ROLLANS *Soil & Environmental Services, PA.*

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Attached is a proposed design for an Accepted (25% reduction) Septic System with Gravity distribution for a 4 bedroom single family residence on Lot #2 Knox Haven Subdivision, Iredell County, North Carolina.

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July 19, 2010
Project No. 01-1636
Design By: Rollans Soil and Environmental Services

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner:	Dumitru (Wesley) Zdrentan
Address:	406 Canvasback Road Mooresville, NC 28117
Phone:	704.658.5106
County:	Iredell
Location:	Knox Haven Subdivision Lot #2
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:	.3 GPD/FTSQ
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:	30
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	5.22
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.

KNOX HAVEN SUBDIVISION LOT 2

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:	30
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	NA

KNOX HAVEN LOT #2

Project #: 01-1636

LAYOUT FOR 4 BEDROOM HOME — July 19, 2010

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	40	40
2	*PINK*			N/A	N/A	*40*	*40*
3	*RED*			N/A	N/A	*92*	*90*
4	*ORANGE*			N/A	N/A	*91*	*90*
5	*BLUE*			N/A	N/A	*91*	*90*
6	*PINK*			N/A	N/A	*90*	*90*
7	RED			N/A	N/A	90	90
8	ORANGE			N/A	N/A	70	70
9	BLUE			N/A	N/A	53	53
10	PINK			N/A	N/A	31	31
					Total	**688**	**684**

	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	284	0.30	*MOD.*	0.30	PPBPS	LOW PRESSURE

Notes: **All measures in feet

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

CALCULATIONS

Location KNOX HAVEN SUBDIVISION

Project Number 01-1636

Lot No: Lot 2

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	30	ft.
Supply Line Volume	5.22	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