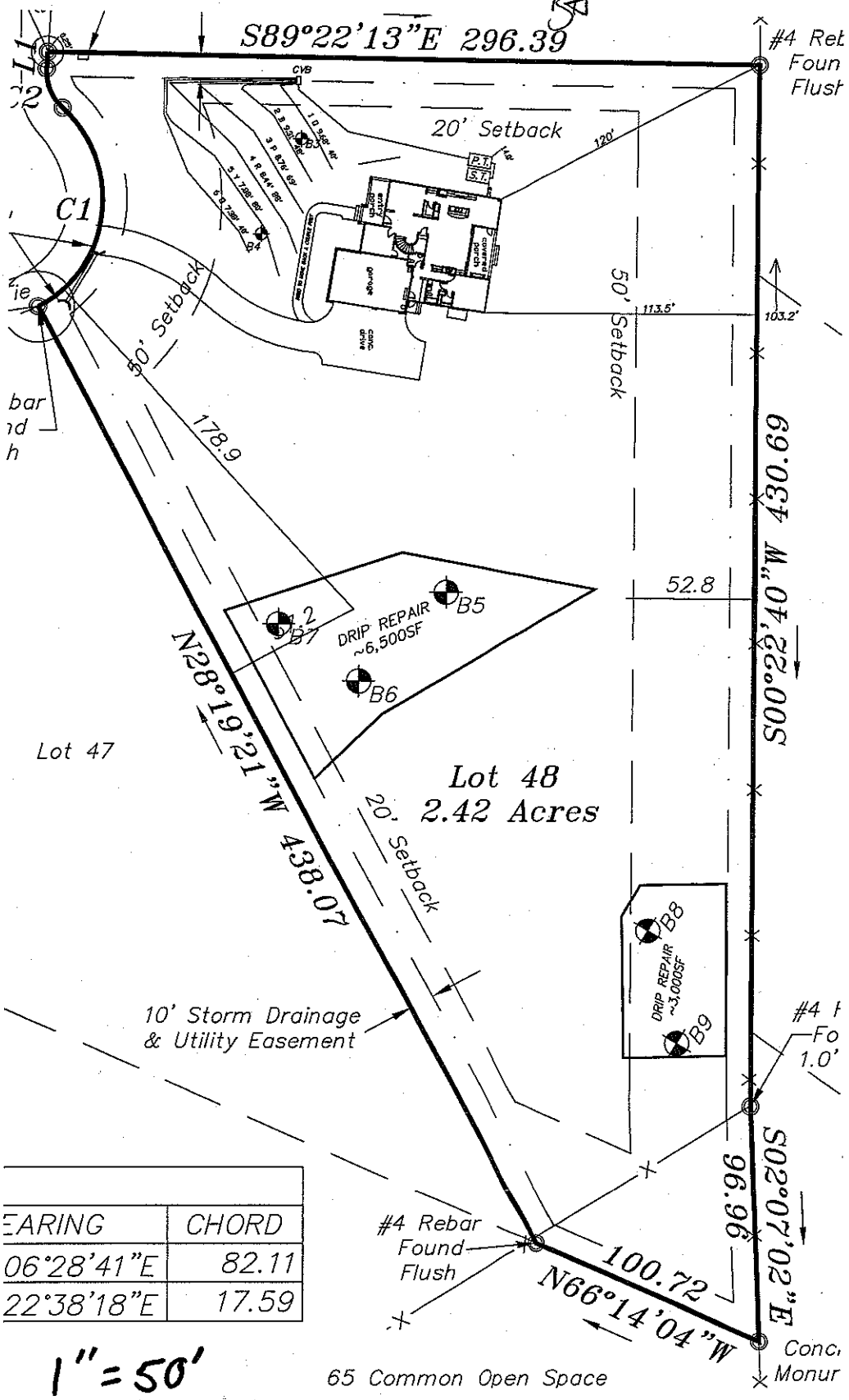
INFORMATION FOR THE INSTALLER:

The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.

- Tanks shall be approved by NC DENR, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate 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 is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- 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 pinflag locations should be checked by the installer prior to beginning trenches.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation with low pressure distribution.
- Repair is specified as a subsurface drip irrigation installation.
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 24" wide and have no more than 1/4" fall in 10 feet.
- **Water line from meter must be at least 10' from septic lines.**

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EARING	CHORD
06°28'41"E	82.11
22°38'18"E	17.59

1" = 50'

APPROVED NOV 0 3 2015

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Shane & Emily Dunlevy

Current Address: 142 E. Warfield Drive
Mooresville, NC 28115
Phone: 828.320.0961
County: Iredell
Location: The Farms Lot 48

Source of Wastewater Flow: 5 Bedroom Single Family Residence
Estimated Gallons Per Day Flow: 600
System Flow: 34.03

Design Specifications

Drainfield Size: 365
Loading Rate (gpd/ft.^{2}): 0.275
Depth of Gravel in Trench: NA (PPBPS)
Gravel Size: NA (PPBPS)
Trench Depth: 30-~~36~~ in. 34" SAR
Trench Width: 24 in.
Septic Tank Size: 1500
Pump Tank Size: 1500

Estimated Supply Line Length: 80
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 13.92
Dosing Volume: 200.20
Supply Manifold: N/A
Supply Manifold Length: N/A
Supply Manifold Volume: N/A

Recommended Float Controls: SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel: SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.

Pressure Head: 2 ft.
Friction Head: 1.90
Elevation Head: 1.00
Total Dynamic Head: 5.63

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 per lateral
Check Valves: In Tank
Anti-Siphon Hole: NA
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

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The Farms Lot 48
LP PPBPS

DESIGN FLOW (gpd):	600
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.275
TOTAL AREA TRENCH BOTTOM:	730
TOTAL LATERAL LENGTH:	365
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	363.6363636
SUPPLY LINE LENGTH:	80
TOTAL DYNAMIC HEAD:	5.63
MANIFOLD SIZE:	N/A
DOSING VOLUME:	200.20
PUMP TANK DRAW DOWN*:	6.9
SEPTIC TANK SIZE:	1500
PUMP TANK SIZE:	1500

**Pump tank draw down based on a volume basis of 29 gallons per inch. Draw down may vary among pump tank manufacturers.*

APPROVED NOV 0 3 2015

THE FARMS LOT # 48

Project #: 01-3004

LAYOUT FOR 5 BEDROOM HOME

October 26, 2015

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM					0.25		
INSTR. 1							
HOUSE CNR					9.96		
P. TANK					14.00		
1	*ORANGE*				*9.68*	*40*	*40*
2	*BLUE*				*9.31*	*48*	*48*
3	*PINK*				*8.76*	*69*	*69*
4	*RED*				*8.44*	*88*	*88*
5	*YELLOW*				*7.88*	*80*	*80*
6	*ORANGE*				*7.38*	*40*	*40*
					Total	**365**	**365**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
** System*	*365*	*0.275*	*MOD.*	*0.275*	*PPBPS*	*LOW PRESSURE*
Repair	9500SF	0.100	INNOV.	0.100	DRIP IRRIGATION	LOW PRESSURE

Notes: ** All septic lines, soil borings and house envelope located via survey

**All measures in feet

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

****Drip Repair Areas flagged with blue tape**

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LP PPBPS TAPSHEET -THE FARMS LOT# 48

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	***ORANGE***	*9.68*	*40*	*0.156*	*0.41*	*120*	*9*
2	***BLUE***	*9.31*	*48*	*0.156*	*0.41*	*144*	*11*
3	***PINK***	*8.76*	*69*	*0.156*	*0.41*	*207*	*16*
4	***RED***	*8.44*	*88*	*0.156*	*0.41*	*264*	*20*
5	***YELLOW***	*7.88*	*80*	*0.156*	*0.41*	*240*	*18*
6	***ORANGE***	*7.38*	*40*	*0.156*	*0.41*	*120*	*9*
	total	feet =	365	gal/min =	34.03		83

Des. Flow	600
Pump Run=	5.88
soil LTAR	0.275
LTAR +5%	0.28875
LTAR with mod.	0.55
LTAR with mod.. + 5%	0.5775

.156 equals 5/32 inch hole

CALCULATIONS

APPROVED NOV 0 3 2015

Location	THE FARMS LOT # 48	
Project Number	01-3004	
Lot No:	48	
No. of Bedrooms	5	
Design Flow	600	$^{gal}/_{day}$
LTAR	0.275	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	80	ft.
Supply Line Volume	13.92	gal.
Required Feet of Line	363.6364	ft.
Amount of Line from Layout	365	ft.
Gallons per Minute	34.03	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Pump Tank Capacity	1500	gal.
Panel Volume	3.6	gal.
# of Panels	83	
Dosing Volume	200.20	gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

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

Tank Draw Down	6.9	*Generic Draw Down of 29 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	1	ft.
Pressure Head	2	ft.
Friction Factor	2.37	ft./100 ft. *(From the interpolater.)*
Friction Head	1.90	ft.
Total Dynamic Head (+15%)	5.63	ft.

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

APPROVED NOV 0 3 2015

Sheet 1 of 2
PROPERTY ID #: 4626840394
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Greenbers_Richard / Applicant: Shane, Emily Dunlevy c/o Rollans Soil (Agent)
ADDRESS: 1946 P Saturina Dr Mooresville FL 28198
APPLICATION DATE 5/8/15
PROPOSED FACILITY: 4BR
PROPOSED DESIGN FLOW (.1949): 480 gpd
DATE EVALUATED: 2015
LOCATION OF SITE: 102 Dunn Ross Court Mooresville NC 28117
PROPERTY SIZE: 2.42 ac
WATER SUPPLY: ☐ Private ☑ Public ☑ Well ☐ Spring ☐ Other
PROPERTY RECORDED:
EVALUATION METHOD: ☑ Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: ☑ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 1	L/5%	0-22	RB cl wmsbk	FrSSSPSExP					
		22-48	RBc wmsbk/Abk	FrSSSPSExP	hf. Fe depl. 45-48"	48	-	-	PS 0.275
B 2	L/7%	0-42	RBc wmsbk	FrSSSPSExP	- F [Fe] depl				
		42-48	RYcl wfsbk	FrSSSPSExP	- f seap				
					- fsap	48	-	-	PS 0.275-0.25
B 3	L/6%	0-7	BRclwfsbk	FrSSSPSExP					
		7-48	RBcwmsbk/Abk	FrSSSPSExP		48	-	-	PS 0.3
B 4	L/7%	0-27	RBcwmsbk	FrSSSPSExP					
		27-48	RCwmsbk/Abk	FSSSPSExP	- c. white m/n, - Fe Fe depl.	48	-	-	PS 0.275-0.25

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	PPBPS
Site LTAR	0.275	0.25

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: S. Ashley Rollans & J. Wendell Overby
OTHER(S) PRESENT: Chad Waynick

COMMENTS:

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SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 4626840394
DATE OF EVALUATION: 2015
COUNTY: Iredell

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	OTHER PROFILE FACTORS .1943 SOIL DEPTH	OTHER PROFILE FACTORS .1956 SAPRO CLASS	OTHER PROFILE FACTORS .1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 5	L/10%	0-10	Br SL Gr	Fr SS SP					
		10-37	RYCL wmsbk/Absk	Fr SS SP	Few to Common Fe Concentrations Few White Minerals Ch. R 2/8 @ 25"	37"	-	-	PS .1-.15
B 6	L/8%	0-18	B SL Gr	Fr SS SP					
		18-35	YR SL Gr wsbk	Fr SS SP	Few Fe Concentrations Ch. R 2/8 @ 30"	35"	-	-	PS .15-.2
B 7	L/8%	0-8	LB SL Gr	Fr SS SP					
		8-15	BR SL Gr	Fr SS SP					
		15-30	RBS ~~SL~~ wmsbk	Fr SS SP		35"	-	-	PS .1-.15
		30-35	RBC wmsbk	Fr SS SP	Few SAP Inclusions Ch. R 2/3 @ 32"				
B 8	L/7%	0-3	BL Gr	Fr SS SP					
		3-30	RBC wmsbk	Fr SS SP					PS
		30-46	RY-YRC wmsbk	Fr SS SP	C. Fe Depl'd Concentrations Ch. R 2/6 @ 43"	46"	-	-	.1-.15
B 9	L/8%	0-5	BL Gr S	Fr SS SP					
		5-15	YBSCL wmsbk	Fr SS SP					
		15-20	YBSC vwsbk	F SS P	C. Fe Depl.	28"	-	-	.1 Drip
		20-28	RYSC vwsbk	F SS P	C. Fe Depl. Ch. R 2/8 @ 26"				

COMMENTS: