



Central Carolina Soil Consulting, PLLC

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December 13, 2006
Job # 52

Mac Development Company
Attention: Chuck Lewis
124 Hidden Oaks Drive
Chapel Hill, NC 27517

RE: Preliminary soil/site evaluation on Phase V lots 29-35 in Cedar Grove Subdivision

Dear Mr. Lewis:

Central Carolina Soil Consulting, PLLC conducted a preliminary soil evaluation on the parcels 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. **Please note that this preliminary soils evaluation was conducted in April 2005.**

The above referenced parcel is located north of Lamont Norwood Road and southeast of Jones Ferry Road in northern Chatham County. This area lies in the mixed mafic and felsic crystalline geologic unit, where soils have formed from residual parent material such as gneiss, schist and diorites. The soils that have formed on this parcel are similar to the Pacolet, Appling, Wedowee, Helena, Louisburg and Chewacla soil series. The attached soils map indicates the areas of suitable vs. unsuitable soils. The Appling, Wedowee and Pacolet 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 clay to sandy clay textured subsoils that are not considered expansive, blocky structure and no indicators of restrictive characteristics within 24 inches of the soil surface. The remaining soil series are considered unsuitable in regards to subsurface wastewater disposal systems. The Helena soils contain expansive clays and indicators of a perched water table, while the areas of Louisburg soils are shallow to bedrock. The Chewacla soils are located in drainage ways and floodplains.

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. The "cross hatched soil units" indicate an area of soils with 18 to 30

inches of suitable soil material that have potential for a LPP Fill septic system or a subsurface drip septic system. Central Carolina Soil Consulting did not map out any other areas of potential LPP Fill or subsurface drip areas on the property. There may be other areas on the proposed lots not identified on this map that could support such 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

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 ft² - 16,000 ft² (could be more or less) per lot. These soil area estimates are based upon soil application rates for a clay to a sandy clay textured subsoil with a range of 0.27 gallons per day/square foot and 0.32 gallons per day/square foot for conventional type systems 0.1 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.

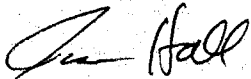
Due to the limited areas of suitable soils for subsurface septic systems on these parcels you may want to consider maximizing the areas of suitable soils for septic system easements. This would allow you to maximize the total number of lots the two parcels can support for subsurface wastewater disposal. A detailed soils evaluation would need to be completed before a final plan is developed. A detailed soils evaluation was completed on the large suitable soils areas that is proposed for lots 29, 30, 32A, 34A and 35A. Septic system layouts may be required by the local health department to determine if these areas are large enough to support primary and repair drain fields

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