ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for a MODIFIED (PPBPS) Septic System with Gravity distribution for a 4 bedroom single family residence on Lot #58 Norman Woods Subdivision, Iredell County, North Carolina.

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July 6, 2006
Design By: Rollans Soil and Environmental Services

Gravity PPBPS
FOR WASTEWATER TREATMENT

Owner:	PRIDE HOMES
Address:	578 NORMANDY RD. Mooresville, NC 28117
Phone:	704-664-71808
County:	Iredell
Location:	Norman Woods Subdivision Lot #58
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	480 gpd
System Flow:	NA

Design Specifications

Drainfield Size:	270
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:	1000
Pump Tank Size:	NA
Estimated Supply Line Length:	20
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	3.48
Dosing Volume:	NA
Supply Manifold:	D-BOX
Supply Manifold Length:	NA
Supply Manifold Volume:	N/A
Recommended Float Controls:	NA
Recommended Control Panel:	NA
Pressure Head:	NA
Friction Head:	NA
Elevation Head:	NA
Total Dynamic Head:	NA
Threaded Union:	NA
Gate Valves:	NA NA
Check Valves:	NA
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

NORMAN WOODS SUBDIVISION LOT 58

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	810
TOTAL LATERAL LENGTH:	270
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	270
SUPPLY LINE LENGTH:	20
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	NA

NORMAN WOODS LOT 58

LAYOUT FOR 4 BEDROOM HOME

July 6, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		N/A			100.00		
TANK		N/A	N/A				
HOUSE		N/A	N/A				
INSTR. 1			N/A				
1	ORANGE			N/A	N/A	32	32
2	***RED***			*N/A*	*N/A*	*45*	*45*
3	***BLUE***			*N/A*	*N/A*	*45*	*45*
4	***BLUE***			*N/A*	*N/A*	*45*	*45*
5	***ORANGE***			*N/A*	*N/A*	*45*	*45*
6	***ORANGE***			*N/A*	*N/A*	*45*	*45*
7	***PINK***			*N/A*	*N/A*	*45*	*45*
					Total	**302**	**302**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*270*	*0.30*	*MOD.*	*0.30*	*PPBPS*	**GRAVITY**
Repair	32	0.30	*MOD.*	0.30	PPBPS	**DISTRIBUTION NOT REQUIRED**

Notes:

** TBM NOT REQUIRED

**All measures in feet

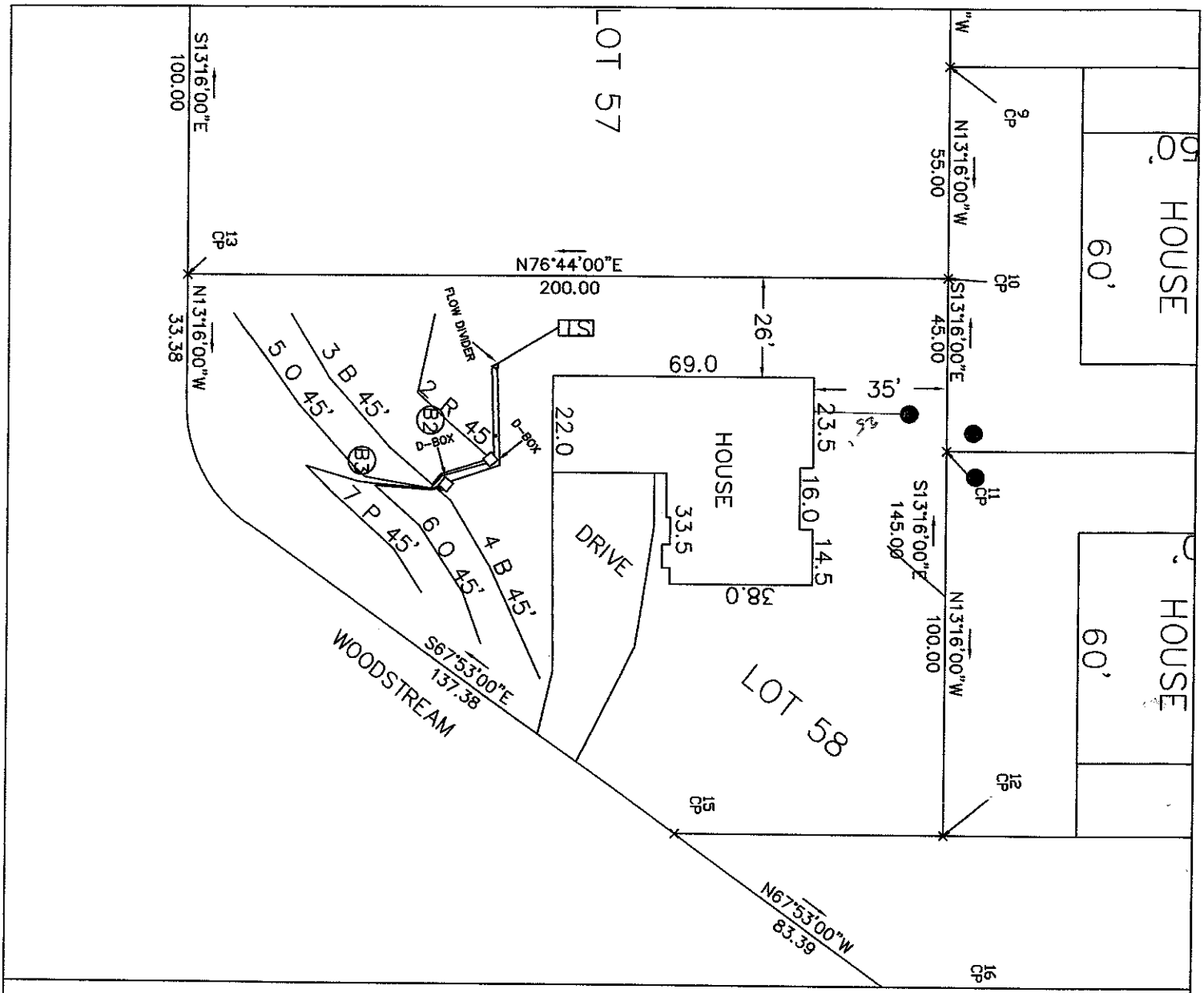
**Nitrification lines are demonstrated on contour via colored pin flags

**BS, HI, and FS indicate rod readings

TAPSHEET - NORMAN WOODS LOT 58

SYSTEM

Line #	Color	Elevation	Length	Hole Size	# of Panels	gpd
2	***RED***	N/A	**45**	N/A	**10**	N/A
3	***BLUE***	N/A	**45**	N/A	**10**	N/A
4	***BLUE***	N/A	**45**	N/A	**10**	N/A
5	***ORANGE***	N/A	**45**	N/A	**10**	N/A
6	***ORANGE***	N/A	**45**	N/A	**10**	N/A
7	***PINK***	N/A	**45**	N/A	**10**	N/A
	total	**feet =**	**270**	**gal/min =**	N/A	
			Des. Flow	N/A		
			Pump Run=	N/A		
			soil LTAR	**0.3**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.4**		
			LTAR with ACCEPTED + 5%	**0.42**		



LEGEND

- Areas contain soils with 24 inches or more of useable material and have potential for conventional, modified conventional and low-pressure pipe (lpp) septic systems.
- Unsuitable areas.
- System lines.
- Repair lines.
- Temporary Bench Mark (TBM)
- Well Location.

GRAPHIC SCALE

1" = 40'

40 0 40 80

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

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MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: PRIDE HOMES / NORMAN WOODS

LOCATION/DATE: WOODSTREAM, IREDELL COUNTY, NORTH CAROLINA, JUNE 2008

JOB # : 01-1005
FILE: C:\JOBS\01-1005
PROJECT MGR.: CBF
FIELD WORK: CBF & AP
DRAWN BY: CBF

CALCULATIONS

Location NORMAN WOODS

Project Number

Lot No: Lot 58

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.3	$^{gal}/_{ft^2\ day}$
50% RED.? (YES OR NO)	YES	
Supply Line Length	20	ft.
Supply Line Volume	3.48	gal.
Required Feet of Line	270	ft.
Amount of Line from Layout	270	ft.
Gallons per Minute NA		$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	176.31	gal.
Dosing Volume NA		gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down NA — *Generic Draw Down of 21 gal.per in.*

Pump Run Time NA — minutes

Elevation Head NA — ft.
Pressure Head NA — ft.
Friction Factor NA — ft./100 ft. *(From the interpolater.)*
Friction Head NA — ft.

Total Dynamic Head (+15%) NA — 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