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Brett:

This report concerns the soils suitability for septic system drain fields on the minor subdivision of the Murphrey Estate located along Oakley Road about one-half mile south of the intersection with Shepherd School Road in eastern Wake County. The new lot of this subdivision is less than 10 acres and requires certification. The existing house lot requires certification for the repair drain field system. The property identification number is: 2717-20-3245.

The attached copy of the subdivision plat shows the location of a provisionally suitable soils or areas that can be re-classified to suitable that were identified from field investigations. The topographic contours (2 ft. interval-LIDAR) were obtained from the NC DOT GIS web site. The soils areas was identified from hand auger borings made at selected locations on the landscape and from field observations of soil related landforms and vegetation. The locations of the existing drain field as well as certain related cultural features were estimated using a Trimble mapping grade GPS receiver. At the time of the investigations the soils were in a moist condition, which was favorable for the estimation of soil texture and consistency.

The new tract (8.184 ac.) ac. tract (Tract 3) will be served by individual septic system for sewage disposal and by an individual well for water supply. This tract will also be served from existing utilities that are located on or adjacent to the lot. Lot 2 is zoned R -30.

SOIL SUITABILITY

The suitability classification of the soil areas based on State Sewage Disposal regulations (15A NCAC 18E .0100-.1716) and local county regulations I are as follows:

AREAS 2 : These soils will classify suitable for conventional or modified conventional septic system drain fields. These soils have sandy loam surface layers overlying yellowish brown sandy clay to sandy clay loam subsoils that exhibit soil structure and are free of seasonal wetness mottling within the upper 24 to more than 36 inches of the soil profile. The main concern for use is the depth to structureless saprolite and the clay content of the subsoils.. These soils have potential for conventional septic system drain fields. Modifications for conventional septic systems may be required as prescribed under the State Regulations or in some isolated cases by using alternative septic systems as permitted by Wake County Environmental Services. . The modifications may involve the use of shallow fill (at grade)

SOIL MAPPING • SITE INVESTIGATION • LAND RESOURCE DATA EVALUATION

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installations, the use of saprolite systems or the shallow placement of drain field trenches. The sewage loading rates (LTAR) are estimated to range from 0.25 to 0.40 gal./sq. ft. of trench bottom for conventional or modified conventional drain fields. For alternative systems the sewage loading rates (LTAR) are estimated to range from 0.10 to 0.12 gal./sq. ft. of drain field area.

SUMMARY

Lot 3 in this subdivision contains in-excess of 40,000 sq. ft. of soils that will classify suitable or can be re-classified to suitable for conventional or alternative septic system drain fields. This lot meets the minimum soil area requirements under Wake County On-site Sewage Disposal regulations for lots to approved under section V. Tract 2 has sufficient suitable soils in area 2 and adjacent areas to accommodate septic drain fields for the require repair system for this lot.

Please call me if you have any questions regarding these investigations or the development of lot 1.

Sincerely

Daniel J. Bliley
Licensed Soil Scientist

AREAS IN SOIL UNITS

SHIRLEY CAMPBELL MINOR SUBDIVISION

Tract No.	Soil Unit	Area
2	2	+10,000 sq. ft..
3	2	+ 40,000 sq. ft.

SOILS AREAS 2

<u>Horizon</u>	<u>Depth(in)</u>	<u>Characteristics</u>
Ap	0 - 7	grayish brown (10YR 5/2) sandy loam; weak granular type structure; very friable; slightly sticky, non-plastic; many fine roots; clear boundary.
E	7 - 10	light yellowish brown (10YR 6/4) sandy loam; weak granular type structure to massive; very friable; slightly sticky; non-plastic; common fine roots; clear boundary.
Bt1	10 - 15	yellowish brown (10YR 5/8) sandy clay loam to sandy clay weak blocky type structure; friable to slightly firm ; slightly sticky; slightly plastic to ; few fine roots; gradual boundary.
Bt2	15 - 28	yellowish brown (5YR 5/6) sandy clay loam to clay loam few strong brown (7.5YR 5/6) and light yellowish brown (10YR6/4) mottles; weak blocky type structure; friable; slightly sticky, slightly plastic; diffuse boundary.
BC	28 - 36	mottled yellowish brown (10YR 5/6), light yellowish brown (2.5Y 6/4), yellowish red (5YR 5/8) and pale brown (10YR 7/3) clay loam to loam: weak coarse blocky type structure grading to massive; friable to slightly firm; sticky, plastic to slightly plastic: diffuse boundary.
C	36 - 60+	light yellowish brown (10YR 6/4), pale brown (10YR 6/3) and reddish yellow (10YR 6/6) sandy sandyloam to loam saprolite: structreless, friable, slightly sticky;

SOIL AREAS 2 (cont.)

Properties Related to Sewage Disposal Suitability

	Classification
1. Parent material - Weathered granite & Old Sediments	PS
2. Landform & Slopes - Gently sloping to sloping Flat to convex side slope	S
3. Soil Mineralogy - Slightly expansive	S
4. Soil Wetness - Seasonally perched water 24 to 40 inches +	S
5. Soil depth - 24 to 36+ inches	S
6. Restrictive Horizons - structureless sediments or saprolite at +36 inches	S
7. Texture - Sandy Clay to Clay Loam	S

