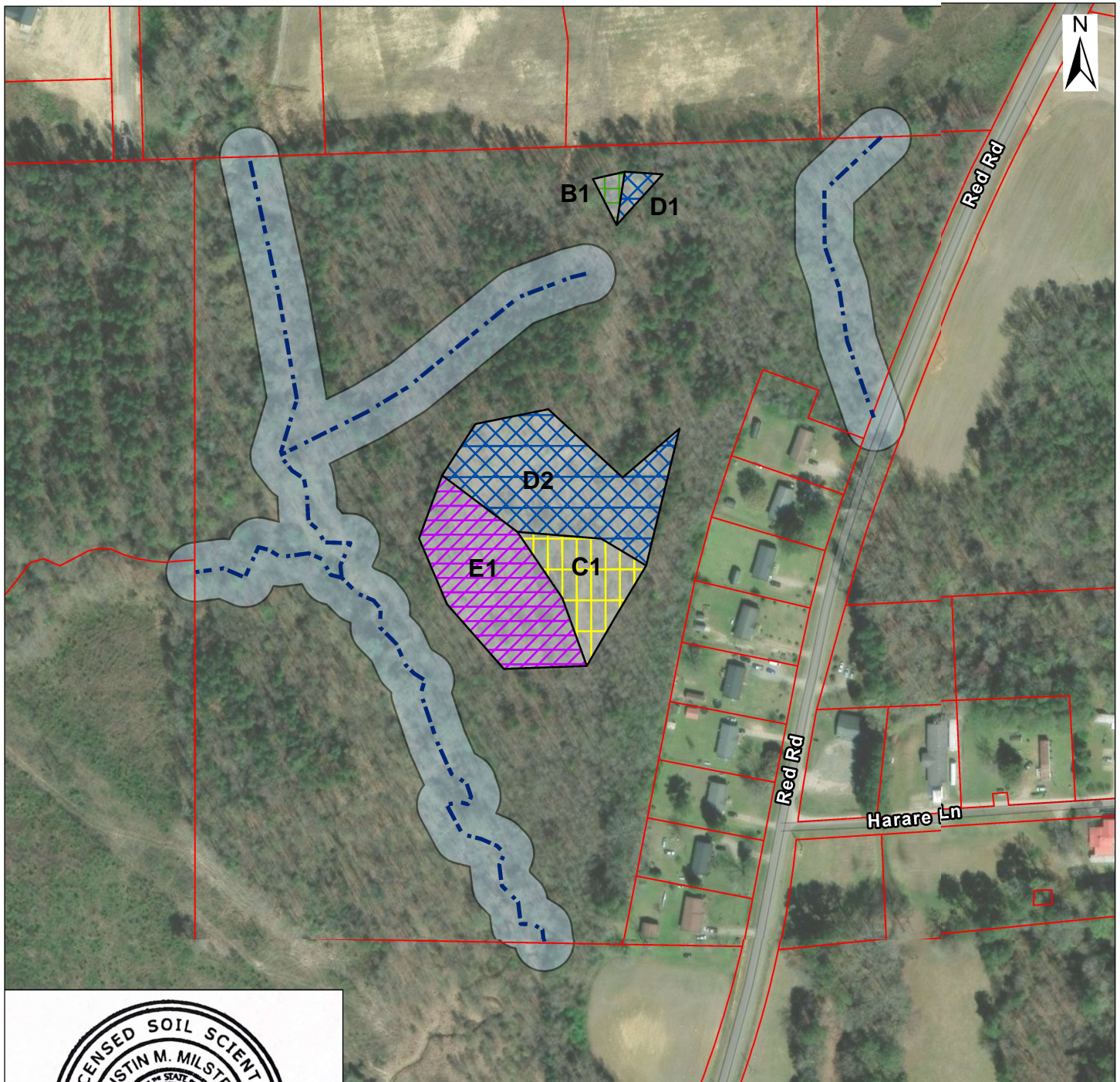
Triangle Soil Consulting, PLLC



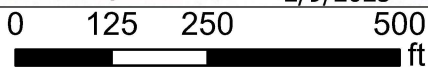
Justin M. Milstein, LSS, REHS
Owner & Soil Scientist



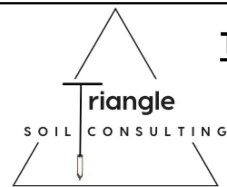
Encl.: Preliminary Lot Evaluation Map



2/9/2025



- Aerobic Drip
- Anaerobic Drip
- Low Profile Chamber
- Shallow/Ultra Shallow Conventional & LPP
- Stream (Approximate)
- 50' Surface Water Setback - RR
- Parcels



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Site Information		Lot: N/A	Draw Date: 2/9/2025
Project Name: Red Road		Project #: 25-004	
County: Nash	State: NC	Scale: 1" = 250'	Revision:
Job Description:		Drawn By: JMM	
Preliminary Lot Evaluation			