IREDELL COUNTY HEATLH DEPARTMENT

PAGE 2: *SITE PLAN WORKSHEET*

SEE THE SAMPLE SITE PLAN BELOW. INCOMPLETE SITE PLANS WILL BE RETURNED TO YOU FOR COMPLETION AND MAY RESULT IN A DELAY IN THE ISSUANCE OF YOUR SEPTIC SYSTEM PERMIT!!!

Place an (X) beside each item as you complete the site plan:

- X Property Line measurements are clearly identified...
- X All proposed structures are indicated...
  SHOW: proposed house or business footprint, wells, water lines, patios, pools and decks, and any other item that will occupy space on the site
- X Front and side setbacks from property line...
- X Preferred driveway location and configuration, preferred well location...
- X Area you prefer your septic system to be placed...
- X North arrow, or other sufficient indicator of direction...

Circle N/A on the following if appropriate:

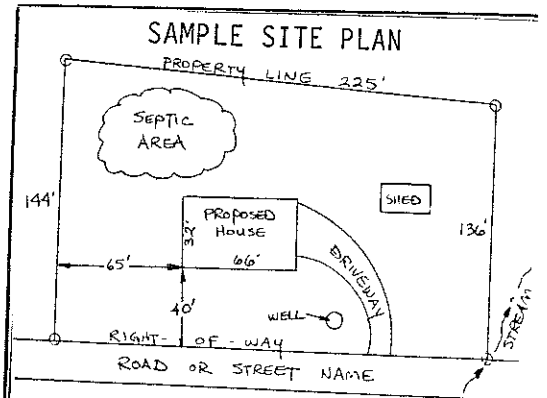
- X Location of septic systems and wells within 100' of your property... N/A
- X Location of easements and rights of ways on your property... N/A
- X Location of any designated wetlands on the property... N/A

Signature: C [illegible] Z
Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

7/19/06
DATE

USE THIS SPACE TO DRAW YOUR SITE PLAN

See Attached Site Plan



ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

2120 Graham Road, Mount Ulla, NC 28125 *Phone/Fax (704) 278 – 0989*

Ashley Rollans, NC Licensed Soil Scientist
Mobile: (704) 746-5046
E-mail: Rollansfortcj@aol.com

Brady Freeman, Registered Sanitarian
Mobile: (704) 746-6497
E-mail: bfree209@yahoo.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence on Lot #10 in Winding Forest Subdivision, Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
System Tapsheet	5
Site Plan/System Plan	6
Calculations	7
Profile Descriptions	8

July 18, 2006
Project #: 01-1152
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 DEHNR, 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.
- 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.
- SUPPLY LINE UNDER DRIVE TO BE 36" DEEP OR GREATER.

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: BO OF NC

Address: 249 Williamson Rd. STE 101
Mooresville, NC 28117
Phone: 704-696-2662
County: Iredell
Location: Winding Forest Subdivision Lot #10

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: 32.64230769

Design Specifications

Drainfield Size: 345
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: 146
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 25.40
Dosing Volume: 192.03
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: 3.46
Elevation Head: 12.40
Total Dynamic Head: 20.54

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

Winding Forest Subdivision Lot #10
LP PPBPS

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.25 gpd/ft.2
TOTAL AREA TRENCH BOTTOM:	1035
TOTAL LATERAL LENGTH:	345
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	320
SUPPLY LINE LENGTH:	146
TOTAL DYNAMIC HEAD:	20.54
MANIFOLD SIZE:	N/A
DOSING VOLUME:	192.03
PUMP TANK DRAW DOWN*:	9.1
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.*

WINDING FOREST LOT 10

Project #: 01-1152

LAYOUT FOR 4 BEDROOM HOME

July 18, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		5.9			100.00		
INSTR. 1			105.90				
HOUSE CNR				10.90	95.00		
P. TANK				14.30	91.60		
1	ORANGE			3.20	102.70	79	79
2	BLUE			3.90	102.00	70	70
3	RED			4.70	101.20	72	72
4	PINK			5.40	100.50	52	52
5	ORANGE			6.30	99.60	50	50
6	***BLUE***			***6.90***	***99.00***	***60***	***60***
7	***RED***			***7.20***	***98.70***	***60***	***60***
8	***PINK***			***7.80***	***98.10***	***60***	***60***
9	***ORANGE***			***8.40***	***97.50***	***53***	***50***
10	***BLUE***			***8.90***	***97.00***	***55***	***55***
11	***RED***			***9.80***	***96.10***	***60***	***60***
					Total	671	668

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
****System***	***345***	***0.25***	***MOD.***	***0.25***	***PPBPS***	***LOW PRESSURE***
Repair	323	0.25	MOD.	0.25	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 -WINDING FOREST LOT 10

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
6	*BLUE*	99	*60*	0.156	**0.41**	180	14
7	*RED*	98.7	*60*	0.156	**0.41**	180	14
8	*PINK*	98.1	*60*	0.156	**0.41**	180	14
9	*ORANGE*	97.5	*50*	0.156	**0.41**	150	12
10	*BLUE*	97	*55*	0.156	**0.41**	165	13
11	*RED*	96.1	*60*	0.156	**0.41**	180	14
	total	**feet =**	**345**	**gal/min =**	**32.642308**		
			Des. Flow	**480**			
			Pump Run=	**5.88**			
			soil LTAR	**0.3**			
			LTAR +5%	**0.315**			
			LTAR with mod.	**0.27**			
			LTAR with mod.. + 5%	**0.2835**			

.156 equals 5/32 inch hole

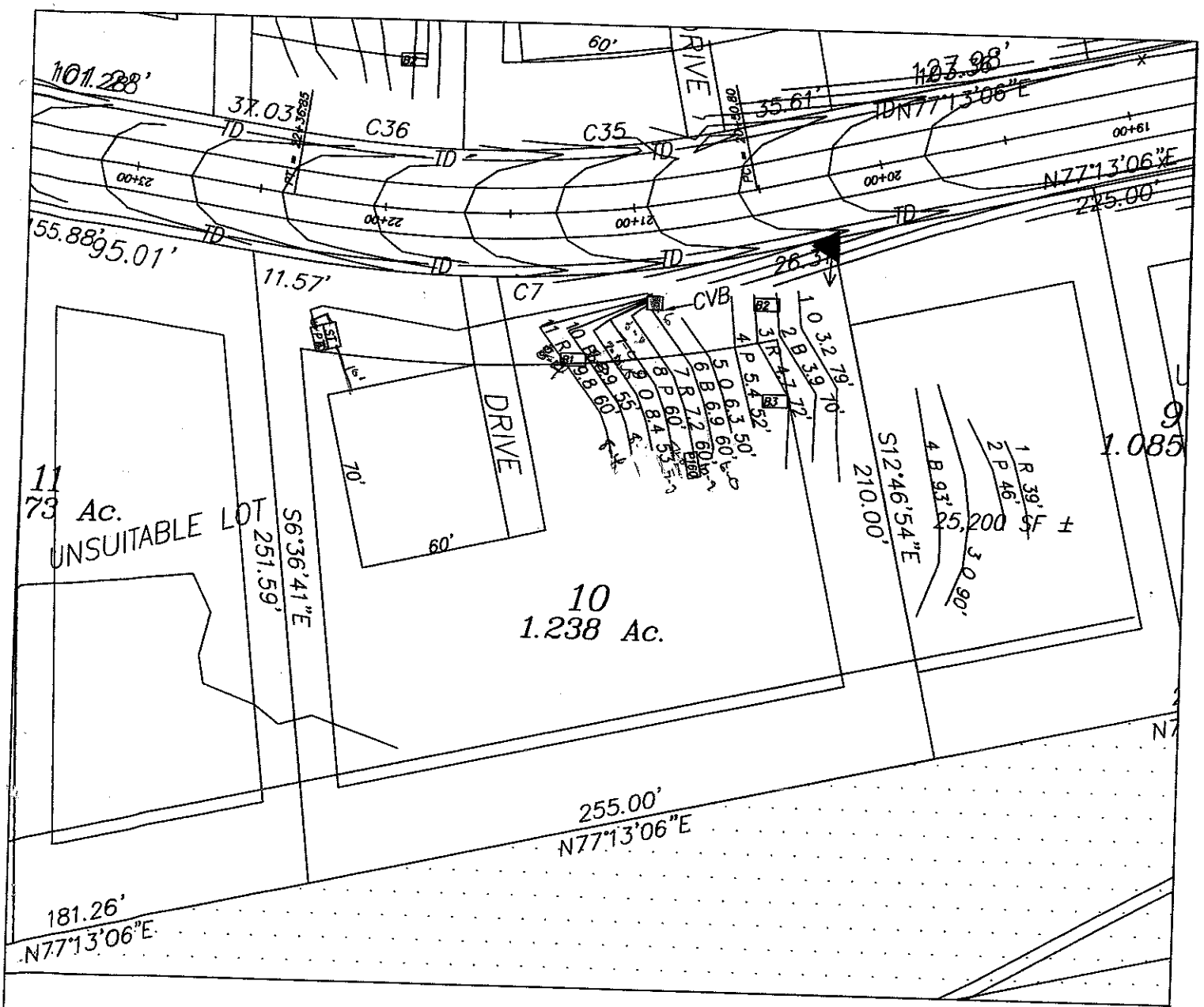
LP PPBPS TAPSHEET -WINDING FOREST LOT 10

SYSTEM

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10	*BLUE*	97	*55*	0.156	**0.41**	165	13
11	*RED*	96.1	*60*	0.156	**0.41**	180	14
	total	**feet =**	**345**	**gal/min =**	**32.642308**		

Des. Flow	**480**
Pump Run=	**5.88**
soil LTAR	**0.3**
LTAR +5%	**0.315**
LTAR with mod.	**0.27**
LTAR with mod.. + 5%	**0.2835**

.156 equals 5/32 inch hole



LEGEND

- House Box.
- System lines.
- Repair lines.
- House Corner Shot.
- T.B.M.

GRAPHIC SCALE
1" = 60'

60 0 60 120

FOR PRELIMINARY PLANNING PURPOSES ONLY. ALL LOTS WILL REQUIRE FINAL APPROVAL BY THE COUNTY HEALTH DEPARTMENT ON A LOT BY LOT BASIS. THIS MAP SHOULD BY USED AS A GENERAL GUIDE, SOME ADJUSTMENTS WILL BE NECESSARY IN THE FIELD DUE TO SOIL VARIABILITY AND COMPLEX TOPOGRAPHIC FEATURES. THIS MAP ONLY REFLECTS EXISTING SOIL SUITABILITY FOR ON-SITE SEPTIC TANK SYSTEMS.

PLEASE REFER TO ATTACHED SOIL REPORT FOR ADDITIONAL SITE SPECIFIC INFORMATION

ROLLANS SOIL & ENVIRONMENTAL SERVICES
2120 GRAHAM ROAD
MOUNT ULLA, NC 28125
PHONE/FAX: (704) 278 - 0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE (704) 746 - 5046
EMAIL: ROLLANSFORTCJ@AOL.COM

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: BD OF NC / WINDING FOREST

LOCATION/DATE: PERRY ROAD, IREDELL COUNTY, NORTH CAROLINA, JUNE 2006

JOB # : 01-1135
FILE: C:\JOBS\01-1135
PROJECT MGR.: C.B.F.
FIELD WORK: C.B.F. & A.L.P.
DRAWN BY: C.B.F.

CALCULATIONS

Location Winding Forest

Project Number 01-1152

Lot No: Lot 10

No. of Bedrooms	4
Design Flow	480 $^{gal}/_{day}$
LTAR	0.25 gpd/ft2
PPBPS? (YES OR NO)	YES
Supply Line Length	146 ft.
Supply Line Volume	25.404 gal.
Required Feet of Line	320 ft.
Amount of Line from Layout	345 ft.
Gallons per Minute	32.64231 $^{gal}/_{min}$
Required Septic Tank Capacity	1000 gal.
Minimum Standard Tank Size	1000
Panel Volume	3.6 gal.
# of Panels	80
Dosing Volume	192.03 gal.

Note: Dosing Volume based on 33% of # of panels times 3.6 gal/panel

Tank Draw Down	9.1 *Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88 minutes
Elevation Head	12.4 ft.
Pressure Head	2 ft.
Friction Factor	2.37 ft./100 ft. *(From the interpolater.)*
Friction Head	3.46 ft.
Total Dynamic Head (+15%)	20.54 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