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 5 bedroom single family residence on Lot 65 in Anniston Subdivision Iredell County, North Carolina.

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May 23, 2012
Project No.01-1705
Design By: Rollans Soil & Environmental Services, PA

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Bluto Builders

Address: 17005 Green Dolphin Lane
Cornelius, NC 28031

Phone: 704.202.8035

County: Iredell

Location: Anniston Lot 65

Source of Wastewater Flow: 5 Bedroom Single Family Residence

Estimated Daily Wastewater Production: 600 gpd

System Flow: 32.39

Design Specifications

Drainfield Size: 340

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: 1500 gal.

Pump Tank Size: 1500 gal.

Estimated Supply Line Length: 131

Supply Line Diameter: 2 in. SCH 40 PVC

Supply Line Volume: 22.79

Dosing Volume: 190.55

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: 3.10

Elevation Head: 13.00

Total Dynamic Head: 20.82

Threaded Union: In Tank

Gate Valves: 1 in Tank
1 per lateral

Check Valves: In Tank

Anti-Siphon Hole: NA

Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

Anniston Lot 65
LP PPBPS

DESIGN FLOW:	600
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	1020
TOTAL LATERAL LENGTH:	340
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	333.33
SUPPLY LINE LENGTH:	131
TOTAL DYNAMIC HEAD:	20.82
MANIFOLD SIZE:	N/A
DOSING VOLUME:	190.55
PUMP TANK DRAW DOWN*:	6.1
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

**Pump tank draw down based on a volume basis of 31 gallons per inch. Draw down may vary among pump tank manufacturers.*

Anniston Lot 65

Project #:01-1005

LAYOUT FOR 5 BEDROOM HOME

May 23, 2012

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		9.2			100.00		
INSTR. 1			109.20				
HOUSE CNR				7.20	102.00		
P. TANK				7.80	101.40		
1	***DARK PINK***			***1.10***	***108.10***	***46***	***46***
2	***BLUE***			***3.80***	***105.40***	***70***	***70***
3	***PINK***			***7.10***	***102.10***	***40***	***40***
4	***DARK PINK***			***8.50***	***100.70***	***60***	***60***
5	***BLUE***			***10.30***	***98.90***	***50***	***50***
6	***ORANGE***			***12.30***	***96.90***	***47***	***47***
7	***RED***			***13.40***	***95.80***	***27***	***27***
8	PINK			5.40	103.80	45	45
9	ORANGE			7.20	102.00	62	62
10	DARK PINK			8.60	100.60	56	56
11	BLUE			11.20	98.00	45	45
12	PINK			12.80	96.40	46	46
13	ORANGE			14.80	94.40	50	50
14	BLUE			16.40	92.80	48	48
15	RED			18.40	90.80	48	48
					Total	644	644

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
* *System*	*340*	*0.3*	*MOD.*	*0.3*	*PPBPS*	*LOW PRESSURE*
Repair	400	0.3	MOD.	0.3	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 65

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*DARK PINK*	*108.10*	*46*	0.156	**0.41**	138	11
2	*BLUE*	*105.40*	*70*	0.156	**0.41**	210	16
3	*PINK*	*102.10*	*40*	0.156	**0.41**	120	9
4	*DARK PINK*	*100.70*	*60*	0.156	**0.41**	180	14
5	*BLUE*	*98.90*	*50*	0.156	**0.41**	150	12
6	*ORANGE*	*96.90*	*47*	0.156	**0.41**	141	11
7	*RED*	*95.80*	*27*	0.156	**0.41**	81	6
	total	feet =	340	gal/min =	**32.39**		79

Des. Flow	600
Pump Run=	5.88
soil LTAR	0.3
LTAR +5%	0.315
LTAR with mod.	0.6
LTAR with mod.. + 5%	0.63

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston Subdivision

Project Number 01-1005

Lot No: Lot 65

No. of Bedrooms	5
Design Flow	600 $^{gal}/_{day}$
LTAR	0.3 $^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES
Supply Line Length	131 ft.
Supply Line Volume	22.794 gal.
Required Feet of Line	333.33 ft.
Amount of Line from Layout	340 ft.
Gallons per Minute	32.39 $^{gal}/_{min}$
	Note: Flow/hole (.41gpm) x # of panels
Required Septic Tank Capacity	1500 gal.
Minimum Standard Tank Size	1500 gal.
Panel Volume	3.6 gal.
# of Panels	79
Dosing Volume	191 gal.
	Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel
Tank Draw Down	6.1 *Generic Draw Down of 31 gal.per in.*
Pump Run Time	5.88 minutes
Elevation Head	13 ft.
Pressure Head	2 ft.
Friction Factor	2.37 ft./100 ft. *(From the interpolater.)*
Friction Head	3.10 ft.
Total Dynamic Head (+15%)	20.82 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