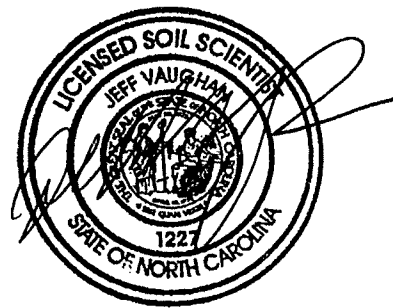




Soil Suitability for Domestic Sewage Treatment and Disposal Systems

1716 and 1700 Brassfield Rd.
Raleigh, NC 27614

Wake County PIN: 1709816628 and 1709718756

Prepared For:	Nelle Strozier Trust, Stuart Shantz
Prepared By:	Jeff Vaughan, Ph.D., L.S.S. Senior Agronomist/Soil Scientist Brent Purdum, Assistant Soil Scientist
Report Date:	February 24, 2026



Agri-Waste Technology, Inc.
1225 Crescent Green, Suite 250, Cary NC 27518
agriwaste.com | 919.859.0669

Soil Suitability for Domestic Sewage Treatment and Disposal Systems

1716 and 1700 Brassfield Rd. Raleigh, NC 27614 (Wake County)

PREPARED FOR: Nelle Strozier Trust, Stuart Schantz

PREPARED BY: Jeff Vaughan
Brent Purdum

DATE: February 24, 2026

Soil suitability for domestic sewage treatment and disposal systems was evaluated on February 20, 2026, for properties located at 1716 and 1700 Brassfield Rd. located near Raleigh, NC. Brent Purdum and Ash Doyen of Agri-Waste Technology, Inc. (AWT) conducted the soil evaluation. A detailed soil evaluation of the land area will follow. A property reference map is in Attachment 1. The property map detailing soil suitability for septic systems and soil types can be found in Attachment 2.

Approximately 15.79 acres were evaluated. The property is mostly a wooded area with an existing home, well, and septic system. There is a powerline easement, a pond, and moderate slopes on the property (Attachment 2).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems

The aerial map in Attachment 2 details the approximate property boundaries, soil boring locations, soil types, and soil areas for septic systems. Numerous soil borings were advanced on the property and the soil evaluated (Attachment 3). A portion of the property contained existing uses, complex topography, a powerline easement, and a compacted path, which is unsuitable for septic systems. However, this evaluation was merely a preliminary review to determine what potential this land might have for domestic sewage treatment and disposal systems. Therefore, specific types of septic systems, exact locations of future drainfields and repair areas, plus buffers from property lines (current and potential future lot lines), building foundations, wells, etc. are not fully considered. These things will need to be more fully considered as the plans develop for the potential future of this site. It is likely that additional soil evaluations will be required once lot layouts are considered and developed for this property so that septic system types and the location of a septic drainfield can be more fully and appropriately considered.

The purple area (see map in Attachment 2) evaluated on the property exhibited soil characteristics and soil depths (30" or greater) that are suitable for conventional trench septic systems. The area is approximately 231,331 ft².

The yellow area (see map in Attachment 2) evaluated on the property exhibited soil characteristics and soil depths (24" or greater) that are suitable for shallow conventional trench septic systems. The area is approximately 50,618 ft².

The blue area (see map in Attachment 2) evaluated on the property exhibited soil characteristics and soil depths (28" or greater) that are suitable for shallow conventional and conventional trench septic systems. The area is approximately 73,061 ft².

Typical profile descriptions of the suitable soil for the properties are in Attachment 3. One distinct soil profile was observed in the soil borings on the properties with conventional soil depths.

The mapped soil types on the properties are predominantly Cecil sandy loam (labeled as CeB), Cecil-Urban land complex (labeled as CfC), and Pacolet sandy loam (labeled as PaD). The Wake County Soil Survey indicates that moderate limitations exist for septic systems installed in these soil types (Attachment 4).

The land area required for a conventional septic system is calculated based on the size of the proposed home and the Long-Term Acceptance Rate (LTAR) of the soil. The LTAR range for the suitable soils on this property is 0.1 – 0.4 GPD/ft² for shallow conventional and conventional septic systems based on the most restrictive soil texture in the subsoil. The LTAR suggested by AWT is 0.275 GPD/ft², but the final LTAR for specific septic system types and septic drainfield locations will be set by the designated permitting authority. The detailed computations are in Attachment 5.

Conclusions

Based on the results of this evaluation, the installation of shallow conventional and conventional septic systems seems very probable on the properties in the areas designated on the map in Attachment 2.

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

**ATTACHMENT 1: Property Reference Map and
Existing Permit Documentation**



Environmental Services - Water Quality
Onsite Wastewater Scan Data Entry Form

PERMIT #: **B 0 0 9 9 9 7**

PIN #: **1 7 0 9 8 1 6 6 2 8**

OP DATE: **0 7 / 2 9 / 1 9 7 7**

SYSTEM USE:

- ☒ House
☐ Mobile Home
☐ Business
☐ Other

SEWAGE TYPE:

- ☒ Domestic
☐ Industrial

PUMP/SIPHON?:

- ☐ Yes
☒ No

PRESSURE MANIFOLD:

- ☐ Yes
☒ No

SYSTEM TYPE:

- ☐ I
☒ II
☐ III
☐ IV
☐ V
☐ VI
☐ Other

SUB TYPE:

- ☒ A
☐ B
☐ C
☐ D
☐ E
☐ F
☐ G

NBR BEDROOMS:

- ☐ 1
☐ 2
☐ 3
☐ 4
☒ 5
☐ 6
☐ Other

MAINT. SCHEDULE:

- ☐ Yes
☒ No

CERT. OPERATOR

- ☐ Yes
☒ No

GT	ST	PT	SIZE
☐	☐		750
☐	☐	☐	900
☐	☐	☐	1,000
☐	☒	☐	1,200
☐	☐	☐	1,500
☐	☐	☐	1,800
☐	☐	☐	2,100
☐	☐	☐	2,500
☐	☐	☐	3,000
☐	☐	☐	4,000
☐	☐	☐	5,000
☐	☐	☐	8,000
☐	☐	☐	10,000
☐	☐	☐	Other
☒		☒	None/NA GT or PT

DRAINFIELD SIZE(SQ. FT.)

0 2 2 0 0

DRAIN TYPE:

- ☒ Stone
☐ EZ Flow
☐ Infiltrator
☐ Biodiffuser
☐ Cultec
☐ Drip
☐ Hancor
☐ Large Dia. Pipe
☐ Multi-Pipe
☐ Other

MAX DEPTH (IN.):

- ☐ 12 in. or less
☐ 18 in. or less
☐ 24 in. or less
☐ 26 in. or less
☐ 28 in. or less
☐ 30 in. or less
☐ 32 in. or less
☐ 36 in. or less
☒ Other

STONE DEPTH (IN.):

- ☐ 8 in. or less
☐ 12 in. or less
☒ 18 in. or less
☐ 24 in. or less
☐ Other

TRENCHES:

- ☐ Individual
☒ Bed

TRENCH WIDTH (IN.):

- ☐ 12 in. or less
☐ 18 in.
☐ 24 in.
☐ 36 in.
☒ 6 ft. or less
☐ 9 ft. or less
☐ Other

HRH

* PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS

TAX MAP NO. 20 WAKE COUNTY HEALTH DEPARTMENT
PARCEL NO. 20 SEPTIC TANK LAYOUT AND PERMIT

PERMIT NO. **B**

OWNER OR CONTRACTOR Dr. Robert Moseley DATE 3-3-77

LOCATION * Near 2006 (Intersection)

S. R. NO. 2007

SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

GARBAGE DISPOSAL UNIT YES ☒ NO ☐

HOUSE ☒ MOBILE HOME ☐ BUSINESS ☐

NO. BEDROOMS 2 LOT AREA 1800 gal.

SIZE OF TANK 1800 sq. ft.

NITRIFICATION LINE 2006 sq. ft.

DEPTH OF STONE IN LINES: 12" ☐ 18" ☒ * Same day to 6 ft. wide.

WATER SUPPLY: INDIVIDUAL ☒ PUBLIC ☐ * App. 125-130

* PERMIT VOID 12 MONTHS FROM DATE OF ISSUANCE

LAYOUT BY Dr. Robert Moseley

7-29-77

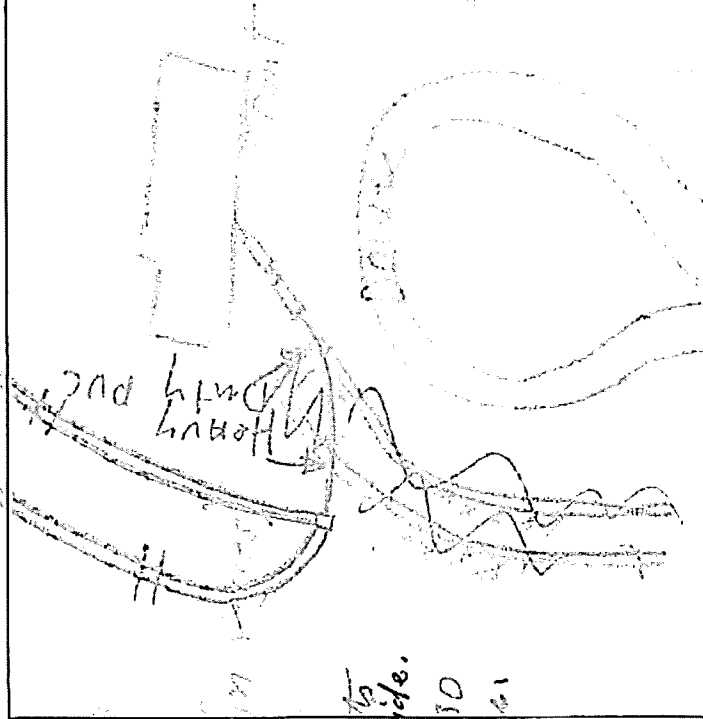
DATE

W. Wilson

INSTALLED BY

Dr. Moseley

APPROVED BY



**ATTACHMENT 2: Property Map Detailing Soil Suitability
for Septic Systems and Soil Types**

Preliminary Soil Evaluation

Nelle Strozler Trust
Wake Co., NC
PIN: 1709816628 and
1709718756

GIS Acres: ~15



Area for Septic:

Area 1: ~231,331 sq. ft.
Area 2: ~50,618 sq. ft.
Area 3: ~73,061 sq. ft.

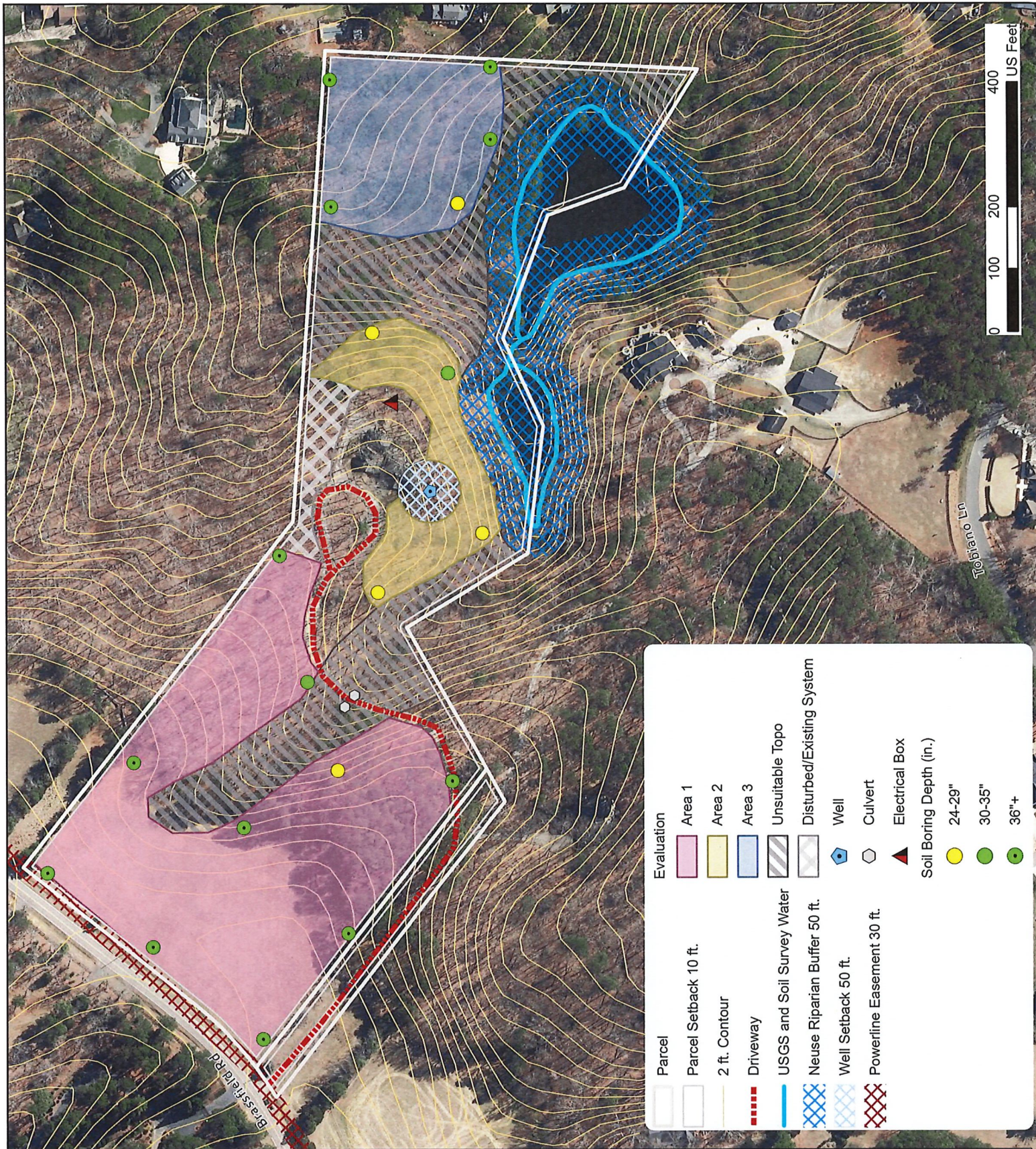
Soil Types:

CeB, CeC: Cecil sandy loam
CfC: Cecil-Urban land complex
PaD: Pacolet sandy loam

Notes:

In Neuse Riparian Buffer
No mapped NWI Wetlands

Drawn by: Clara Frickmann
Reviewed by: Brent Purdum
Date: 2/24/2026





Engineers and Soil Scientists

Agri-Waste Technology, Inc.
1225 Crescent Green, Suite 250, Cary NC 27518
agrivaste.com | 919.859.0669

Preliminary Soil Evaluation

Nelle Strozier Trust
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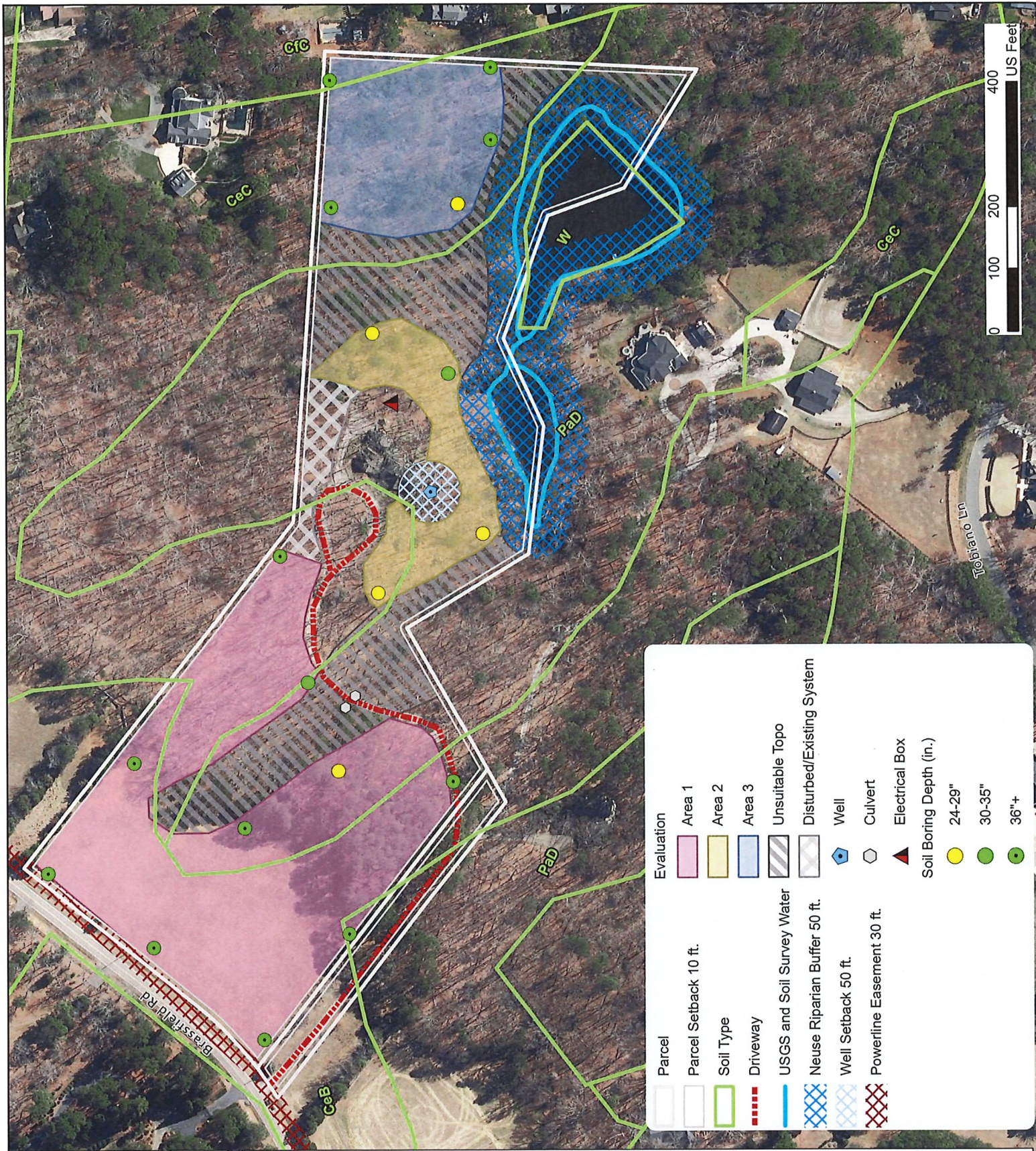
Soil Types:

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Notes:

In Neuse Riparian Buffer
No mapped NWI Wetlands

Drawn by: Clara Frickmann
Reviewed by: Brent Purdum
Date: 2/24/2026



0 100 200 400 US Feet

**ATTACHMENT 3: Typical Profile Descriptions of
Suitable Soil**

Property ID#: 1709816628 & 1709718756
Property Recorded: _____
County: Wake

SOIL/SITE EVALUATION
FOR
ON-SITE WASTEWATER SYSTEM

Applicant: Nelle Strozier Trust
Address: 7216 Fontana Pl.
Raleigh, NC 27614

Phone: (919) 291-0576
Date Evaluated: 02/20/2026
Proposed Facility: Residential
Property Size: Approximately 15.79 acres evaluated

Location Site: 1716 and 1700 Brassfield Rd. Raleigh, NC 27614

Water Supply: On Site Well ☒ Comm. Well ☐ Public ☐ Other ☐ Evaluation Method: Auger Boring ☒ Pit ☐ Cut ☐

TYPICAL PROFILE

Horizon/ Depth (IN)	Matrix	Mottles	Mottle Abundance / Contrast	.0503 Texture	.0503 Structure	.0503 Minerology	.0504 Consistence Wet	Consistence Moist
A 0-6"	10YR 5/3	None	None	SL	GR	NEXP	NS, NP	Vfr
Bt1 6-18"	2.5YR 5/8	None	None	C	SBK	SEXP	S, P	Fi
Bt2 18-36"	2.5YR 4/6	5YR 5/6	2, m, D	C	SBK	SEXP	S, P	Fi

.0503 Landscape Pos/Slope %	- Suitable, <15%	Profile LTAR	- Suitable for conventional systems due to texture, structure, and depth.
.0504 Wetness Condition	- Suitable	System Type	
.0506 Saprolite	- Suitable		
.0507 Restrictive Horizon	- Suitable		
.0509 Profile Classification	- Suitable		

EVALUATED BY: Brent Purdum

COMMENTS: _____

LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM

<u>LANDSCAPE POSITION</u>	<u>TEXTURE GROUP</u>	<u>TEXTURE CLASS</u>	<u>.1955 LTAR</u> (gal/day/sqft)
CC - Concave Slope	I	S - Sand	1.2 - .08
CV - Convex Slope		LS - Loamy Sand	
DS - Debris Slump	II	SL - Sandy Loam	0.8 - 0.6
D - Depression		L - Loam	
DW - Drainage Way	III	SCL - Sandy Clay Loam	0.6 - 0.3
FP - Flood Plain		CL - Clay Loam	
FS - Foot Slope		SiL - Silt Loam	
H - Head Slope		Si - Silt	
I - Interfluvial		SiCL - Silt Clay Loam	
L - Linear Slope	IV	SC - Sandy Clay	0.4 - 0.1
N - Nose Slope		C - Clay	
P - Pocosin		SiC - Silty Clay	
R - Ridge		O - Organic	
S - Shoulder			
T - Terrace			
<u>STRUCTURE</u>	<u>MOIST CONSISTENCE</u>	<u>MOTTLES</u>	<u>WET CONSISTENCE</u>
G - Single Grain	Vfr - Very Friable	1 - Few	NS - Non Sticky
M - Massive	Fr - Friable	2 - Common	SS - Slightly Sticky
CR - Crumb	Fi - Firm	3 - Many	S - Sticky
GR - Granular	Vfi - Very Firm	F - Faint	VS - Very Sticky
SBK - Subgranular Blocky	Efi - Extremely Firm	D - Distinct	NP - Non Plastic
ABK - Angular Blocky		P - Prominent	SP - Slightly Plastic
PL - Platy		f - Fine	P - Plastic
PR - Prismatic		m - Medium	VP - Very Plastic
		c - Coarse	

ATTACHMENT 4: Soil Survey Information

TABLE 6.—*Engineering*

[Dashed lines indicate that information is not available, or that the practice is not applicable. Miscellaneous land types Gullied land

Soil series and map symbols	Suitability as source of—		Degree of limitation for—		
	Topsoil	Road fill	Homebuilding sites	Septic tank absorption fields	Recreation
					Campsites
Altavista (AfA)-----	Fair-----	Fair-----	Severe: flooding-----	Severe: flooding-----	Moderate: flooding; fair trafficability.
Appling: (AgB, AgB2)-----	Fair-----	Fair-----	Moderate: coarse fragments.	Moderate: medium percolation rate.	Moderate: coarse fragments.
(AgC, AgC2)-----	Fair-----	Fair-----	Moderate: coarse fragments.	Moderate: medium percolation rate.	Moderate: coarse fragments; slopes of 6 to 10 percent.
(ApB, ApB2, AsB, AsB2)-----	Fair-----	Fair-----	Slight-----	Moderate: medium percolation rate.	Slight-----
(ApC, ApC2, AsC, AsC2)-----	Fair-----	Fair-----	Slight-----	Moderate: medium percolation rate.	Moderate: slopes of 6 to 10 percent.
(ApD)-----	Fair-----	Fair-----	Moderate: slopes greater than 10 percent.	Moderate: medium percolation rate; slopes greater than 10 percent.	Severe: slopes greater than 10 percent.
Augusta (Au)-----	Poor-----	Poor-----	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table.
Bibb (Mapped only in an undifferentiated unit with Wehadkee soils).	Poor-----	Fair-----	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table; poor trafficability.
Buncombe (Bu)-----	Poor-----	Good-----	Severe: flooding-----	Severe: flooding-----	Severe: flooding-----
Cecil: (CeB, CeB2)-----	Fair-----	Fair-----	Slight-----	Moderate: medium percolation rate.	Slight-----
(CeC, CeC2)-----	Fair-----	Fair-----	Slight-----	Moderate: medium percolation rate.	Moderate: slopes of 6 to 10 percent.
(CeD)-----	Fair-----	Fair-----	Moderate: slopes of 10 to 15 percent.	Moderate: medium percolation rate; slopes of 10 to 15 percent.	Severe: slopes greater than 10 percent.
(CeF)-----	Fair-----	Fair-----	Moderate to severe: slopes of 15 to 45 percent.	Severe: slopes greater than 15 percent.	Severe: slopes greater than 15 percent.
(CgB, CgB2, CgC, CgC2)-----	Fair-----	Fair-----	Moderate: coarse fragments.	Moderate: medium percolation rate.	Moderate: coarse fragments.
(ClB3, ClC3)-----	Poor-----	Fair-----	Moderate: clayey surface layer.	Moderate: medium percolation rate.	Moderate: clayey surface layer.
(ClE3)-----	Poor-----	Fair-----	Moderate: clayey surface layer; slopes of 10 to 20 percent.	Moderate to severe: medium percolation rate; slopes of 10 to 20 percent.	Severe: slopes greater than 10 percent.

**ATTACHMENT 5: Septic System Area Computation
Spreadsheets**

Conventional Septic System Area Computation

Client Name: *Nelle Strozier Trustee*
Number Bedrooms: 3
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.275
Trench Bottom Area (ft²): 1309.091 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 436.3636

Minimum Field Area Required (ft²): 3927.273 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 2945.455 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 9818.182 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 7363.636 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 11781.82 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 8836.364 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Nelle Strozier Trustee*
Number Bedrooms: 4
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.275
Trench Bottom Area (ft²): 1745.455 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 581.8182

Minimum Field Area Required (ft²): 5236.364 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3927.273 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 13090.91 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9818.182 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 15709.09 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 11781.82 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Nelle Strozier Trustee*
Number Bedrooms: 5
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.275
Trench Bottom Area (ft²): 2181.818 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 727.2727

Minimum Field Area Required (ft²): 6545.455 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 4909.091 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 16363.64 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 12272.73 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 19636.36 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 14727.27 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.