IP only

ROLLANS *Soil & Environmental Services, PA.*

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Ashley Rollans, NC Licensed Soil Scientist
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Attached is a proposed design for an Accepted Septic System with gravity distribution for a 3 bedroom single family residence on Lot 11/12, Olin Ridge Subdivision, at 177 Cora Lane, Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
Site Plan/System Plan	5
Calculations	6
Profile Descriptions	SUBMITTED
Expedited Review Process Checklist	SUBMITTED
Zoning Permit & Receipt	SUBMITTED
Application	SUBMITTED
Green Sheet	SUBMITTED
Agent Authorization Form	SUBMITTED
Survey Plat for Recombination	SUBMITTED

7/12/16

July 12, 2016
Project #: 01-3191
Design By: Rollans Soil & Environmental Services, PA

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 NC DENR, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- 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 gravity 25% reduction (Accepted) installation.
- Repair is specified as a gravity 25% reduction (Accepted) installation.
- **Interceptor Drain upslope of drainfield must be installed 36" deep and daylighted.**

GRAVITY ACCEPTED SYSTEM
FOR WASTEWATER TREATMENT

Applicant:	Rollans Soil
Address:	P.O. Box 832 Mooresville, NC 28115
Phone:	704.746.5046
County:	Iredell
Location:	177 Cora Lane

Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	N/A

Design Specifications

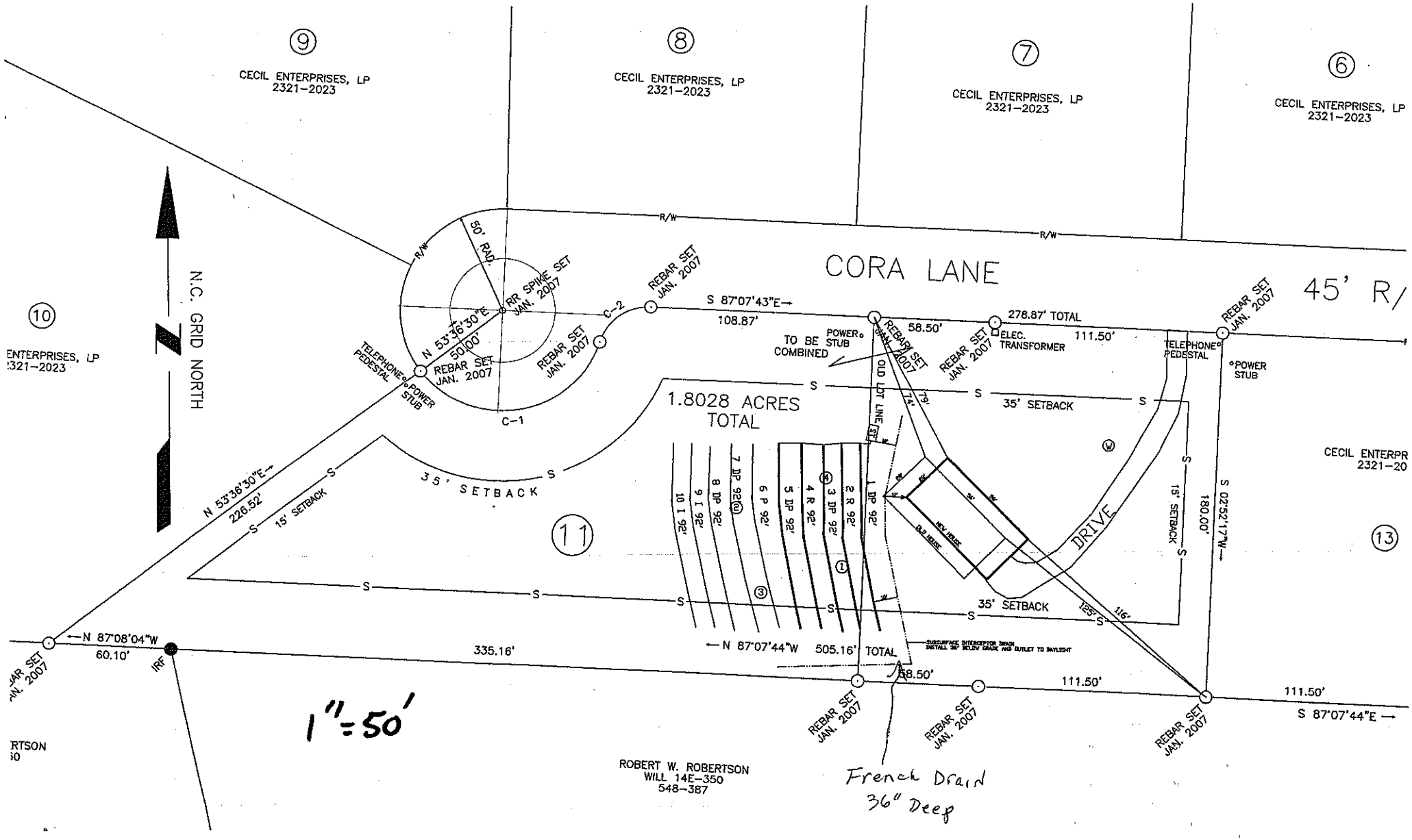
Drainfield Size:	460	
Loading Rate (gpd/ft.^{2}):	0.2	
Depth of Gravel in Trench:	N/A	
Gravel Size:	N/A	
Trench Depth:	18 in.	Repair Trench Bottom 18 in.
Trench Width:	36 in.	
Septic Tank Size:	1000	

Estimated Supply Line Length:	10
Supply Line Diameter:	4 in. SCH 40 PVC
Supply Line Volume:	6.53
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 Rollans Soil & Environmental Services

177 Cora Lane

ACCEPTED SYSTEM

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.2
TOTAL AREA TRENCH BOTTOM:	1380
TOTAL LATERAL LENGTH:	460
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	450
SUPPLY LINE LENGTH:	10
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000


⑨
CECIL ENTERPRISES, LP
2321–2023
⑧
CECIL ENTERPRISES, LP
2321–2023
⑦
CECIL ENTERPRISES, LP
2321–2023
⑥
CECIL ENTERPRISES, LP
2321–2023
CORA LANE
45' R/
R/W
50' RAD.
RR SPIKE SET JAN. 2007
REBAR SET JAN. 2007
C-2
C-1
N 53°36'30"E
50.00'
S 87°07'43"E
108.87'
58.50'
278.87' TOTAL
111.50'
ELEC. TRANSFORMER
TELEPHONE PEDESTAL
POWER STUB
TO BE COMBINED
OLD LOT LINE
1.8028 ACRES TOTAL
35' SETBACK
15' SETBACK
N 53°36'30"E
226.52'
N 87°08'04"W
60.10'
IRF
335.16'
N 87°07'44"W 505.16' TOTAL
180.00'
S 02°52'17"W
125'
116'
DRIVE
NEW HOUSE
DJ HOUSE
11
13
10
CECIL ENTERPR
2321–20
ENTERPRISES, LP
:321–2023
1"=50'
ROBERT W. ROBERTSON
WILL 14E-350
548-387
French Drain
36" Deep

Layout Specifications - 177 Cora Lane

Project #: 01-3191

LAYOUT FOR 3 BEDROOM HOME

July 12, 2016

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM							
INSTR. 1							
1	***DARK PINK***					***92***	***92***
2	***RED***					***92***	***92***
3	***DARK PINK***					***92***	***92***
4	***RED***					***92***	***92***
5	***DARK PINK***					***92***	***92***
6	PINK					92	92
7	DARK PINK					92	92
8	DARK PINK					92	92
9	I					92	92
10	I					92	92
					Total	**920**	**920**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
****System***	***460***	***0.200***	***ACCEPT.***	***0.250***	***25% RED***	***GRAVITY***
Repair	460	0.200	ACCEPT.	0.250	25% RED	***GRAVITY***

Notes: **All measures in feet

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

** **INTERCEPTOR DRAIN REQUIRED UPSLOPE OF DRAINFIELD (SEE SITE PLAN)**

**I represents an Imaginary line to be installed on contour but not flagged

CALCULATIONS

Location 177 Cora Lane, Olin, NC 28660

Project Number 01-3191

Lot No: 11 & 12 Olin Ridge Subdivision

No. of Bedrooms 3

Design Flow 360 $^{gal}/_{day}$

LTAR 0.200 $^{gal}/_{ft^2\ day}$

PPBPS? (YES OR NO) NO

Supply Line Length 10 ft.

Supply Line Volume 6.53 gal.

Required Feet of Line 450 ft.
Amount of Line from Layout 460 ft.

Gallons per Minute N/A $^{gal}/_{min}$

Required Septic Tank Capacity 1000 gal.
Septic Tank Size 1000 gal.

Panel Volume N/A gal.
# of Panels N/A
Dosing Volume N/A gal.

Tank Draw Down N/A

Pump Run Time

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.

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

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

Sheet 1 of 1
PROPERTY ID #:
COUNTY: Iredell

Lot 11 4940904265
Lot 12 4940906294

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

OWNER: Cecil Enterprises LP
ADDRESS: 855 Jennings Road, Statesville NC 28625
PROPOSED FACILITY: 3BR PROPOSED DESIGN FLOW (.1949): 360gpd
LOCATION OF SITE: 177 Cora Lane, Olin NC 28660

APPLICATION DATE 7/1/16
DATE EVALUATED: 6/22/16
PROPERTY SIZE: ±1.3028
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
B 1	L/3%	0 - 10	Bsl sr	FrSSSPSExP	-f [Fe] dep/conc	48	-	-	PS 0.275
		10 - 35	Bscl wfsbk	" " " "					
		35 - 48	YBscl wmsbk	" " " "					
B 2	L/3%	0 - 8	B sl sr	FrSSSPSExP	f-c [Fe] dep/conc.	48	-	-	PS 0.25
		8 - 25	BR scl wfsbk	" " " "					
		25 - 48	YBscl/sc wmsbk	" " " "					
B 3	L/3%	0 - 10	B sl sr	FrSSSPSExP	f-c Fe dep/conc. f [mn] conc.	48	-	-	PS 0.25
		10 - 35	BR scl wmsbk	" " " "					
		35 - 48	YBscl/sc wmsbk	" " " "					
B 4	L/3%	0 - 33	B/BRsl/scl gr/wfsbk	FrSSSPSExP	f [Fe] dep/conc	48	-	-	PS 0.25
		33 - 48	YBscl/sc wmsbk	" " " "					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	Accepted
Site LTAR	0.25	0.25

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

COMMENTS: 18-20" Trench Bottom