



Central Carolina Soil Consulting, PLLC

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Wake Forest, NC 27587

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May 12, 2021

Job # 3768

Susan Sikes
409 Flat Rock Church Road
Louisburg, NC 27549

RE: Detailed soil/site evaluation on approximately 33-acres south of Flat Rock Church Road in Franklin County, NC.

Dear Mrs. Sikes:

Central Carolina Soil Consulting, PLLC conducted a Detailed soil evaluation on the parcel listed above to determine the areas of provisionally suitable soils that are suitable for subsurface wastewater disposal systems (conventional, LPP & Low Profile Chamber). The soil/site evaluation was performed with 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 provisionally suitable soils and unsuitable soils in the field through and located them with Trimble 6000 GEO XT GPS units.

The above referenced parcel is located south of south of Flat Rock Church Road & west of Highway 401 in southern Franklin County. This area lies in the felsic crystalline geologic unit, where soils have formed from residual parent material such as gneiss or schist. The soils that have formed on this parcel are similar to the Appling, Wedowee, Vance, Louisburg and Worsham soil series. The attached soils map indicates the areas of provisionally 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 contains provisionally suitable characteristics that would support subsurface septic systems such as clay textured subsoils that are not considered expansive, blocky structure and no indicators of restrictive characteristics within 20 inches of the soil surface. The Vance soils have expansive clays and/or field indicators of a perched water table within 20 inches which are unsuitable. The Louisburg soils have areas of rock less than 24 inches and are

unsuitable for the systems mentioned above. The Worsham soil series are poorly drained soils which have formed in the floodplain/streams of the property. These soil types are unsuitable for subsurface septic systems. Additional unsuitable soils are due to complex topography, well setbacks and powerline setbacks.

The attached soils map indicates the areas of soils which are provisionally 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 provisionally suitable soil material. These areas have potential for conventional and modified conventional septic systems. There may be inclusions of soils that can only support LPP or ultra-shallow conventional septic systems in the areas mapped as conventional. The "cross hatched" soil units on the attached map indicates areas of soils with 24-29 inches of provisionally suitable soil material. These areas have potential for LPP or ultra-shallow conventional septic systems. The "Honey Comb" soils units indicate soils with 20 inches or more of provisionally useable material that have potential for Low Profile Chamber (Innovative) 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. 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 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 50-100' setback is required around the well head for all system and repair components. 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 flow rate is based on the number of bedrooms in the proposed residence (120 gal/day per bedroom). The amount of suitable soils required to support a 4-bedroom residence will range between 12,000 ft² - 14,000 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 range of 0.25 gallons per day/square foot and 0.3 gallons per day/square foot for conventional type systems and 0.125 gallons per day/square foot for low pressure pipe septic systems. The ultimate application rate will be assigned by the Franklin County Health Department based on a detailed evaluation of each lot depending on which

jurisdiction a future lot is located. Septic system field layouts may be required before the local Health Department can issue any permits on future lots.

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. Central Carolina Soil Consulting does not guarantee that the areas shown as potentially suitable for septic systems will be granted septic permits by the local health department. 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

