Carolina Soil & Septic Consulting, PLLC

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NC Licensed Soil Scientist, SC Professional Soil Classifier,
Certified Septic System Operator, Licensed Septic Installer,
Certified Septic Inspector

Design proposal for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence on Lot 28 on The Point at Norman, Phase 1B Map 2 , Iredell County, North Carolina.

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April 9, 2013
Design By: Adrian L. Pruett LSS

INSTALLER INFORMATION:

- The permit should be read very carefully prior to submitting bid. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by NC DHHS, and certification supplied by the manufacturer.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- The installer is responsible for final grades and returning that grade to original, with exception of added structural features.
- The supply trench shall be compacted to eliminate any cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom has no more than 1/4"fall in 10 feet with no high or low areas within. If high or low areas do exist after trench excavation, high areas should be removed rather than filling in low areas. Do not over excavate trenches! Any fine grading should be completed by hand with a rake and shovel, leaving no loose material.
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral to prevent unwanted lateral water movement.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pin flag locations should be checked by the installer prior to beginning trenches to insure accuracy.
- Pump tank riser should be 6" above grade, control panel should be 12" above grade.
- If septic tank risers are used they should be a minimum of 6" above finished grade or within 6" of final grade if buried.
- **Design precludes use of foundation drains on the residence.**
- Backfill minimum of 6" of material (County Approved) over panels, rake trench walls, lime side walls, install trenches 36" wide.
- **System is specified as a PPBPS with Low Pressure Distribution.**
- **Repair is specified as a PPBPS with Low Pressure Distribution.**
- Follow all Crescent Communities Required Install Specifications.

LOW PRESSURE PPBPS SYSTEM
INSTALL SPECIFICATIONS

Location: THE POINT LOT 28, PHASE 1B MAP 2

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow: 480
System Flow: 43.66

Design Specifications

Drainfield Size: 320
Required Drainfield Size: 320
Loading Rate (gpd/ft.^{2}): 0.25
Depth of Gravel in Trench: NA (PPBPS)
Gravel Size: NA (PPBPS)
Trench Depth: 36 in.
Trench Width: 36 in.

Septic Tank Size: 1500 gal.
Pump Tank Size: 1500 gal.

Estimated Supply Line Length: 11
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 1.91
Dosing Volume: 218.45

Recommended Pump: Crescent Communities approved Orenco Stainless Steel, turbine pump.
Recommended Float Controls: Crescent Communities approved Orenco Float Controls
Recommended Control Panel: Crescent Communities approved Orenco Control Panel

Pressure Head: 2 ft.
Friction Head: 0.41
Elevation Head: 4.80
Total Dynamic Head: 8.66

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 per lateral
Check Valves: In Tank
Anti-Siphon Hole: **YES**
Additional Comments: Soil suitability performed by Carolina Soil & Septic Consulting, PLLC

Owner/Applicant Information

Owner/Applicant Name: Bob Hogan
Address: 4201 Congress St., Suite 170
Charlotte, NC 28209
Phone Number: 704-578-1778

**Pump tank draw down based on a volume basis of 31 gallons per inch. Draw down may vary among pump tank manufacturers.*

THE POINT LOT 28, PHASE 1B MAP 2
FIELD LAYOUT SPECIFICATIONS

LAYOUT FOR 4 BEDROOM HOME

April 9, 2013

LINE #	FLAG COLOR	IH	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM			7.20	100.00		
INSTR. 1		107.20				
HOUSE CNR			4.30	102.90		
P. TANK			4.50	102.70		
1	PINK		2.80	104.40	20	20
2	YELLOW		3.40	103.80	44	44
3	PINK		3.90	103.30	67	67
4	***BLUE***		***4.70***	***102.50***	***89***	***68***
5	***ORANGE***		***5.30***	***101.90***	***65***	***65***
5	***ORANGE***		***5.30***	***101.90***	***65***	***65***
6	***YELLOW***		***5.70***	***101.50***	***61***	***61***
6	***YELLOW***		***5.70***	***101.50***	***61***	***61***
7	PINK		6.40	100.80	122	122
8	BLUE		6.90	100.30	51	51
9	ORANGE		7.40	99.80	25	25
				Total	**670**	**649**

	LINE LENGTH	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
****System***	***320***	***MOD.***	***0.250***	***PPBPS***	***LOW PRESSURE***
Repair	329	MOD.	0.250	PPBPS	LOW PRESSURE

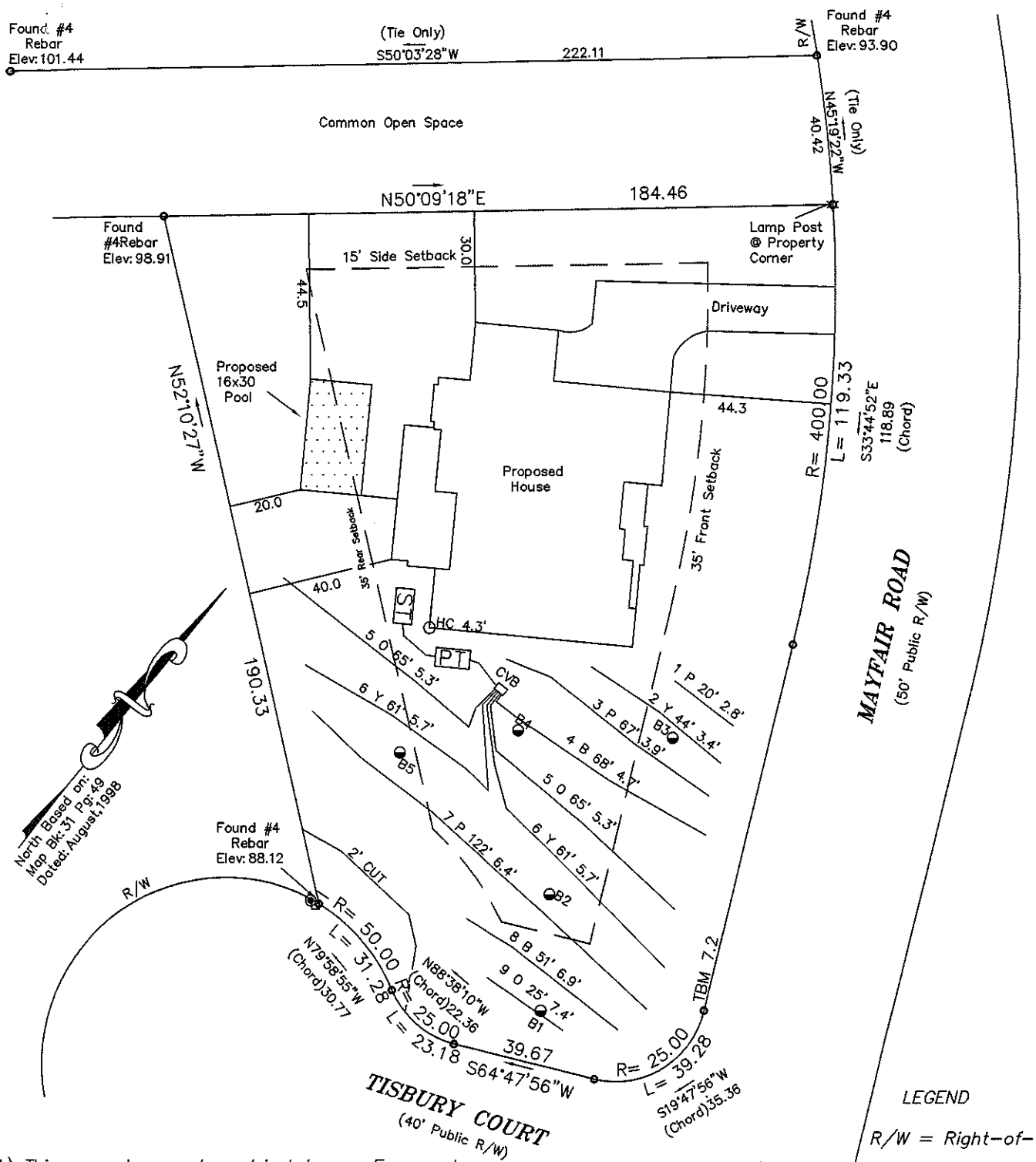
Notes: ** TBM located top of ground at EIP at corner of lot (see site plan)
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**IH, and FS indicate rod readings

LOW PRESSURE PPBPS TAPSHEET -THE POINT LOT 28, PHASE 1B MAP 2

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
4	*BLUE*	*102.50*	*68*	0.188	**0.59**	204	16
5	*ORANGE*	*101.90*	*65*	0.188	**0.59**	195	15
5	*ORANGE*	*101.90*	*65*	0.188	**0.59**	195	15
6	*YELLOW*	*101.50*	*61*	0.188	**0.59**	183	14
6	*YELLOW*	*101.50*	*61*	0.188	**0.59**	183	14
							74
	total	**feet =**	**320**	**gal/min =**	**43.66**		
			Des. Flow	**480**			
			Pump Run=	**5.00**			
			soil LTAR	**0.25**			

.188 equals 3/16 inch hole



1) *This property may be subject to any Easements, Rights-of-way, and/or Restrictive Covenants.*

2) *Boundary information based on Map Book 31 at Page 49 as recorded in the Iredell County Register of Deeds.*

3) *This survey is of an existing parcel or parcels of land.*

4) *No N.C.G.S. or U.S.G.S. Monuments could be located within 2000'.*

5) *Area by coordinate method.*

Approved ICHD 4-11-13

LEGEND

R/W = Right-of-way

I.P.S. = #4 Rebar Set

= Not to scale

= Telephone Pedestal

= Utility Pole

= Cable Pedestal

WM *= Water Meter*

= Soil Borings

SEPTIC LAYOUT SURVEY

OF

LOT 28" THE POINT ON NORMAN", PHASE 1 B, MAP 2

DAVIDSON TWSP., IREDELL CO., NC

SCALE 1" = 40'

ACQUIRED BY: BOB HOGAN

FIELD BOOK: 002
FILE: 13022

TAX MAP NO: 4635164579

DOSING CALCULATIONS

Location The Point on Norman

Lot No: Lot 28, Phase 1B Map 2

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.250	$^{gal}/_{ft^2\,day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	11	ft.
Supply Line Volume	1.914	gal.
Required Feet of Line	320	ft.
Amount of Line from Layout	320	ft.
Gallons per Minute	43.66	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Panel Volume	3.6	gal.
# of Panels	74	
Dosing Volume	218.45	gal.

Note: Dosing Volume based on 82% of # of panels times 3.6 gal/panel

Tank Draw Down	7.0	*Generic Draw Down of 31 gal.per in.*
Pump Run Time	5.00	minutes
Elevation Head	4.8	ft.
Pressure Head	2	ft.
Friction Factor	3.77	ft./100 ft. *(From the interpolater.)*
Friction Head	0.41	ft.
Total Dynamic Head (+20%)	8.66	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

)ENR/DEH

)N-SITE WASTEWATER SECTION

Sheet __1__ of __2__
PROPERTY ID #: _4635164579_
COUNTY: __Iredell___

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

)WNER: Bob Hogan APPLICATION DATE__4/1/2013_
\DDRESS: 4201 Congress St, Suite 170, Charlotte, NC 28209 DATE EVALUATED: ____3/23/2013____
'ROPOSED FACILITY: ____4 BRM_____ PROPOSED DESIGN FLOW (.1949): __480gpd____ PROPERTY SIZE: ____0.74ac_____
.OCATION OF SITE: _____Corner of Mayfair Rd and Tisbury Ct PROPERTY RECORDED: ____Yes_____
VATER SUPPLY: X Private ☐ Public ☐ Well ☐ Spring ☐ Other _____
:VALUATION METHOD: X Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: X Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
B 1	LSS 3%	0-6	RB SCL GR	FR, SS, SP, SEXP	-Few YB & mica	48"	-	-	PS
		6-31	R C WFSBK/ABK	FR, SS, SP, SEXP	-Com. mica				0.25 gpd/sqft
		31-42	R C WFSBK	FR, SS, SP, SEXP	-Com. mica				
		42-48	R CL WFSBK	FR, SS, SP, SEXP					
B 2	LSS 4%	0-13	RB SCL GR	FR, SS, SP, SEXP	-Few/com. YB, few mica	48"	-	-	PS
		13-35	R C WFSBK/ABK	FR, SS, SP, SEXP	-Few/com. mica				0.25 gpd/sqft
		35-46	R C WFSBK	FR, SS, SP, SEXP	-Com. mica				
		46-48	R CL WFSBK	FR, SS, SP, SEXP					
B 3	LSS 5%	0-8	RB CL WFSBK	FR, SS, SP, SEXP	-Few very faint YB's between 20-30" -Com. mica, few sap	48"	-	-	PS
		8-38	R C WFSBK	FR, SS, SP, SEXP					0.275 gpd/sqft
		38-48	YR CL WFSBK	FR, SS, SP, SEXP					
B 4	LSS 5%	0-8	BR SCL GR	FR, SS, SP, SEXP	-Com. YB, few mica	48"	-	-	PS
		8-25	R C WFABK/SBK	FR, S, SP, SEXP	-Few mica				0.25 gpd/sqft
		25-40	R C WFSBK	FR, SP, SP, SEXP	-Com. mica				
		40-48	R CL WFSBK	FR, SS, SP, SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Gravity PPBPS	LP PPBPS
Site LTAR	0.25	0.25

OTHER FACTORS (.1946): NONE
SITE CLASSIFICATION (.1948): PS

EVALUATED BY: ADRIAN L. PRUETT
OTHER(S) PRESENT: NONE

COMMENTS:

Approved ICND
4-11-13

SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: __4635164579__
DATE OF EVALUATION: __3/23/2013___
COUNTY: ____IREDELL__

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZ ON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
B 5	LSS 4%	0-8	RB SCL GR	FR, SS, SP, SEXP		48"	-	-	PS
		8-27	R C WFABK/SBK	FR, S, SP, SEXP	-Com. YB, few mica				
		27-36	R C WFSBK	FR, SS, SP, SEXP	-Few mica				0.25 gpd/sqft
		36-48	R CL WFSBK	FR, SS, SP, SEXP	-Com. mica				

COMMENTS:____