ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 3 bedroom single family residence on Lot #25 in Carlyle Farms Subdivision, Iredell County, North Carolina.

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5-17-06 OK DLS

LICENSED SOIL SCIENTIST Samuel A. Rollans 1231 STATE OF NORTH CAROLINA

5/16/06

May 12, 2006
Project No. 01-1234
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Corinthian Development LTD
Address:	P.O. Box 3421 Mooresville, NC 28117
Phone:	704-664-4822
County:	Iredell
Location:	Carlyle Farms Subdivision Lot #25
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	23.55923077

Design Specifications

Drainfield Size:	249
Loading Rate:	0.25 gpd/ft.^{2}
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	172
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	29.93
Dosing Volume:	138.60
Supply Manifold:	N/A
Supply Manifold Length:	N/A
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	2.18
Elevation Head:	10.00
Total Dynamic Head:	16.31
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral (4)
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services

Carlyle Farms Lot 25
LP PPBPS

DESIGN FLOW:	360
SOIL APPLICATION RATE:	0.25 gpd/ft²
TOTAL AREA TRENCH BOTTOM:	747
TOTAL LATERAL LENGTH:	249
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	240
SUPPLY LINE LENGTH:	172
TOTAL DYNAMIC HEAD:	16.31
MANIFOLD SIZE:	N/A
DOSING VOLUME:	138.60
PUMP TANK DRAW DOWN*:	6.6
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

LP PPBPS TAPSHEET - CARLYLE FARMS LOT 25

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*BLUE*	101	*32*	0.156	**0.41**	96	7
2	*RED*	100.55	*50*	0.156	**0.41**	150	12
3	*ORANGE*	99.5	*74*	0.156	**0.41**	222	17
5	*PINK*	98.65	*93*	0.156	**0.41**	279	21

total	**feet =**	**249**	**gal/min =**	**23.559231**
		Des. Flow	**360**	
		Pump Run=	**5.88**	
		soil LTAR	**0.25**	
		LTAR +5%	**0.2625**	
		LTAR with mod.	**0.5**	
		LTAR with mod.. + 5%	**0.525**	

.156 equals 5/32 inch hole

Carlyle Farms Lot 25

Project #: 01-1234

LAYOUT FOR 3 BEDROOM HOME — May 12, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		3.3			100.00		
INSTR. 1			103.25				
HOUSE CNR				7.75	95.50		
P. TANK				10.10	106.00		
1	*BLUE*			*2.25*	*101.00*	*32*	*32*
2	*RED*			*2.70*	*100.55*	*50*	*50*
3	*ORANGE*			*3.75*	*99.50*	*74*	*74*
4	*PINK*			*4.60*	*98.65*	*93*	*93*
5	BLUE			5.70	97.55	130	130
6	RED			6.50	96.75	160	160
7	ORANGE			7.30	95.95	110	110
					Total	649	649

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
** System*	*249*	*0.25*	*MOD.*	*0.25*	*PPBPS*	*LOW PRESSURE*
Repair	400	0.225	MOD.	0.225	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

CALCULATIONS

Location	Carlyle Farms	
Project Number		
Lot No:	Lot 25	
No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.25	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	172	ft.
Supply Line Volume	29.928	gal.
Required Feet of Line	240	ft.
Amount of Line from Layout	249	ft.
Gallons per Minute	23.55923	$^{gal}/_{min}$
	Note:	*Flow/hole (.41gpm) x # of panels (65)*
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	57	
Dosing Volume	139	gal.
	Note:	*Dosing Volume based on 67% of # of panels times 3.6 gal/panel*
Tank Draw Down	6.6	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	10.00	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	2.18	ft.
Total Dynamic Head (+15%)	16.31	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

10' DRAINAGE & UTILITY EASEMENT
S19°32'27"W
118.09'
L46
L44
L43
L11
C1
C2
C3
C4
C5
C27
C28
C29
C30
FARMDALE DRIVE
SIDE STREET MBSL
45' R/W
PUBLIC
R/W
CMP
SEPTIC AREA
30,782.60 sq. ft.
0.707 acres
N73°39'42"W
227.89'
50'
50'
1" = 50'
28,135.11
0.646
564.32 sq. ft.
0.541 acres
26
25
25'
63
P-1
P-2
well