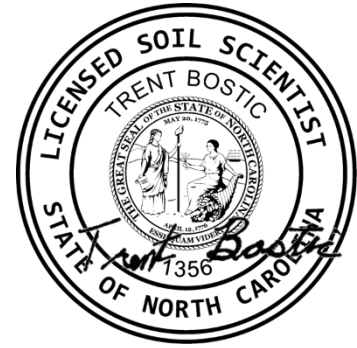




Agri-Waste Technology, Inc.
1225 Crescent Green, Suite 250, Cary NC 27518
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Soil Suitability for Domestic Sewage Treatment and Disposal Systems
3669 Brooks Bend, Franklinton NC 27525
(Granville County PIN: 182600946436)

PREPARED FOR: Shaun McGuigan, Client

PREPARED BY: Trent Bostic
Lexi Seal
Jordan Harris

DATE: October 9, 2026

Soil suitability for domestic sewage treatment and disposal systems was evaluated on October 5, 2026, for property located at 3669 Brooks Bend near Franklinton, NC. Lexi Seal and Jordan Harris 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.

The total property area is approximately 1.28 acres. The property is wooded. There are several drainage features with 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. Approximately 6 soil borings were advanced on the property and the soil evaluated (Attachment 3). A portion of the property contained drainage features, complex topography, and/or unsuitable soils and, thus, are 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 pink area (see map in Attachment 2) evaluated on the property exhibited soil characteristics and soil depths (30" or greater) that are suitable for shallow conventional or conventional trench septic systems. The area is approximately 26,911 ft².

Typical profile descriptions of the suitable soil for this property are in Attachment 3. One distinct soil profile was observed in the soil borings on the property: a deep red clay subsoil.

The suitable soil borings had the following characteristics. No restrictive horizons were found in any soil borings within 30" of the soil surface. Soil texture was suitable and was estimated to be sandy loam near the soil surface (A horizons) and clay in the subsoil (B horizons). Soil structure was suitable and was estimated to be granular near the soil surface (A horizons) and subangular blocky in the subsoil (B horizons). Clay mineralogy was suitable with very friable to firm moist soil consistence and non-sticky to slightly sticky and non-plastic to slightly plastic wet soil consistence.

The mapped soil types on this property are predominantly Cecil clay loam (map symbol CeC2) and Cecil sandy loam (map symbol CaB). The Granville 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 0.3 GPD/ft². The final LTAR for specific septic system types and septic drainfield locations will be set by the permitting entity (AOWE, EOP, or Granville County Health Department). The detailed computations are in Attachment 5.

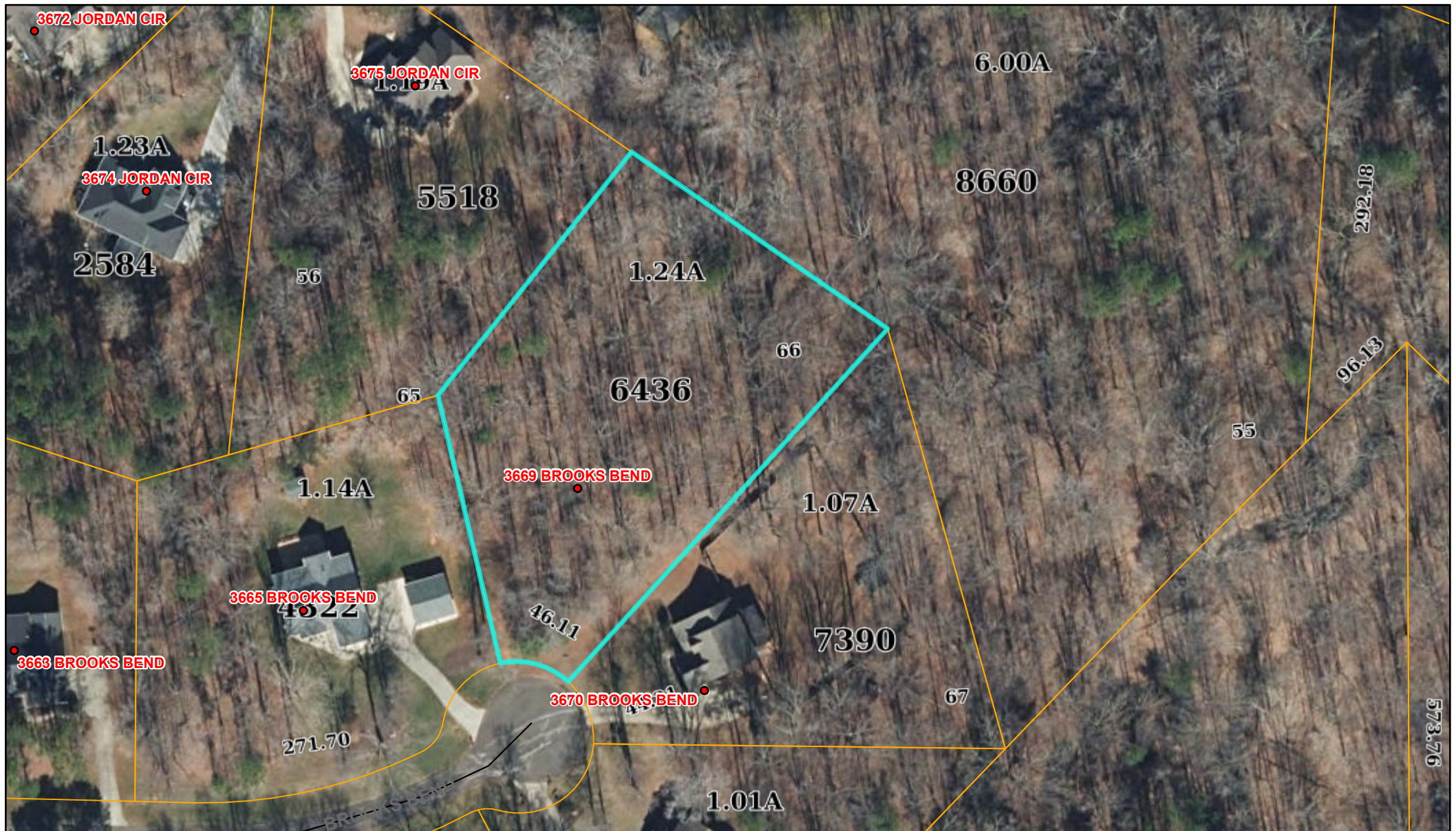
Conclusions

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

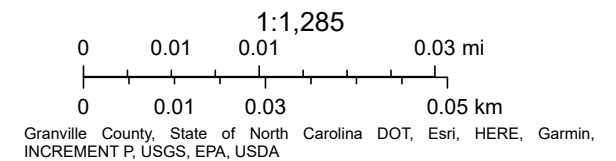
We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

ATTACHMENT 1: Property Reference Map

Granville County, NC



10/7/2026, 1:19:55 PM



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



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Preliminary Soil Evaluation

McGuigan Shaun
Granville Co., NC
PIN: 182600946436

GIS Acres: ~1.28



Area for Septic:

~26,911 sq. ft.

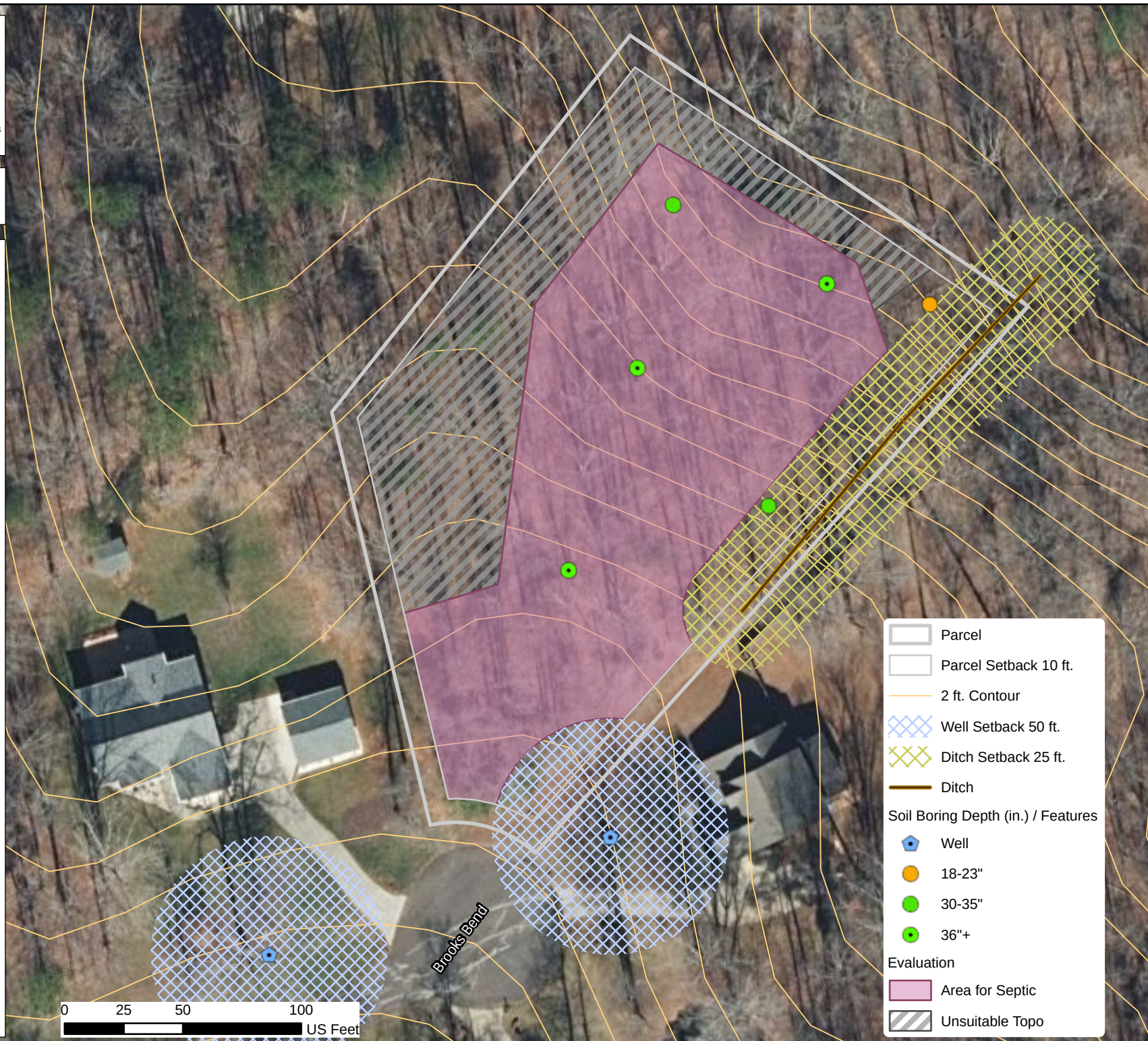
Soil Types:

CeC2: Cecil clay loam
CaB: Cecil sandy loam

Notes:

No USGS/Soil Survey Waters
No mapped NWI Wetlands
Not in NC Riparian Buffer

Drawn by: Julie Davidson
Reviewed by: Jordan Harris
Date: 10/7/2026



- Parcel
- Parcel Setback 10 ft.
- 2 ft. Contour
- Well Setback 50 ft.
- Ditch Setback 25 ft.
- Ditch
- Soil Boring Depth (in.) / Features
 - Well
 - 18-23"
 - 30-35"
 - 36"+
- Evaluation
 - Area for Septic
 - Unsuitable Topo



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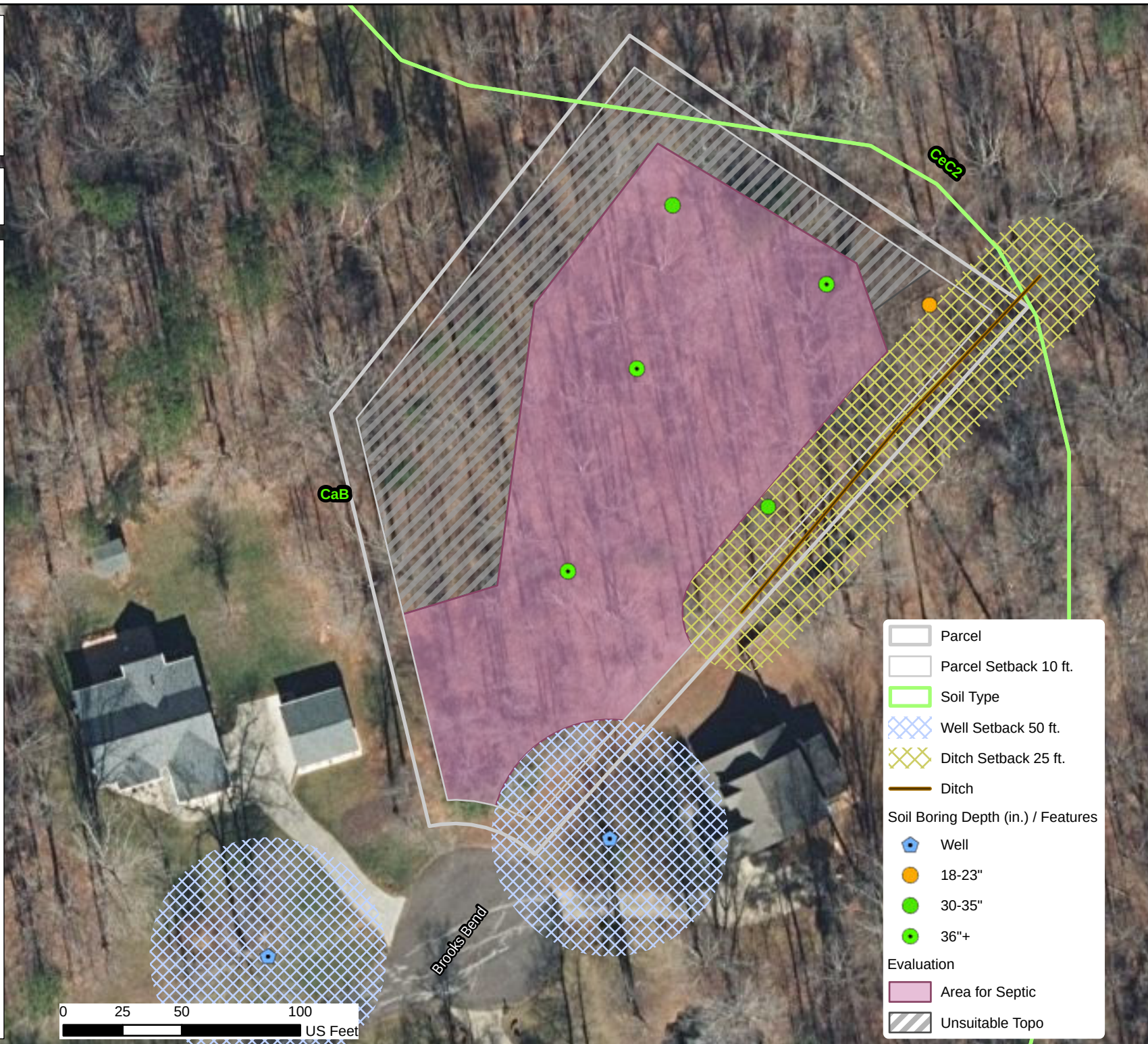
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Notes:

No USGS/Soil Survey Waters
No mapped NWI Wetlands
Not in NC Riparian Buffer

Drawn by: Julie Davidson
Reviewed by: Jordan Harris
Date: 10/7/2026



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

County: Granville

SOIL/SITE EVALUATION FOR ON-SITE WASTEWATER SYSTEM

Bolivia NC 28422

Property Size: Approximately 1.2 acres evaluated

Location Site: 3669 Brooks Bend, Franklinton NC 27525

Water Supply: On Site Well X Comm. Well Public Other

Evaluation Method: Auger Boring X Pit Cut

TYPICAL PROFILE

Horizon/ Depth (IN)	Matrix	Mottles	Mottle Abundance / Contrast	.0503 Texture	.0503 Structure	.0503 Minerology	.0504 Consistence Wet	Consistence Moist
A 0-8"	10YR 4/4	None	None	SL	GR	NEXP	NS, NP	Vfr
Bt1 8-25"	10R 4/8	None	None	C	SBK	SEXP	SS, SP	Fi
Bt2 25-36"+	10R 4/8	5YR 5/8	1, P, f	C	SBK	SEXP	SS, SP	Fi

.0503 Landscape Pos/Slope %	- Suitable, <15%	Profile LTAR	- 0.3 GPD/ft²
.0504 Wetness Condition	- Suitable	System Type	- Suitable for conventional, shallow conventional, and low profile chamber systems due to texture, structure, and depth.
.0506 Saprolite	- Suitable		
.0507 Restrictive Horizon	- Suitable		
.0509 Profile Classification	- Suitable		

Comments:

EVALUATED BY: Lexi Seal and Jordan Harris

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

ATTACHMENT 4: Soil Survey Information

TABLE 10.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AaA----- Altavista	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness, too clayey.
ApB----- Appling	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
ApC----- Appling	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
AuC*: Appling-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
Urban land.					
CaB, CeB2----- Cecil	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
CeC2----- Cecil	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
ChA*: Chewacla-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
Wehadkee-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness, thin layer.
CoA----- Congaree	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
CrB----- Creedmoor	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
CrC----- Creedmoor	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
EnB----- Enon	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.

See footnote at end of table.

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

Conventional Septic System Area Computation

Created by: LS
Created on: 10/7/2026

Client Name: McGuigan
Number Bedrooms: 3
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 1200 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 400

Minimum Field Area Required (ft²): 3600 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 2700 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 9000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 6750 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 10800 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 8100 (25% reduction from above)

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

Client Name: McGuigan
Number Bedrooms: 4
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 1600 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 533.3333

Minimum Field Area Required (ft²): 4800 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3600 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 12000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9000 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 14400 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 10800 (25% reduction from above)

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

Client Name: McGuigan
Number Bedrooms: 5
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 2000 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 666.6667

Minimum Field Area Required (ft²): 6000 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 4500 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 15000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 11250 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 18000 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 13500 (25% reduction from above)

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