

Alliance Environmental Services

204 Emry Street

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Roanoke Rapids, NC 27870

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February 27, 2018

David Lawhorn
6204 Tiffield Way
Wake Forest, NC 27587

RE: Soil/Site Evaluation of Lot #21 in Tillar Plantation Subdivison, Gaston, NC

Dear Mr. Lawhorn:

On January 23, 2018, the Northampton County Health Department evaluated the above-referenced property and found it unsuitable “without further testing” due to the presence of rock and saprolite (weathered rock). The Health Department suggested the property be evaluated by a licensed soil scientist via soil pits.

Alliance Environmental Services performed a soil/site evaluation on the property on February 24, 2018. The evaluation was performed in accordance with North Carolina’s Division of Environmental Health regulations (15A NCAC 18A .1900) for the purposes of determining site suitability for an onsite wastewater system to serve a single-family dwelling.

This letter serves to supplement the included soil/site diagram and attachments. Using a sketch of the property provided by Michael Cullom, PLS (Attachement 1), the lot was traversed in order to identify topographic and landscape features. Soil pits were dug by MacBride Excavation in order to identify soil properties that influence onsite wastewater treatment and disposal. A summary of the evaluation is presented below.

The property was found to have slopes ranging from 13% to 30% (Attachment 2) with shallow soils most similar to an eroded Pacolet series formed over metasedimentary rocks (metamudstone) of the Eastern Slate Belt. Soil pits revealed soils with very shallow lithic and paralithic contact. The boundary between soil and continuous, coherent weathered parent material and rock was typically observed to be between six and 14 inches over most of the lot (Attachement 3).

The in situ evaluation of soil pits revealed wavy boundaries with respect to soil interfaces and great variability within the same pit. The NC septic rules require 12 inches of suitable soil below the proposed septic trench bottom for a conventional or accepted status septic system. **Due to inconsistent soil depth, coupled with the slope and topography, the lot is unsuitable for conventional or alternative septic systems.**

As we discussed on the telephone, the following options are presented for consideration:

1. **Off-Site System.** It may be possible to designate an area of suitable soils on another nearby property for a septic system and repair area to serve a dwelling on Lot #21. Typically, a 10' wide utility easement is recorded on a plat for the installation of a pressure supply to convey wastewater to the off-site area. The off-site area may remain under different ownership if a Septic System Easement Agreement is recorded at the Register of Deeds.
2. **Subsurface Drip System.** A subsurface drip irrigation system consisting of small diameter tubing with pressure-compensating emitters buried at shallow depths in narrow trenches coupled with a pretreatment technology may be a option. These systems require a special site evaluation that must include site-specific determination of saturated hydraulic conductivities, a hydraulic assessment that demonstrates effluent will not discharge to the ground surface, and a slope stabilization plan. These systems are expensive and require an ongoing contract with a Subsurface Wastewater Operator.

This report represents my professional opinion. The final permitting authority remains with the Northampton County Environmental Health Division.

Please feel free to call with any questions or concerns.

Sincerely,

Robert A. Rose L.S.S., R.E.H.S.

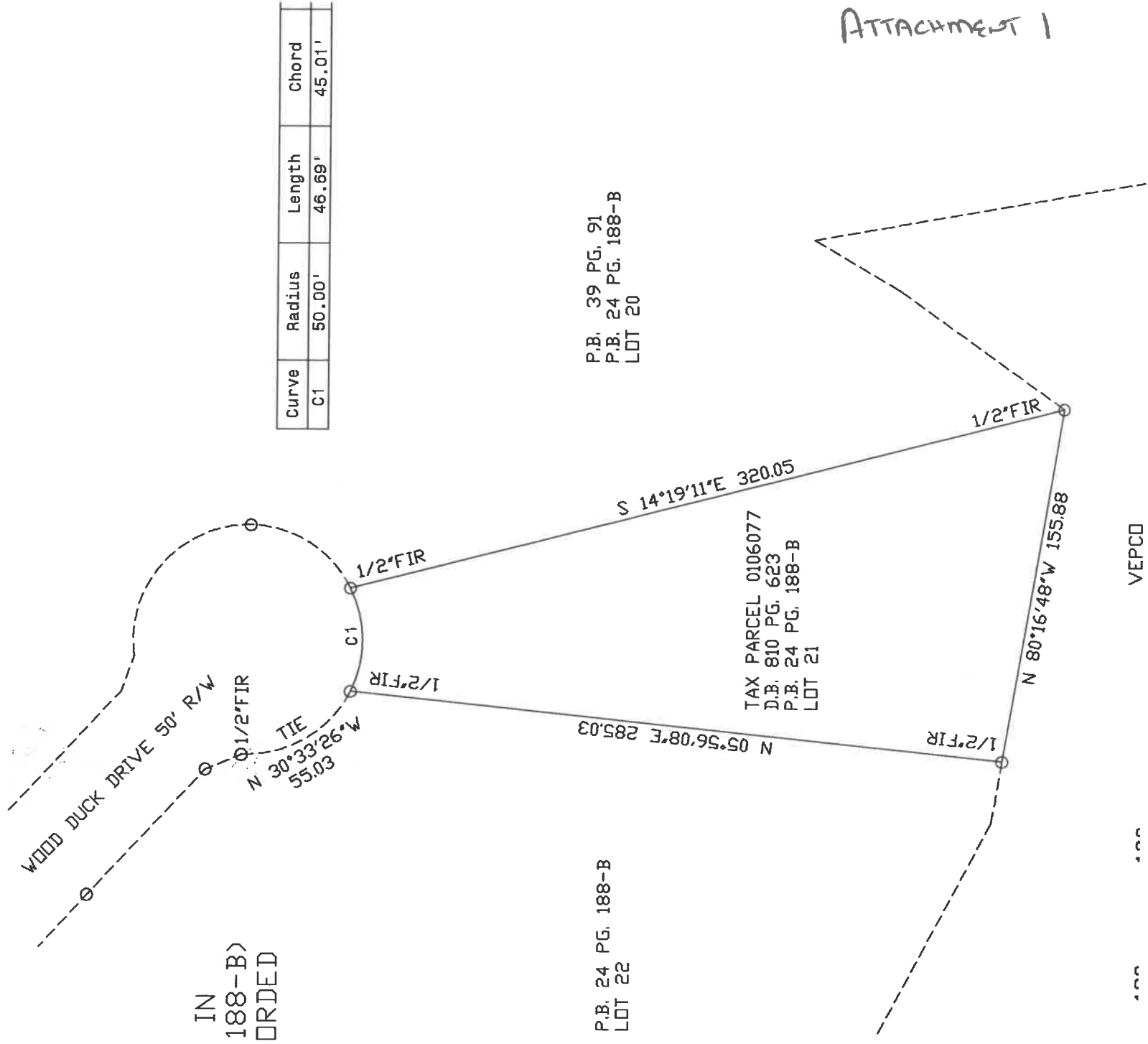
Robert A. Rose, L.S.S., R.E.H.S.
Licensed Soil Scientist # 1273
Registered Environmental Health Specialist



ATTACHMENT 1

HIS IS A SKETCH OF LOT 21 IN
 AR PLANTATION (P.B. 24 PG. 188-B)
 ; SKETCH IS NOT TO BE RECORDED

Curve	Radius	Length	Chord
C1	50.00'	46.69'	45.01'

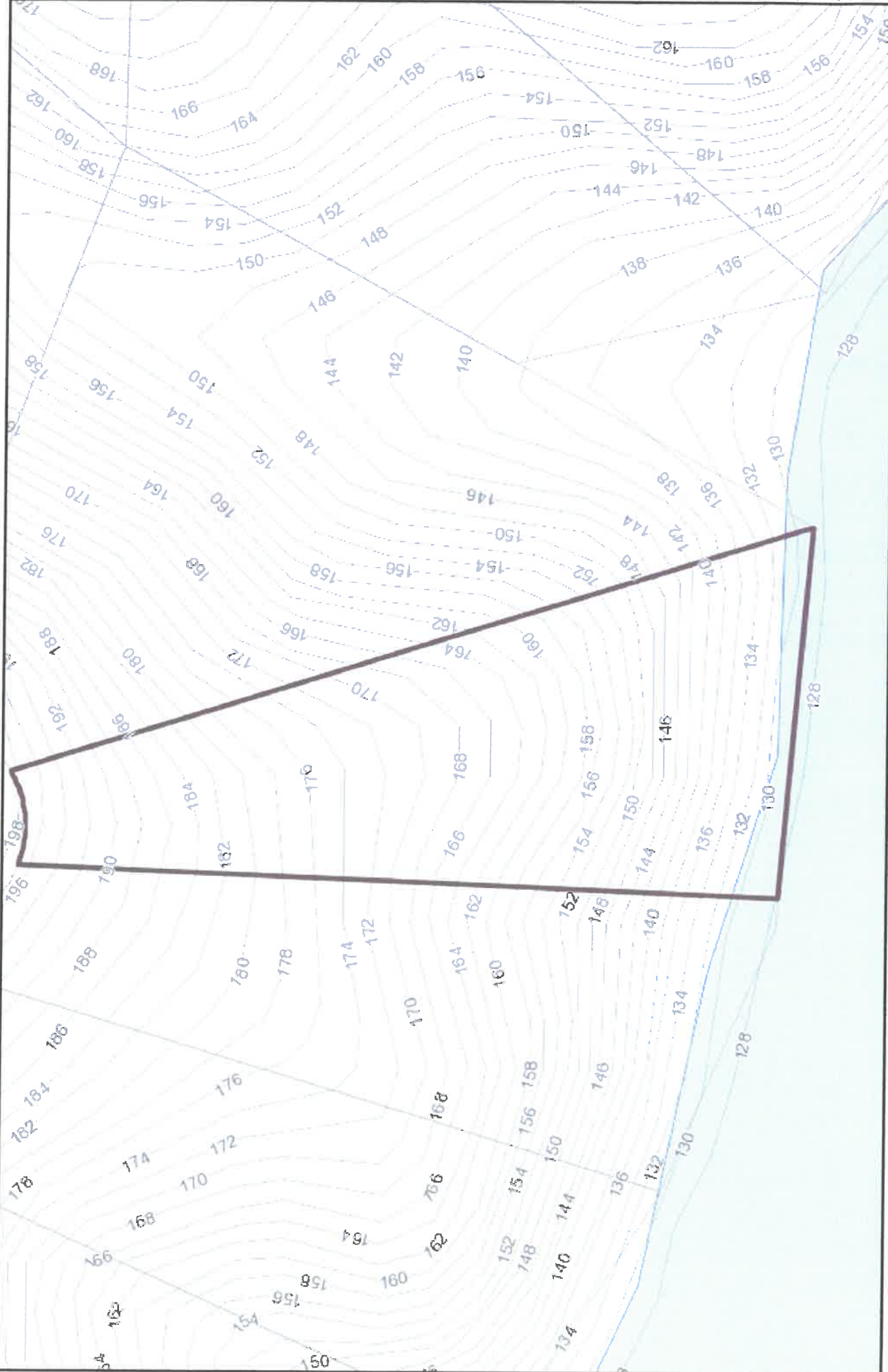


P.B. 39 PG. 91
 P.B. 24 PG. 188-B
 LDT 20

TAX PARCEL 0106077
 D.B. 810 PG. 623
 P.B. 24 PG. 188-B
 LOT 21

P.B. 24 PG. 188-B
 LDT 22

VEPCO



One Inch = 53 Feet

**NORTHAMPTON COUNTY
TAX MAP**



Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Northampton County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 0106077
 PIN Number: 3060-60-5176
 Owner Name: LAWHORN, DAVID ASHLEY
 Owner Name2: LAWHORN, NANCY SHRY
 Owner Address: 6204 TIFFIELD WAY
 Owner City: WAKE FOREST
 Owner State: NC
 Owner ZIP: 27587

Parcel Address: 810/623
 Deed Reference: 105969
 Deed Acres: 0.67
 Tax Value: No Data

ALLIANCE ENVIRONMENTAL SERVICES
SOIL / SITE EVALUATION

OWNER: **David Lawhorn**

PROPOSED FACILITY: **Single-Family Dwelling**

PROPOSED DESIGN FLOW (. 1949) **360 G.P.D.**

LOCATION OF SITE: **Lot #21 – Tillar Plantation Subdivision**

WATER SUPPLY: PRIVATE **X** PUBLIC _____ OTHER _____ EVAL METHOD: AUGER _____ PIT **X** CUT _____

PROFILE #	.1940 LANDSCAPE POS SLOPE%	HORIZON DEPTH (IN)	SOIL MORPHOLOGY .1941					OTHER PROFILE FACTORS	
			TEXTURE	STRUCTURE	MINERALOGY CONSISTENCE	MATRIX COLOR	MOTTLE COLOR		
1a 75' off Front 20' off Right	Linear Side Slope 13%	0 - 4	SL	Gr	Vfr, ns, np, nex	7.5 YR 5/4	--	.1942 WETNESS > 24"	
		4 - 18	C	SBK	Fr, s, p, sepx	2.5 YR 5/6	--	.1943 DEPTH 18"	
		18 - 24	Rock	Weathered					.1944 REST. HOR. N/A
		24+	>= 50%	Saprolite	CL Texture				.1947 CLASS US
					<u>North</u>	<u>Side</u>			PROFILE LTAR N/A
1b 75' off Front 20' off Right	Linear Side Slope 13%	0 - 6	SL	Gr	Vfr, ns, np, nex	7.5 YR 5/4	--	.1942 WETNESS > 30"	
		6 - 11	SCL	SBK	Fr, ss, sp, sepx	5 YR 5/8	--	.1943 DEPTH 30"	
		11 - 30	C	SBK	Fr, s, p, sepx	2.5 YR 5/6	relics	.1944 REST. HOR. N/A	
		30+	Rock	Weathered				.1947 CLASS PS (IV)	
					<u>South</u>	<u>Side</u>			PROFILE LTAR 0.3
2a 120' off Front 35' off Right	Linear Side Slope 13%	0 - 7	SL	Gr	Vfr, ns, np, nex	7.5 YR 5/4	--	.1942 WETNESS > 48"	
		7 - 48	> 50%	Rock				.1943 DEPTH 7"	
					<u>North</u>	<u>Side</u>			.1944 REST. HOR. N/A
									.1947 CLASS US
									PROFILE LTAR N/A
2b 120' off Front 35' off Right	Linear Side Slope 13%	0 - 6	SL	Gr	Vfr, ns, np, nex	7.5 YR 5/4	--	.1942 WETNESS > 48"	
		6 - 24	> 50%	Rock	w/ Clay Lens			.1943 DEPTH 6"	
		24 - 30	CL	SBK	Fr, s, p, sepx	2.5 YR 5/6	relics	.1944 REST. HOR. N/A	
		30 - 48	> 50%	Rock				.1947 CLASS US	
					<u>South</u>	<u>Side</u>			PROFILE LTAR N/A
3 165' off Front 50' off Right	Foot Slope 16%	0 - 5	L	Gr	Vfr, ns,np, nex	--	--	.1942 WETNESS > 21"	
		5 - 14	SiCL	SBK	Fr, ss, sp, sepx			.1943 DEPTH 14"	
		14 - 21	> 50%	Rock	w/ Clay Lens			.1944 REST. HOR. N/A	
		21+	US	PM	Very Firm	Gley 1	8 White	.1947 CLASS US	
									PROFILE LTAR N/A

AVAILABLE SPACE (.1945) **NO** OTHER FACTORS (.1946) **N/A** SITE CLASSIFICATION **US**

INITIAL LTAR **N/A** REPAIR LTAR **N/A** OTHER(S) PRESENT **Robert W. Boone, Jr.**

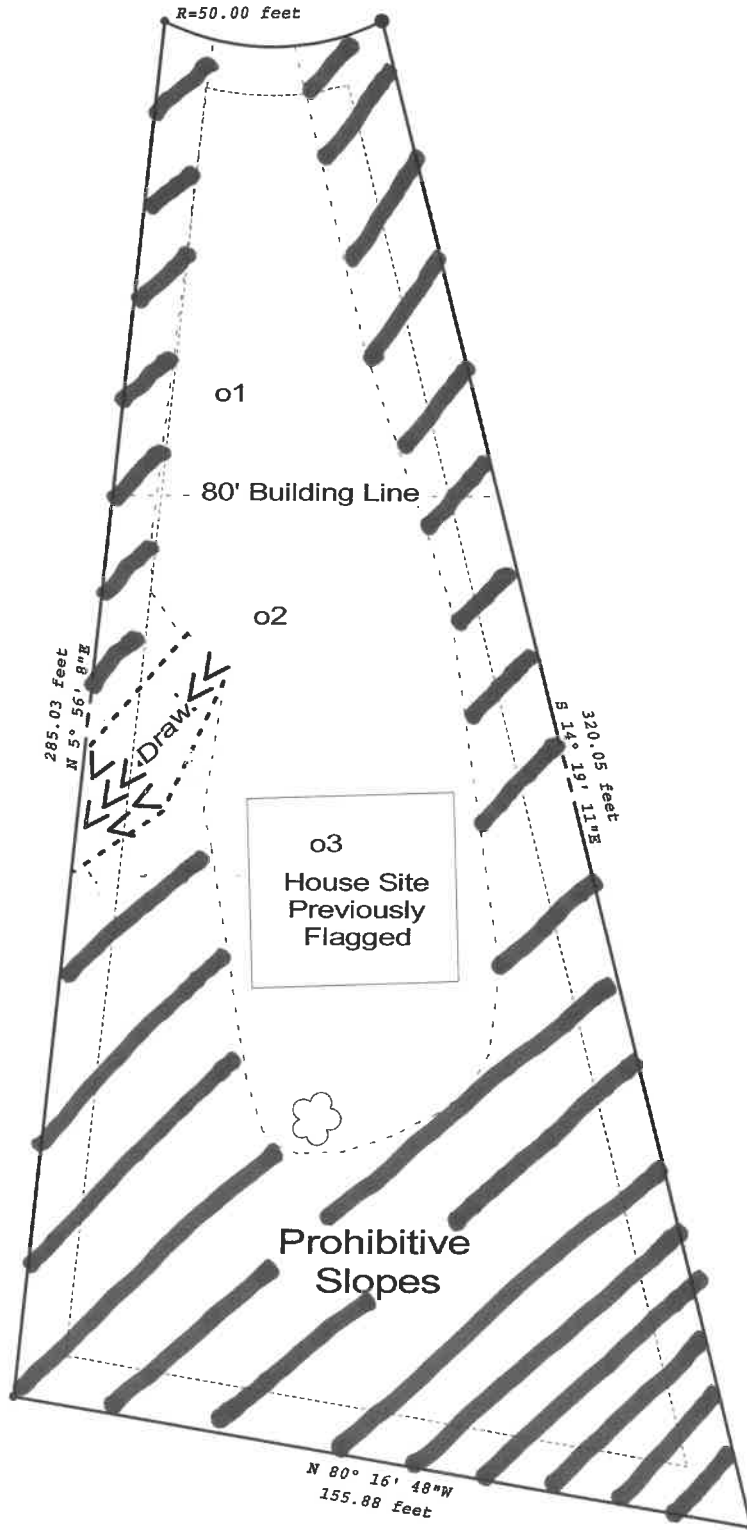
COMMENTS: **Lot is unsuitable for conventional and alternative septic system due to shallow depths to rock and unsuitable saprolite.**

Variable soil depths (wavy boundaries) were noted within same pit. Too inconsistent to confidently install a system.

EVALUATED BY: **Robert A. Rose, L.S.S., R.E.H.S.**

SOIL/SITE DIAGRAM

Location: Lot #21 - Wood Duck Drive (Tillar Plantation Subdivision)
Owner: David Lawhorn



Roanoke Rapids Lake

