

Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110

Wake Forest, NC 27587

919-569-6704

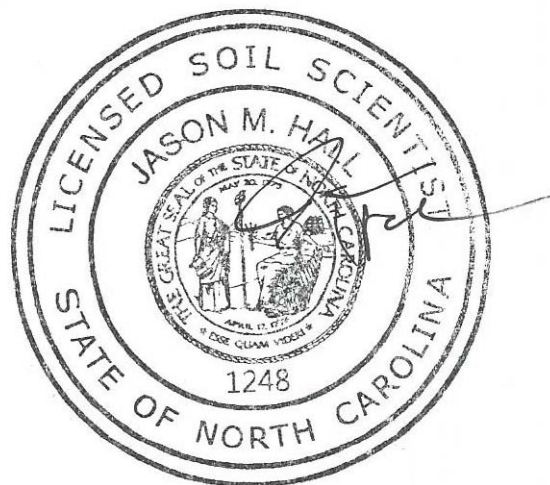
4301

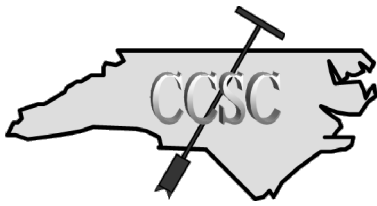
Checklist of required items for Subdivision Review with Respect to On-Site Sewage Disposal Systems.

- A** Lots 3-4 for Clyde Bailey adjacent to Hopkins Chapel Road contain at least 40,000 ft² of provisionally suitable soils and meet the minimum lot requirements set forth in Section V of the Sewage Regulations in Wake County.
- 1) Soil Map
 - a) Soil suitability units marked on attached detailed soils map.
 - b) Square footage of each soil unit is outlined on the attached soils map.
 - c) Delineation of unsuitable topography that would prohibit the use of an onsite subsurface wastewater system is included with the soil unit "UN" on the attached detailed soils map.
 - d) Topographic map with 2' contours included on attached soils map.
 - 2) Report
 - a) When the evaluation was conducted no road construction or installation of utilities had started. The evaluation was conducted under dry soil conditions.
 - b) Hand auger borings were used to evaluate the site.
 - c) The upland soils formed from felsic crystalline parent material such as gneiss or schist
 - d) Soil descriptions are attached to this document.
 - e) The proposed use for this subdivision will be 4-bedroom homes served by individual wells.
 - f) The Section V and VI Certifications are attached to the surveyor's mylars.
 - g) No off-site wastewater disposal easements are planned in this subdivision.

B N/A Soil Report

- a) Soil report for site is attached, which includes the proposed long term acceptance rates for the subdivision.
- b) The proposed systems in the subdivision will mostly be conventional depth (gravity, pump to D-Box or pressure manifold). There may be small inclusions of soils that will support LPP (low pressure pipe) systems.





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August 31, 2022

Project # 4301

Clyde Bailey
6725 Pulley Town Road
Wake Forest, NC 27587

RE: Preliminary soil/site evaluation on multiple proposed lots east of Hopkins Chapel road in eastern Wake County, NC.

Dear Mr. Bailey:

Central Carolina Soil Consulting, PLLC conducted a preliminary soil evaluation on the referenced parcel to determine the areas of soils which are provisionally suitable for subsurface wastewater disposal systems (conventional & LPP only). The soil/site evaluation was performed using hand auger borings during dry soil conditions based on the criteria found in the State Subsurface Rules, 15ANCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems" along with "Regulations Governing Sewage Treatment and Disposal Systems in Wake County, Amended October 27, 2011". From this evaluation, CCSC sketch the soils boundary between the provisionally suitable soils and unsuitable through ground truthing and gps field location of soil borings to increase mapping accuracy.

The above referenced parcel is located the piedmont region of eastern Wake County south and west of Twin Rock Road. This area lies in the felsic crystalline geologic unit where the soils have formed from acid crystalline parent material such as gneiss or schist. The soils that have formed on this parcel have characteristics similar to the Appling, Wedowee, Vance and Chewacla Soil Series. The attached soils map indicates the areas of suitable vs. unsuitable soils. The Appling and Wedowee soil series are generally provisionally suitable for subsurface wastewater systems. That is, the morphology of the soils contain suitable characteristics that would support subsurface septic systems such as clay textured subsoils which are not considered expansive and have blocky structure with no indicators of restrictive characteristics within 24 inches of the soil surface. The Vance soil series contains areas of expansive clays and/or a perched water table within 24 inches of the soil surface and is unsuitable for

conventional or LPP septic systems. Additional unsuitable soil areas are due to complex topographic features such as gullies.

The attached soils map indicates the areas of soils which are suitable for subsurface wastewater systems. The "hatched soil units" on the attached map indicates the areas of soils that have 30 inches or more of suitable soil material. These areas have potential for conventional and modified conventional septic systems. There may be inclusions of soils 24-29 inches that would support LPP or ultra-shallow conventional septic systems in the areas mapped as conventional. The "cross hatched" soil units indicates areas of soils with 24-29 inches of provisionally suitable soils suitable for Low Pressure Pipe septic systems. Unit "UN" on the attached map indicates areas of soils with restrictive horizons within 24 inches of the soil surface or areas of unsuitable topography. Please note that the area of suitable soils was delineated by soil borings using hand auger in various locations and flagging out the unsuitable borings along with the unsuitable topography on the property. Central Carolina 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.

Future Subdivision Considerations

Several factors should be considered before a final subdivision plan is created for this property. One consideration is that each proposed lot shall contain an adequate amount of suitable soils, which can support a primary septic system along with a repair septic system. The suitable soil areas cannot be affected by future homes, driveways, patios, excavation or filling activities and if an on-site well is used then a 100' setback is required around the well head. An exact square footage of suitable soils required per lot to obtain a permit cannot be given due to soil variability and topographic characteristics on each lot. The amount of suitable soils required to support a 4-bedroom residence will range between 11,000 ft²-13,000 ft² (could be more or less) per lot. These soil area estimates are based upon soil application rates for a clay textured subsoil with a site LTAR of 0.275-0.3 gallons per day/square foot for conventional type systems. The ultimate application rate will be assigned by the Wake County Health Department based on a detailed evaluation of each new lot.

The Wake County Planning Department requires that any proposed subdivision in the county with onsite wastewater disposal systems follow certain criteria set forth in the subdivision regulations. The regulations (Section V) mandate that any proposed lot for recordation shall have at least 30,000 ft² of suitable soils before it can be recorded. If the proposed lot is located in a watershed and will require an on-site well, then the minimum area required is raised to 40,000 ft². **This site is in the Little River Water supply water shed area.** If any proposed lot does not meet the minimum 40,000 ft² with an on-site well and suitable soils, then a septic system field layout is required demonstrating system and repair, along with the location of a house, well, drive, decks, etc. If the layout proves the lot can accommodate a system and repair on the lot with the house and other features, then it can be recorded under Section VI of the subdivision regulations. The amount of drain line required for each lot will be based upon the daily flow, soil application rate and type of system proposed on the lot. The daily flow is assigned by the number of actual bedrooms in a proposed home (120 gallons/day/bedroom). The field layouts required by the Section VI regulations do not represent a septic permit or a guarantee of a permit on such lots. The permits are ultimately issued by the local health department based on current subsurface wastewater regulations.

During the road construction process of a subdivision it is important not to impact any suitable soil areas with such activities as excavating or filling. Only the actual roadways and required drainage ditches and/or sediment basins should be constructed during this process. If the contractor requires a staging area to place fill from the construction process, then areas of unsuitable soils on the property should be utilized as long as they are not state/county buffers, jurisdictional wetlands or other areas protected by local zoning regulations. If this is not possible, then the disturbed areas should be minimized as much as possible. The same precautions should be taken when the individual lots are cleared for home sites. Only the vegetation should be removed in the areas of the proposed drain fields on lots to prevent any disturbance of the naturally occurring soil. A lot with adequate areas of suitable soils can be deemed unsuitable due to poor planning or site disturbance. Central Carolina Soil Consulting recommends that all lot clearing activities are delayed until a permit is issued by the local health department, with the exception of clearing thick vegetation to access the lot.

This report discusses the location of suitable soils for subsurface wastewater disposal systems and does not guarantee any permits or approval required by the local health department. Central Carolina Soil Consulting, PLLC is a professional consulting firm specializing in soil delineations and design for on-site wastewater disposal systems. The rules governing on-site wastewater disposal systems are complex and the

interpretation of the rules are based upon the opinions of regulators (state and county level). Due to the subjective nature of the permitting process and the variability of naturally occurring soils, CCSC cannot guarantee that areas delineated as suitable for on-site wastewater disposal systems will be permitted by the governing agencies. These permitting considerations should be taken into account before a financial commitment is made on a tract of land.

If you have any questions regarding the findings on the attached map or in this report, please feel free contact me at anytime. Thank you allowing Central Carolina Soil Consulting to perform this site evaluation for you.

Sincerely,



Jason Hall
NC Licensed Soil Scientist #1248

Encl: Soil Map

Sheet:
Property ID:
Lot #:
File #:
AppID:

Applicant:

Date Evaluated:

Property Size:

Property Recorded:

Type of Wastewater: ☒ Sewage ☐ Industrial Process ☐ Mixed

[illegible]

Description	Initial System	Repair System
Available Space (.1945)	Yes	Yes
System Type(s)	Accepted	Accepted
Site LTAR		

Other Factors (.1946):

Soil Evaluation By: Jason Hall

Others Present:

Site Classification (.1948):

Site Evaluation By:

Others Present:

COMMENTS:

Sheet:
FILE #:

<u>Landscape Position</u>	<u>Group</u>	<u>Texture</u>	<u>.1955 LTAR</u>	<u>Structure</u>
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay		PR-Prismatic
T-Terrace		Loam		
FP-Flood Plain	IV	CL-Clay Loam	0.4 - 0.1	
		SCL-Sandy Clay		
		Loam		
		SC-Sandy Clay		
		SIC-Silty Clay		
		C-Clay		

<u>Consistence</u>	<u>Consistence</u>	<u>Mineralogy</u>
<u>Moist</u>	<u>Wet</u>	SEXP-Slightly Expansive
VFR-Very Friable	NS-Non-Sticky	EXP-Expansive
FR-Friable	SS-Slightly Sticky	
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations

