GRAVITY DISTRIBUTION SYSTEM FOR WASTEWATER TREATMENT

Owner:	MID-ATLANTIC CUSTOM BUILDERS
Address:	P.O. BOX 3792 Mooresville, NC 28117
Phone:	704-202-5568
County:	Iredell
Location:	WATERTREE LANDING LOT 63
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	ON DEMAND

Design Specifications

Drainfield Size:	400
Loading Rate (gpd/ft.^{2}):	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:	1000
Pump Tank Size:	N/A
Estimated Supply Line Length:	49
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	8.53
Dosing Volume:	N/A
Supply Manifold:	N/A
Supply Manifold Length:	N/A
Supply Manifold Volume:	N/A
Recommended Float Controls:	N/A
Recommended Control Panel:	N/A
Pressure Head:	N/A
Friction Head:	N/A
Elevation Head:	N/A
Total Dynamic Head:	N/A
Threaded Union:	N/A
Gate Valves:	N/A
Check Valves:	N/A
Anti-Siphon Hole:	N/A
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

WATERTREE LANDING LOT 63
GRAVITY DISTRIBUTION DESIGN

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	49
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	N/A

WATERTREE LANDING LOT 63

Project #: 01-1430

LAYOUT FOR 4 BEDROOM HOME

November 2, 2009

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		N/A			N/A		
INSTR. 1			N/A				
HOUSE			N/A	N/A			
TANK			N/A	N/A			
1	***DARK PINK***			***N/A***	***N/A***	***100***	***100***
2	***PINK***			***N/A***	***N/A***	***130***	***100***
3	***BLUE***			***N/A***	***N/A***	***116***	***100***
4	***ORANGE***			***N/A***	***N/A***	***107***	***100***
5	DARK PINK			N/A	N/A	110	110
6	PINK			N/A	N/A	81	81
7	ORANGE			N/A	N/A	56	56
8	DARK PINK			N/A	N/A	26	26
					Total	**726**	**673**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	***400***	***0.3***	***ACCEPT.***	***0.3***	***25% RED.***	**GRAVITY DISTRIBUTION**
Repair	273	0.3	MOD.	0.3	PPBPS	LOW PRESSURE

Notes:

** TBM is not needed

**All measures in feet

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

**BS, HI, and FS indicate rod readings

CALCULATIONS

Location WATERTREE LANDING

Project Number 01-1430

Lot No: Lot 63

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.3	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	49	ft.
Supply Line Volume	8.526	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	400	ft.
Gallons per Minute	N/A	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	261.2	gal.
Dosing Volume	N/A	gal.
	Note:	*Dosing Volume based on75% of lateral line volume*
Tank Draw Down	N/A	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	N/A	minutes
Elevation Head	N/A	ft.
Pressure Head	N/A	ft.
Friction Factor	N/A	ft./100 ft. *(From the interpolater.)*
Friction Head	N/A	ft.
Total Dynamic Head (+15%)	N/A	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

SOIL/SITE EVALUATION

(Continuation Sheet)

Sheet ___ of ___

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: _____
DATE OF EVALUATION: _____
COUNTY: _____

Lot 63 Lucky Tree

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZ ON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
A	SS 5-10%	0-16	R C MFSBK	SS,SP,FR SEP	—	52"	—	—	P5 .3
		16-52	RY CL WFSBK	SS SP, FR SEP	few Iron Sep				
B	5-10%	0-22	R C MFSBK	FR SSSP SMP	—	96	—	—	3
		22-96	R C WSBK	FR SSP SMP	common SAP				
AB C	5-10%	0-12	BSCR. GR	FR SSSP SMP	—	48	—	—	3
		12-32	R C WSBK	FR SSSP SMP					
		32-48	R C WSBK	FR SSSP SMP					
AB D	5-10%	0-6	BSCR GR	FR SSSP SMP	—	48	—	—	3
		6-24	R C MFSBK	FR SSSP SMP					
		24-48	R C WSBK	FR SSSP SMP					

COMMENTS: _____