

**Central Carolina Soil Consulting, PLLC**

6325-9 Falls of Neuse Rd., PMB#341
Raleigh, NC 27615-6809
919-784-9449

June 4, 2006
Job # 175

Standout Properties
Attention: Dan Sullivan
8502-201 Six Forks Road
Raleigh, NC 27615

RE: Detailed soil/site evaluation on 75-acres (Pennington Tract South) adjacent to Highway 64 in Chatham County.

Dear Mr. Sullivan:

Central Carolina Soil Consulting, PLLC conducted a detailed soil evaluation on the parcel listed above to determine the areas of soils that are suitable for subsurface wastewater disposal systems. The soil/site evaluation was performed using hand auger borings during moist soils conditions based on the criteria found in the State Subsurface Rules, 15ANCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems". From this evaluation, CCSC flagged the boundary between the suitable soils and unsuitable soils, then located them utilizing GPS technology.

The above referenced parcel is located west of Jordan Lake and east of Pittsboro. This area lies in the Carolina Slate Belt geologic unit, where soils have formed from residual parent material such as volcanic argillites. The soils that have formed on this parcel are similar to the Georgeville, Herndon, Badin, Lignum and Cid soil series. The attached soils map indicates the areas of suitable vs. unsuitable soils. The Georgeville and Herndon soil series are generally suitable for subsurface wastewater systems. That is, the morphology of the soils contain suitable characteristics that would support subsurface septic systems such as clayey textured subsoils that are not considered expansive, blocky structure and no indicators of restrictive characteristics within 24 inches of the soil surface. The Badin, Lignum and Cid soil series have a combination of expansive clays and/or a perched water table within 24 inches of the soil surface.

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 of suitable soil material. These areas have potential for conventional and modified conventional septic systems. There will be areas of soils 24-29 inches to restrictive horizons in the areas mapped as conventional that are only suitable for LPP or ultra-shallow conventional septic systems. The "cross hatched soil units" indicate areas of soils that have 24 to 29 inches of suitable soil material and have potential for LPP or ultra-shallow conventional septic systems. Due to variable soil characteristics, there may be small inclusions of unsuitable soils in the areas mapped as suitable. Unit "Fill" on the attached map indicates areas of fill material located on the

property that is unsuitable with respect to subsurface wastewater disposal systems. Unit "UN" on the attached map indicates areas of unsuitable soils that contain restrictive soil characteristics less than 24 inches.

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 5-bedroom residence will range between 18,000 ft² - 22,000 ft² (could be more or less) per lot. These soil area estimates are based upon soil application rates for a clayey textured subsoil with a range of 0.25 gallons per day/square foot and 0.3 gallons per day/square foot for conventional type systems and 0.1 to 0.13 gallons per/day/square foot for low pressure pipe septic systems. The ultimate application rate will be assigned by the Chatham County Health Department based on a detailed evaluation on each proposed lot.

This particular parcel already had a portion of the proposed roads graded or they were in the process of being graded. The attached map indicates the approximate areas of road ways that have been constructed. The areas that illustrate suitable soils where the proposed roads are shown on the attached map were not constructed at the time CCSC evaluated the property. During any future road construction in the 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 developer may decide to stockpile the upper 12-16 inches (topsoil) when constructing the roads to use this material for fill over any future lots that may require ultra-shallow conventional septic systems. 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, 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

Detail Soils Evaluation,
75-acres, Chatham County, NC
Standout Properties
Pennington Tract South

