

Central Carolina Soil Consulting, PLLC

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

Raleigh, NC 27615-6809

919-790-1083

March 18, 2005

Job # 29

Rick Benton
PO Box 37759
Raleigh, NC 27627

RE: Detailed soil/site evaluation on a 24-acre parcel in eastern Johnston County.

Dear Mr. Benton:

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 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 flagged the boundary between the suitable soils and unsuitable soils, then located them utilizing GPS technology.

The above referenced parcel is located in the upper coastal plains geologic region of Johnston County where soils have formed from marine sediments. The soils that have formed on this parcel are similar to the Norfolk, Goldsboro and Grantham soil series. The attached soils map indicates the areas of suitable vs. unsuitable soils. The Norfolk soil series is generally suitable for subsurface wastewater systems. That is, the morphology of the soils contain suitable characteristics that would support subsurface septic systems such as sandy clay loam textured subsoils that are not considered expansive, blocky structure and no indicators of restrictive characteristics within 24 inches of the soil surface. The Goldsboro and Grantham soil series have indicators of restrictive horizons such as a soil wetness condition less than 24 inches and are not suitable for subsurface wastewater disposal systems.

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 or modified conventional septic systems. Due to soil variability there may be small inclusions of soils that contain 24-29 inches of suitable soil material that would support LPP or ultra-shallow conventional septic 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 3-bedroom residence will range between 8,000 ft² - 10,000 ft² (could be more or less) per lot. These soil area estimates are based upon soil application rates for a sandy clay loam and clay loam textured subsoils with a range of 0.3-0.45 gallons per day/square foot for conventional type systems and 0.15 to 0.17 gallons per day/square foot for low pressure pipe septic systems. The ultimate application rate will be assigned by the Johnston County Health Department based on a detailed evaluation of each proposed lot.

During the road construction process of a subdivision it is important not to impact any suitable soil areas with such activities as excavating, filling or compaction. 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, jurisdiction wetlands or other areas protected by local zoning regulations (**Note that this parcel does contain jurisdictional wetlands and it is advised that these areas are identified before a final subdivision plan is prepared to avoid any possible filling of jurisdictional wetlands**). 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.

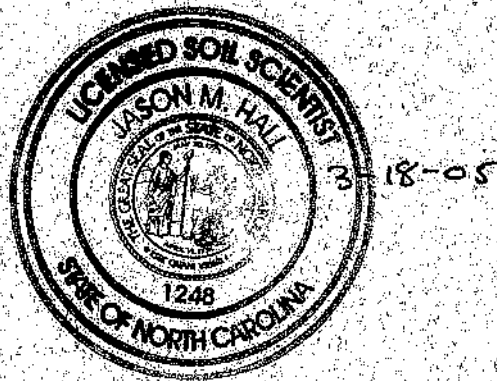
This report discusses the location of suitable soils for subsurface wastewater disposal systems and does not guarantee any permits or approval required by the local health department. Central Carolina Soil Consulting, PLLC is a professional consulting firm specializing in soil delineations and design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

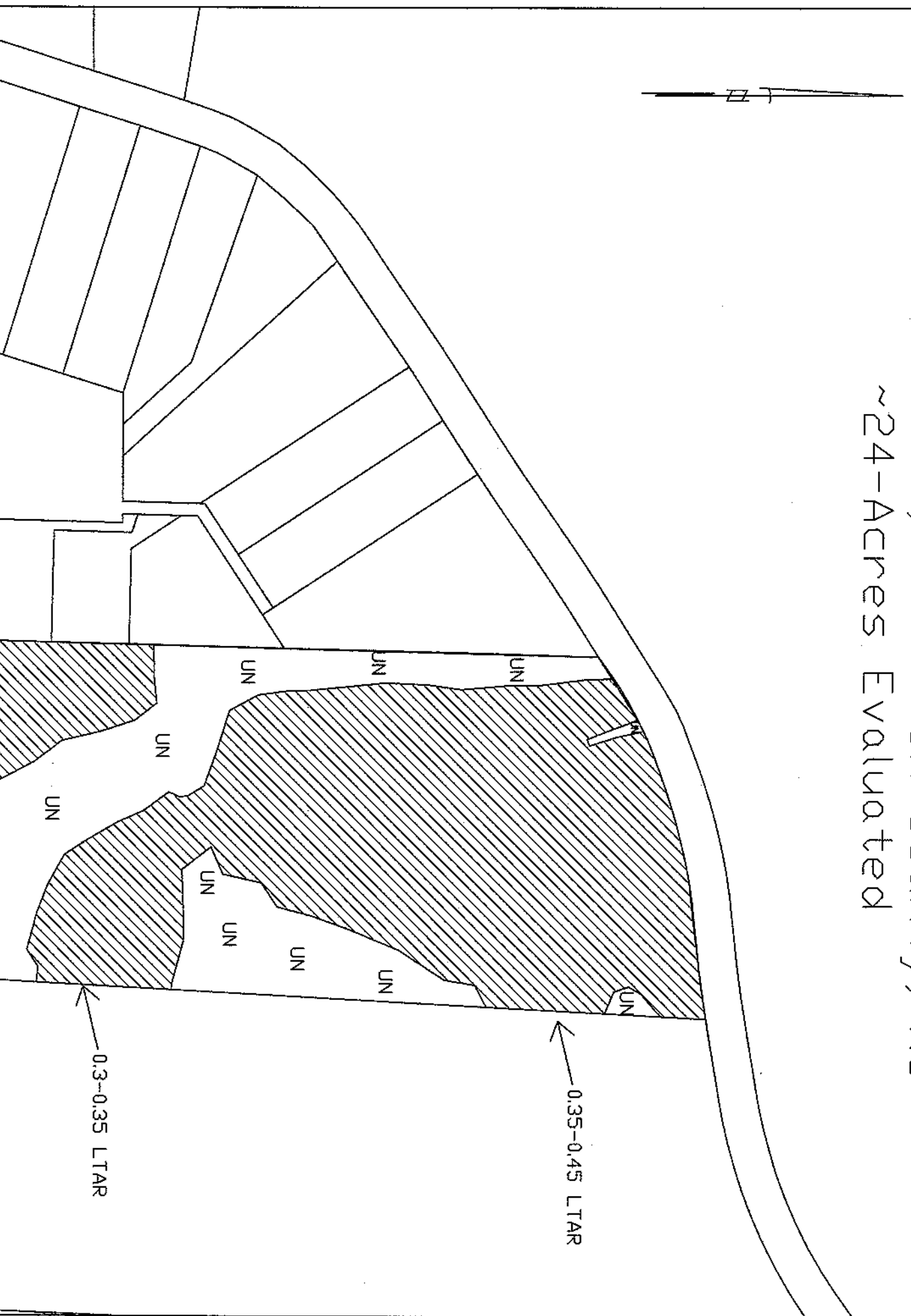
Jason Hall

Jason Hall
NC Licensed Soil Scientist #1248



Encl: Soil Map

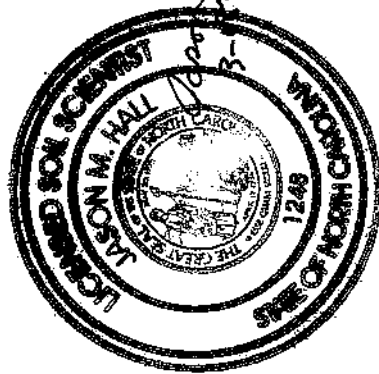
Detailed Soils Evaluation
Junior Road, Johnston County, NC
~24-Acres Evaluated



0.33-0.4 LTAR →

Areas contain soils with 30 inches or more of useable material and have potential for conventional and modified conventional septic systems. There may be small inclusions of soils 24-29 inches that will support LPP or ultra-shallow conventional septic systems.

UN Unsuitable areas.



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GRAPHIC SCALE
1" = 200'



- *Detail soils map, soil boundary flagged with blue flagging and numbered.
- *Soil flags located with CE GPS receiver.
- *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).
 - 5) 15' Setbacks from pools
- *Property boundary provided by client's planner, not a boundary survey.
- *The majority of the conventional soils on this property are suitable for a soil application rate around 0.35-0.4 gal/day/ft².
- *Any soils requiring LPP systems shall use an LTAR of 0.15-0.17 gal./day/ft².