Soil & Forestry Services of the Carolinas, PA
PO Box 832
Mooresville, NC 28115
www.soilandforestryservices.com

APPROVED FEB - 5 2016

Attached is a proposed design for a PPBPS Septic System using gravity distribution for a 3 bedroom single family residence at 176 Winding Cedar Drive, Statesville, North Carolina.
PIN #4722697575

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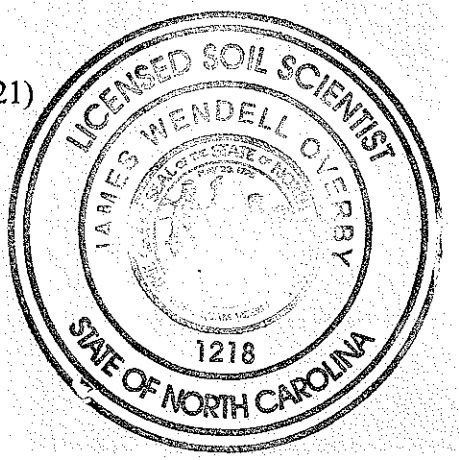
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Landowner: 20 20 Properties
Applicant: Ronald Scott Properties (Scott Parmiter 980 505-2421)

January 16, 2016
Project No.16-1000



INFORMATION FOR THE INSTALLER:

The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.

- Tanks shall be approved by DENR, and certification supplied by the manufacturer.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation with gravity distribution.
- Repair is specified as a PPBPS installation with gravity distribution.
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 24" wide to be level but have no more than 1/4" fall in 10 feet.
- Utility lines (any power from power transformer to be marked prior to install).
- Lot will be served from community well.

GRAVITY PPBPS SYSTEM
FOR WASTEWATER TREATMENT

APPROVED FEB - 5 2016

Applicant:	Ronald Scott Properties Attn: Scott Parmiter
Address:	406 Canvasback Road Mooresville, NC 28117
Phone:	980 505-2421
County:	Iredell
Location:	176 Winding Cedar Drive
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	N/A

Design Specifications

Drainfield Size:	200
Loading Rate:	0.3
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	24 in.
Septic Tank Size:	1000
Pump Tank Size:	n/a
Estimated Supply Line Length:	20
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	7.60
Dosing Volume:	N/A
Supply Manifold:	N/A
Supply Manifold Length:	N/A
Supply Manifold Volume:	N/A
Recommended Float Controls:	N/A
Recommended Control Panel:	N/A
Pressure Head:	N/A
Friction Head:	N/A
Elevation Head:	N/A
Total Dynamic Head:	N/A
Threaded Union:	N/A
Gate Valves:	N/A
Check Valves:	N/A
Anti-Siphon Hole:	N/A
Additional Comments:	Soil suitability was performed by Soil & Forestry Services, PA

176 Winding Cedar Drive
GRAVITY PPBPS

DESIGN FLOW:	360
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	400
TOTAL LATERAL LENGTH:	200
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	200.00
SUPPLY LINE LENGTH:	20
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	n/a

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176 Winding Cedar Drive

Project #:16-1000

LAYOUT FOR 3 BEDROOM HOME

January 15, 2016

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM							
INSTR. 1							
HOUSE CNR							
P. TANK							
1A	***RED***			***2.90***		***50***	***50***
1B	RED			2.90		69	42
2A	***ORANGE***			***3.90***		***50***	***50***
2B	ORANGE			3.90		47	47
3A	***BLUE***			***4.80***		***50***	***50***
3B	BLUE			4.80		38	38
4	RED			5.80		32	32
5A	***PINK***			***6.60***		***50***	***50***
5B	PINK			6.60		16	0
6	ORANGE			8.50		41	41
					Total	443	400

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	TRENCH SYSTEM	DIST	TRENCH BOTTOM
SYSTEM	***200***	***0.3***	***MOD.***	***PPBPS***	***GRAVITY***	36"
Repair	200	0.3	MOD.	PPBPS	GRAVITY	36"

Notes:

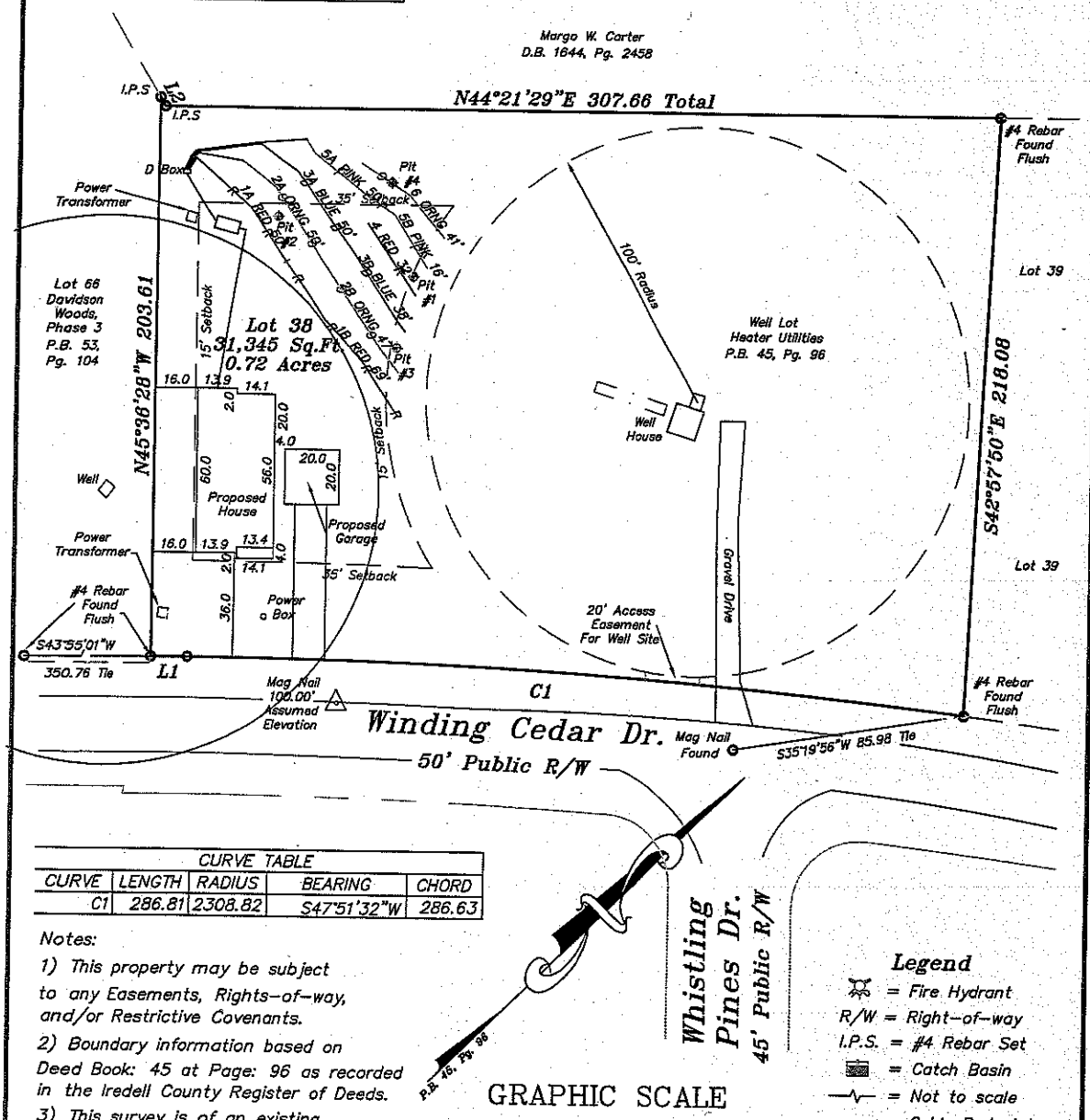
**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

I Lance D. Schamback, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description and/or Map Book: 45, Page 96). That the boundaries not surveyed are clearly indicated as drawn from information as shown survey; that the ratio of precision as calculated is 1: 10,000+ that this plat was prepared in accordance with G.S. 89-C as amended. Witness my original signature, registration number and seal this 10 day of January, A.D. 2016.

LINE TABLE		
LINE	LENGTH	BEARING
L1	13.43	N44°18'02"E
L2	3.79	N76°15'42"W

Lance D. Schamback, PLS
LICENSE NUMBER: L-4295



CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	286.81	2308.82	S47°51'32"W	286.63

Notes:

1) *This property may be subject to any Easements, Rights-of-way, and/or Restrictive Covenants.*
2) *Boundary information based on Deed Book: 45 at Page: 96 as recorded in the Iredell County Register of Deeds.*
3) *This survey is of an existing parcel or parcels of land.*
4) *No N.C.G.S. or U.S.G.S. Monuments could be located within 2000'.*
5) *10' Utility & Drainage Easement. 10' Along each Property Line.*

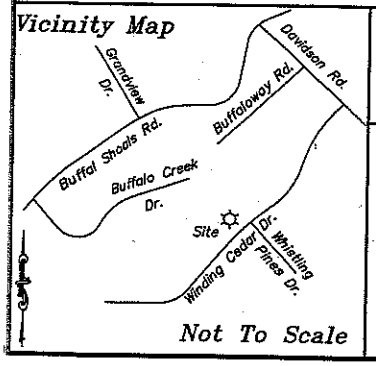
GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

Legend

- = Fire Hydrant
- R/W = Right-of-way
- I.P.S. = #4 Rebar Set
- = Catch Basin
- = Not to scale
- = Cable Pedestal
- WM = Water Meter
- = Utility Pole
- B.O.C. = Back of Curb
- Ⓢ = Sanitary Sewer Manhole



Boundary Survey
FOR
20 20 Properties, LLC.

PROPERTY DESCRIPTION
Lot 38, Phase 2
Davidson Woods Subdivision
Plat Book 45, at Page 96
Statesville Outside Township
Iredell County, NC

SCALE: 1" = 50'

FIELD BOOK:

FILE: 2016-05

TAX PARCEL ID: 4722697575

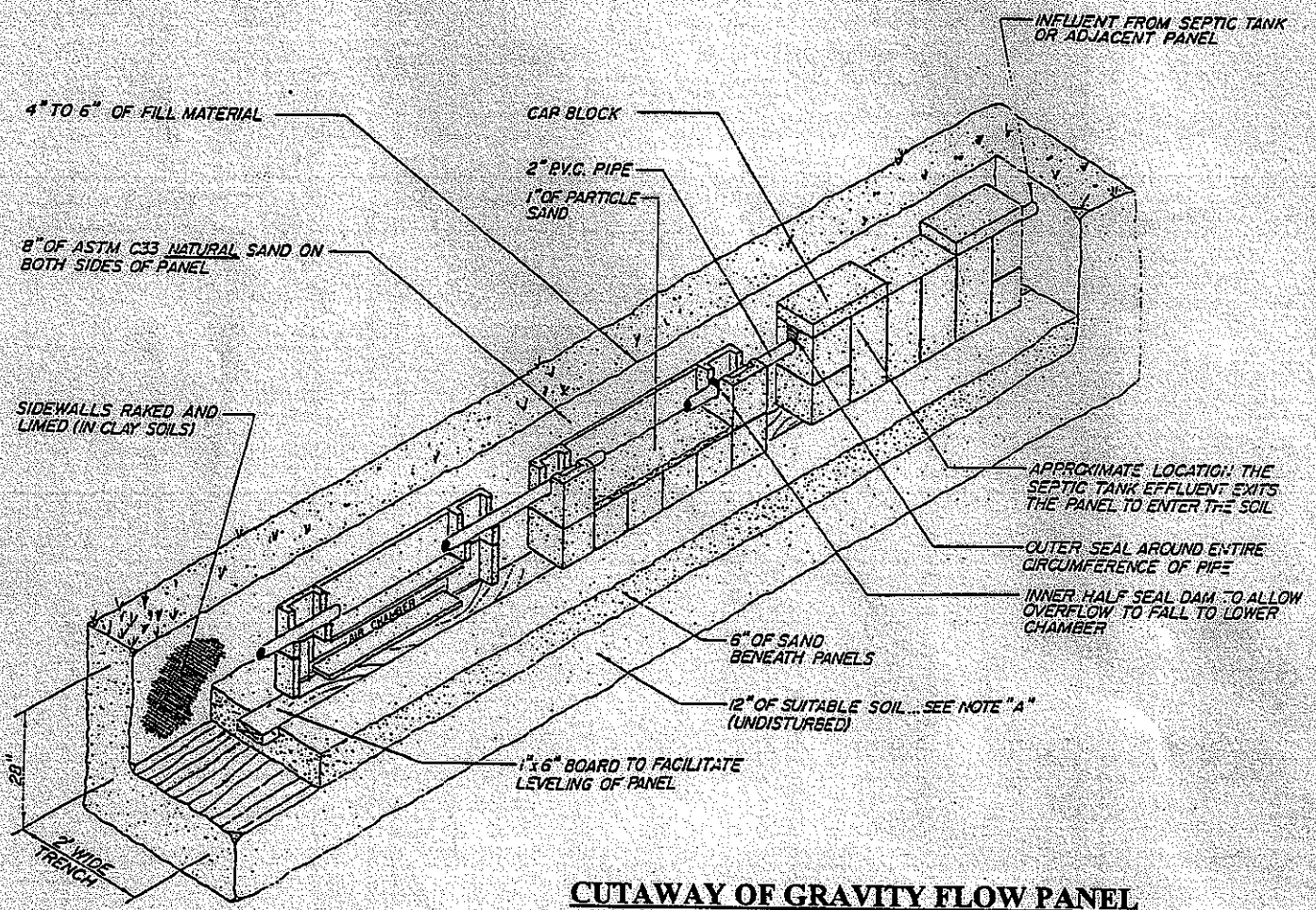
Schamback Surveying, P.A.
Post Office Box 4143
Mooresville, NC 28117
(704) 622-9915
C-3218

The T & J Panel
Wastewater Treatment System

Patent # 4013559

269 Marble Road
Statesville, N.C. 28625
704-924-8600

ISOMETRIC DRAWING OF A SEGMENT OF 16" T & J PANEL SYSTEM DRAINFIELD



CUTAWAY OF GRAVITY FLOW PANEL

CALCULATIONS

APPROVED FEB - 5 2016

Location 176 Winding Cedar Drive

Project Number 16-1000

Lot No: n/a

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.3	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	20	ft.
Supply Line Volume	7.6	gal.
Required Feet of Line	200.00	ft.
Amount of Line from Layout	200	ft.
Gallons per Minute	N/A	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	44	
Dosing Volume	N/A	gal.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42

Tank Draw Down	N/A	
Pump Run Time	N/A	minutes
Elevation Head	N/A	ft.
Pressure Head	N/A	ft.
Friction Factor	N/A	ft./100 ft. *(From the interpolater.)*
Friction Head	N/A	ft.
Total Dynamic Head (+15%)	N/A	ft.

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

Sheet 1 of 1
PROPERTY ID #: 4722697575
COUNTY: IREDELL

SOIL/SITE EVALUATION *for* ON-SITE WASTEWATER SYSTEM

APPROVED FEB - 5 2016

OWNER: 2020 PROPERTIES, LLC ATTN: SPECIAL ASSETS
ADDRESS: PO BOX 989 STATESVILLE, VA 24605
PROPOSED FACILITY: RESIDENCE
PROPOSED DESIGN FLOW (.1949): 360
LOCATION OF SITE: 176 WINDING CEDAR DRIVE
WATER SUPPLY: ☒ Private ☒ Public ☒ Well ☐ Spring Other
EVALUATION METHOD: ☐ Auger Boring ☒ Pit ☐ Cut
APPLICATION DATE 1/14/16
DATE EVALUATED: 12-15-15
PROPERTY SIZE: .72
PROPERTY RECORDED: YES
TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	LS/10%	0-5	B SL GR	VFR NS NP	>50"	40"	PS	N/A	S .3
		5-10	YB SCL WFSBK	FR SS SP					
		10-33	R C MMA/SBK	FR SS SP					
		33-40	RB CL WMSBK	FR SS SP Comm. SAP					
		40-50	VAR L MASS	VFR NS NP					
2	LS/12%	0-3	B SL GR	VFR NS NP	763"	32"	PS	N/A	S .3
		3-10	LtB SCL WFSBK	FR SS SP					
		10-27	RB C MMA/SBK	FR SS SP					
		27-32	BR CL WMA/S	FR SS SP Com SAP					
		32-63	VAR L MASS	VFR NS NP					
3	LS/11%	0-3	B SL GR	VFR NS NP	760"	36"	PS	N/A	S .3
		3-9	YB SL WFSBK	VFR SS SP					
		9-32	RB C MMABK	FR SS SP					
		32-36	RB CL WMSBK	FR SS SP					
		36-60	VAR L MASS	VFR NS NP					
4	LS/24%	0-4	B SL GR	VFR NS NP	758"	28"	PS	N/A	S .3
		4-20	RB C MMA/S	FR SS SP					
		20-28	RB CL WMSBK	VFR SS SP					
		28-58	VAR L MASS	VFR NS NP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	200'	200'
System Type(s)	PP BPS	PP BPS
Site LTAR	.3	.3

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

LICENSED SOIL SCIENTIST JAMES WENDELL OVERBY 1615 STATE OF NORTH CAROLINA

COMMENTS:

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

Sheet ____ of ____
PROPERTY ID #: ____
COUNTY: ____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
(Complete all fields in full)

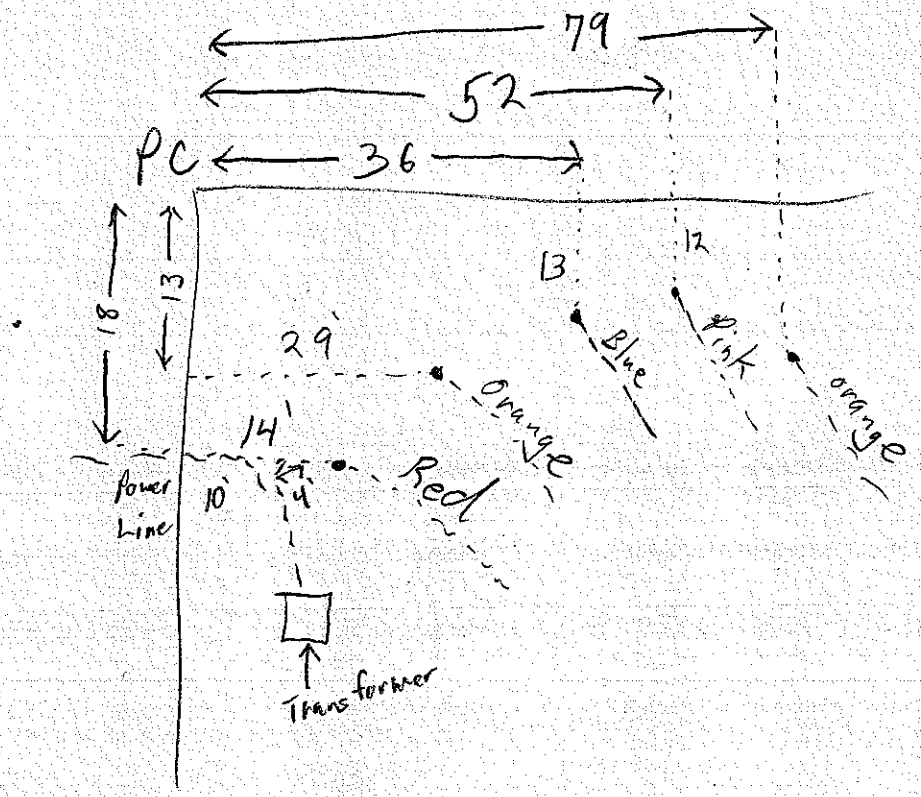
OWNER: Ronald Scott Properties — APPLICATION DATE 1-14-16
ADDRESS: P.O. Box 989 Statesville, VA — DATE EVALUATED: 1-30-16
PROPOSED FACILITY: 3 BR House — PROPOSED DESIGN FLOW (.1949): 360 gal/day — PROPERTY SIZE: 0.72 acres
LOCATION OF SITE: 176 Winding Cedar Drive Statesville — PROPERTY RECORDED: Yes
WATER SUPPLY: ☐ Private ☒ Public ☐ Well ☐ Spring ☐ Other ____
EVALUATION METHOD: ☐ Auger Boring ☒ Pits ☐ 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 LSS Pit #4 Repair	Shoulder	0-25	Clay Medium ABK	slightly F.rm, SS, Sp, Sexp	—	38	—	—	0.3 PS
		25-35	Clay Loam medium SBK	slightly Friable, SS, Sp, Sexp					
		35 60	Loamy Saprolite massive	moderately drained					
2 LSS Pit #1 Primary	Shoulder	0-6	Sandy Loam weak SBK	Friable, SS, Sp, Sexp	common SAP inclusions from 28" to 39"	39	—	—	0.3 PS
		6-33	Clay weak ABK	slightly F.rm, SS, Sp, Sexp					
		33-39	Clay Loam weak SBK	slightly Friable, SS, Sp, Sexp					
		39-60	Loamy Saprolite massive	moderate drained					
3									
Pit "4" Repair Area									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	200 L.F.	240 L.F.
System Type(s)	PPBPS-Grav	PPBPS-Grav
Site LTAR	0.3	0.3

OTHER FACTORS (.1946): —
SITE CLASSIFICATION (.1948): P.S.
EVALUATED BY: Tom Shuck
OTHER(S) PRESENT: —

COMMENTS: ____


79
52
PC
36
18
13
29
14
10
4
Power Line
Orange
Blue
Pink
Orange
Red
Transformer