TONEY C. JACOBS & ASSOCIATES, INC.

Consulting Soil Scientists

Licensed by the North Carolina Board for Licensing of Soil Scientists
Certified by the American Registry of Certified Professionals in Agronomy, Crops and Soils

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June 3, 2003

LICENSED SOIL SCIENTIST
PAUL G. PENNINGER
1065
STATE OF NORTH CAROLINA

To: Mr. David Hinson, R.S.
Iredell County Environmental Health Dept.

From: Paul G. Penninger

RE: The Farms Lot 23 Particle Size Analysis

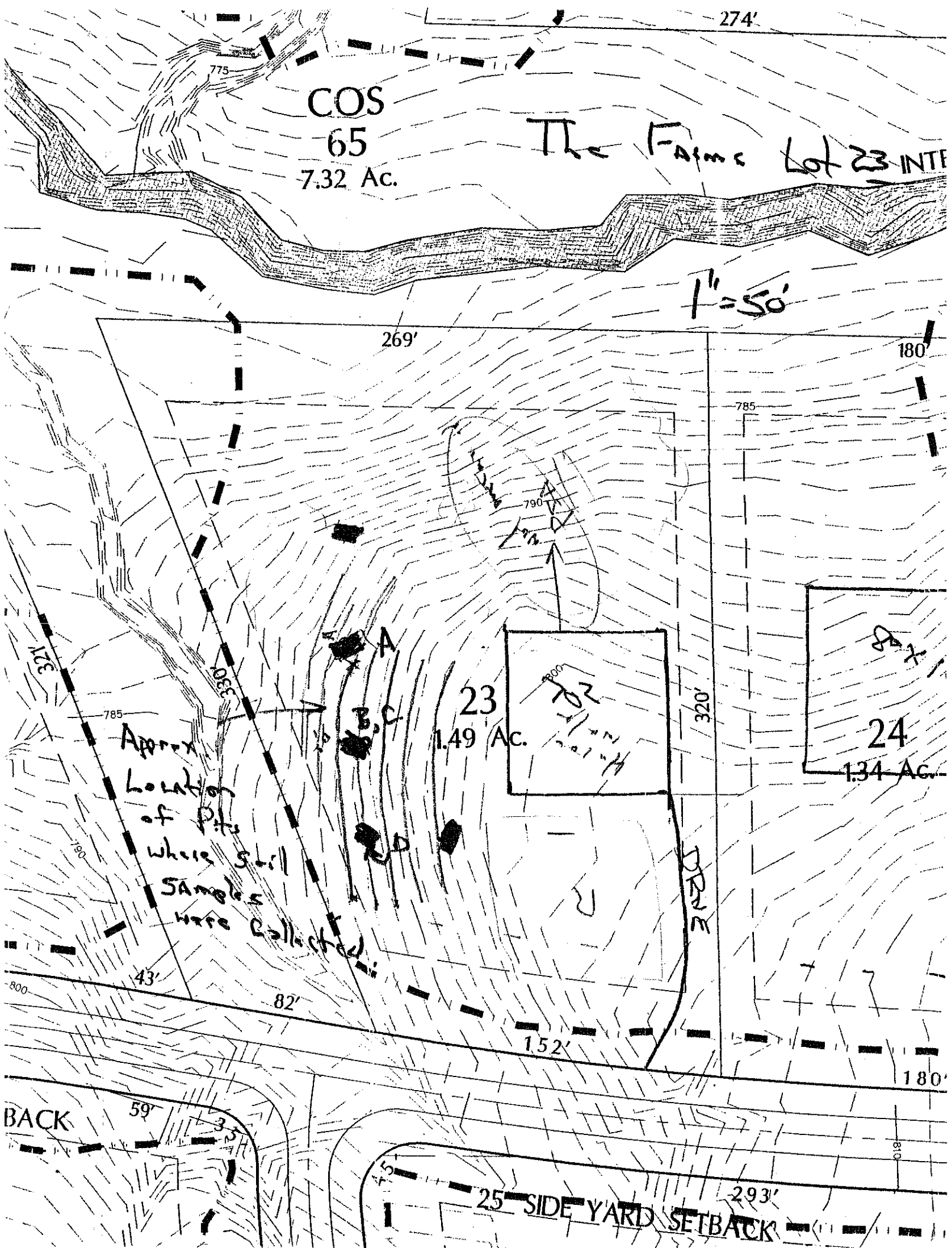
During our initial soil evaluation with you, several pits on lot 23 adjacent to the common open space at the left lot line were shallow to saprolite. According to your profile descriptions, saprolite was described at generally 30 to 36 inches deep. The field determination of soil texture showed that the saprolite present at approximately 36 inches deep was near the break between a loam (PS) and clay loam (US).

Toney C. Jacobs and Associates collected four samples from three of the described pits for particle size analysis by the Hydrometer Method. These samples were run in our lab and the results are attached. The approximate pit locations the samples were collected from are also shown on the attached map.

The particle size analysis showed all four samples were loam textures and that the saprolite at 36-48 inches deep was provisionally suitable according to the current *Laws and Rules for Sewage Treatment, and Disposal Systems.* We reviewed the particle size analysis and sample locations with you on May 27, 2003 and determined there was available space for a 25% reduction system with a LPP/PPBPS repair.

If you have any questions or need any additional information please call.

Copy: Mr. Jim Atkinson, Crescent Resc. Inc.


274'
COS
65
7.32 Ac.
The Farms Lot 23 INTE
1"=50'
269'
180'
785
790
800
A
B,C
D
23
1.49 Ac.
320'
24
1.34 Ac.
330'
323'
Approx Location of Pits where Soil Samples were Collected
43'
82'
152'
180'
59'
BACK
25' SIDE YARD SETBACK
293'

The Farms Lot 23 PSA

Iredell County

Series	Pacolet-like
Lab #	A ~ 36" ← sample depth
Horizon	C
Sample size	40.00
Photo	The Farms lot 23

	Reading	Blank	Time		Temp C
1st	36.0	8.5	30	sec	20.0
2nd	31.5	8.5	90	sec	20.0
3rd	15.0	8.5	3.0	Hours	20.0
4th	14.0	8.5	22.0	Hours	20.0

Concentration	P	d		
27.5	68.75	61.53526		
23	57.5	36.61497	Psand	35.75
6.5	16.25	3.747874	Psilt	49.59
5.5	13.75	1.39316	Pclay	14.66
		USDA Texture		Loam

The Farms Lot 23 PSA

Iredell County

Series	Pacolet-like
Lab #	B ~ 8.6"
Horizon	C
Sample size	40.00
Photo	The Farms lot 23

	Reading	Blank	Time		Temp C
1st	38.0	8.5	30	sec	20.0
2nd	34.0	8.5	90	sec	20.0
3rd	20.0	8.5	3.0	Hours	20.0
4th	17.5	8.5	22.0	Hours	20.0

Concentration	P	d		
29.5	73.75	60.59339		
25.5	63.75	36.07119	Psand	29.95
11.5	28.75	3.632045	Psilt	45.09
9	22.5	1.359553	Pclay	24.96
		USDA Texture		Loam

The Farms Lot 23 PSA

Iredell County

Series	Pacolet-like
Lab #	C
Horizon	C
Sample size	40.00
Photo	The Farms lot 23

	Reading	Blank	Time		Temp C
1st	37.0	8.5	30	sec	20.0
2nd	31.5	8.5	90	sec	20.0
3rd	16.5	8.5	3.0	Hours	20.0
4th	14.0	8.5	22.0	Hours	20.0

Concentration	P	d		
28.5	71.25	61.06433		
23	57.5	36.61497	Psand	34.12
8	20	3.706506	Psilt	49.82
5.5	13.75	1.39316	Pclay	16.06
		USDA Texture		Loam

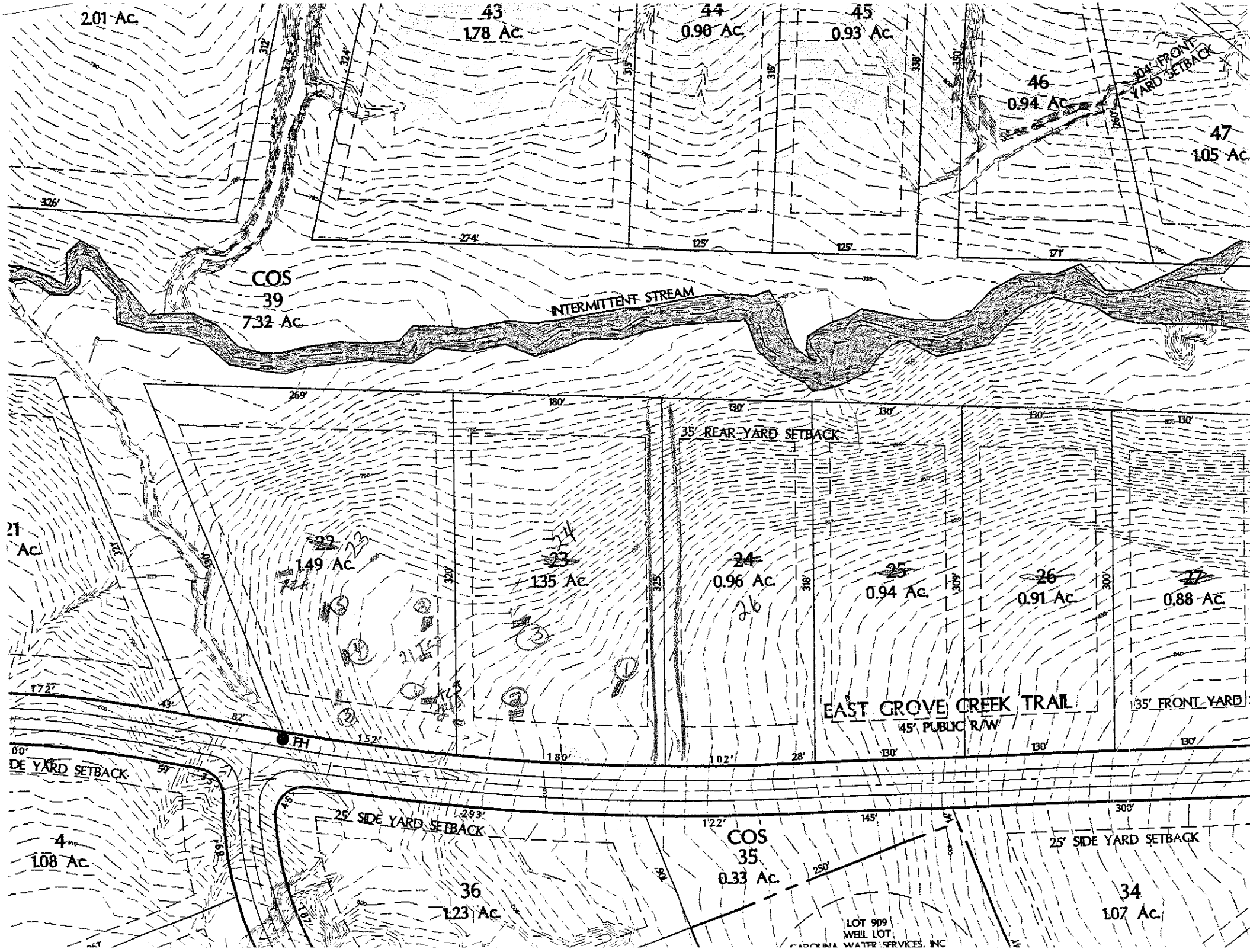
The Farms Lot 23 PSA

Iredell County

Series	Pacolet-like
Lab #	D
Horizon	CB — 36"
Sample size	40.00
Photo	The Farms lot 23

	Reading	Blank	Time		Temp C
1st	36.0	8.5	30	sec	20.0
2nd	32.0	8.5	90	sec	20.0
3rd	19.0	8.5	3.0	Hours	20.0
4th	16.0	8.5	22.0	Hours	20.0

Concentration	P	d		
27.5	68.75	61.53526		
23.5	58.75	36.61497	Psand	35.25
10.5	26.25	3.656866	Psilt	43.13
7.5	18.75	1.374829	Pclay	21.62
		USDA Texture		Loam


2.01 Ac.
43
1.78 Ac.
44
0.90 Ac.
45
0.93 Ac.
46
0.94 Ac.
104' FRONT YARD SETBACK
47
1.05 Ac.
COS
39
7.32 Ac.
INTERMITTENT STREAM
35' REAR YARD SETBACK
22
1.49 Ac.
23
1.35 Ac.
24
0.96 Ac.
25
0.94 Ac.
26
0.91 Ac.
27
0.88 Ac.
EAST GROVE CREEK TRAIL
45' PUBLIC R/W
35' FRONT YARD
FH
25' SIDE YARD SETBACK
4
1.08 Ac.
36
1.23 Ac.
COS
35
0.33 Ac.
LOT 909
WELL LOT
CAROLINA WATER SERVICES, INC
34
1.07 Ac.

PARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
IVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet ___ of ___
PROPERTY ID #: ___
COUNTY: ___

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Now lot 23 Agcourt

OWNER: CRI APPLICATION DATE: ___
ADDRESS: ___ DATE EVALUATED: 3-28-03
PROPOSED FACILITY: ___ PROPOSED DESIGN FLOW (.1949): ___ PROPERTY SIZE: ___
LOCATION OF SITE: lot 22 Revised Lake Forest PROPERTY RECORDED: ___
WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☐ Other ___
EVALUATION METHOD: ☐ Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: ☐ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1		0-8	gn-wk sbk lms sl	fr ss sp	28"+ water seeps out of sidewall			maybe shallow trench w/ trench Drain LPP bottom	LPP .1-.125
		8-28	wk sbk RC	fr ss sp					
		28-48	w-m mas Rydcl	fr sp ss sp					
			no distinct chr 2 but 3/4 gop around Root channels						
2		0-6	gn lms sl/scl	fr ss sp					.1 LPP OR .2 shallow 12"-16" max
		6-19/30	wk sbk RC	fr ss sp	few gley mottles				
		19/30-48	AB Rydcl	fr sp ss sp					
			distinct chr 2 @ 34"						
3	#21 FCS	0-5	gn lms scl	fr ss sp					.2-.25
		5-23	m sbk yp c	fr sp					
		23-46	wk sbk yp cl/cl		common gley mottles				
4		0-5	gn lms scl	fr ss sp				Depth to LPP depth .1-.125 maybe shallow trench installation .25 @ 18" max	
		5-24/35	m sbk RC	fr-fi fr ss sp					
		24/35-48+	cl/hvy cl	m-vfi fr ss sp	few gley, mn mangan oxs				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): ___
SITE CLASSIFICATION (.1948): ___
EVALUATED BY: ___
OTHER(S) PRESENT: ___

COMMENTS: ___

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet ___ of ___
PROPERTY ID #: _____
COUNTY: _____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: ORT APPLICATION DATE _____
ADDRESS: _____ DATE EVALUATED: 2-28-03
PROPOSED FACILITY: _____ PROPOSED DESIGN FLOW (.1949): _____ PROPERTY SIZE: _____
LOCATION OF SITE: Lot 22 Lake Forest PROPERTY RECORDED: _____
WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☐ Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: ☐ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1		0-3/5	gr sandy loam	friable SAP				Soil or Sap That is the Question	
		3/5-12/30	mod blk yel/cl	friable SAP for common wi SAP					
		12/30-49	B-c/C-B mottled gry cl/l	SAP/soil many wi SAP					
2									
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: _____
OTHER(S) PRESENT: _____

COMMENTS: _____

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet ___ of ___
PROPERTY ID #: _____
COUNTY: _____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Now Lot 23 again

OWNER: _____ APPLICATION DATE _____
ADDRESS: _____ DATE EVALUATED: 3-28-03
PROPOSED FACILITY: _____ PROPOSED DESIGN FLOW (.1949): _____ PROPERTY SIZE: _____
LOCATION OF SITE: lot 22 continued PROPERTY RECORDED: _____
WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☐ Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: ☐ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LAND-SCAPE POSITION/ SLOPE %	HORI-ZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	22A Newport	0-4	wk sbk loamsl	frssp					U maybe PS upon additional testing
		4-41	wk sbk rcl	clsp frssp					
		41-60	wk-mk-sbk-mabk	rcl clsp frssp					
2									
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: _____
OTHER(S) PRESENT: _____

COMMENTS: _____