Paid $180.00 Redraw 1-16-10

ROLLANS ***Soil & Environmental Services, PA.***
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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 #35A in Anniston Subdivision, Iredell County, North Carolina.

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July 9, 2010
Project No. 01-1631
Design By: Samuel A. Rollans, LSS

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Tina Goins

Address: 9156 Glen Ashley Drive
Cornelius, NC 28036
Phone: 704.650.2002
County: Iredell
Location: Anniston Lot 35A

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: 31.16

Design Specifications

Drainfield Size: 326'
Loading Rate: 0.25 gpd/ft.^{2}
Depth of Gravel in Trench: NA (PPBPS)
Gravel Size: NA (PPBPS)
Trench Depth: 30 in.
Trench Width: 24 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 1000'
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 174.00
Dosing Volume: 183.31
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: 23.70
Elevation Head: 40.00
Total Dynamic Head: 75.56

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 & Iredell County Health Dept.

ANNISTON LOT 35A
LP PPBPS

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.25 gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM:	660
TOTAL LATERAL LENGTH:	330
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	320
SUPPLY LINE LENGTH:	1000
TOTAL DYNAMIC HEAD:	75.56
MANIFOLD SIZE:	N/A
DOSING VOLUME:	183.31
PUMP TANK DRAW DOWN*:	8.7
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 35A

Project #: 01-1631

LAYOUT FOR 4 BEDROOM HOME

July 9, 2010

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.7			100.00		
INSTR. 1			101.70				
HOUSE CNR.				40.00	61.70		
P. TANK				40.00	61.70		
1	PINK			2.00	99.70	20	20
2	RED			2.90	98.80	30	30
3	ORANGE			4.40	97.30	114	100
4	BLUE			5.20	96.50	112	100
5	ORANGE			6.00	95.70	112	100
6	BLUE			7.00	94.70	110	110
8	PINK			7.80	93.90	43	43
9	ORANGE			8.50	93.20	90	90
10	BLUE			10.80	90.90	60	60
11	ORANGE			11.80	89.90	40	40
					Total	731	693

Initial System

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
*System	330	0.25	MOD.	0.25	PPBPS	LOW PRESSURE
Repair	363	0.25	MOD.	0.25	PPBPS	LOW PRESSURE

Notes:

** TBM located top of ground at EIP at corner of lot 20A and 37A (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 35A

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
2	RED	98.8	30	0.156	0.41	60	7
3	ORANGE	97.3	100	0.156	0.41	200	23
4	BLUE	96.5	100	0.156	0.41	200	23
5	ORANGE	95.7	100	0.156	0.41	200	23
	total	feet =	330	gal/min =	31.16	# of panels=	76
			Des. Flow	480			
			Pump Run=	5.88			
			soil LTAR	0.25			

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston

Project Number 01-1631

Lot No: Lot 35A

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.25	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	1000	ft.
Supply Line Volume	174	gal.
Required Feet of Line	320	ft.
Amount of Line from Layout	330	ft.
Gallons per Minute	31.16	$^{gal}/_{min}$

Note: Flow/hole (.41gpm) x # of panels (72)

Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	76	
Dosing Volume	183.31	gal.

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

Tank Draw Down	8.7	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	40	ft.
Pressure Head	2	ft.
Friction Factor	2.37	ft./100 ft. *(From the interpolater.)*
Friction Head	23.70	ft.
Total Dynamic Head (+15%)	75.56	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