

**Central Carolina Soil Consulting, PLLC**

6325-9 Falls of Neuse Rd., PMB#341

Raleigh, NC 27615-6809

919-784-9449

February 9, 2006

Job # 197

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

**RE: Preliminary soil/site evaluation on ~130-acres (Cooper Tract) in Chatham County, NC**

**Dear Mr. Sullivan:**

Central Carolina Soil Consulting, PLLC conducted a preliminary 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 under moist soil 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 sketched the boundary between the suitable soils and unsuitable soils onto an aerial and topographic map of the property from ground truthing and locating portion of the suitable soil borings via GPS receivers.

The above referenced parcel (Cooper Tract) is located north of Hatley Road in Chatham County. 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 24 to 30+ inches or more of suitable soil material. These areas have potential for conventional, modified conventional, LPP or ultra-shallow conventional septic systems. Unit "UN" on the attached map indicates areas of unsuitable soils that are located in unsuitable soils or topography and cannot be used for the systems

mentioned above. Unit "NE" on the attached map indicates areas of soils that were not evaluated.

### **Future Subdivision Considerations**

Several factors should be considered before a final subdivision plan is created for any 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 12,000 ft<sup>2</sup> - 18,000 ft<sup>2</sup> (could be more or less) per lot. These soil area estimates are based upon soil application rates for a clay textured subsoil with a range of 0.25 gallons per day/square foot and 0.33 gallons per day/square foot for conventional type systems 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.

Due to the limited areas of suitable soils for subsurface septic systems on these parcels you may want to consider maximizing the areas of suitable soils for septic system easements. This would allow you to maximize the total number of lots the two parcels can support for subsurface wastewater disposal. A detailed soils evaluation would need to be completed before a final plan is developed.

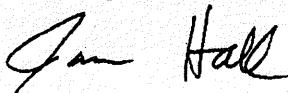
During the road construction process of a subdivision it is important not to impact any suitable soil areas with such activities as excavating or filling. Only the actual roadways and required drainage ditches and/or sediment basins should be constructed during this process. If the contractor requires 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, 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

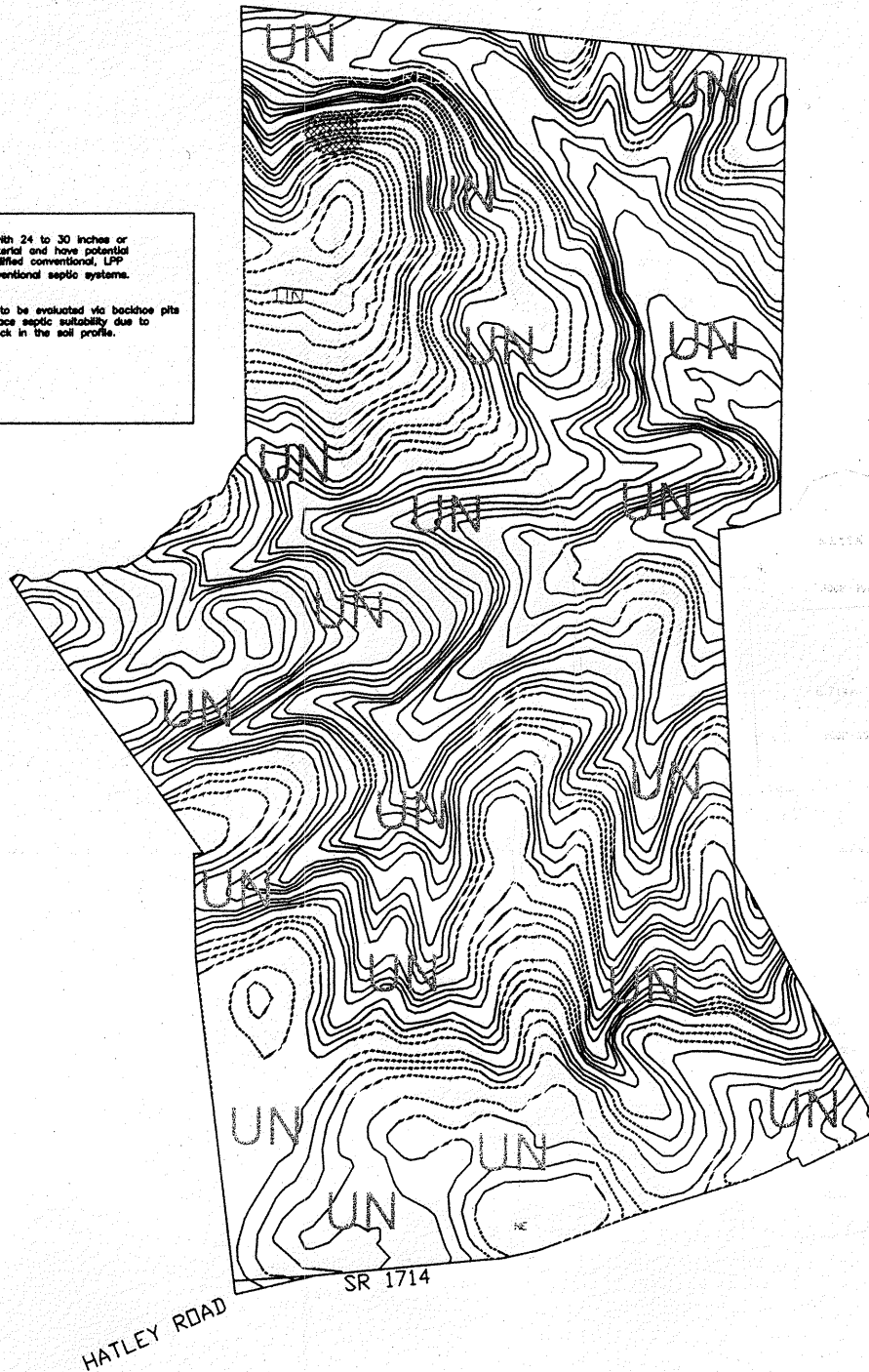


Encl: Soil Map

# Preliminary Soils Evaluation Cooper Tract ~130-acres Chatham County, NC Standout Properties

## Legend

-  Areas contain soils with 24 to 30 inches or more of useable material and have potential for conventional, modified conventional, LPP or ultra-shallow conventional septic systems.
-  Areas that will need to be evaluated via backhoe pits to determine subsurface septic suitability due to dense amounts of rock in the soil profile.
- UN Unsuitable areas.



- \*Preliminary Soils Evaluation
- \*Soil boundary was sketched onto a topographic map by ground truthing and locating a portion of suitable soil borings via GPS receivers.
- \*Not a Survey.
- \*Septic system setbacks listed below for new lots.
  - 1) 10' from property lines.
  - 2) 100' from wells for primary systems.
  - 3) 50' from wells for repair systems.
  - 4) 50' from surface waters (streams, ponds, lakes).
- \*Due to variable soils located on-site, there may be small inclusions of unsuitable soils located in the areas mapped as suitable.
- \*See accompanying report for additional information.
- \*Base map taken from Chatham County GIS, not a survey map.
- \*A detailed soils evaluation may be required before a final subdivision plan is created.

GRAPHIC SCALE  
1" = 300'



Central Carolina  
Soil Consulting  
Project # 197  
919-784-9449

# Chatham County Map



*Disclaimer:* This map is prepared for the inventory of real property found within this jurisdiction and is compiled from recorded deeds, plats, and other public records and data. Users of this map are hereby notified that the aforementioned public primary information sources should be consulted for verification of the information contained on this map. The County and the mapping companies assume no legal responsibilities for the information contained on this map.

Map Scale  
**1 inch = 2968 feet**  
Grid based on the North  
Carolina State Plane Coordinate  
System, 1983 North American  
Datum.

