ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for an Accepted (25% reduction) Septic System with Gravity distribution for a 5 bedroom single family residence on 6 ACRE TRACK FAIRHAVEN SUB, Iredell County, North Carolina.

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December 1, 2006
Project No. 01-1325
Design By: Rollans Soil and Environmental Services

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner:	REA- MOR
Address:	109-C Williamson Road Mooresville, NC 28115
Phone:	704-663-4050
County:	Iredell
Location:	FAIRHAVEN 6 ACRE TRACK
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	600 gpd
System Flow:	NA

Design Specifications

Drainfield Size:	500
Loading Rate:	0.3
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	N/A
Estimated Supply Line Length:	40
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	15.36
Dosing Volume:	NA
Supply Manifold:	DROP 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.

FAIRHAVEN 6 ACRE TRACK

DESIGN FLOW:	600
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	1500
TOTAL LATERAL LENGTH:	500
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	500
SUPPLY LINE LENGTH:	40
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	N/A

FAIRHAVEN 6 ACRE TRACK

Project #: 01-1325

LAYOUT FOR 5 BEDROOM HOME 12/01/06

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	***PINK***			***N/A***	***N/A***	***100***	***100***
2	***BLUE***			***N/A***	***N/A***	***110***	***100***
3	***DARK PINK***			***N/A***	***N/A***	***128***	***100***
4	***ORANGE***			***N/A***	***N/A***	***100***	***100***
5	***PINK***			***N/A***	***N/A***	***111***	***100***
6	BLUE			N/A	N/A	116	116
7	DARK PINK			N/A	N/A	124	124
8	ORANGE			N/A	N/A	103	103
					Total	**892**	**843**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
****System***	***500***	***0.30***	*ACCEPT.*	***0.30***	***25% RED.***	**GRAVITY**
Repair	343	0.30	*MOD.*	0.30	PPBPS	**DISTRIBUTION** LOW PRESSURE

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

CALCULATIONS

Location FAIRHAVEN

Project Number 01-1325

Lot No: 6 ACRE TRACK

No. of Bedrooms 5

Design Flow 600 $^{gal}/_{day}$

LTAR 0.3 $^{gal}/_{ft^2\ day}$

25% RED.? (YES OR NO) YES

Supply Line Length 40 ft.

Supply Line Volume 15.36 gal.

Required Feet of Line 500 ft.
Amount of Line from Layout 500 ft.

Gallons per Minute NA $^{gal}/_{min}$

Required Septic Tank Capacity 1500 gal.
Minimum Standard Tank Size 1500 gal.

Lateral Line Volume 326.5 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