IREDELL COUNTY HEALTH DEPARTMENT

Statesville Office (704) 878-5305 | Mooresville Office (704) 660-3625

SEPTIC IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM

PERMIT # 222263

PIN # 4624-89-2328

APPLICANT/OWNER: Brian Donehoo | APPLICANT ADDRESS: 224 Milford Circle Mooresville, NC

SITE ADDRESS: 149 Keel Court Mooresville, NC 28117 | PHONE: 704-488-1622 | ALT. PHONE

SITE DIRECTIONS: BSR towards Lake Norman → L on Yacht Rd → R on Yacht Harbor → Ron Keel Ct. lot on left @ end of cul-da-sac

SUBDIVISION: Yacht Harbour | SECTION: — | LOT # 22 | LOT AREA: 0.624 acres | SAP CONTROLLED: ☐ YES ☒ NO | DESIGN FLOW: 480 GPD | L.T.A.R.: 0.30

Septic Tank	1000 (gal)	STB	Date	☒ New System	☐ Repair	☐ Expansion	System Type: I II III (IV) V VI
Pump Tank	1000 (gal)	PT	Date	System Description:	50% Reduction (LP-PPBPS)		
Pump Make		Model	Serial #	Repair System Description:	50% Reduction (LP-PPBPS)		
# Nitrification Fields	1	# Lines	7	Linear Ft 267	Maintenance Agreement Required:	☒ YES	☐ NO
Trench Width	24"	Trench Bottom Depth(Low side)	33"	Gravel Depth —		☐ GRAVITY	☒ PRESSURE

☒ Residence — No. Bedrooms 4
☐ Business — No. Persons 8
☐ Other — No. Employees
☐ Slab — ☒ Crawl Space
☐ Basement w/plumbing — ☐ Basement w/o plumbing

Water Supply: ☒ Private (Needs variance) ☐ Public ☐ Community

Comments / Conditions: Well in front yard must be properly decomissioned + abandoned prior to AC being issued. A well construction permit must be issued in the back yard for the proposed area/site (requiring a variance) before an AC may be issued. Strongly recommend flagging off drainfield primary + repair areas during construction to avoid compaction / vehicle usage.

INITIAL SITE SKETCH

See attached plans from Soil + Forestry Services of the Carolinas, PA

Dated: April, 2017 — Wendell Overby LSS #1218

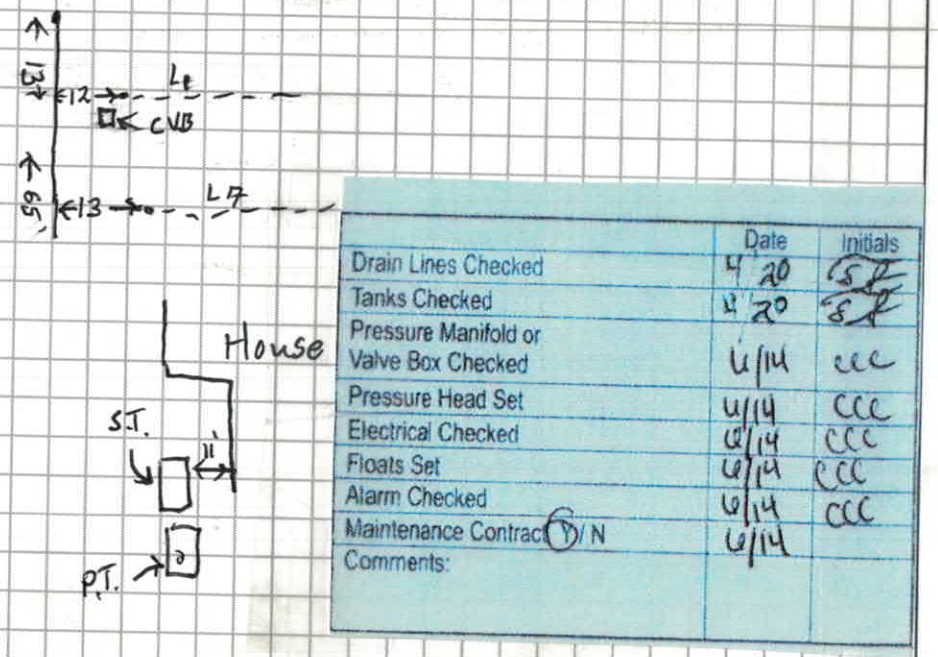
Received: April 27, 2017

Well abandoned in front yard 7/26/17 by Ben Aldridge (EHS) + Todd Adams (Rowan)

* Received 8/17/2017 w/ GW-30 *

AS BUILT SKETCH

4/20/18: 267 L.F. of PPBPS installed @ 33" Trench Bottom in permitted area. Tanks + Lines OK



	Date	Initials
Drain Lines Checked	4/20	
Tanks Checked	4/20	
Pressure Manifold or Valve Box Checked	6/14	CCC
Pressure Head Set	6/14	CCC
Electrical Checked	6/14	CCC
Floats Set	6/14	CCC
Alarm Checked	6/14	CCC
Maintenance Contract (Y) / N	6/14	
Comments:		

Permit can be suspended or revoked if any false information is supplied toward securing the permit / any unauthorized changes are made to the site / any unauthorized changes are made in the installation of the system. **CONTACT A LOCATOR SERVICE PRIOR TO ANY EXCAVATION**

☐ **IMPROVEMENT PERMIT** *with plat valid without expiration.* ☒ **IMPROVEMENT PERMIT** *with site plan valid for 60 mos.* ☒ **AUTHORIZATION TO CONSTRUCT** *valid for period equal to IMPROVEMENT PERMIT--not to exceed 60 mo.*

Owner / Applicant Signature: [signature] Date: 5/30/2017

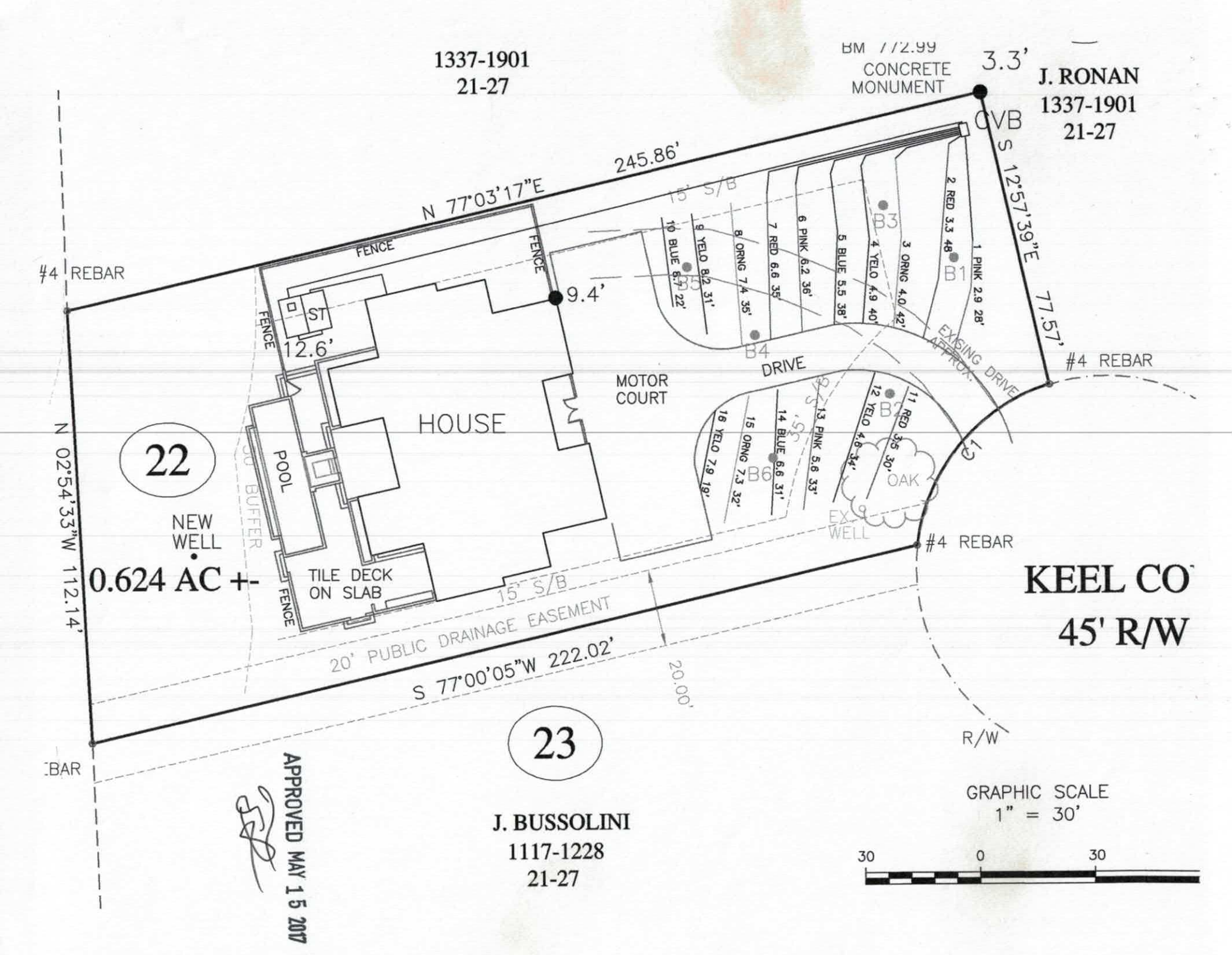
IMPROVEMENT PERMIT by: Tom Shudi Date: 5/15/2017

AUTHORIZATION TO CONSTRUCT by: Tom Shudi Date: 8/17/2017

Installed by: Richard Abernathy

OPERATION PERMIT by: Carla C. Care Date: 6-14-18

Existing System Inspected by: Date:


1337-1901
21-27
BM 772.99
CONCRETE
MONUMENT
3.3'
J. RONAN
1337-1901
21-27
CVB
S 12°57'39"E
77.57'
245.86'
N 77°03'17"E
#4 REBAR
FENCE
FENCE
FENCE
ST
12.6'
9.4'
15' S/B
10 BLUE 6.7 22'
9 YELO 8.2 31'
8 ORNG 7.4 35'
7 RED 6.6 35'
6 PINK 6.2 36'
5 BLUE 5.5 38'
4 YELO 4.9 40'
3 ORNG 4.0 42'
2 RED 3.3 48'
1 PINK 2.9 28'
B1
B2
B3
B4
B5
B6
EXISING DRIVE
APPROX.
DRIVE
#4 REBAR
MOTOR
COURT
HOUSE
22
POOL
50' BUFFER
NEW
WELL
0.624 AC +-
TILE DECK
ON SLAB
FENCE
16 YELO 7.9 19'
15 ORNG 7.3 32'
14 BLUE 6.6 31'
13 PINK 5.6 33'
12 YELO 4.6 34'
11 RED 3.5 30'
OAK
EX.
WELL
#4 REBAR
N 02°54'33"W 112.14'
15' S/B
20' PUBLIC DRAINAGE EASEMENT
S 77°00'05"W 222.02'
20.00'
KEEL CO
45' R/W
R/W
:BAR
23
J. BUSSOLINI
1117-1228
21-27
APPROVED MAY 15 2017
GRAPHIC SCALE
1" = 30'
30
0
30

NOTES:

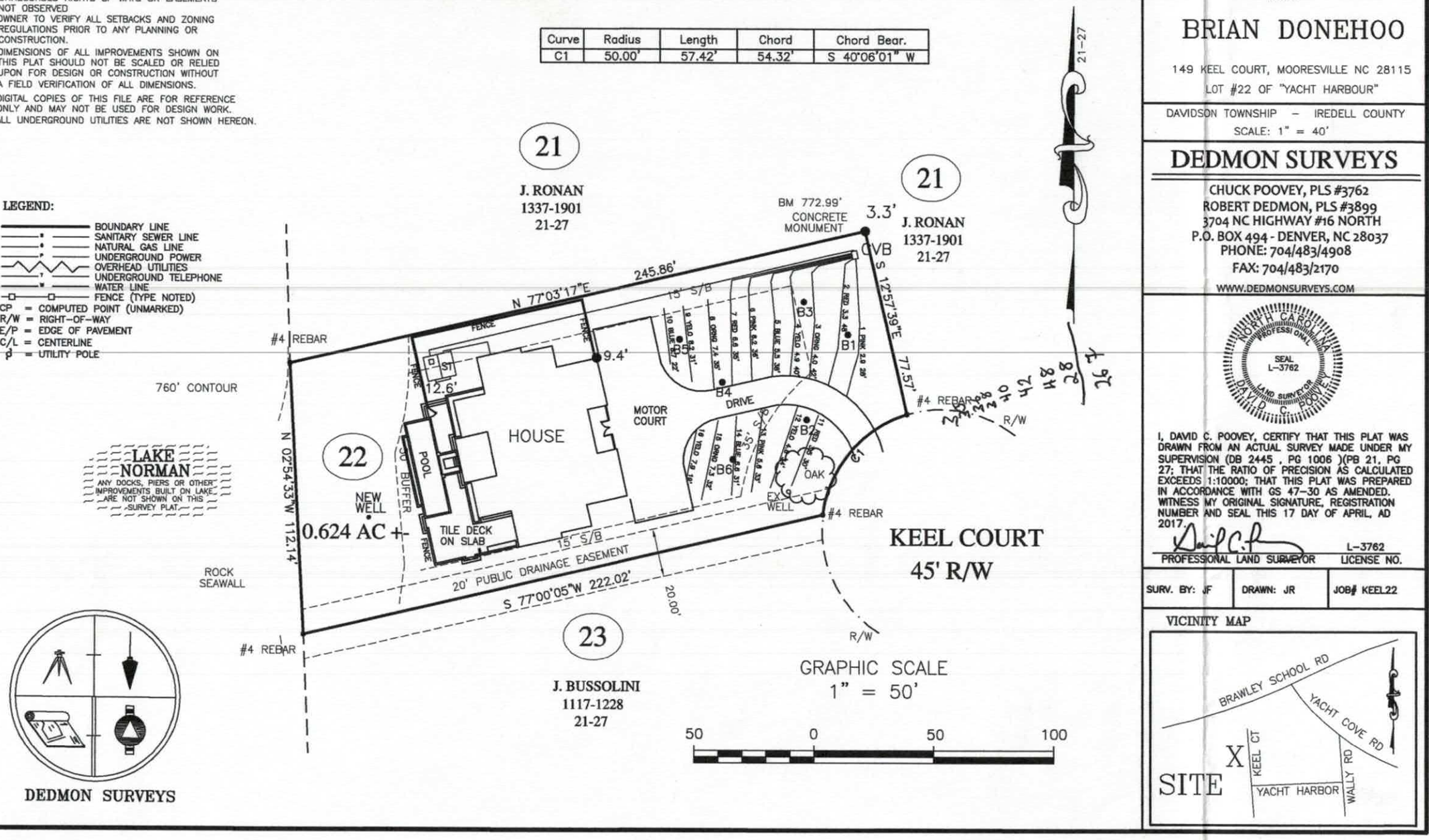
* PROPERTY MAY BE SUBJECT TO RECORDED OR UNRECORDED RIGHTS OF WAYS OR EASEMENTS NOT OBSERVED
* OWNER TO VERIFY ALL SETBACKS AND ZONING REGULATIONS PRIOR TO ANY PLANNING OR CONSTRUCTION.
* DIMENSIONS OF ALL IMPROVEMENTS SHOWN ON THIS PLAT SHOULD NOT BE SCALED OR RELIED UPON FOR DESIGN OR CONSTRUCTION WITHOUT A FIELD VERIFICATION OF ALL DIMENSIONS.
* DIGITAL COPIES OF THIS FILE ARE FOR REFERENCE ONLY AND MAY NOT BE USED FOR DESIGN WORK.
* ALL UNDERGROUND UTILITIES ARE NOT SHOWN HEREON.

LEGEND:

- BOUNDARY LINE
- SANITARY SEWER LINE
- NATURAL GAS LINE
- UNDERGROUND POWER
- OVERHEAD UTILITIES
- UNDERGROUND TELEPHONE
- WATER LINE
- FENCE (TYPE NOTED)

CP = COMPUTED POINT (UNMARKED)
R/W = RIGHT-OF-WAY
E/P = EDGE OF PAVEMENT
C/L = CENTERLINE
ø = UTILITY POLE

Curve	Radius	Length	Chord	Chord Bear.
C1	50.00'	57.42'	54.32'	S 40°06'01" W



DEDMON SURVEYS

PHYSICAL SURVEY
FOR

BRIAN DONEHOO

149 KEEL COURT, MOORESVILLE NC 28115
LOT #22 OF "YACHT HARBOUR"

DAVIDSON TOWNSHIP – IREDELL COUNTY
SCALE: 1" = 40'

DEDMON SURVEYS

CHUCK POOVEY, PLS #3762
ROBERT DEDMON, PLS #3899
3704 NC HIGHWAY #16 NORTH
P.O. BOX 494 - DENVER, NC 28037
PHONE: 704/483/4908
FAX: 704/483/2170
WWW.DEDMONSURVEYS.COM

NORTH CAROLINA PROFESSIONAL SEAL L-3762 LAND SURVEYOR DAVID C. POOVEY

I, DAVID C. POOVEY, CERTIFY THAT THIS PLAT WAS DRAWN FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DB 2445 , PG 1006)(PB 21, PG 27; THAT THE RATIO OF PRECISION AS CALCULATED EXCEEDS 1:10000; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH GS 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 17 DAY OF APRIL, AD 2017.

PROFESSIONAL LAND SURVEYOR — L-3762 LICENSE NO.

SURV. BY: JF	DRAWN: JR	JOB# KEEL22

VICINITY MAP

APPROVED MAY 15 2017

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

March 9, 2017

Iredell County Environmental Health
610 E Center Avenue
Mooresville, NC 28115

Re: 149 Keel Court

To Whom It May Concern:

Attached please find an expedited review submittal for 149 Keel Court in Mooresville. The parcel formerly supported a 3-bedroom home with conventional system (gravity dosed). In October 2016 the current owner removed the aforementioned home. The owner wants to build a new 4-bedroom home. To accommodate a new 4-bedroom home the EXISTING WELL will be abandoned. In addition, the proposed well WILL REQUIRE A VARIANCE for placement within the 50' lake buffer. S&FS has performed soils evaluation and layout for proposing PPBPS system and repair. The proposed home and septic layout were surveyed. The prior driveway currently exists on the parcel; however it will be removed for a new drive that is proposed for the center of the lot. The owner has paid for an expedited review (pump), well abandonment and new well. The prior zoning fee has been re-activated by central permitting but will require a new payment at time of application.

Thank you,

Wendell Overby
NC Licensed Soil Scientist

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence at 149 Keel Court, Iredell County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1
Design Information
Design Specifications---------- 2-3
Layout Specifications---------- 4
System Tapsheet---------- 5
Site Plan/System Plan---------- 6-7
Calculations---------- 8
LPP Panel Block Diagram---------- 9
Profile Descriptions---------- 10
Iredell County Expedited Review Checklist---------- 11
Iredell County Septic Application---------- 12
Iredell County Site Plan Worksheet---------- 13
Environmental Health Requirements Checklist---------- 14
Iredell County Zoning Receipt---------- 15
Agent Authorization---------- 16

Owner: Brian Donehoo
224 Milford Circle, Mooresville
704 488-1622

April '17
Project #: 16-1093
Design By: Soil & Forestry Services of the Carolinas, PA

LICENSED SOIL SCIENTIST
JAMES WENDELL OVERBY
1218
STATE OF NORTH CAROLINA

APPROVED MAY 15 2017

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 DEHNR, and certification supplied by the manufacturer.
- 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
- 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.
- Pump tank riser should be 6" above grade, control panel should be 12" above grade.
- Foundation proposed as crawl
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation.
- Repair is specified as a PPBPS installation.
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.
- Iredell County can move tanks, well, etc.

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Brian Donehoo
Address:	224 Milford Circle Mooresville, NC
Phone:	704 488-1622
County:	Iredell
Location:	149 Keel Court
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	25.26

Design Specifications

Drainfield Size:	267
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	185
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	32.19
Dosing Volume:	148.62
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:	2.35
Elevation Head:	10.00
Total Dynamic Head:	16.50
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral
Check Valves:	In Tank
Anti-Siphon Hole:	NA

APPROVED MAY 15 2017

149 Keel Court

LP PPBPS SYSTEM

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	801
TOTAL LATERAL LENGTH:	267
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	266.67
SUPPLY LINE LENGTH:	185
TOTAL DYNAMIC HEAD:	16.50
MANIFOLD SIZE:	N/A
DOSING VOLUME:	148.62
PUMP TANK DRAW DOWN*:	7.1
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.*

APPROVED MAY 15 2017

149 Keel Court

Project #: 16-1093

LAYOUT FOR 4 BEDROOM HOME

April '17

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LENGTH	DESIGN LENGTH
TBM		3.3			100.00		
INSTR. 1			103.30				
HOUSE CNR				9.40	93.90		
P. TANK				12.60	90.70		
			SYSTEM				
1	*PINK*			*2.90*	*100.40*	*30*	*28*
2	*RED*			*3.30*	*100.00*	*50*	*48*
3	*ORANGE*			*4.00*	*99.30*	*44*	*42*
4	*YELLOW*			*4.90*	*98.40*	*41*	*40*
5	*BLUE*			*5.50*	*97.80*	*39*	*38*
6	*PINK*			*6.20*	*97.10*	*38*	*36*
7	*RED*			*6.60*	*96.70*	*37*	*35*
			REPAIR				
8	ORANGE			7.40	95.90	37	35
9	YELLOW			8.20	95.10	32	31
10	BLUE			8.70	94.60	23	22
11	RED			3.50	99.80	31	30
12	YELLOW			4.60	98.70	35	34
13	PINK			5.60	97.70	34	33
14	BLUE			6.60	96.70	32	31
15	ORANGE			7.30	96.00	33	32
16	YELLOW			7.90	95.40	20	19

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	TRENCH SYSTEM	DISTRIBUTION
** System*	*267*	*0.3*	*MOD.*	*PPBPS*	*LOW PRESSURE*
Repair	267	0.3	MOD.	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground at EIP at corner of lot (see site plan)
**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

APPROVED MAY 15 2017

LP PPBPS TAPSHEET -149 KEEL COURT

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*PINK*	100.4	*28*	0.156	**0.41**	84	6
2	*RED*	100	*48*	0.156	**0.41**	144	11
3	*ORANGE*	99.3	*42*	0.156	**0.41**	126	10
4	*YELLOW*	98.4	*40*	0.156	**0.41**	120	9
5	*BLUE*	97.8	*38*	0.156	**0.41**	114	9
6	*PINK*	97.1	*36*	0.156	**0.41**	108	8
~~7~~	~~PINK~~ Red	96.7	*35*	0.156	**0.41**	105	8
	total	**feet =**	**267**	**gal/min =**	**25.262308**		62

Des. Flow	**480**
Pump Run=	**5.88**
soil LTAR	**0.3**
LTAR +5%	**0.315**
LTAR with mod.	**0.6**
LTAR with mod.. + 5%	**0.63**

.156 equals 5/32 inch hole

APPROVED MAY 15 2017

CALCULATIONS

Location	149 Keel Ct	
Project Number	16-1093	
Lot No:		
No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.300	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	185	ft.
Supply Line Volume	32.19	gal.
Required Feet of Line	266.6667	ft.
Amount of Line from Layout	267	ft.
Gallons per Minute	25.26231	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	62	
Dosing Volume	148.62	gal.

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

Tank Draw Down	7.1	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	10	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	2.35	ft.
Total Dynamic Head (+15%)	16.50	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

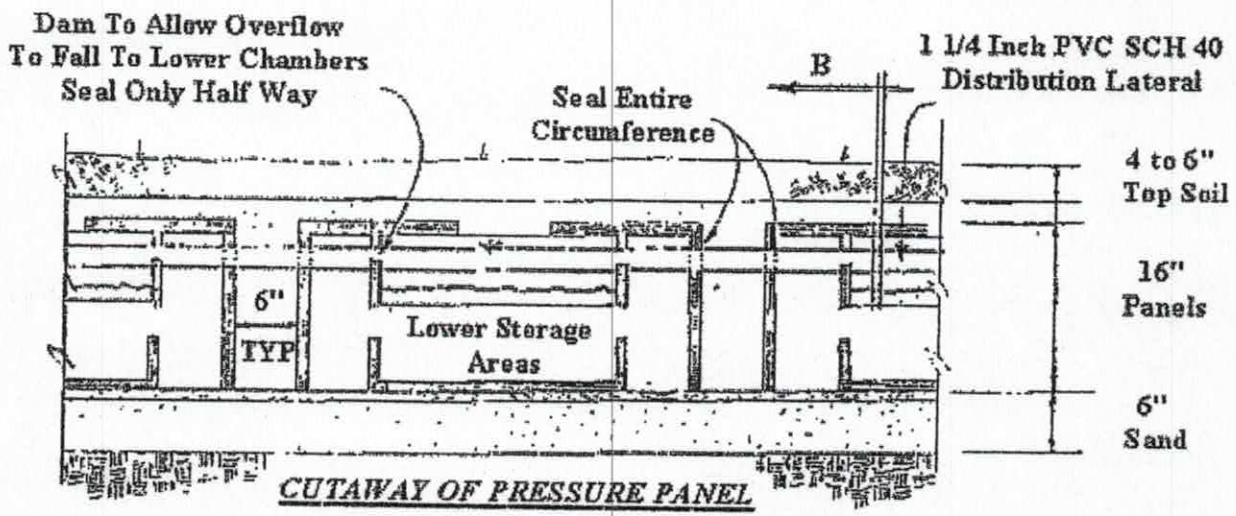
APPROVED MAY 15 2017

Panels With Pressure Distribution

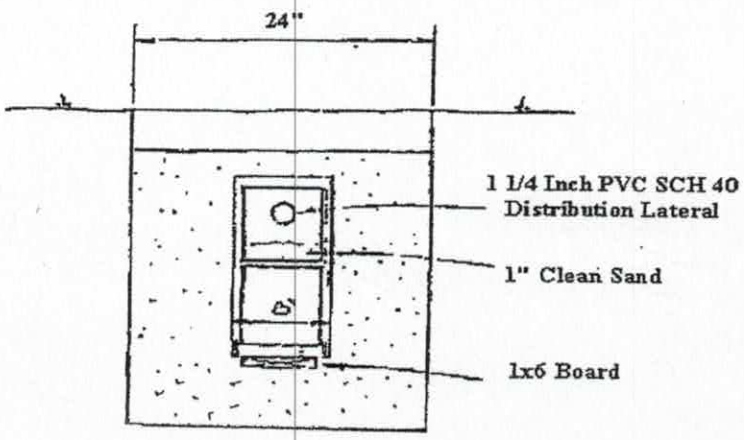
The LP Panel uses technology similar to that of Low Pressure Pipe (LPP) Systems. The tables and distribution design described in the LPP manual is applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects a LP Panel is similar to a LPP with the holes discharging into the panels.

The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel holds 3.6 gallons. When the system has 34 panels and all holes are the same size, then you would multiply 34 X 3.6 to get 122 gallons per dose cycle. The holes are drilled in the distribution pipe at the 10 and the 2 o'clock position. These are then placed so that the effluent is pumped into the top chamber of the panel. If the hole sizing changes in the system the pump cycle is set by the hole that is discharging the fastest.

All valves and turn-ups should be neatly capped, covered and labeled for future service. Pump tanks should be constructed as shown in the drawing on page 12 to allow for service and repairs.



CUTAWAY OF PRESSURE PANEL



PROPERTY ID #: 4624912328
COUNTY: IREDELL

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
(Complete all fields in full)

OWNER: BRIAN DONEHOO
APPLICATION DATE: 4/27/17
ADDRESS: 224 MILFORD CIRCLE MOORESVILLE
DATE EVALUATED: 2/21/17
PROPOSED FACILITY: RESIDENCE
PROPOSED DESIGN FLOW (.1949): 480
PROPERTY SIZE: .624
LOCATION OF SITE: 149 KEEL COURT
PROPERTY RECORDED: YES
WATER SUPPLY: ☒ Private ☐ Public ☒ Well ☐ Spring ☐ Other
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	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
B 1	L/6%	0-15	B CL WFSBK	FR SS SP	N/A	48	N/A	N/A	PS .3
		15-44	R C MMSBK	FR SS SP					
		44-48	RB CL WFSBK	FR SS SP few SAP					
2	L/9%	0-12	BR CL WMSBK	FR SS SP	N/A	48	N/A	N/A	PS .3
		12-24	BR C MMSBK	FR SS SP					
		24-42	R C MMSBK	FR SS SP					
		42-48	BR CL WMSBK	FR SS SP few SAP					
3	L/8% ✓	0-3	B SL WFGR	FR SS SP	N/A	48	N/A	N/A	PS .3
		3-14	BR CL WMS	FR SS SP					
		14-32	R C WMSBK	FR SS SP					
		32-48	BR CL WFSBK	FR SS SP few SAP					
		30"	CL + some SAP						
4	L/10%	0-5	RB CL WFSBK	FR SS SP	N/A	48	N/A	N/A	PS .3
		5-33	BR C WMSBK	FR SS SP					
		33-48	BR CL WFSBK	FR SS SP few SAP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)	PPBPS	PPBPS
Site LTAR	.3	.3

OTHER FACTORS (.1946): PS
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: OVERBY
OTHER(S) PRESENT: ROLLINS Tom Shuck (Chiles 3,6) on 5/11/17

APPROVED MAY 15 2017

COMMENTS:

JAMES S. OVERBY LICENSED SOIL SCIENTIST IREDELL COUNTY STATE OF NORTH CAROLINA 1218

SOIL/SITE EVALUATION

(Continuation Sheet-Complete all field in full)

PROPERTY ID #: 4624892328
DATE OF EVALUATION: 2/21/17
COUNTY: Iredell

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	
BS	L/8%	0-8	RB C WMANG	FI SS P	N/A	48	N/A	N/A	PS .3
		8-33	RC WMSBK	FR SS SP					
		33-48	BR CL WMSBK	FR SS SP					
B6	L/12%	0-13	RB CL WFSBK	FR SS SP	N/A	48	N/A	N/A	PS .3
		13-30	BR C WMSBK	FR SS SP					
		30-48	RB CL WMSBK	FR SS SP					
		27" Clay Loam							

COMMENTS:

IREDELL COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH DIVISION

RECEIVED APR 2 7 2017

(THE ABOVE PERMIT DOCUMENTS WILL BECOME INVALID IF INFORMATION PROVIDED ON THIS APPLICATION IS FALSIFIED OR CHANGED, OR IF THE SITE IS ALTERED. THE IMPROVEMENT PERMIT IS VALID FOR EITHER 60 MONTHS OR WITHOUT EXPIRATION DEPENDING UPON DOCUMENTATION SUBMITTED - APPLICATION WITH SITE PLAN 60 MONTHS, APPLICATION WITH COMPLETE, SCALED PLAT WITHOUT EXPIRATION. SEE 15A NCAC 18A .1937(f) FOR DETAILS)

Paid $850.00

1. APPLICATION FOR: ✓ Improvement Permit ✓ Authorization To Construct ___ Existing System Inspection

2. Page 2: *Site Plan Worksheet* Form MUST Accompany This Application

#222263

The following optional attachments may also be submitted: ✓ Survey Plat, Scaled no more than 1 Inch = 60 Feet

Place check ( ) beside whichever is submitted if applicable ___ Custom Site Plan, Scaled no more than 1 Inch = 60 Feet

3. Applicant Information:

BRIAN DONEHOO	224 MILFORD CIRCLE		704 488-1622
Applicant Name	**Mailing Address** MOORESVILLE	**Home Phone #**	**Alternate Phone #**
BRIAN DONEHOO	224 MILFORD CIRCLE		704 488-1622
Owner Name	**Mailing Address**	**Home Phone #**	**Alternate Phone #**

4. Property Information:

149 KEEL COURT	YACHT HARBOUR	22
Street Address	**Subdivision Name**	**Section/Phase and Lot Number**

Driving Directions: FROM CENTER AVE GO WEST TO CHURCH ST GO LEFT. TURN RIGHT ON WILSON AVE (BRAWLEY SCHOOL). TAKE BRAWLEY SCHOOL TO YACHT ROAD. TAKE YACHT ROAD TO YACHT HARBOR THEN RIGHT ON KEEL.

5. RESIDENTIAL Site Development Information: *(Check or Complete ALL that apply)*

- (✓) New, Single Family Residence
- ( ) New, Multi-Family Residence
- ( ) Expansion of Existing Septic System
- ( ) Repair To Failing Septic System due to ___
- ( ) Other ___

Maximum Number of Bedrooms 4
Maximum Number of Occupants 8
If Expansion, Current Number of Bedrooms ___

- (✓) Crawl Space Foundation?
- ( ) Concrete Slab Foundation?
- ( ) Basement w/Plumbing?
- ( ) Basement w/out Plumbing?

IF Non-Residential Site Development: Type of Business ___
Square Footage of Building ___
Maximum Number of Employees ___
Maximum Number of Seats ___

6. Proposed Water Supply:

(X) New Well ( ) Existing Well ( ) Community Well ( ) City Water ( ) Other Public Water

7. Desired Septic System Type: *(You may rank in order of preference, if any)* ( ) EXISTING SYSTEM installed ___ *Year*

( ) Alternative ( ) Conventional ( ) Innovative (X) Modified Conventional ( ) Other ___

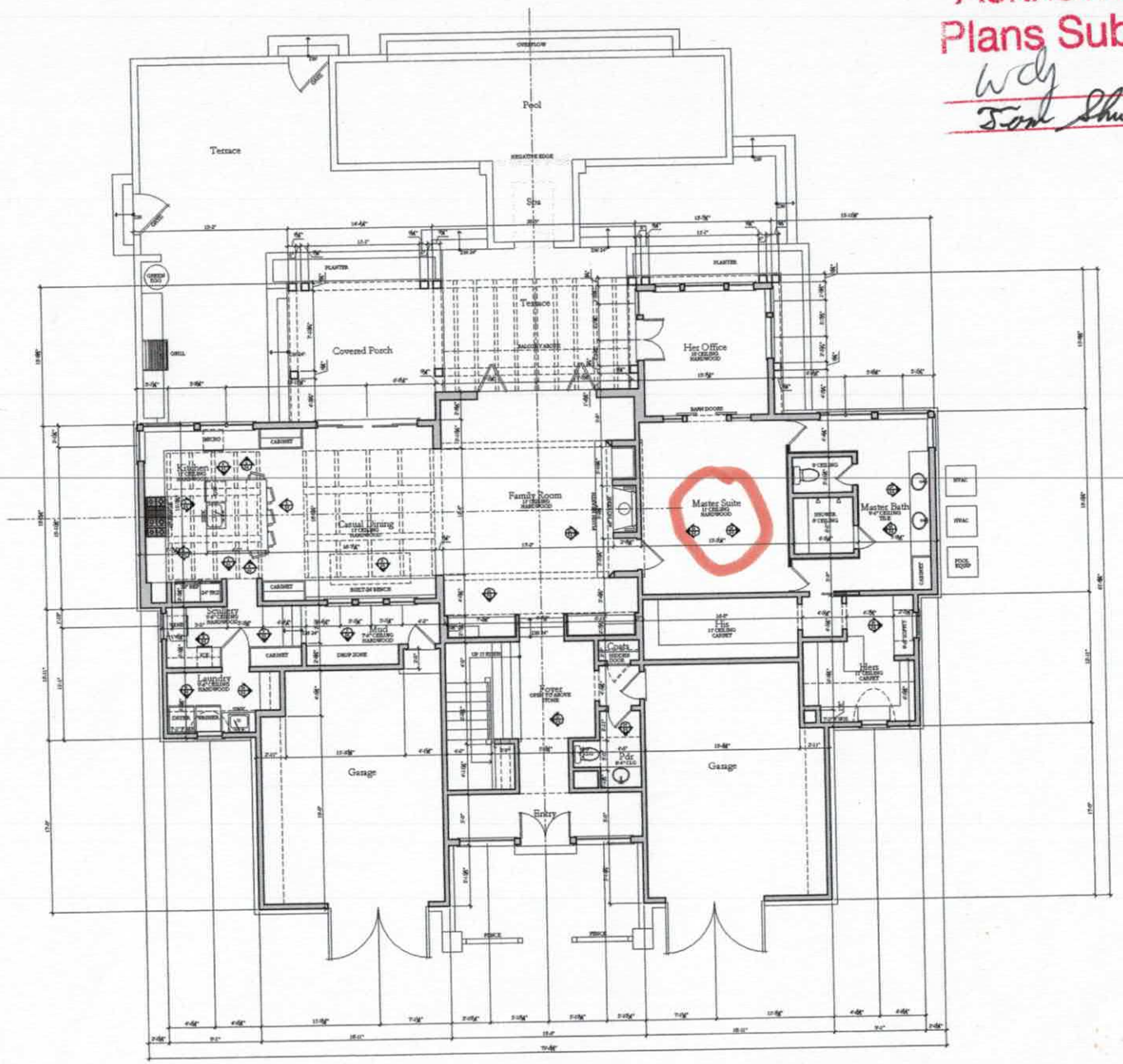
8. Please Answer The Following To The Best of Your Ability:
( ) Yes (✓) No Does the site contain any jurisdictional wetlands?
( ) Yes (✓) No Is any non-domestic sewage (i.e. industry) to be generated?
( ) Yes (✓) No Is the site subject to approval by any other public agency?

I have read this application and certify that the information provided herein is true, complete, and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed.

9. Signature: W Cly
Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

4/27/17
DATE

Acknowledgement
Plans Submittal ONL
WDJ Date 4/27/17
Tom Shuck Date 5/15/17



Square Footage		
Main Level Heated	2,677	Sq.Ft.
Upper Level Heated	1,902	Sq.Ft.
Total Heated	4,579	Sq.Ft.
Garage	419	Sq.Ft.
Garage	431	Sq.Ft.
Covered Porch	206	Sq.Ft.
Total Under Roof	5,635	Sq.Ft.
Trellis Terrace	216	Sq.Ft.

JIM PHELPS COLLECTION, LLC
CONCORD, NC
704.259.5570

DONEHOO RESIDENCE

A-2
MAIN LEVEL FLOOR PLAN

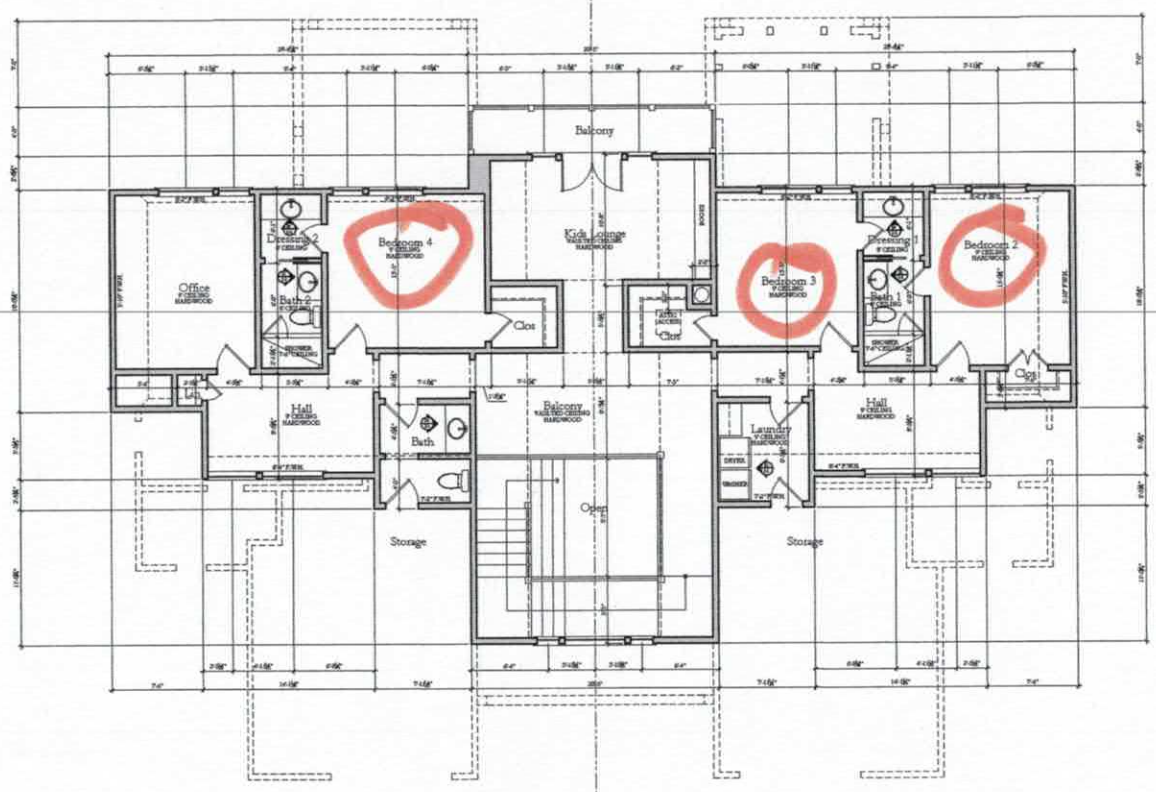
1/4" = 1'-0"

April 12, 2017

Acknowledgement of
Plans Submittal ONLY!

WW Date 4/27/17

Tom Pluch Date 5/15/17



JIM PHELPS COLLECTION, LLC
CONCORD, NC
704.259.5572

DONEHOO RESIDENCE

A-3
UPPER LEVEL
FLOOR PLAN

April 12, 2017

AUTHORIZATION TO ACT AS AGENT FOR OWNER

Any application/document/permit requiring a signature must be signed by the property owner or their authorized agent. This form shall be provided by the owner to allow specified individuals to act as agents for the owner. This form allows the specified individuals to sign or receive any application/document/permit on behalf of the owner. This form allows the authorized agent to make decisions on behalf of the owner pertaining to modifications of permits in the field. It is the responsibility of the owner to assure that any/all permit conditions specified on permits issued by this Division are followed.

I, John Brian Donehoo, am the legal owner of the property located at 149 Keel Court Mooresville NC 28117, identified as PIN(Parcel Identification Number) 4624892328, located in Iredell County, North Carolina.

I do hereby authorize (print authorized agent/company name) SOIL & FORESTRY SERVICES, _____, _____, _____, _____, to act as an agent on my behalf in applying for/signing/obtaining any of the documents described below.

1. Improvement Permit (IP)/ Authorization to Construct (AC).
2. Application for soil-site evaluation (new/repair).
3. Application/permit for water well/well abandonment.
4. Application for existing system.
5. Application for Improvement Permit (IP)/ Authorization to Construct (AC).

I agree to abide by any and all decisions and/or conditions between the agent acting on my behalf and the Iredell County Department of Public Health, Environmental Health Division. This form must be fully executed before the individual's specified above will be recognized as the authorized agent.

[signature]	4-25-17
Signature of Owner	Date
_____	_____
Signature of Witness	Date

Please return this signed form to the appropriate office:

Mooresville - Environmental Health
ronda.hart@co.iredell.nc.us
Fax: 704-662-3239
610 E. Center Avenue, Mooresville, NC 28115
or
Statesville - Environmental Health
adrienne.shea@co.iredell.nc.us
Fax: 704-871-3483
349 N. Center Street, Statesville, NC 28677

IREDELL COUNTY HEALTH DEPARTMENT

Statesville Office - Central Permitting (704) 878-5305 Mooresville Office (704) 660-3625

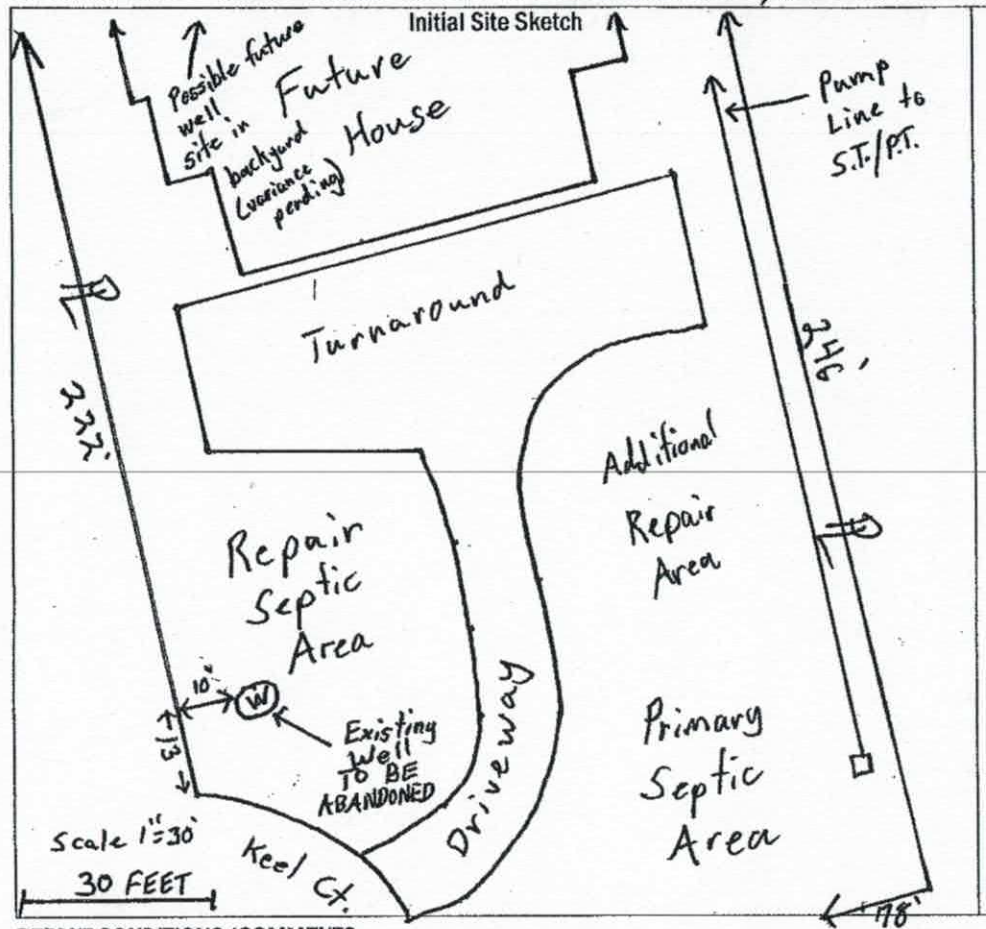
PRIVATE DRINKING WATER WELL PERMIT # 222263 PIN # 4624-89-2328 Type of Permit (circle one): New Repair (Abandonment)

APPLICANT NAME: Brian Dunehoo ADDRESS: 224 Milford Circle Mooresville, NC PHONE: 704-488-1622

DIRECTIONS TO SITE: BSR towards Lake Norman → L on Yacht Rd → R on Yacht Harbor → Rt on Keel Ct → Lot @ end on left

SITE ADDRESS: 149 Keel Ct. Mooresville, NC SUBDIVISION: Yacht Harbour SECTION/LOT: 22

Initial Site Sketch



"As Built" Sketch

Well GPS Latitude: _____ Longitude: _____

PERMIT CONDITIONS/COMMENTS: _____

WELL PERMIT ISSUED BY: Tom Lauch DATE: 5/22/17 (Permit is valid for 5 years from date issued. This permit may be revoked if it is determined there has been a material change in any fact or circumstance upon which the permit is issued. Actions of the employees of the Iredell County Health Department shall in no way be taken as a guarantee that this well will produce water of any particular quantity or quality or for any amount of time. Employees of the Iredell County Health Department assume no liability for any damages, either direct or consequential which may be caused by this well.)

Well Contractor: _____ CONTRACTOR CERT #: _____ GROUT INSPECTION BY: _____ DATE: _____

OR CERTIFICATION OF GROUT NOT WITNESSED BY DEPT: _____ DATE: _____ WELL HEAD INSPECTION BY: _____ DATE: _____

WELL HEAD INSPECTION (check when completed): GROUT TO GROUND SURFACE ☐ WELL CONTRACTOR ID PLATE ☐ PUMP INSTALLER ID PLATE ☐ SAMPLE PORT ☐

ACCESS PORT / VENT ☐ WELL SEAL ☐ WELL HEAD 12 INCHES / PITLESS ADAPTOR 8 INCHES ABOVE GRADE ☐

CERTIFICATE OF COMPLETION BY: _____ DATE: _____ WATER SAMPLES BY: _____ DATE: _____

Attachments: Form GW-1a (required except for abandonment) ☐ Form GW-30 ☐ Water Sample Results ☐ Plat ☐

Health Dept. Copy - White Applicant Certificate of Completion - Yellow Applicant Well Construction Permit - Pink

M.A.D.

IREDELL COUNTY HEALTH DEPARTMENT

Statesville Office – Central Permitting (704) 878-5305 Mooresville Office (704) 660-3625

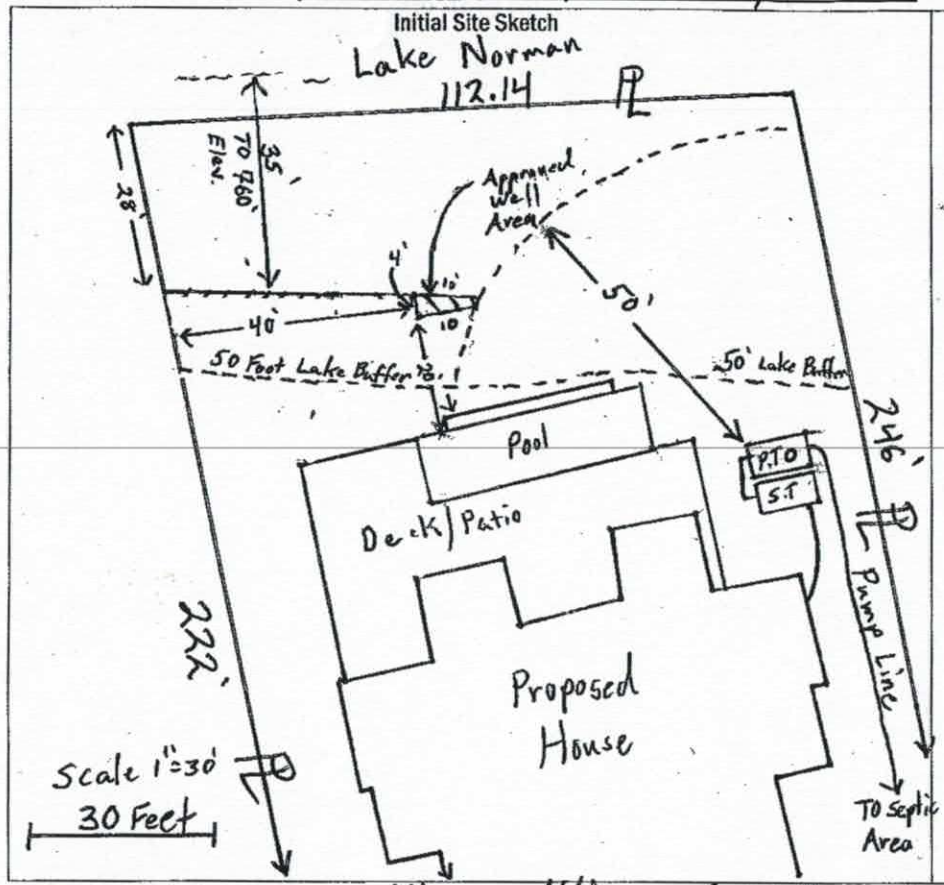
PRIVATE DRINKING WATER WELL PERMIT # 222263 **PIN #** 4624-89-2328 **Type of Permit (circle one):** (New) Repair Abandonment

APPLICANT NAME: Brian Dunehoo ADDRESS: 224 Milford Cr. Mooresville, NC 28117 PHONE: 704-488-1622

DIRECTIONS TO SITE: BSR towards IKN → L on Yacht Rd → R on Yacht Harbor → R on Keel Ct → Lot @ end on left

SITE ADDRESS: 149 Keel Court Mooresville, NC SUBDIVISION: Yacht Harbour SECTION/LOT: 22

Initial Site Sketch



"As Built" Sketch

Well GPS Latitude: _____ Longitude: _____

PERMIT CONDITIONS/COMMENTS: All conditions of well variance # JMB1113 (dated 6-2-2017) must be followed. (see attached) 50' setback to the lake buffer must be staked/marked @ time of inspection to ensure compliance.

WELL PERMIT ISSUED BY: Tom Shuck DATE: 6/9/2017 (Permit is valid for 5 years from date issued. This permit may be revoked if it is determined there has been a material change in any fact or circumstance upon which the permit is issued. Actions of the employees of the Iredell County Health Department shall in no way be taken as a guarantee that this well will produce water of any particular quantity or quality or for any amount of time. Employees of the Iredell County Health Department assume no liability for any damages, either direct or consequential which may be caused by this well.)

Well Contractor: _____ CONTRACTOR CERT #: _____ GROUT INSPECTION BY: _____ DATE: _____

OR CERTIFICATION OF GROUT NOT WITNESSED BY DEPT: _____ DATE: _____ WELL HEAD INSPECTION BY: _____ DATE: _____

WELL HEAD INSPECTION (check when completed): GROUT TO GROUND SURFACE ☐ WELL CONTRACTOR ID PLATE ☐ PUMP INSTALLER ID PLATE ☐ SAMPLE PORT ☐

ACCESS PORT / VENT ☐ WELL SEAL ☐ WELL HEAD 12 INCHES / PITLESS ADAPTOR 8 INCHES ABOVE GRADE ☐

CERTIFICATE OF COMPLETION BY: _____ DATE: _____ WATER SAMPLES BY: _____ DATE: _____

Attachments: Form GW-1a (required except for abandonment) ☐ Form GW-30 ☐ Water Sample Results ☐ Plat ☐

Health Dept. Copy – White Applicant Certificate of Completion – Yellow Applicant Well Construction Permit - Pink

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH

ROY COOPER
GOVERNOR

MANDY COHEN, MD, MPH
SECRETARY

DANIEL STALEY
DIRECTOR

Onsite Water Protection Branch
June 2, 2017

Brian and Jenny Donehoo
224 Milford Circle
Mooresville, NC 28117

Re: Approval No. JMB1113

Private Well Located Less than 50' to Surface Water Body [Rule 15A NCAC 2C .0107(a)(2)(N)]

Property location:
149 Keel Ct
Mooresville, NC 28117

Dear Mr. and Mrs. Donehoo;

On May 31, 2017 the On-site Water Protection Branch received your request for a variance from the Well Construction standards, Title 15A North Carolina Administrative Code Subchapter 2C .0100. The request for a variance concerns a proposed water supply well on the referenced property that will serve a single, family dwelling. The home is on a lot with very difficult topography.

Specifically, the variance request grants you permission to construct a water supply well at a distance closer than the fifty foot setback to a surface water body. Achieving fifty foot setback would be difficult given the challenges of the property.

Based upon information provided by the Iredell County Health Department, and the property owner, it is my finding that based upon current conditions as the site exist today (as well as the current proposal for use of the structure) you meet the conditions necessary for approval of a variance as specified by 15A NCAC .0118 (a) (1) and (2). On that basis and if the following conditions are met, the requested variance is approved:

1) The new water supply well shall be constructed of either steel or galvanized metal casing.

2) The well shall be located as far as possible from the high water mark of the lake where, depending upon where the well rig can actually set up, will possibly encroach upon the 50foot setback, but no closer than 35feet.

3) The well will be required to have casing installed to a minimum of 50 feet below land surface and 10 feet into bedrock. If bedrock is encountered at a depth greater than 50 feet, then casing must extend 10 feet into bedrock

4) Grout will be required the entire length of the casing from land surface into bedrock.

5) A drill bit with a diameter of a least one third greater than the diameter of the casing must be used to drill the cased portion of the well.

6) Grout must be either pumped into place with the use of a tremmie pipe or pressure method.

7) A preconstruction meeting between the well contractor and Iredell County Environmental Health staff is required to ensure that maximum separation distances are achieved.

The granting of this variance is for the well location only. It in no way relieves the owner or agent from other requirements of the North Carolina Well Construction Standards including, but not limited to the requirements in 15A NCAC 2C .0113(b) to repair or to abandon any well which acts as a source or channel for the migration of contamination. This approval does not imply sufficient water quality. Further, the approval does not relieve your responsibility to comply with any other applicable Federal, State, or local laws or regulations.

If you have any questions regarding this variance, please contact me at (828) 713-3335.

Sincerely,

John Brooks

John M. Brooks R.E.H.S, MS

1. Well Contractor Information:

Todd Adams

Well Contractor Name (or well owner personally abandoning well on his/her property)

2522

NC Well Contractor Certification Number

Rowan Well Drilling

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. UIC, County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 7/25/17

5a. Well location:

Brian Dunehoo

Facility/Owner Name

Facility ID# (if applicable)

149 Keel Court, Mooresville, NC

Physical Address, City, and Zip

Iredell

County

4624-89-2328

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35 31 8.65 N 80 55 17.65 W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

6a. Well ID#: _____

6b. Total well depth: 165 (ft.)

6c. Borehole diameter: 6 (in.)

6d. Water level below ground surface: _____ (ft.)

6e. Outer casing length (if known): 6 (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

WELL ABANDONMENT DETAILS

7a. For Geoprobe/DPT or Closed-Loop Geothermal Wells having the same well construction/depth, only 1 GW-30 is needed. Indicate TOTAL NUMBER of wells abandoned: _____

7b. Approximate volume of water remaining in well(s): _____ (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☐ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
■ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

cement no fly ash

7g. Provide a brief description of the abandonment procedure:

gravity

8. Certification:

Signature of Certified Well Contractor or Well Owner — Date: 7/25/17

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

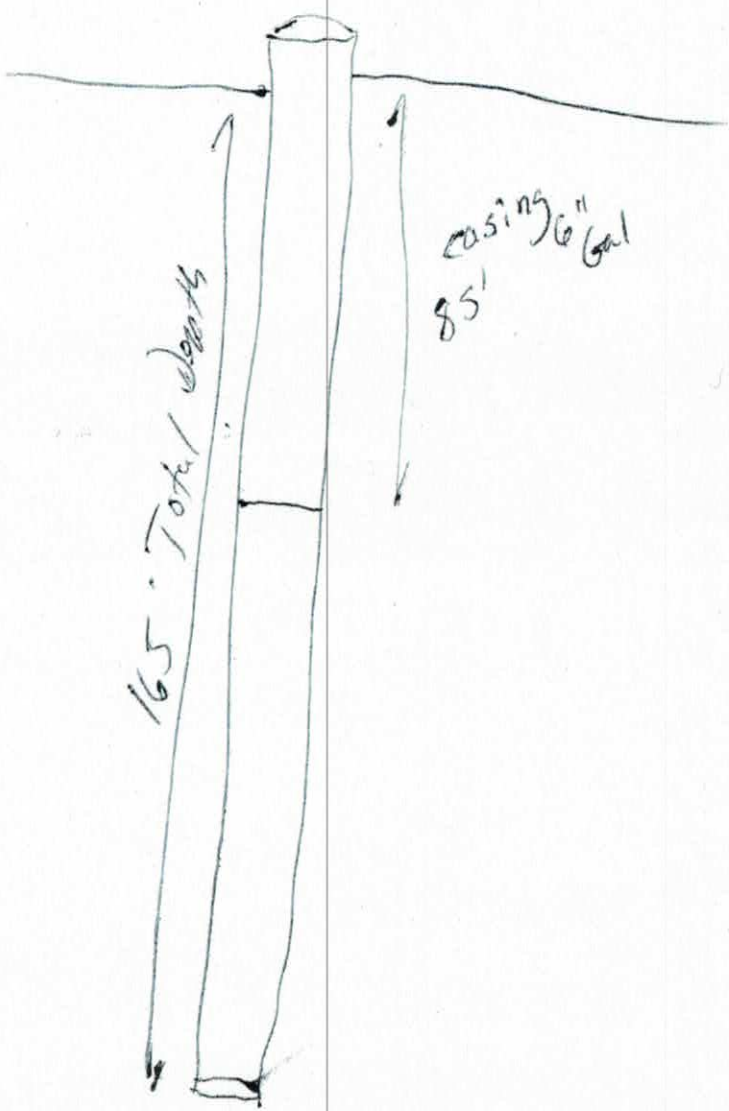
10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.


165' Total depth
casing 6" Gal
85'

REACTIVATED BY CENTRAL PERMITTING

IREDELL COUNTY

PO Box 788
349 North Center St.
Statesville, NC 28677

FILE COPY

APPLICATION NUMBER
222263
Issue Date: 10/04/2016

ZONING PERMIT
Residential

Parcel Number	Street Address	Jurisdiction
4624892328.000	149 KEEL COURT, MOORESVILLE, NC	IREDELL COUNTY

Owner Information	Applicant Information
Owner: SAPANARO THERESA	Applicant: KATHLEEN SAUNDERS
Address: 149 KEEL COURT MOORESVILLE, NC 28115	Address: 121 HOLT LANE MOORESVILLE, NC 28117
Phone:	Phone: 704-578-4951

Use Requested	Zone Code
SFD- FAST TRACK	RR

Lot Acreage	F Setback	B Setback	L Setback	R Setback	Watershed	Flood Zone
.624	35.00	50.00	15.00	15.00	CACL	AE

Remarks:

$ PAID

The applicant certifies that there are no deed restrictions, contractual agreements or governmental regulations of any kind that interfere with or prohibit the use of the property or the use for which this permit is requested. The applicant further acknowledges that enforcement of deed restrictions, plat conditions and other contractual agreements will not be undertaken by Iredell County and is the sole responsibility of the affected parties.

See Attached

Applicant: _____ Date: _____

Permit Number	82182	TOTAL FEES:	$ 77.25