8-1-06

ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence on Lot 51 in Anniston Subdivision Iredell County, North Carolina.

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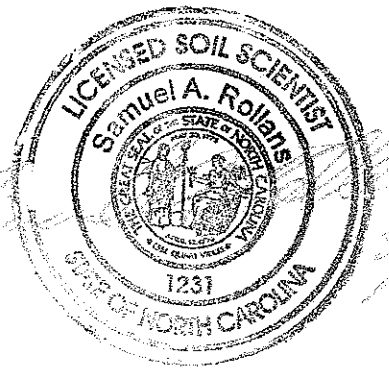
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July 31, 2006
Project No.01-1005
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Anniston, LLC
Address:	17824 Statesville Rd., Suite 112 Cornelius, NC 28031
Phone:	(704) 362-5007
County:	Iredell
Location:	Anniston Subdivision Lot 51
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	480 gpd
System Flow:	29.24

Design Specifications

Drainfield Size:	309
Loading Rate:	.275 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:	150
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	26.10
Dosing Volume:	173.66
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:	2.67
Elevation Head:	0.00
Total Dynamic Head:	5.37
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral
Check Valves:	N/A
Anti-Siphon Hole:	In Tank
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services

ANNISTON LOT 51
LP PPBPS

DESIGN FLOW:	480
SOIL APPLICATION RATE:	.275 gpd/ft²
TOTAL AREA TRENCH BOTTOM:	927
TOTAL LATERAL LENGTH:	309
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	290.91
SUPPLY LINE LENGTH:	150
TOTAL DYNAMIC HEAD:	5.37
MANIFOLD SIZE:	N/A
DOSING VOLUME:	173.66
PUMP TANK DRAW DOWN*:	8.3
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.*

Anniston Lot 51

Project #:01-1005

LAYOUT FOR 4 BEDROOM HOME

July 31, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.3			100.00		
INSTR. 1			101.30				
HOUSE CNR				9.60	91.70		
P. TANK				9.30	106.00		
1	***RED***			***5.00***	***96.30***	*47*	*47*
2	***ORANGE***			***6.20***	***95.10***	*60*	*60*
3	***BLUE***			***7.10***	***94.20***	*63*	*63*
4	***PINK***			***7.70***	***93.60***	*70*	*70*
5	***RED***			***8.70***	***92.60***	*69*	*69*
6	ORANGE			9.70	91.60	*69*	*69*
7	BLUE			10.50	90.80	*71*	*71*
8	PINK			11.10	90.20	*74*	*74*
9	RED			12.10	89.20	*75*	*75*
10	ORANGE			12.90	88.40	*77*	*77*
11	BLUE			13.40	87.90	*68*	*68*
					Total	743	743

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR	TRENCH SYSTEM	DISTRIBUTION
** System*	***309***	***0.259***	***MOD.***	***0.275***	***PPBPS***	***LOW PRESSURE***
Repair	434	0.184	MOD.	0.25	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

LP PPBPS TAPSHEET - Anniston Lot 51

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	***RED***	96.3	***47***	0.156	**0.41**	141	11
2	***ORANGE***	95.1	***60***	0.156	**0.41**	180	14
3	***BLUE***	94.2	***63***	0.156	**0.41**	189	15
4	***PINK***	93.6	***70***	0.156	**0.41**	210	16
5	***RED***	92.6	***69***	0.156	**0.41**	207	16
							72
	total	**feet =**	**309**	**gal/min =**	**29.236154**		
			Des. Flow	**480**			
			Pump Run=	**5.94**			
			soil LTAR	**0.275**			
			LTAR +5%	**0.28875**			
			LTAR with mod.	**0.27**			
			LTAR with mod.. + 5%	**0.2835**			

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston Subdivision

Project Number 01-1005

Lot No: Lot 51

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.275	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	150	ft.
Supply Line Volume	26.1	gal.
Required Feet of Line	290.9091	ft.
Amount of Line from Layout	309	ft.
Gallons per Minute	29.23615	$^{gal}/_{min}$

Note: Flow/hole (.41gpm) x # of panels

Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	72	
Dosing Volume	174	gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

Tank Draw Down	8.3	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.94	minutes
Elevation Head	0	ft.
Pressure Head	2	ft.
Friction Factor	1.78	ft./100 ft. *(From the interpolater.)*
Friction Head	2.67	ft.
Total Dynamic Head (+15%)	5.37	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