ICHD - ENVIRONMENTAL HEALTH DIVISION

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

PERMIT # AP 310808

PIN # 4778 -- 79 -- 1085

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

APPLICANT/OWNER: WJH LLC

APPLICANT ADDRESS: 93 Knob Center Lake Drive Ste 160 Charlotte NC 28216

SITE ADDRESS: 111 Zach Drive Harmony NC 28634

PHONE: 704-489-1400

ALT. PHONE

SITE DIRECTIONS: I-40 to old Mooresville Left on Mt Bethel Drive to Rock Creek

SAP CONTROLLED: ☐ YES ☒ NO

SUBDIVISION: Rock Gate Estates

SECTION: 2 LOT# 10 LOT AREA:

DESIGN FLOW: 480 L.T.A.R.: .50

Septic Tank	1000	(gal)	STB 750	Date	3-1-22	☒ New System ☐ Repair ☐ Expansion	System Type: I II (III) IV V VI	☒ Residence	No. Bedrooms 4
Pump Tank	1000	(gal)	PT 340	Date	5-4-21	System Description: 25% Reduction PM		☐ Business	No. Persons 8
Pump Make	Zoeller		Model	151		Serial # 20D218	Repair System Description: PPBPS - 50% Reduction	☐ Other	No. Employees
# Nitrification Fields	1	# Lines	4	Linear Ft	400	Maintenance Agreement Required: ☐ YES ☒ NO		☒ Slab	☐ Crawl Space
Trench Width	36	Trench Bottom Depth	24 in max	Gravel Depth		☐ GRAVITY ☒ PRESSURE		☐ Basement w/plumbing	☐ Basement w/o plumbing

Water Supply: ☐ Private ☒ Public ☐ Community

Comments / Conditions:

1½" SCH 40 all lines
5.5' drawdown

INITIAL SITE SKETCH

This permit is issued pursuant to Section 11 . (C) of S.L. 2018-114 using the signed and sealed LSS Evaluation by:

Thompson Environmental Consulting Inc.

LSS # 1287 Date June 17, 2021.

AS BUILT SKETCH

FOR SEPTIC FINAL INSPECTION CALL: 704-664-3703 between 8am-9am the day the inspection is needed. Be sure to speak with an inspector to confirm your time.

Still need riser 6" above grade

As Built Attached - see notes

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: Date: 6-4-21

IMPROVEMENT PERMIT by: Benjamin A. Bell Date: 6/21/2021.

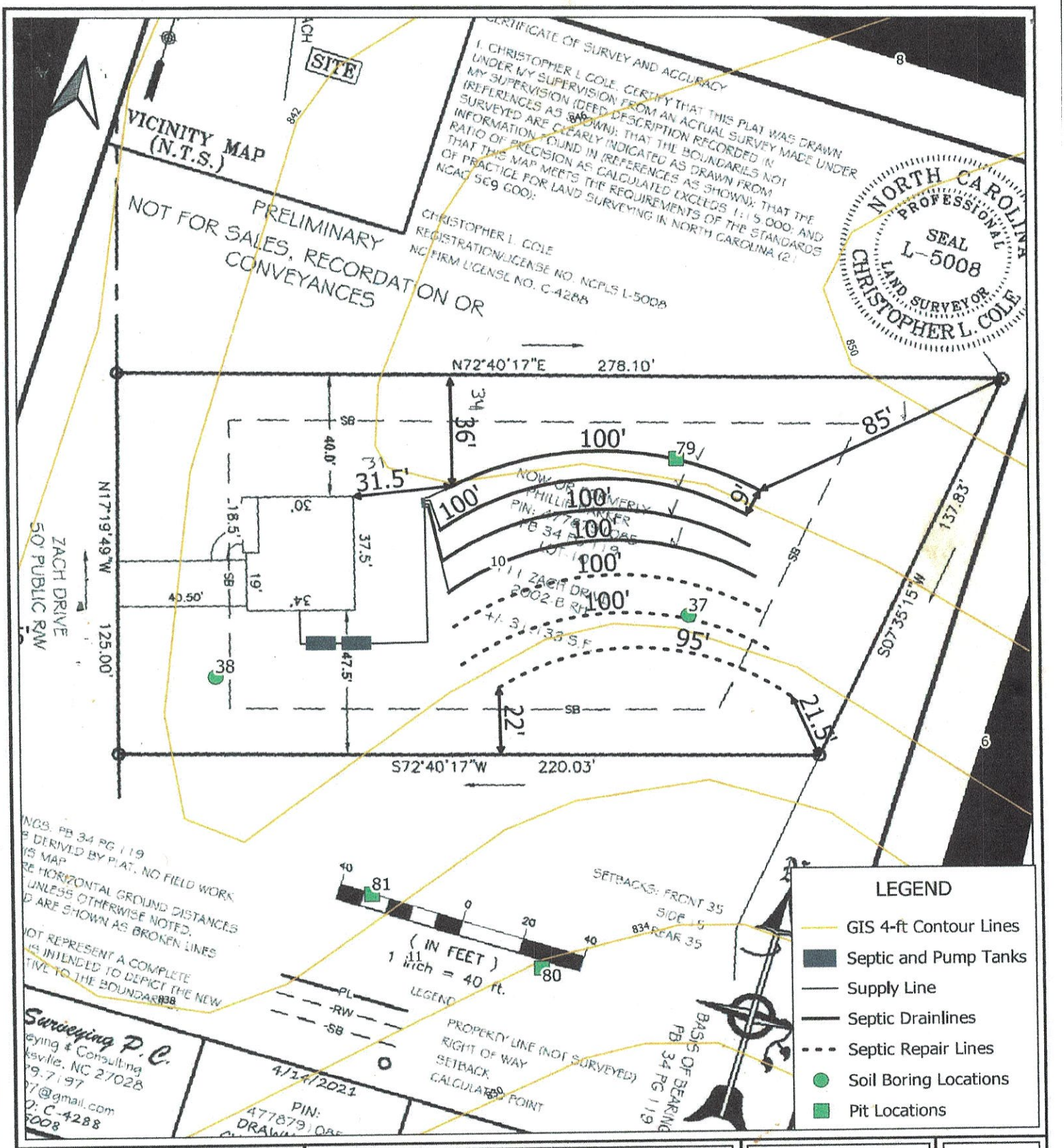
AUTHORIZATION TO CONSTRUCT by: Benjamin A. Bell Date: 8-4-2021

Installed by: Dewey's Septic & Grading

OPERATION PERMIT by: Matthew Wilkins Date: 5/5/22

Existing System Inspected by: Date:

FOR SEPTIC FINAL INSPECTION: CALL 704-664-3703 between 8am-9am the day the inspection is needed.



Thompson Environmental Consulting

Prepared For:
Century Complete

Proposed Septic Layout

Lot 10 - Rock Gate Estates
111 Zach Drive
Harmony, NC 28634
Iredell County

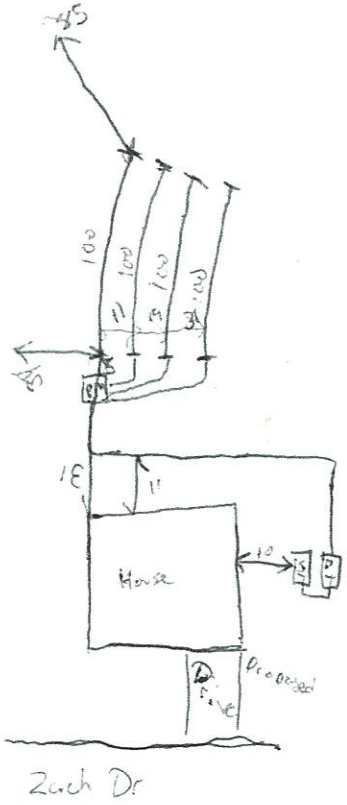
Date: June 2021
Scale: 0 20 40 ft
TEC Job #: 21-167

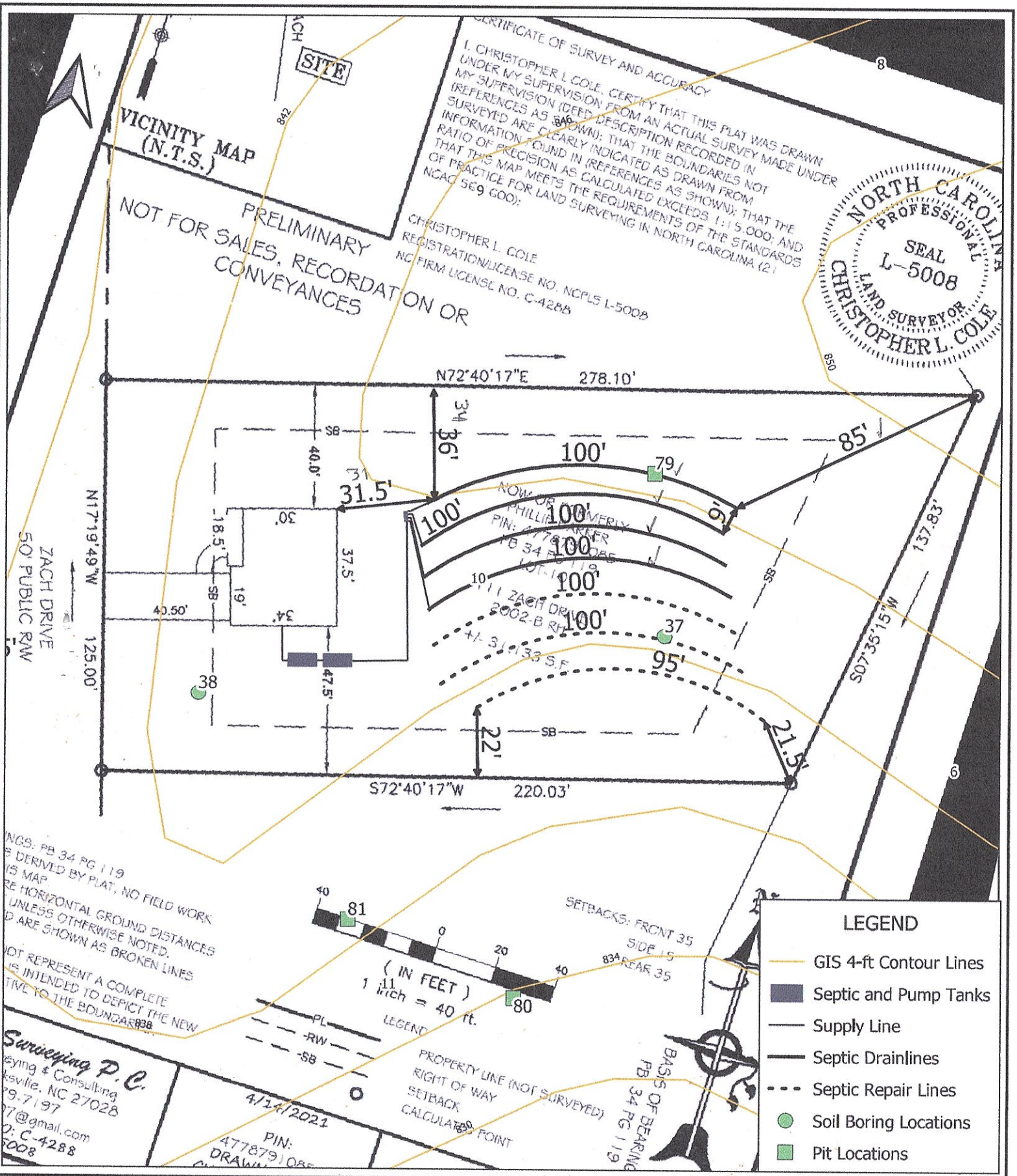
Figure 1

Item	Date	Initials
Drain Lines Checked	4/8/22	MW
Tanks Checked	4/8/22	MW
Pressure Manifold or Valve Box Checked	4/29/22	DW
Pressure Head Set	4/29/22	DW
Electrical Checked	4/29/22	DW
Floats Set	4/29/22	DW
Alarm Checked	4/29/22	DW
Maintenance Contract Needed? Y (N)		
Comments:		
Pump tank riser 6" above grade		

Repairs Only	
	State Code
Failing System Code	
Type of Distribution	G or P
Type of Failure/Malfunction	
Primary Cause of Failure/Malfunction	
Age of System? _____	
Initial or Repair? _____	

11 Zach





Surveying P.C.
eying & Consulting
esville, NC 27028
79-7197
97@gmail.com
0: C-4288
5008

Thompson Environmental Consulting
WATER · WASTEWATER · WETLANDS

Prepared For:
Century Complete

Proposed Septic Layout

Lot 10 - Rock Gate Estates
111 Zach Drive
Harmony, NC 28634
Iredell County

Date: June 2021
Scale: 0 20 40 ft
TEC Job #: 21-167

Figure 1

Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107

Sheet 1 of 14

PROPERTY ID #:

COUNTY: IREDELL

SOIL/SITE EVALUATION
***for* ON-SITE WASTEWATER SYSTEM**

OWNER: Phillip P Barker
ADDRESS: 476 Shaw Road, Harmony, NC 28634
PROPOSED FACILITY: LPS PROPOSED DESIGN FLOW (.1949):
LOCATION OF SITE: Rock Cove Estates, Harmony, NC 28634

DATE EVALUATED: 3/21/21
PROPERTY SIZE:
PROPERTY RECORDED:

WATER SUPPLY: ☐ Private ☒ Public ☐ Well ☐ Spring ☐ Other Lots10-14, 16-20, 22-33, 41-44, 46-52, 55, 59-61, and 65
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
1	LS/5%	0-3	GR/SL	VFR/N	—	40+	30"	—	PS 0.35 Need P.E.
		3-30	SBK/CL	FR/S					
		30-40+	M/SiL	VFR/N					
2	LS/13	0-4	GR/SCL	VFR/N	—	40+	19	—	PS 0.35 Need P.E.
		4-19	SBK/CL	FR/S					
		19-40+	M/SiL	VFR/N					
3	LS/	0-9	SBK/SL	VFR/NS	—	40+	25	—	PS 0.35 Need P.E.
		9-25	SBK/CL	FR/S					
		25-40	M/SiL	VFR/N					
4	LS/13	0-14	SBK/SL	FR/S	—	40+	19	—	PS 0.35 Need P.E.
		14-19	SBK/SiL	FR/N					
		19-40+	M/SiL	VFR/N					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	Accepted/PPBPS
Site LTAR	0.3	0.3

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): Provisionally Suitable
EVALUATED BY: M. WOOD, LSS
OTHER(S) PRESENT: E. WOOD, E
Larry Thompson, LSS

LICENSED SOIL SCIENTIST L. THOMPSON JR. 1287 STATE OF NORTH CAROLINA

COMMENTS:
* Pits needed on lots with shallow depths
* Lots 16-20, 46, 47, 48, 49, 50, 51, 52, 55, 59, 60, 61, 65

Updated February 2014

The LSS Evaluation is being submitted pursuant to and meets the requirements of SL 2018-114 Section 11.(c).

SOIL/SITE EVALUATION

(Continuation Sheet-Complete all field in full)

PROPERTY ID #:
DATE OF EVALUATION: 3/21/21
COUNTY: FREDERICK

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
35	LS/TS 4	0-14	SBK / scl	FR / S	—	29+	—	—	PS 0.3
		14-29	SBK / cl	FR / N					
		29	AR						
36	LS/ 11	0-40	SBK / C	FR / S	—	40+	—	—	PS 0.3
37	LS/ 7	0-15	SBK / C	FR / S	—	40+	—	—	PS 0.3
		15-29	SBK / cl	FR / S					
		29-40+	SBK / l	FR / S					
38	R/ 1	0-17	SBK / scl	FR / S	—	40+	17	—	PS 0.35 Need Pit
		17-35	m / l	VFR / S					
		35-40+	m / sC	VFR / S					
39	NS/ 10	0-13	M / sl	VFR / N	—	13		13 Cr	PS 0.1 Drip
		13+	Cr						

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet-Complete all field in full)

Sheet ___ of ___

PROPERTY ID #: _____

DATE OF EVALUATION: 6-11-24

COUNTY: Iredell

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
77	LS 10%	0-10	SBk/scL	FI/ss/sp/exp	-	52"	-	-	PS 0.3
		10-52	SBk/C	FI/s/P/exp					
78	LS	0-35	SBk/C	FI/s/P/exp	-	35"	L 35-60"	-	PS 0.3
		35-60	M/L	FR/NS/NP/Nexp					
79	LS 6%	0-3	SBk/scL	FI/ss/sp/exp	-	50"	-	-	PS 0.3
		3-50	SBk/C	FI/s/P/exp					
80	LS 6%	0-10	SBk/scL	FR/ss/sp/exp	-	52"	-	-	PS 0.3
		10-52	SBk/C	FI/s/P/exp					
81	LS 8%	0-24	SBk/C	FI/s/P/exp	-	40"	40-52	-	PS 0.3
		24-40	SBk/scL	FR/ss/sp/exp					
		40-52	M/sL	FR/NS/NP/Nexp					

COMMENTS: _____

Rock Cave

Residential Subsurface Wastewater Treatment and Disposal System Proposal

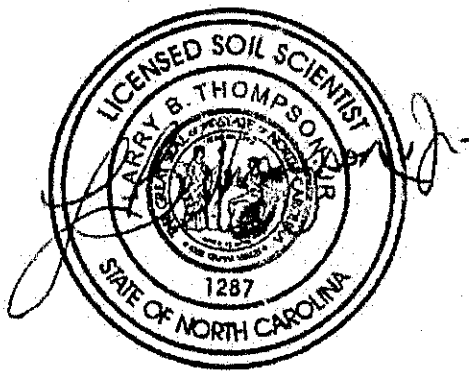
for

Lot 10 – Rock Gate Estates
110 Zach Drive
Harmony, NC 28634

Tax Parcel # 4778791085.000
June 17, 2021

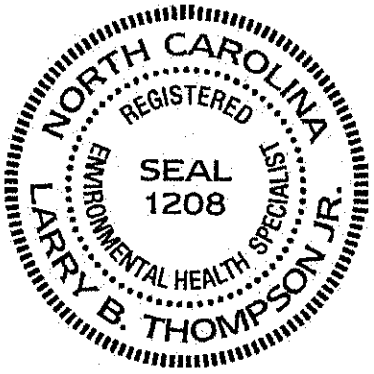
Prepared for:

Glenn Bird
Century Complete
9325 Center Lake Dr., Suite 160
Charlotte, NC 28216
1-833-791-0192



Prepared by:

Larry Thompson, REHS, LSS
Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107-0541
Phone: 704-301-4881
info@thompsonenv.com



Details

Century Complete has contracted with Thompson Environmental Consulting, Inc. (TEC) to prepare a septic proposal for a 4-bedroom single family residence to be located on Lot 10, Rock Gate Estates, Harmony, North Carolina.

Based upon an investigation performed by TEC, it was determined that a sufficient amount of "Suitable" Group IV soils are available for the installation of a **Pump-To Accepted System** for a 4-bedroom residence (the proposed repair system will be Prefabricated Permeable Block Panel System). The property will be served by a municipal water supply.

Century Complete would like to request that Iredell County Environmental Health (ICEH) issue the appropriate permits for a subsurface wastewater treatment and disposal system based upon the following proposal and the enclosed Licensed Soil Scientist Evaluation, which is being submitted pursuant to and meets the requirements of SL 2018-114 Section 11. (c).

Location

From Statesville, take I-40 to Old Mocksville Road. Turn left onto Old Mocksville Road, left onto Mt. Bethel Road, and left onto 4 Andrews Drive (Rock Gate Estates).

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, April 1, 2017.

Accepted Wastewater System No. AWWS-2005-02-R6; North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, August 21, 2015.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
SC Certified Professional Soil Classifier No. 111
NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer No. 1762
NC Certified Wastewater System Inspector No. 17621

Plans and Specifications

A. Septic Tank

1. The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1,000 gallons (minimum) in capacity.
2. The septic tank will be fitted with an approved effluent filter.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

B. Pump Tank

1. The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1,000 gallons in capacity. Again, it is the responsibility of the septic tank contractor to thoroughly inspect each pump tank prior to accepting delivery.
2. All pipe penetrations into the tank shall be booted (i.e., C-293 boot with a stainless-steel strap).
3. The pump tank shall have access risers that extend, at a minimum, 6 inches above finished grade and must have less than 36 inches of fill over its top once finished grade has been established (a reinforced concrete tank will be required if finished soil cover is 36 inches or greater in depth).
4. The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4x rated control panel. Pump and float control wiring should be long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
5. Panel and control equipment shall include lightning protection, be protected from unauthorized access, and always remain accessible to the system operator.
6. The pump removal system will be via a pump tether made of nylon rope or its equivalent. The tether material should be resistant to mildew and rot.

C. Pipe, Fittings and Supply Line

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC and fitted with pressure rated couplings.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
3. Supply line will be approximately 62 feet long and consist of a 2-inch SCH 40 PVC pipe with pressure fittings.

D. Pressure Manifold

1. A pressure manifold shall be used to distribute wastewater to four drainlines.
2. The pressure manifold shall be contained within an adequately sized box/vault that will allow future repair lines to be installed and is designed to allow for drainage of effluent that may accumulate in it during flushing and head pressure adjustments. The box should be placed upon a gravel base.
3. A gate valve shall be provided at the pressure manifold box to allow for final pressure adjustment (2 foot of head pressure as per design).
4. The pressure manifold shall be constructed of SCH 80 PVC.
5. There shall be 4 taps (1/2 inch SCH. 40 PVC - direct thread or saddle).
6. Each tap to have a true union ball valve that will allow for future removal/replacement.
7. The connecting pipe between the pressure manifold taps and the drainfield shall be constructed of PVC.

E. Drainfield Installation

1. The drainfield has been previously laid out on-site utilizing metal stemmed flags. The property owner/builder should mark this area and isolate it as much as possible from construction traffic
2. Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition.
3. The specified system is an accepted wastewater system, specifically the Infiltrator Quick 4 chamber system or any other system with a state-approved 25% reduction in required drainline length.
4. The drainfield consists of four (4) lateral trenches 3-foot wide by 100 feet in length. Total trench length is 400 feet.
5. The maximum trench depth for this system shall be **24 inches**.
6. The laterals are to be installed on contour with the land, keeping the individual trench bottoms level from beginning to end.
7. The trenches should be left open for the final inspection by the ICEH.

F. Final Landscaping

1. The final soil cover over the drainfield shall be a minimum of 6 inches deep.
2. The drainfield shall be shaped to shed rainwater and be free from low spots.
3. The drainfield area should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

G. Utility Conflicts

1. The builder and property owner must take special care in planning for water, power, gas, telephone, and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground

utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation.
2. Lawn irrigation should not be placed over the drainfield area.
3. If there are any questions regarding preferred routes, contact the ICEH as soon as possible.

Maintenance

H. In General

1. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
2. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
3. When it becomes necessary to clean the effluent filter, the filter should be removed, and the accumulated debris washed back into the septic tank – not onto the lawn.
4. Any damp areas, leakages, or malfunctions in the drainfield area should be addressed immediately.
5. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

Design Specifics

Daily Design Flow:	480 GPD – 4 Bedroom Home
Septic Tank Requirements:	1,000 Gallon Septic Tanks
Pump Tank Requirements:	1,000 Gallon Pump Tank
Effluent Loading Rate:	0.3 GPD per sq. ft.
Drainfield Type:	Infiltrator Quick4 Plus Standard
Distribution Method:	Pressure Manifold
Number of Taps:	4 (1/2 inch SCH. 40 PVC)
Number of Drainlines:	4
Drain Lines:	(4) 3' Wide x 100' Long
Total Trench Length:	400 Linear Feet
Maximum Trench Depth:	24 Inches

Final Cover Requirement:	6 Inches (minimum)
Pump Requirements from Barn:	28.44 GPM at 12 Feet TDH
Recommended Pump:	Liberty FL30 (or equivalent)

Repair Option

Effluent Loading Rate:	0.3 GPD per sq. ft.
Drainfield Type:	PPBPS
Required Linear Footage:	267 Feet
Available Linear Footage:	295 Linear Feet
Installation Depth:	24 Inches

PRELIMINARY SOIL AND SITE EVALUATION

Rock Gate Estates
Harmony, NC 28636

Prepared For:

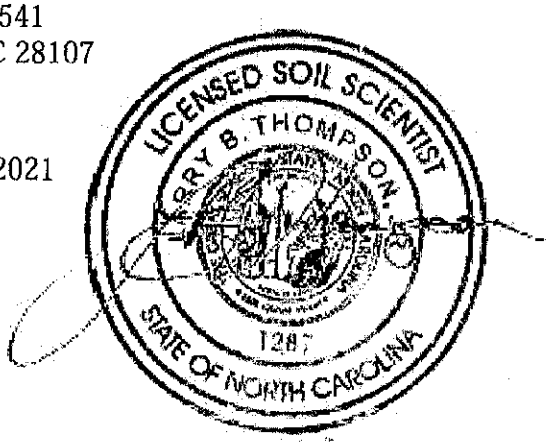
Katie Dyess
Century Complete
9325 Center Lake Dr., Suite 160
Charlotte, NC 28216

Prepared By:

Thompson Environmental Consulting
WATER • WASTEWATER • WETLANDS

Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107

June 11, 2021



INTRODUCTION & SITE DESCRIPTION

This Preliminary Soil and Site Evaluation was performed on 38 lots located in the Rock Gate Estate subdivision, Harmony, North Carolina (Lots10-14, 16-20, 22-33, 41-44, 46-52, 55, 59-61, and 65).

Thompson Environmental Consulting, Inc. (TEC) was retained to determine whether the soils were suitable for the installation of onsite subsurface wastewater treatment and disposal systems. The property was evaluated in accordance with North Carolina statutes for waste disposal ("Laws and Rules for Sewage Treatment and Disposal Systems", amended April 1, 2017).

INVESTIGATION METHODOLOGY & SITE PHYSICAL CHARACTERISTICS

The evaluation was conducted by Michael Wood, LSS, Larry Thompson, LSS, and Ethan Wood, ES on March 20-21, and June 11, 2021. Sixty-six soil borings and 17 pits were advanced, and soil color was determined with a Munsell Soil Color Chart. Observations of the landscape (slope, drainage patterns, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) were recorded.

The project study area has been previously developed as a single-family residence subdivision served by public water.

FINDINGS

Borings rated as "Provisionally Suitable" for the installation of an Accepted System or Prefabricated Permeable Block Panel Systems (PPBPS) are denoted in the attached Figure as green and orange points. Surfaces typically exhibited friable silt loam to clay loam textures with weak, medium, subangular blocky structure 3 to 12 inches in depth. Lower subsurface horizons exhibited firm clay loam, sandy clay loam, to clay textures with moderate, medium, subangular blocky structure to a depth of 13 to greater than 40 inches before encountering sandy loam to loam saprolite. A long-term acceptance rate (LTAR) of 0.3 to 0.4 gal./day/sq. ft. would be recommended for these soils.

Borings rated as "Provisionally Suitable" for the installation of Subsurface Drip Dispersal product are denoted in the attached Figure as yellow points. Textures of friable sandy loam with weak, medium, granular blocky structure were recorded to depths of 15 to 22 inches before encountering >50% parent rock. A long-term acceptance rate (LTAR) of 0.1 to gal./day/sq. ft. would be recommended for these soils.

Borings rated as "Unsuitable" for the installation of subsurface wastewater treatment and disposal systems are denoted as red points in the attached Figure. These soils were shallow to soil rock.

DISCUSSION

Twenty-six of the sixty-six borings were noted as having sandy loam to loam saprolitic material, which can be considered for use with onsite wastewater treatment and disposal if no open and continuous joints, quartz veins, or fractures that are relic of parent rock is observed. While the borings give every indication that we have "suitable" saprolite, 15A NCAC 18A .1956 MODIFICATIONS TO SEPTIC TANK SYSTEMS, (6) SAPROLITE SYSTEM states that an investigation of the site using pits is a requirement. This was completed with a deep pit evaluation on June 11, 2021 and the saprolite was determined to be "Suitable" for wastewater treatment and disposal.

It is estimated that approximately 4,800 square feet of suitable soil area would need to be allocated and left completely available for the installation of a 3-bedroom Accepted System in "Provisionally Suitable" soil. Some of the lots would benefit from the installation of a PPBPS due to limited areas of "Provisionally Suitable Soil" and, in this case, would need approximately 3,300 square feet of suitable soil area allocated and left completely available for a 3-bedroom system installation.

Soil borings designated as "Drip Dispersal Depth" in the Figure have the potential to support the installation of a Subsurface Drip Dispersal septic system. It is estimated that approximately 7,200 square feet of suitable soil would need to be allocated and left completely available for the installation of a 3-bedroom Subsurface Drip Dispersal septic system. A special hydraulic assessment would be required to determine the exact square footage that might be required when considering subsurface drip dispersal.

TEC is not aware of any innovative or alternative systems currently permitted for use in North Carolina that can be used in areas with "Unsuitable" soil borings.

Based on our evaluation, it appears that Lots 26 and 46 would be considered "Unsuitable" and Lots 41 and 42 could be classified as "Provisionally Suitable" for use with subsurface drip dispersal.

CONCLUSION

The findings presented herein represent TEC's professional opinion based on our Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. Soils naturally change across a landscape and contain many inclusions. As such, attempts to quantify them are not always precise and exact. Due to this inherent variability of soils and the subjectivity when determining limiting factors, there is no guarantee that a regulating authority will agree with the findings of this report.

FL30-Series Specifications

1.01 GENERAL

The contractor shall provide labor, material, equipment, and incidentals required to provide _____ (QTY) centrifugal pumps as specified herein. The pump models covered in this specification are FL30-Series single-phase pumps. The pump furnished for this application shall be model _____ as manufactured by Liberty Pumps.

2.01 OPERATING CONDITIONS

Each submersible pump shall be rated at 1/3 hp, _____ volts, single-phase, 60 Hz, 1725 RPM. The unit shall produce _____ GPM at _____ feet of total dynamic head.

The submersible pump shall be capable of handling effluent with 3/4" solids handling capability. The submersible pump shall have a shut-off head of 19.8 feet and a maximum flow of 58 GPM @ 5 feet of total dynamic head.

The pump shall be controlled with:

_____ Piggyback style ON/OFF float switch

_____ NEMA 4X outdoor simplex control panel with three float switches and a high water alarm

_____ NEMA 1 indoor simplex control panel with three float switches and a high water alarm

_____ NEMA 4X outdoor simplex control panel with four float switches and a high water alarm

_____ NEMA 1 indoor simplex control panel with four float switches and a high water alarm

_____ NEMA 4X outdoor duplex control panel with three float switches and a high water alarm

_____ NEMA 1 indoor duplex control panel with three float switches and a high water alarm

_____ NEMA 4X outdoor duplex control panel with four float switches and a high water alarm

_____ NEMA 1 indoor duplex control panel with four float switches and a high water alarm

3.01 CONSTRUCTION

Each centrifugal effluent pump shall be equal to the $_{C}$SP$_{US}$ certified FL30-Series pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N O-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity, eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a unitized ceramic/carbon seal with stainless steel housings and spring. The pump shall be furnished with stainless steel handle.

4.01 ELECTRICAL POWER CORD

The submersible pump shall be supplied with 10, 25, 35, or 50 feet of multiconductor power cord. It shall be cord type SJTW, capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a watertight compression fitting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord by means of a damaged or wicking cord.

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7000 Apple Tree Avenue Bergen NY 14416 ■ Phone 800-543-2550 ■ Fax 585-494-1839 ■ Email Liberty@LibertyPumps.com ■ Web www.LibertyPumps.com

5.01 MOTORS

Single-phase motors shall be oil filled, permanent split capacitor, class B insulated NEMA B design, rated for continuous duty. Since air filled motors are not capable of dissipating heat as effectively, they shall not be considered equal. At maximum load, the winding temperature shall not exceed 130°C unsubmerged. The pump motor shall have an integral thermal overload switch in the windings for protecting the motor. The capacitor circuit shall be mounted internally in the pump.

6.01 BEARINGS AND SHAFT

Upper and lower ball bearings shall be required. The bearings shall be a single ball/race type bearing. Both bearings shall be permanently lubricated by the oil that fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of 0.500".

7.01 SEALS

The pump shall have a unitized carbon/ceramic seal with stainless steel housings and spring equal to Crane Type 6a. The motor plate/ housing interface shall be sealed with a Buna-N O-ring.

8.01 IMPELLER

The impeller shall be engineered polymer, with pump out vanes on the back shroud to keep debris away from the seal area. It shall be threaded to the motor shaft.

9.01 CONTROLS

All units can be supplied with CSA and UL approved automatic wide angle tilt float switches. The switches shall be equipped with piggyback style plug that allows the pump to be operated manually without the removal of the pump in the event that a switch becomes inoperable. Manual pumps are operable by means of a pump control panel.

10.01 PAINT

The exterior of the casting shall be protected with powder coat paint.

11.01 SUPPORT

The pump shall have cast iron support legs, enabling it to be a freestanding unit. The legs will be high enough to allow 3/4" solids to enter the volute.

12.01 SERVICEABILITY

Components required for the repair of the pump shall be shipped within a period of 24 hours.

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13.01 FACTORY ASSEMBLED TANK SYSTEMS WITH GUIDE RAIL AND QUICK DISCONNECT DISCHARGE

_____ Factory mounted guide rail system with pump suspended by means of bolt-on quick disconnect that is sealed by means of nitrile grommets or O-rings. The discharge piping shall be schedule 80 PVC and furnished with a PVC check valve and shut-off ball valve. The tank shall be wound fiberglass or roto-molded plastic. An inlet hub shall be provided with the fiberglass systems.

_____ Stainless steel guide rail

_____ Zinc plated steel guide rail

_____ " diameter of basin

_____ " height of basin

_____ " distance from top of tank to discharge pipe outlet

_____ Fiberglass cover

_____ Structural foam polymer cover

_____ Steel cover

_____ Simplex system with outdoor panel and alarm

_____ Duplex system with outdoor panel and alarm

_____ Separate outdoor alarm

_____ Remote outdoor alarm

14.01 TESTING

The pump shall have a ground continuity check and the motor chamber shall be hi-potted to test for electrical integrity, moisture content, and insulation defects. The motor and volute housing shall be pressurized, and an air leak decay test performed to ensure integrity of the motor housing. The pump shall be run, voltage current monitored, and checked for noise or other malfunction.

15.01 QUALITY CONTROL

The pump shall be manufactured in an ISO 9001 certified facility.

16.01 WARRANTY

Standard limited warranty shall be 3 years.

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310808

APPLICATION MUST BE FILLED OUT COMPLETELY & BE LEGIBLE OR IT WILL NOT BE PROCESSED

Iredell County Health Department – Environmental Health Division

PAGE 1: *APPLICATION FORM*

Application For: ( ) New Well Permit ( ) Well Repair Permit ( ) Well Abandonment
(X) Septic Improvement Permit (X) Authorization to Construct ( ) Existing System Inspection ( ) Septic System Repair

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.

****

Page 2: *Site Plan Worksheet* form MUST accompany this application

The following optional attachments may also be submitted: ( ) Survey Plat, scaled no more than 1 inch = 60 feet
Place an (X) beside whichever is submitted if applicable ( ) Custom Site Plan, scaled no more than 1 inch = 60 feet

****

Applicant Information: **(PRINT CLEARLY)**

Applicant Name: WJH LLC **Address:** 9325 Center Lake Drive Ste 160 Charlotte NC 28216 **Zip:** _____

Applicant Email: katie.dyess@centurycommunities.com **Phone:** 704-488-1100 **Alt. Phone:** _____

Owner Name: Phillip P Barker (WJH LLC is under contract to purchase this lot) **Address:** 2904 Harmony Hwy- Harmony NC 28634 **Zip:** _____

Owner Email: _____ **Phone:** _____ **Alt. Phone:** _____

****

Property Information:

Street Address: 111 Zach Dr

Subdivision Name: Rock Gate **Section/Phase:** _____ **Lot Number:** 10

Driving Directions: Turn right onto Kelly St, Turn right onto Feimster St, Take I-40 E and Old Mocksville Rd to Mt Bethel Rd, Turn left onto N Center St, Turn right to merge onto I-40 E, Take exit 154 for Old Mocksville Rd, Turn left onto Old Mocksville Rd, Turn left ont Mt Bethel Rd. Drive and turn left into Rock Gate Development

****

Site Development Information: ***(check or complete ALL that apply***

CHECK FOUNDATION TYPE

(X) New Single Family Residence — Maximum Number of Bedrooms: 4 — ( ) Crawl Space Foundation
( ) New Multi-Family Residence — Maximum Number of Occupants: _____ — (X) Concrete Slab Foundation
( ) Accessory Building — ( ) Swimming Pool — ( ) Basement with Plumbing
( ) Bedroom(s) Addition — ( ) Other Addition/Structure: _____ — ( ) Basement without Plumbing
( ) Repair to failing septic system ___ Tank ___ Drain lines Describe Problem: _____
Non-Residential Site Development: Type of Business: _____
Square Footage of Building: _____ Max. Number of Employees: _____ Max. Number of Seats/Beds/Other: _____

****

Water Supply: ( ) Replacement Well – Reason: _____
( ) Multi-connection Well Number of Houses: _____ Number of Persons: _____

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

****

Desired Septic System Type: ***(you may rank in order of preference)*** Year existing system installed: _____
( ) No Preference ( ) Alternative (X) Conventional ( ) Innovative ( ) Modified Conventional ( ) Other: _____

****

Please answer the following to the best of your ability:

( ) Yes (X) No Does the site contain any jurisdictional wetlands?
( ) Yes (X) No Is any non-domestic sewage (i.e. industrial) to be generated?
(X) 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.

Signature: Katie Dyess for WJH LLC 6-18-21

Property owner or owner's legal representative signature (SIGNATURE REQUIRED) DATE

DocuSign Envelope ID: 90F9FE01-96A7-4F33-94DC-DA56F3403A66

EXHIBIT "C"

PERMISSION TO PERMIT

DATE: February 15, 2021

WJH LLC, a Delaware limited liability company
Permitting for the MID-ATLANTIC Division
3091 Governors Lake Drive, Suite 300
Norcross, GA 30071

Per your request, we grant permission to **WJH LLC**, a Delaware limited liability company (hereinafter, "WJH") Katie Dyess, Glenn Bird and Dave Hodgman, as Builder's Agent, to begin the permitting process for (Rock Gate Estates) on the lots listed within Exhibit "A" (attached) of the contract intended for purchase so long as the lots are not disturbed by you or your affiliates prior to their scheduled purchase and more specifically, no work of any kind will be performed on the lots prior to closing. WJH shall be held liable should anyone attempt to lien the property for work ordered by WJH.

If you have any questions, feel free to email me at the email provided below.

Sincerely,

SELLER:

DocuSigned by:
_____ (SEAL)
PHILIP B. PARKER
Date: 2/15/2021 | 3:30 PM EST
Email: _____

PBP

MP

DocuSign Envelope ID: B4E15E00-408B-4FDC-B5C9-D2F35D044D9D

To: Iredell County Environmental Health

From: WJH LLC

Regarding: Rock Gate Estates – Session Law 2018-114 Permit Packages

The NC LSS evaluation attached to these applications is to be used to produce a design and construction features for permitting in accordance with Session Law 2018-114 Section 11. (c).

DocuSigned by:

3A6EC48879C5476...

Project Manager

6/17/2021

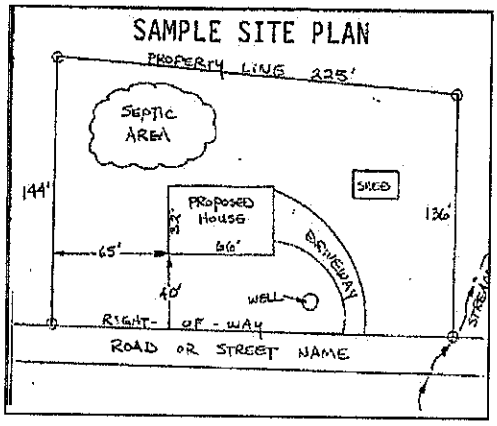
Date

IREDELL COUNTY HEALTH DEPARTMENT

ENVIRONMENTAL HEALTH DIVISION

PAGE 2: ***SITE PLAN WORKSHEET***

SEE THE "SAMPLE SITE PLAN" BELOW. ***INCOMPLETE SITE PLANS WILL BE RETURNED TO YOU FOR COMPLETION AND MAY RESULT IN A DELAY IN THE ISSUANCE OF YOUR SEPTIC SYSTEM PERMIT!!!***



Place an (X) beside each item as you complete the site plan:

- (X) Property Line measurements are clearly identified
- (X) All proposed structures are indicated
- (x) Front and side setbacks from property line
- (X) Preferred driveway location and well location
- (X) Area you prefer your septic system to be placed
- (x) North arrow, or other sufficient indicator of direction

Circle N/A on the following if appropriate:

Location of septic systems and wells within 100' of your property	N/A
Location of easements and rights of ways on your property	N/A
Location of any designated wetlands on the property	N/A

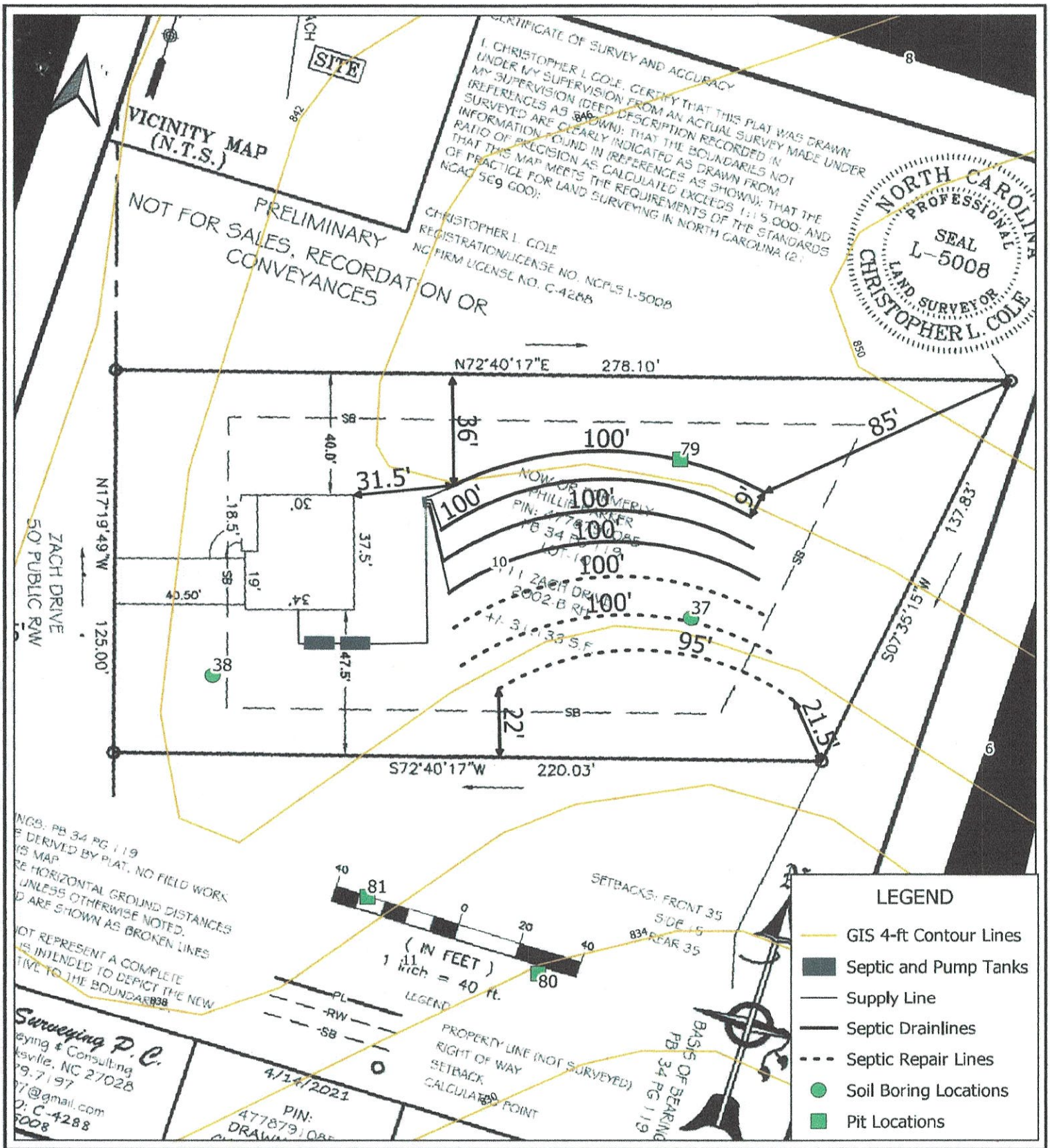
USE THIS SPACE TO DRAW YOUR SITE PLAN

Show: proposed house or business footprint, wells, water lines, patios, pools and decks, and any other item that will occupy space on the site

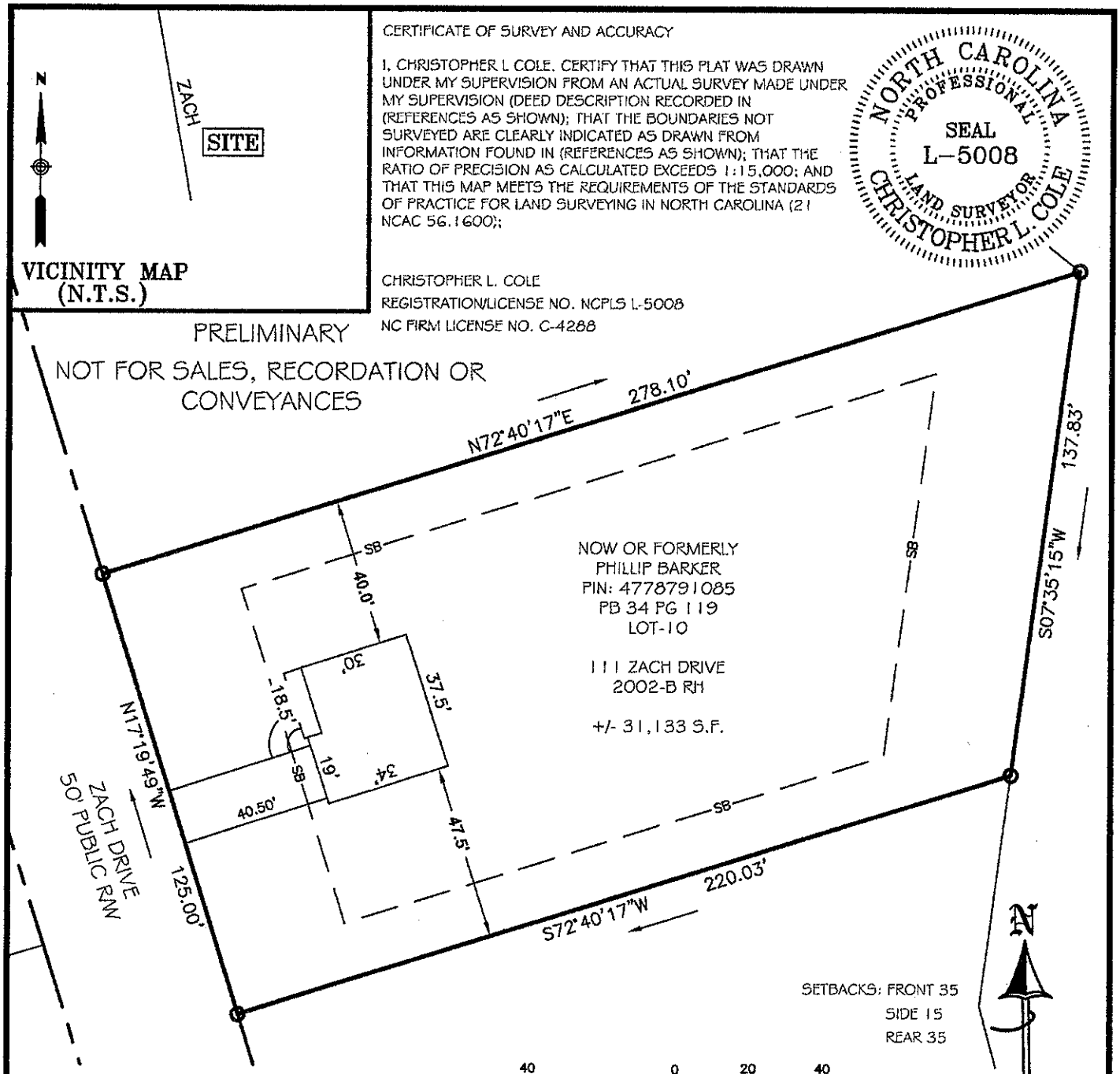
See attached session Permit paperwork

Signature: Katie Dyess for WJH LLC — 6-18-21

Property owner or owner's legal representative signature (SIGNATURE REQUIRED) — DATE



Thompson Environmental Consulting	Prepared For: Century Complete	**Proposed Septic Layout** Lot 10 - Rock Gate Estates 111 Zach Drive Harmony, NC 28634 Iredell County	Date: June 2021 Scale: 0 20 40 ft TEC Job #: 21-167	Figure 1



CERTIFICATE OF SURVEY AND ACCURACY

I, CHRISTOPHER L COLE, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN (REFERENCES AS SHOWN); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN (REFERENCES AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED EXCEEDS 1:15,000; AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56.1600);

NORTH CAROLINA PROFESSIONAL SEAL L-5008 LAND SURVEYOR CHRISTOPHER L. COLE

CHRISTOPHER L. COLE
REGISTRATION/LICENSE NO. NCPLS L-5008
NC FIRM LICENSE NO. C-4288

NOTES:

1) BASIS OF BEARINGS: PB 34 PG 119
2) BOUNDARY LINES DERIVED BY PLAT, NO FIELD WORK COMPLETED FOR THIS MAP.
3) ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
4)LINES NOT SURVEYED ARE SHOWN AS BROKEN LINES FROM
5) THIS SURVEY DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY AND IS INTENDED TO DEPICT THE NEW BUILDING LOCATION RELATIVE TO THE BOUNDARIES.

Ascension Land Surveying P.C.
Professional Land Surveying & Consulting
116 Williams Road, Mocksville, NC 27028
Phone: (704) 579-7197
Email: surveyor.chris007@gmail.com
NC FIRM LICENSE NO: C-4288
NC PLS NO: L-5008

4/14/2021

PIN: 4778791085
DRAWN BY: CC
CHECKED BY: JH
SCALE: 1"=40'
JOB: 21-02-24

PLOT PLAN
LOT-10
111 ZACH DRIVE
ROCK GATE ESTATES
TURNERSBURG TWNSHP, IREDELL CO., NC

WALL LEGEND

FULL HEIGHT
2X4 WOOD STUD PARTITION

FULL HEIGHT
2X6 WOOD STUD PARTITION

STONE VENEER

DRYWALL OPENING HEIGHT
AS NOTED ON PLAN, 6'-8" HDR HT.

BRICK VENEER

1 ROD & SHELF

STUD WALL BELOW
HEIGHT AND STUD SIZE AS NOTED

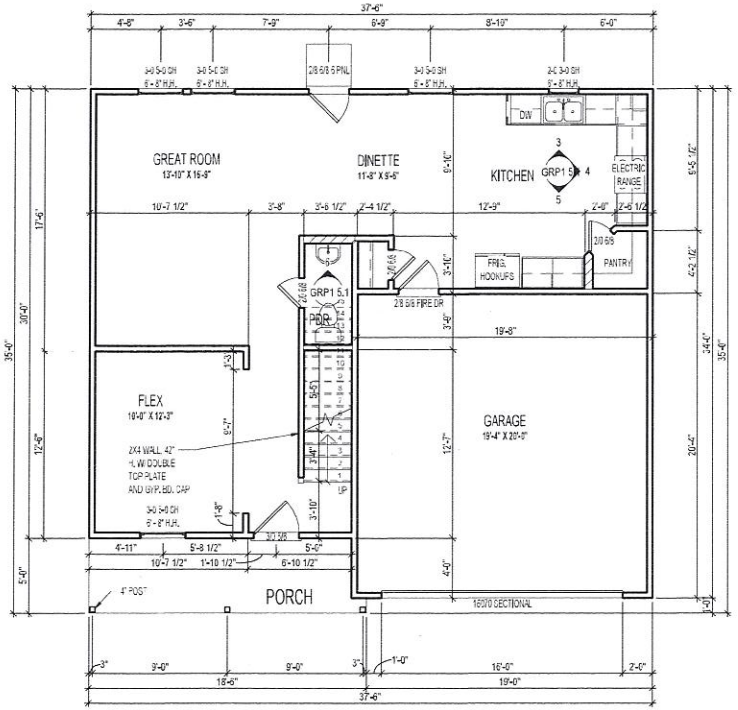
NOTE: EXTERIOR WALLS FRAMED AT 16" O.C. INTERIOR NON-BEARING WALLS FRAMED AT 24" O.C. REF TO STRUCTURAL SHEETS FOR BEARING WALL SPECIFICATIONS AND PLATE INFORMATION

TABLE R302.5 Dwelling/Garage Separation	
Separation	Material
From the residence and attics	Not less than ½-inch gypsum board or equivalent applied to the garage side
From all habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor-ceiling assemblies used for separation required by this section	Not less than ½-inch gypsum board or equivalent

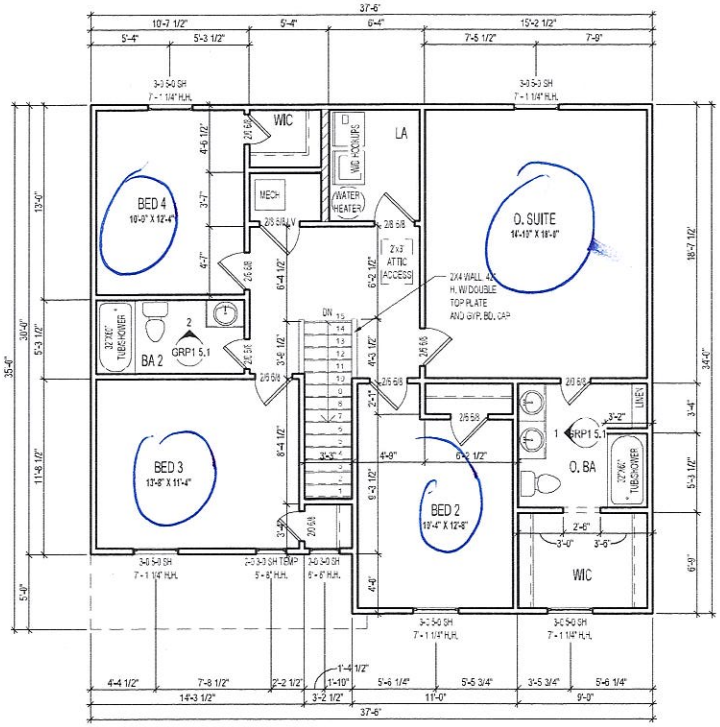
Acknowledgement Of Plans Submittal ONLY!

Date 8/4/21

Date 8/4/21.



1 FIRST FLOOR PLAN ELEV 'B'
1/4" = 1'-0" AT 22" X 34" LAYOUT
1/8" = 1'-0" AT 11" X 17" LAYOUT



2 SECOND FLOOR PLAN ELEV 'B'
1/4" = 1'-0" AT 22" X 34" LAYOUT
1/8" = 1'-0" AT 11" X 17" LAYOUT

CENTURY Complete
MORE HOME • LESS MONEY

3091 GOVERNORS LAKE DR.
SUITE 300
NORCROSS, GA 30071
PHONE: 336 287 3606

WJH, LLC © 2021

GRP1 - 'B'

FLOOR PLANS

LOT #:

JOB #:

COMMUNITY:

ADDRESS:

PLAN # / ORIENTATION:
3822009 / RH

SERIES NAME:
DIAMOND

PLAN NAME:

LAST REVISION
2.03

SHEET #
GRP1 1.2

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

APPLICATION NUMBER
310808
Issue Date: 09/10/2020

Permit Type: ZONING

Parcel Number	Street Address	Jurisdiction
4778791085.000	111 ZACH DR	IREDELL COUNTY

Owner Information	Applicant Information
Name: BARKER PHILLIP P	Name: CLAYTON HOMES OF STATESVILLE
Address:	Address: 2026 NORTHSIDE DR
	STATESVILLE, NC 28677
Phone:	Phone: (704)873-2547

Use Requested	Zone Code
Double-Wide Mobile Home	RA

Lot Acreage	F Setback	B Setback	L Setback	R Setback	Watershed	Flood Zone
0	35	35	15	15	N/A	NO

Remarks

DWMH

REQUIREMENTS FOR ALL MULTI -SECTIONAL MOBILE HOMES Must meet requirement R9 of the LDC. Minimum size of main body is at least 22 feet by 40 feet; Must have standard residential shingles; Minimum of 3/12 roof pitch; Must have continuous masonry underpinning; Must have minimum roof eave and raker projections of 6 inches; Must have a 36 square foot deck or porch at all front entrances; Exterior siding must consist of vinyl or aluminum lap siding, wood, or hardboard, comparable in composition, appearance and durability to residential siding; Must remove towing apparatus; Must face front property line and be no less than 20 degrees from parallel to the front property line. Original mobile home must be removed before Certificate of Occupancy can be approved.

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.

Signature of Owner/Contractor

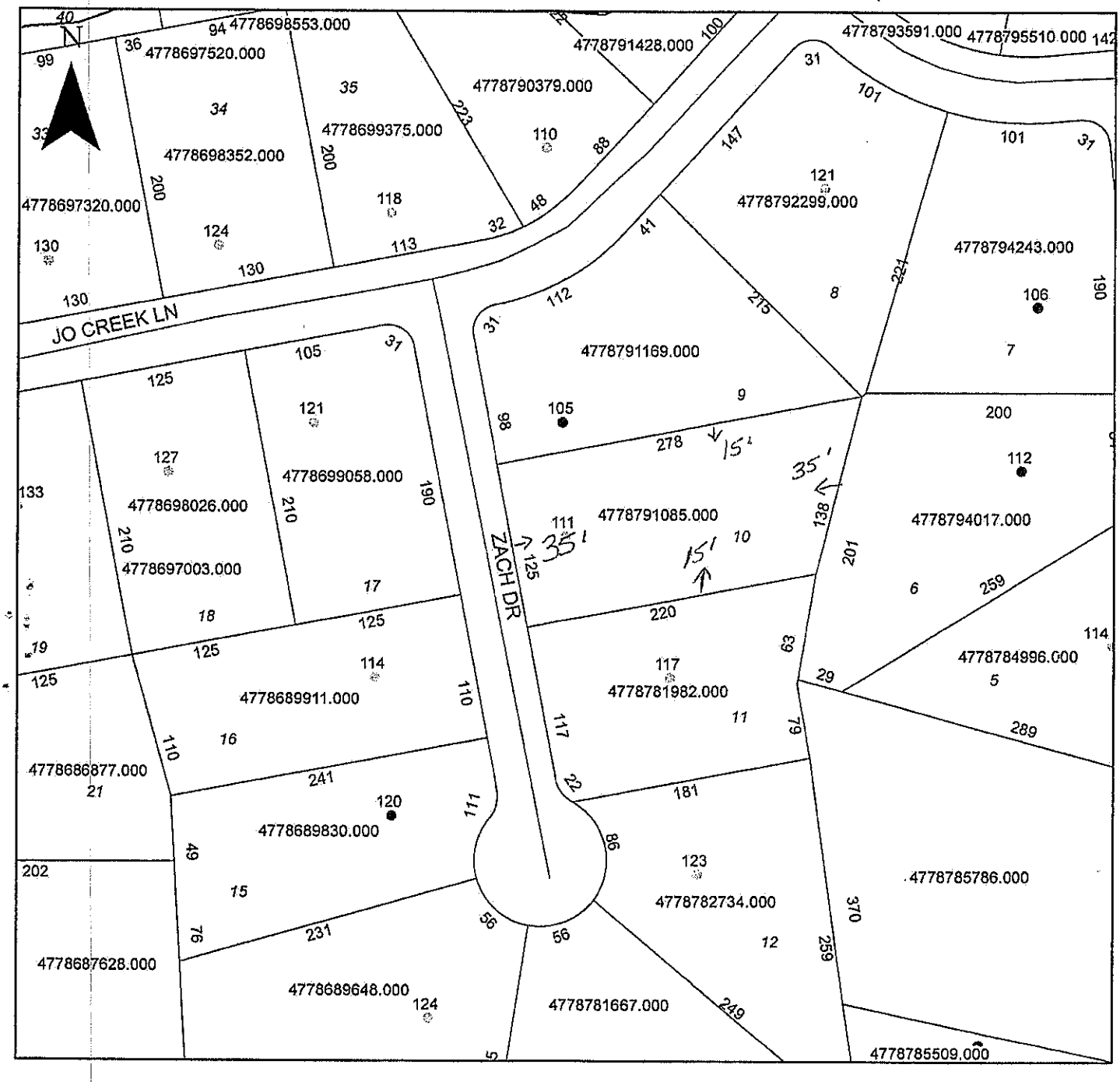
Date: 09/10/2020

Permit Number	310808	TOTAL FEES:	$77.25

310808 RA .715 AC

NO-WS FL-ND

ZONING DISCLAIMER



Property Address 111 Zach Dr.

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. Applicant further acknowledges that the 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.

Applicant

9/10/20
Date