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 an Accepted (25% reduction) Septic System with Gravity distribution for a 4 bedroom single family residence on Lot #52 Shepherds Bluff Subdivision, Iredell County, North Carolina.

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November 1, 2006
Project #: 01-1064
Design By: Rollans Soil and Environmental Services

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner: Billy Allen

Address: 111-B Raceway Drive
Mooresville, NC 28117
Phone: 704-664-7029
County: Iredell
Location: Shepherds Bluff Subdivision Lot #52

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

Design Specifications

Drainfield Size: 400
Loading Rate: .3GPD/FTSQ
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 42 in.
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 50
Supply Line Diameter: 3 in. SCH 40 PVC
Supply Line Volume: 8.70
Dosing Volume: NA
Supply Manifold: 4 Drop Boxes
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.

Shepherds Bluff Subdivision Lot #52

DESIGN FLOW:	480
SOIL APPLICATION RATE:	.3 GPD/FTSQ
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	50
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

SHEPHERDS BLUFF LOT #52

Project #: 01-1064

LAYOUT FOR 4 BEDROOM HOME

November 1, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		N/A			N/A		
TANK			N/A				
HOUSE			N/A				
INSTR. 1			N/A				
1	YELLOW			N/A	N/A	69	69
2	***ORANGE***			***N/A***	***N/A***	***85***	***80***
3	***YELLOW***			***N/A***	***N/A***	***85***	***80***
4	***ORANGE***			***N/A***	***N/A***	***85***	***80***
5	***YELLOW***			***N/A***	***N/A***	***85***	***80***
6	***ORANGE***			***N/A***	***N/A***	***83***	***80***
7	YELLOW			N/A	N/A	83	83
8	ORANGE			N/A	N/A	83	83
9	YELLOW			N/A	N/A	57	57
					Total	**715**	**692**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	***400***	***0.30***	***ACCEPT.***	***0.30***	***25% RED.***	**GRAVITY DISTRIBUTION**
Repair	292	0.30	*MOD.*	0.30	PPBPS	LOW PRESSURE

Notes:

**No Elevations Required

**All measures in feet

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

**BS, HI, and FS indicate rod readings

CALCULATIONS

Location SHEPHERDS BLUFF SUBDIVISION

Project Number 01-1064

Lot No: Lot 52

No. of Bedrooms 4

Design Flow 480 $^{gal}/_{day}$

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

25% RED.? (YES OR NO) YES

Supply Line Length 50 ft.

Supply Line Volume 8.7 gal.

Required Feet of Line 400 ft.
Amount of Line from Layout 400 ft.

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

Required Septic Tank Capacity 1000 gal.
Minimum Standard Tank Size 1000

Lateral Line Volume 261.2 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