ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 3 bedroom single family residence on Lot #24 Holiday Harbor Subdivision, Iredell County, North Carolina.

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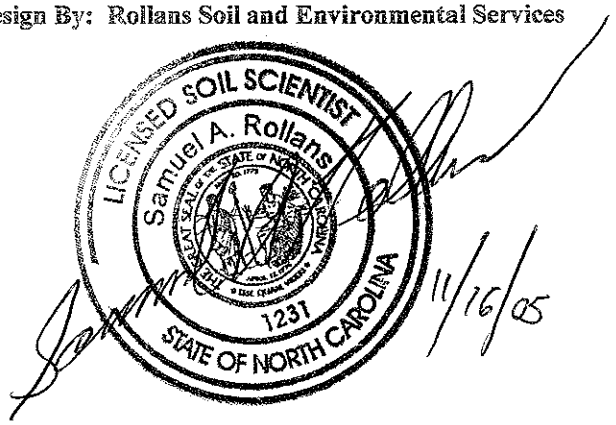
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November 16, 2005
Project No. 01-1094
Design By: Rollans Soil and Environmental Services



PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	GEMINI HOMES
Address:	PO Box 367 Terrell, NC 28682
Phone:	704-489-8589
County:	Iredell
Location:	Holiday Harbor Subdivision - Lot 24
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	38.36

Design Specifications

Drainfield Size:	315
Loading Rate:	.3 gpd/ft²
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	190
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	33.06
Dosing Volume:	143.99
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
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:	5.76
Elevation Head:	31.20
Total Dynamic Head:	44.80
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

HOLIDAY HARBOR SUBDIVISION LOT 24
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	360	
SOIL APPLICATION RATE:	.3 gpd/ft²	
TOTAL AREA TRENCH BOTTOM:	945	
TOTAL LATERAL LENGTH:	315	
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	300	
SUPPLY LINE LENGTH:	190	
TOTAL DYNAMIC HEAD:	44.80	
MANIFOLD SIZE:	4 in.SCH 80 PVC	
DOSING VOLUME:	143.99	
PUMP TANK DRAW DOWN*:	6.9	
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 very among pump tank manufacturers.*

HOLIDAY HARBOR LOT #24

Project #: 01-1094

LAYOUT FOR 3 BEDROOM HOME 11/16/05

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.5			100.00		
TANK		32.50	69.00				
HOUSE		21.70	79.80				
INSTR. 1			101.50				
1	*YELLOW*			*6.30*	*95.20*	*55*	*45*
2	*BLUE*			*7.70*	*93.80*	*55*	*45*
3	*YELLOW*			*8.80*	*92.70*	*55*	*45*
4	*BLUE*			*10.70*	*90.80*	*55*	*45*
5	*YELLOW*			*11.80*	*89.70*	*55*	*45*
6	*BLUE*			*13.00*	*88.50*	*55*	*45*
7	*ORANGE*			*14.00*	*87.50*	*55*	*45*
8	GREEN			15.40	86.10	55	45
9	ORANGE			16.70	84.80	55	45
					Total	**495**	**405**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*315*	*0.30*	*ACCEPT.*	*0.30*	*25% RED.*	**PRESSURE MANIFOLD**
Repair	*90*	0.30	*ACCEPT.*	0.30	25% RED.	PRESSURE MANIFOLD

Notes:

** TBM located on top of phone box (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

**Backfill upslope of house foundation for positive drainage

****Repair not needed; Lot deeded prior to January 1, 1983; see Attached Subdivision Plat**

PRESSURE MANIFOLD TAPSHEET - HOLIDAY HARBOR LOT#24

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
1	YELLOW	95.2	45	SCH 80 1/2	5.48	135
2	BLUE	93.8	45	SCH 80 1/2	5.48	135
3	YELLOW	92.7	45	SCH 80 1/2	5.48	135
4	BLUE	90.8	45	SCH 80 1/2	5.48	135
5	YELLOW	89.7	45	SCH 80 1/2	5.48	135
6	BLUE	88.5	45	SCH 80 1/2	5.48	135
7	ORANGE	87.5	45	SCH 80 1/2	5.48	135
	total	feet =	315	gal/min =	38.36	
			Des. Flow	360		
			Pump Run=	3.75		
			soil LTAR	0.3		
			LTAR +5%	0.315		
			LTAR with ACCEPTED	0.33075		
			LTAR with ACCEPTED + 5%	0.3472875		

PRESSURE MANIFOLD (TYPICAL)
FOR
GEMINI HOMES / HOLIDAY HARBOR LOT#24

