ROLLANS *Soil & Environmental Services, Inc.*

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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 at ~~243~~ 259 Wiggins Road, Iredell County, North Carolina.

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June 28, 2013
Project #: 01-1840
Design By: Rollans Soil and Environmental Services

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner: CLAYTON ~~Freedom~~ Homes
Address: 1230 CONOVER BLVD ~~1124 Charlotte Highway~~
CONOVER ~~Troutman~~, NC ~~28166~~ 28613
Phone: 704 883-6148
County: Iredell
Location: ~~243~~ 259 WIGGINS ROAD
Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow: 480
System Flow: NA

Design Specifications

Drainfield Size: 400
Loading Rate (gpd/ft.^{2}): 0.30
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: N/A
Supply Line Diameter: 3 in. SCH 40 PVC
Supply Line Volume: 0.00
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.

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~~243~~ WIGGINS ROAD

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

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~~243~~ WIGGINS ROAD

Project #: 01-1840

LAYOUT FOR 4 BEDROOM HOME

June 28, 2013

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		NA		NA	NA		
INSTR. 1							
HOUSE CRN			NA	NA	NA		
P. TANK			NA	NA	NA		
1	YELO			NA	NA	100	100
2	PINK			NA	NA	100	100
3	YELO			NA	NA	100	100
4	PINK			NA	NA	100	100
5	YELO			NA	NA	104	90
6	PINK			NA	NA	105	90
7	YELO			NA	NA	105	90
					Total	**714**	**670**

	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	270	0.30	*MOD.*	0.30	PPBPS	PRESSURE MANIFOLD

Notes:

** TBM Is Not Required.
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

CALCULATIONS

Location ~~243~~ 259 Wiggins Road

Project Number 01-1840

Lot No: Lot 27

No. of Bedrooms 4

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

LTAR 0.30 $^{gal}/_{ft^2\,day}$

25% RED.? (YES OR NO) YES

Supply Line Length N/A ft.

Supply Line Volume 0 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.*

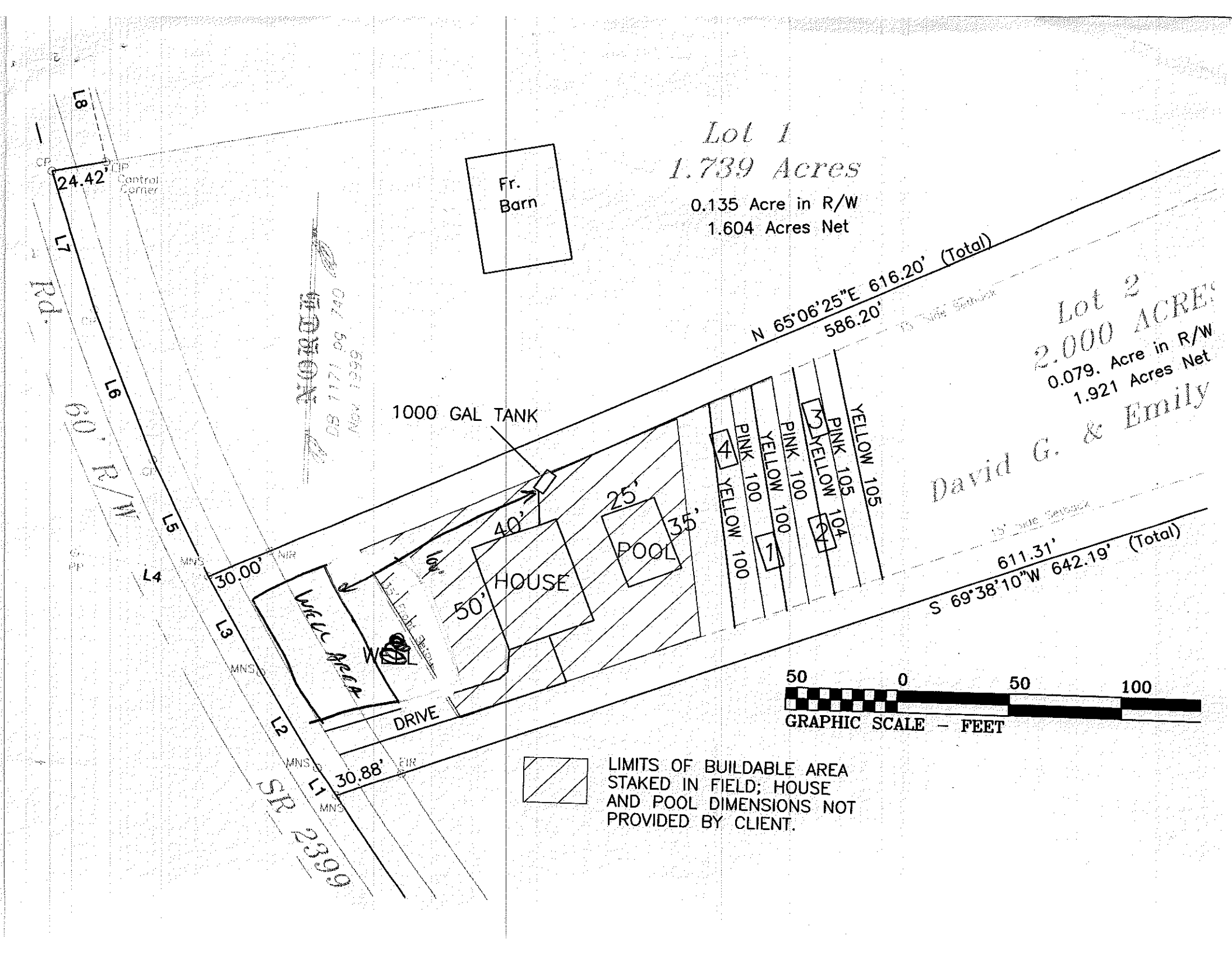
Pump Run Time NA minutes

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


Lot 1
1.739 Acres
0.135 Acre in R/W
1.604 Acres Net
Fr. Barn
Lot 2
2.000 ACRES
0.079. Acre in R/W
1.921 Acres Net
David G. & Emily
N 65°06'25"E 616.20' (Total)
586.20'
611.31'
S 69°38'10"W 642.19' (Total)
1000 GAL TANK
HOUSE
POOL
25'
35'
40'
50'
DRIVE
WELL
WELL AREA
30.00'
30.88'
24.42'
L1
L2
L3
L4
L5
L6
L7
L8
SR 2399
60' R/W
PINK 100
YELLOW 100
PINK 105
YELLOW 104
YELLOW 105
50 0 50 100
GRAPHIC SCALE – FEET
LIMITS OF BUILDABLE AREA STAKED IN FIELD; HOUSE AND POOL DIMENSIONS NOT PROVIDED BY CLIENT.