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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 # 58 in ROSELAND HEIGHTS Subdivision, Iredell County, North Carolina.

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July 14, 2008
Project #: 01-1373
Design By: Rollans Soil & Environmental Services

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.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Design precludes foundation drains.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation.
- Repair is specified as a PPBPS installation.
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	SPEAR BUILDERS, INC.
Address:	109-C Williamson Road Mooresville, NC 28115
Phone:	704-663-4050
County:	Iredell
Location:	ROSELAND HEIGHTS LOT # 58
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	13.94

Design Specifications

Drainfield Size:	150
Loading Rate (gpd/ft.^{2}):	0.4
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:	320
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	55.68
Dosing Volume:	82.01
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:	2.69
Elevation Head:	3.50
Total Dynamic Head:	9.42
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

ROSELAND HEIGHTS LOT # 58
LP PPBPS

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.4
TOTAL AREA TRENCH BOTTOM:	450
TOTAL LATERAL LENGTH:	150
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	150
SUPPLY LINE LENGTH:	320
TOTAL DYNAMIC HEAD:	9.42
MANIFOLD SIZE:	N/A
DOSING VOLUME:	82.01
PUMP TANK DRAW DOWN*:	3.9
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.*

ROSELAND HEIGHTS LOT # 58

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LAYOUT FOR 3 BEDROOM HOME

July 14, 2008

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.7			100.00		
INSTR. 1			101.70				
HOUSE CNR				0.50	101.20		
P. TANK				2.50	99.20		
1	PINK			4.00	97.70	60	60
2	***PINK***			***4.00***	***97.70***	***75***	***75***
3	DARK PINK			5.50	96.20	61	61
4	***DARK PINK***			***5.50***	***96.20***	***75***	***75***
5	BLUE			7.50	94.20	30	30
					Total	**301**	**301**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***150***	***0.4***	***MOD.***	***0.400***	***PPBPS***	***LOW PRESSURE***
Repair	151	0.4	MOD.	0.400	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground at EIP at corner of lot (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 -ROSELAND HEIGHTS LOT# 58

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
2	***PINK***	97.7	*75*	0.156	**0.41**	225	17
3	***DARK PINK***	96.2	*75*	0.156	**0.41**	225	17
							34
	total	**feet =**	**150**	**gal/min =**	**13.94**		
			Des. Flow	**360**			
			Pump Run=	**5.88**			
			soil LTAR	**0.4**			
			LTAR +5%	**0.42**			
			LTAR with mod.	**0.8**			
			LTAR with mod.. + 5%	**0.84**			

.156 equals 5/32 inch hole