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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 #29/30 Kings Landing Subdivision, Iredell County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
- Layout Specifications---------- 4

Calculations---------- 5

Site Plan/System Plan---------- 6

Profile Descriptions---------- 7-8

August 31, 2009
Project No. 01-1573
Design By: Rollans Soil & Environmental Services

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	David C. Luceri
	Horizon Engineering Associates, LLP
Address:	5600 77 Center Drive, Suite 105
	Charlotte, NC 28217
Phone:	(646) 294-9423
County:	Iredell
Location:	lot 29/30 Kings Landing

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

Design Specifications

Drainfield Size:	500
Loading Rate:	0.25 gpd/ft.^{2}
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	12 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000

Estimated Supply Line Length:	160
Supply Line Diameter:	3 in.
Supply Line Volume:	27.84
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:	IN TANK

Check Valves:	IN TANK
Anti-Siphon Hole:	N/A

Additional Comments:	Soil suitability was performed by Iredell County Health Department.

ANNISTON LOT 22
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.25 gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM:	1500
TOTAL LATERAL LENGTH:	500
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	480
SUPPLY LINE LENGTH:	160
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
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 vary among pump tank manufacturers.*

KINGS LANDING LOTS 29/30

Project #: 01-1573

LAYOUT FOR 4 BEDROOM HOME

August 31, 2009

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		0.8			100.00		
INSTR. 1			100.75				
1	***PINK***			*N/A*	*N/A*	***100***	***100***
2	***ORANGE***			*N/A*	*N/A*	***100***	***100***
3	***BLUE***			*N/A*	*N/A*	***100***	***100***
4	***RED***			*N/A*	*N/A*	***100***	***100***
5	***WHITE***			*N/A*	*N/A*	***100***	***100***
10	DRIP REPAIR			N/A	N/A	***7489 SQFT***	***7489 SQFT***
					Total	**500**	**500**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*500*	*0.25*	*ACCEPT.*	*0.25*	*25% RED.*	**PRESSURE**
Repair	***7489 SQFT***	0.10	***INNOV.***	0.10	***DRIP*** IRRIGATION	**MANIFOLD** LOW PRESSURE

Notes:

**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

CALCULATIONS

Location KINGS LANDING

Project Number 01-1573

Lot No: LOT 22

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.25	$^{gal}/_{ft^2\ day}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	160	ft.
Supply Line Volume	27.84	gal.
Required Feet of Line	480	ft.
Amount of Line from Layout	500	ft.
Gallons per Minute	N/A	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	326.5	gal.
Dosing Volume	N/A	gal.

Tank Draw Down N/A

Pump Run Time N/A

Elevation Head N/A
Pressure Head N/A
Friction Factor N/A
Friction Head N/A

Total Dynamic Head (+15%)

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