DW

ICHD - ENVIRONMENTAL HEALTH DIVISION

Statesville Office (704) 878-5305 | Mooresville Office (704) 660-3625 | PERMIT # AP 32674

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

PIN # 4638-28-7683

APPLICANT/OWNER: Woodbridge Partners LLC | APPLICANT ADDRESS: PO Box 3608 Mooresville, NC 28117

SITE ADDRESS: 564 Kenway Lp Mooresville, NC 28117 | PHONE: 704 799-9776 | ALT. PHONE: 704 235 8211

SITE DIRECTIONS: Perth Rd N, TL Fern Hill TL Kenway Lp on right | SAP CONTROLLED: ☐ YES ☒ NO

SUBDIVISION: Fern Leaf | SECTION: 1 | LOT #: 8 | LOT AREA: .74 Ac | DESIGN FLOW: 480 gpd | L.T.A.R.: .3

Septic Tank	1000 (gal)	STB	760	Date	9-2-22	☒ New System ☐ Repair ☐ Expansion	System Type: I II III IV V VI	☒ Residence	No. Bedrooms	4	Water Supply
Pump Tank	1000 (gal)	PT	160	Date	8-22-22	System Description:	Pump PM VP1BPS	☐ Business	No. Persons	8	☒ Private
Pump Make		Model		Serial #		Repair System Description:	Hart PPBPS	☐ Other	No. Employees		☐ Public
# Nitrification Fields	1	# Lines	6	Linear Ft	360	Maintenance Agreement Required:	☐ YES ☒ NO	☐ Slab	☒ Crawl Space		☐ Community
Trench Width	min 24"	Trench Bottom Depth (low side)	max 30"	Gravel Depth	N/A		☐ GRAVITY ☒ PRESSURE	☐ Basement w/ plumbing	☐ Basement w/o plumbing		

Comments / Conditions: Divert Storm/Surface water away from Septic. Keep Septic 100ft from well. Laterals 2ft pressure 1 1/2" sch 40 laps

Keep pool 15ft from Septic System & 10ft from Supply line.

Driveway leading to approx. site - graveled 1122

INITIAL SITE SKETCH

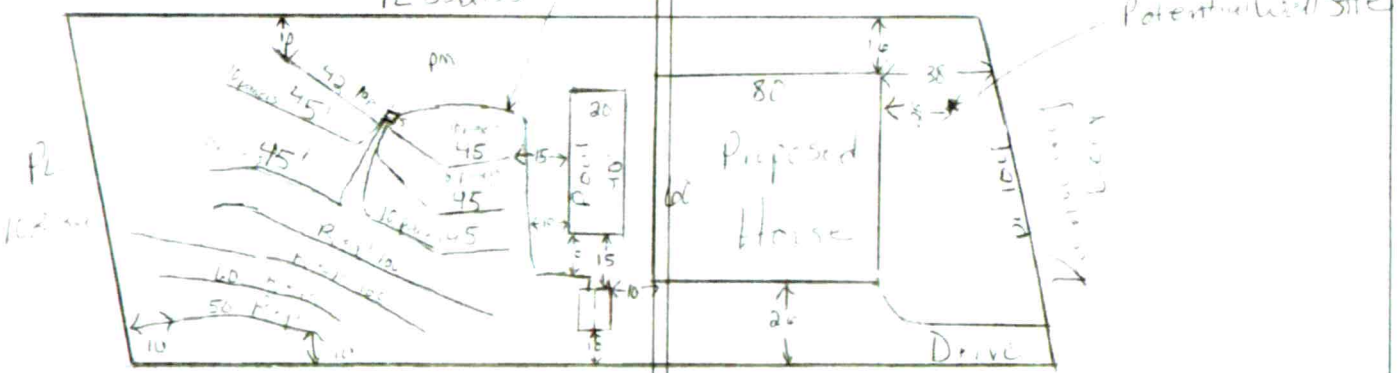
Scale 1:50 Drainage = 10.28 Pump Rate = 8.78 mm

42.66 gal 216 gals per dose

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.

*Installed as permitted



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: 9/5/2022 Installed by: Abernathy

IMPROVEMENT PERMIT by: [signature] Date: 9/1/22 OPERATION PERMIT by: _____ Date: _____

AUTHORIZATION TO CONSTRUCT by: [signature] Date: 10/22 Existing System Inspected by: _____ Date: _____

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

564 Kinney Loop

Item	Date	Initials
Drain Lines Checked	10-11	BB
Tanks Checked	10-11	BB
Pressure Manifold or Valve Box Checked		
Pressure Head Set		
Electrical Checked		
Floats Set		
Alarm Checked		
Maintenance Contract Needed? Y / N		
Comments Pump Line	10-11	BB
Filter Check		

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? _____	

PART 3: Authorization to Operate (ATO)

Except for date received, the Section below is to be completed by the Owner or by the PE designated to act as their legal representative for the EOP.

LHD USE ONLY: Initial submittal of request for ATO received: 10-14-2022 (Date) by BCW (Initials)
Date of Post-construction Conference: 10-14-2022

The following items are included in this submittal for an Authorization to Operate under an EOP:

1.	Signed and sealed copy of the Engineer's report that includes:		
	a. Signed and sealed evaluation of soil conditions and site features	☒ Yes	☐ No
	b. Drawings, specifications, plans	☒ Yes	☐ No
	c. Reports on special inspections and final inspection	☒ Yes	☐ No
	d. Management Program manual	☒ Yes	☐ No
	e. On-site Wastewater Contractor's signed statement	☒ Yes	☐ No
	f. Signed and sealed statement pursuant to 15A NCAC 18A .1938(h)	☒ Yes	☐ No
2.	Fee (as applicable)	☐ Yes	☒ No
3.	Notarized letter documenting Owner's acceptance of the system from the PE	☒ Yes	☐ No

Attestation by the Owner or the PE for Authorization to Operate

I, BRIAN GROVES, PE hereby attest that all items indicated above have been provided to the
Print name of Owner or Professional Engineer

IREDELL County LHD and the system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336-.1(e)(6).

Brian N. Groves — *Signature of Owner or Professional Engineer*
10/2/22 — *Date*

This section for LHD Use Only.

LHD Review of required information for the ATO

☐ INCOMPLETE
Based upon review of information submitted by the Owner or PE in the Section above, the following items are missing from the information required for an Authorization to Operate for an EOP: _____

Copies of this signed form were sent to the design PE and the Owner on _____ (Date) via _____ (Email, FAX, USPS, Hand-delivered).

_____ (Print name of authorized Agent of the LHD) _____ (Signature of authorized Agent of the LHD) _____ (Date)

☑ COMPLETE
Based upon review of information submitted by the Owner or PE in the Section above, this Authorization to Operate is hereby issued in accordance with G.S. 130A-336.1(m).

A copy of this complete NOI/ATO with tracking information was sent to the State on 10-17-2022 (Date) via EMAIL (Email, FAX, USPS, Hand-delivered).

BRYANT C. WHITE — *Print name of authorized Agent of the LHD*
Bryant C. White — *Signature of authorized Agent of the LHD*
10-14-2022 — *Date*

ISSUANCE OF CERTIFICATE OF OCCUPANCY: Once the LHD determines completeness based upon the PE submission, the owner may apply to the local permitting agency for permanent electrical service to a residence, place of business or place of public assembly pursuant to G.S. 130A-339.

Groves Engineering, PLLC
PO Box 428
Marshville, NC 28103

9/18/2022

Ms. Barbara Nebel
Iredell County Environmental Health
610 E Center Avenue
Mooresville, NC 28115

Request for Authorization to Operate (ATO)
For 165 Allendale Circle (Allendale Point Lot 27), Troutman, NC 28166

Dear Ms. Barbara Nebel,

On behalf of Judy Verross, I am requesting an Authorization to Operate for the septic system installed at the above referenced address. The following documentation is attached, in accordance with the Engineered Option Permit, Part 3 requirements.

1. Signed and sealed evaluation of soil conditions and site features.
2. Drawings, specifications, plans
3. Reports for special inspections and final inspection
4. Management Program Manual
5. On-site Wastewater Contractor's signed statement
6. Notarized letter documenting Owner's acceptance of the system.

Please note that items 1 and 4 are included in the Narrative that was submitted with the Engineered Option Permit (EOP) Notice of Intent to Construct, but are included again with this package for completeness.

Please approve this submittal and issue an Authorization to Operate at your earliest convenience.

Sincerely,

Brian N. Groves, PE

Groves Engineering, PLLC
NC PE # 044489
Firm P-2406



Groves Engineering, PLLC
PO Box 428
Marshville, NC 28103

9/18/2022

Judy Verross
934 Granville Road
Charlotte, NC 28207

Report on Special Inspections and Final Inspection
For 165 Allendale Circle (Allendale Point Lot 27), Troutman, NC 28166

Dear Judy Verross,

Based on site observations, and images of the system construction provided by Carlos Rocha of Lago Vista LLC, the septic system at the above referenced address is complete and installed in general accordance with the approved plans and specifications.

Sincerely,

Brian N. Groves, PE

Groves Engineering, PLLC
NC PE # 044489
Firm P-2406



9/18/2022

Lago Vista LLC
2602 Goldmine Rd
Monroe, NC. 28110
(704) 242-3402

On-site Wastewater Contractor's Signed Statement
Regarding the Septic System Installation
For 165 Allendale Circle (Allendale Point Lot 27), Troutman, NC 28166

To whom it may concern,

Our company, Lago Vista LLC, installed the septic system at the above referenced site. The system was installed in general accordance with the plans & specifications prepared by Groves Engineering, PLLC. The system has been started up and installed to function properly as designed.

Sincerely,

Juan Carlos Rocha (Sep 20, 2022 07:33 EDT)

Carlos Rocha

NC Certification: 5240

4 - Contractor Statement - 165 Allendale Circle

Final Audit Report 2022-09-20

Created:	2022-09-19
By:	Brian Groves (bngroves@gmail.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAqxbv-F14nBRgGeeMjEkqApf57TkZXmNe

"4 - Contractor Statement - 165 Allendale Circle" History

Document created by Brian Groves (bngroves@gmail.com)
2022-09-19 - 1:06:05 AM GMT- IP address: 24.88.35.15

Document emailed to carlosseptic@gmail.com for signature
2022-09-19 - 1:06:20 AM GMT

Email viewed by carlosseptic@gmail.com
2022-09-20 - 11:32:07 AM GMT- IP address: 66.249.88.4

Signer carlosseptic@gmail.com entered name at signing as Juan Carlos Rocha
2022-09-20 - 11:33:47 AM GMT- IP address: 174.203.210.156

Document e-signed by Juan Carlos Rocha (carlosseptic@gmail.com)
Signature Date: 2022-09-20 - 11:33:48 AM GMT - Time Source: server- IP address: 174.203.210.156

Agreement completed.
2022-09-20 - 11:33:48 AM GMT

9/18/2022

Judy Verross
934 Granville Road
Charlotte, NC 28207

Owner Affadavit Regarding Septic System Installation
For 165 Allendale Circle (Allendale Point Lot 27), Troutman, NC 28166

The septic system installed on my referenced property was engineered by Brian N. Groves, PE and installed by Lago Vista LLC. The below signed recognizes the following items:

1. I accept the system installed on my property.
2. I understand that this is a mechanical system that will require periodic maintenance (like any mechanical system). This system will not last forever but will be more likely to last well into the future if it is properly maintained.
3. I have (or will) contracted with a system operator who will be responsible for operating and maintaining this system. I understand that it is my responsibility to ensure that this operator performs a system inspection twice annually.
4. Failure to have the system inspected and maintained per the specifications in this design package (including Project Narrative in particular) will result in eventual system compromise.
5. I understand that periodic pumping of the septic tank will be required to prevent over-accumulation of solids. (The system operator will advise when this is required.) Disposing of grease, kitchen waste (i.e. garbage disposal), flushable wipes or other hygiene products is detrimental to the system and will require increased maintenance and pumping needs.
6. I understand that water softening systems or other water treatment systems should not have their backflushes directed to the septic system. Salt based water softening systems are particularly detrimental to the long term performance of the system and drain field.

Sincerely,

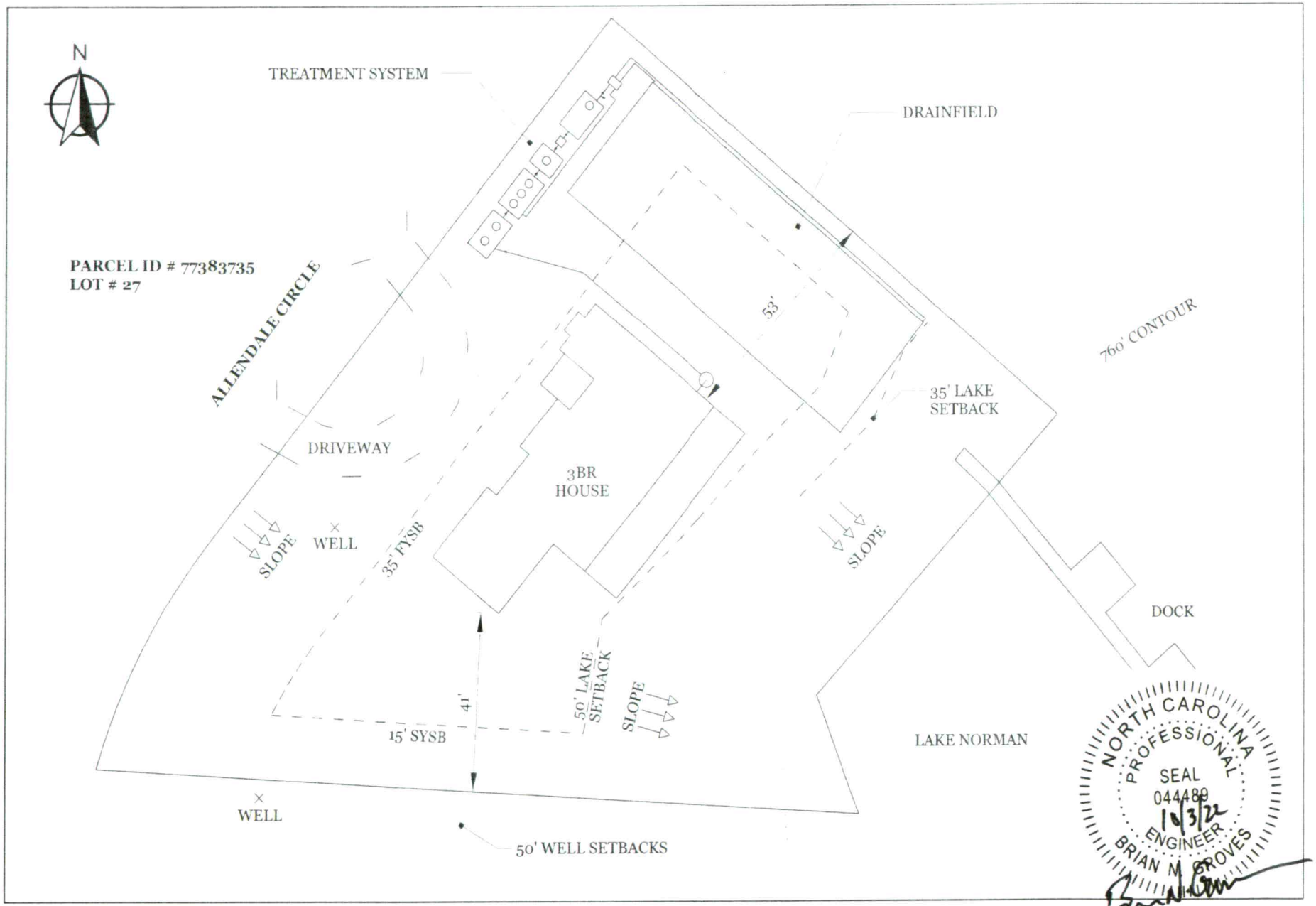
Judy Verross
Name

Signature

9/19/2022
Date

Notary: Tracy Wilson

TRACY WILSON
NOTARY
My Comm. Exp. Apr. 6, 2026
Comm. # 202109600088
PUBLIC
MECKLENBURG COUNTY, NC



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

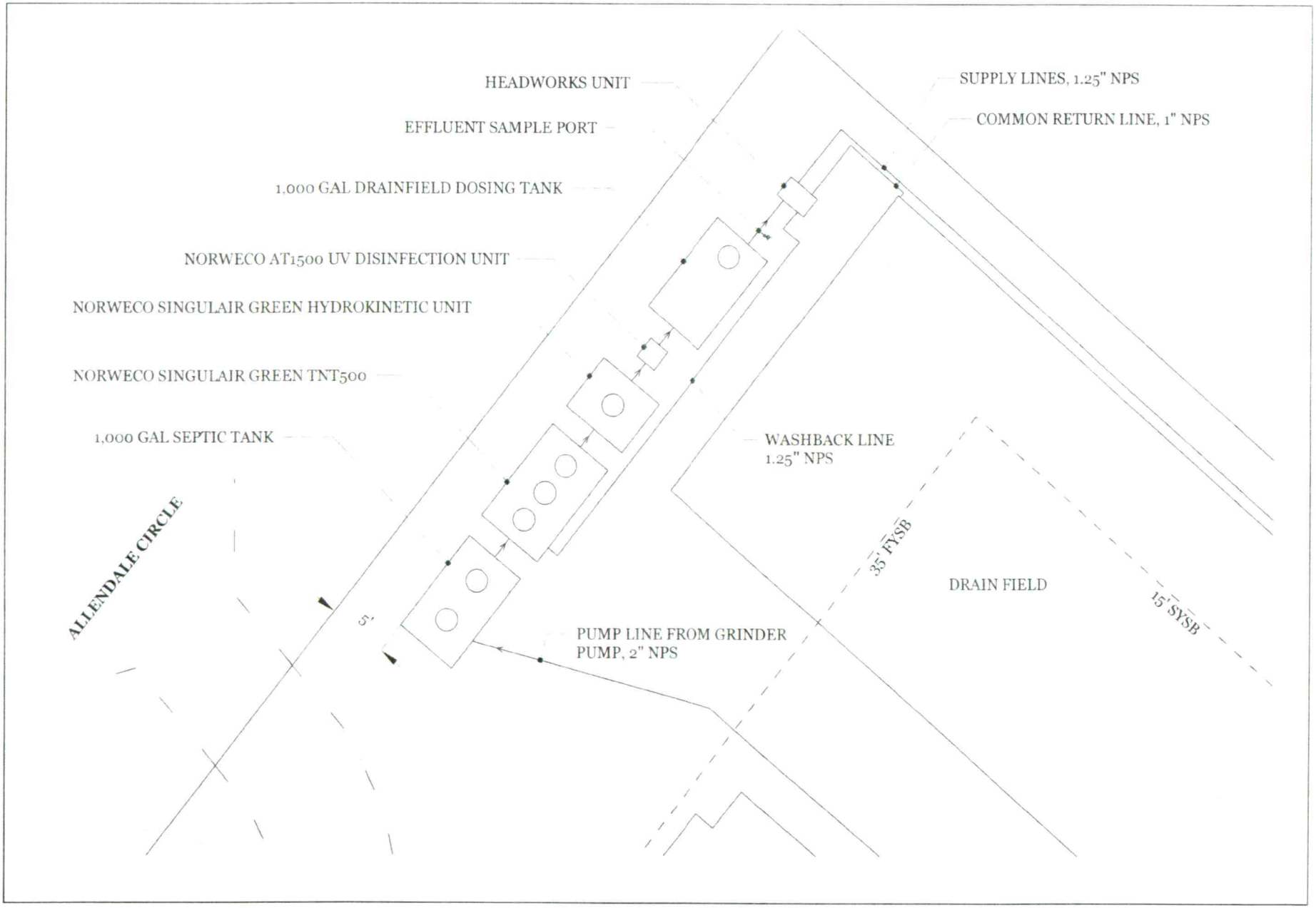
SITE OVERVIEW

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
2	11/29/2020	BNG	--	UPDATED HOUSE LOCATION AND DIMENSIONS.
3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	10/3/2022	BNG	--	AS-BUILT DRAWINGS.

M 01



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

TREATMENT SYSTEM DETAIL

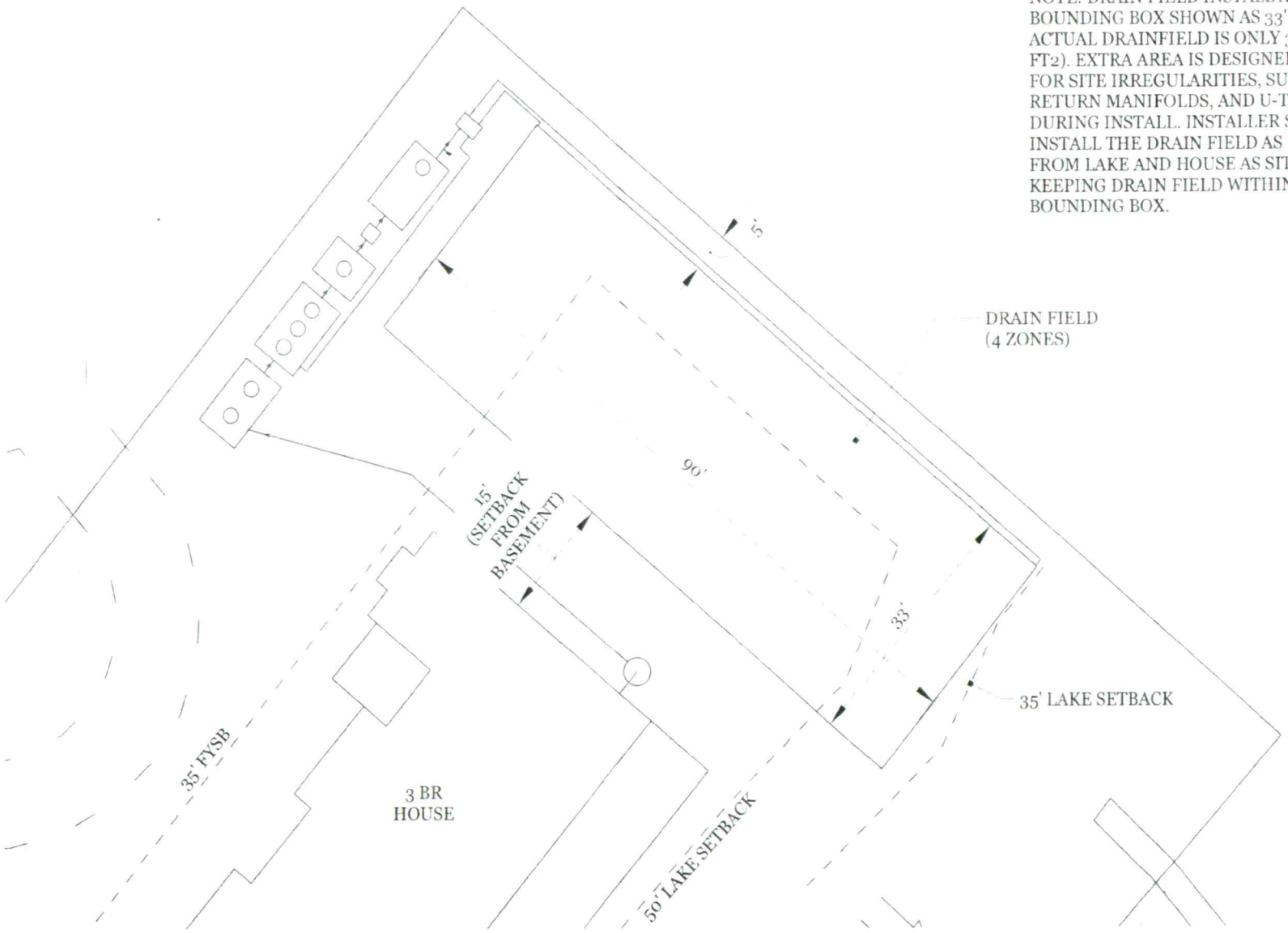
TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	10/3/2022	BNG	--	AS-BUILT DRAWINGS.

M 02

NOTE: DRAIN FIELD INSTALL AREA BOUNDING BOX SHOWN AS 33' X 90'. THE ACTUAL DRAINFIELD IS ONLY 30' X 80' (2400 FT2). EXTRA AREA IS DESIGNED TO ALLOW FOR SITE IRREGULARITIES, SUPPLY AND RETURN MANIFOLDS, AND U-TURNS DURING INSTALL. INSTALLER SHOULD INSTALL THE DRAIN FIELD AS FAR AWAY FROM LAKE AND HOUSE AS SITE ALLOWS, KEEPING DRAIN FIELD WITHIN SPECIFIED BOUNDING BOX.



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

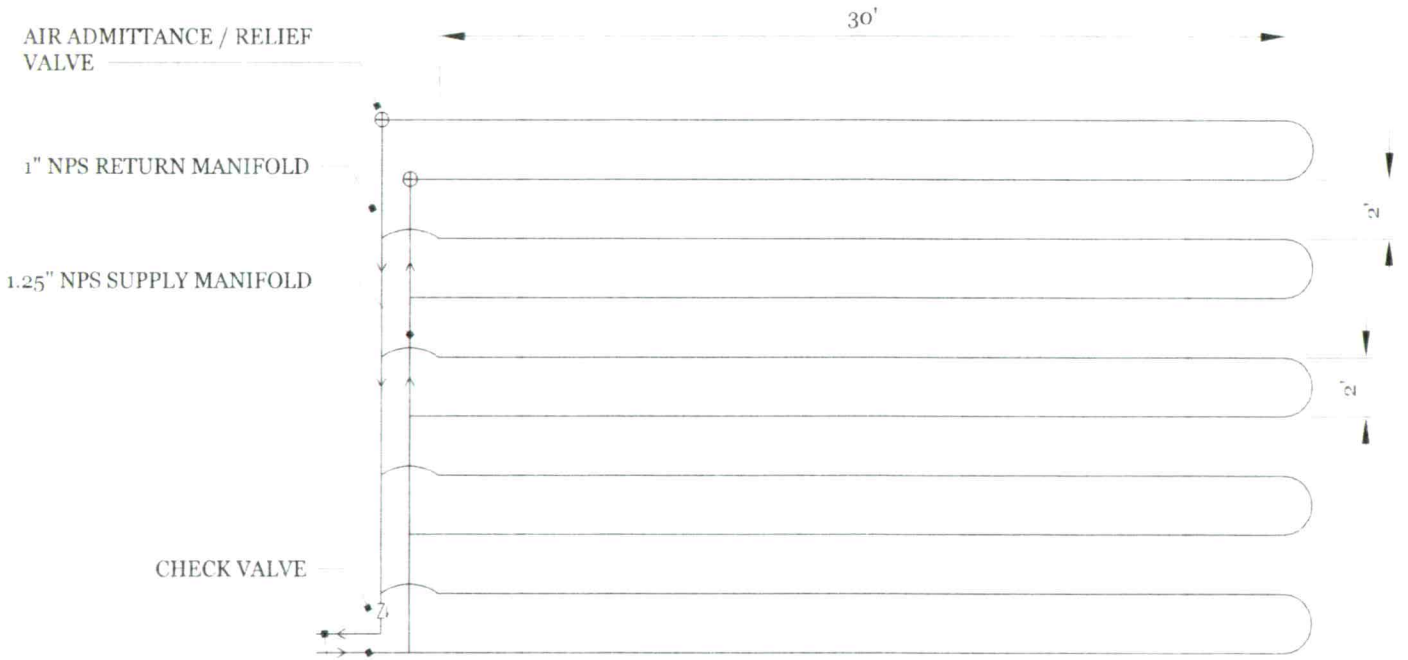
DRAIN FIELD OVERVIEW

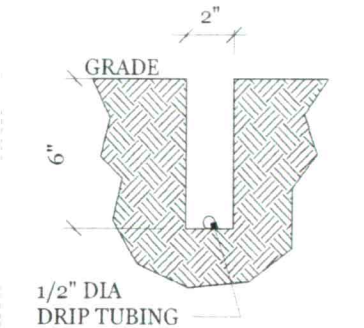
TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

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5	10/3/2022	BNG	--	AS-BUILT DRAWINGS.

M 03





NOTES:
1. DRAIN FIELD ZONE DETAIL IS TYPICAL FOR EACH OF 4 ZONES.
2. TOTAL OF 60 FEET OF DRIP TUBING PER LATERAL, WITH 5 LATERALS PER ZONE. TOTAL OF 150 EMITTERS PER ZONE.
3. TOTAL DRIP TUBING REQUIRED IS 1200 FEET.
4. DRIP TUBING TO BE SPACED 24 INCHES APART, WITH EMITTERS SPACED 24 INCHES APART.

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

DRAIN FIELD DETAIL

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

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M 04

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

PROPERTY PLOT PLAN

TREATED DRIP SEPTIC SYSTEM DESIGN

JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

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5	10/3/2022	BNG	--	AS-BUILT DRAWINGS.

M 05

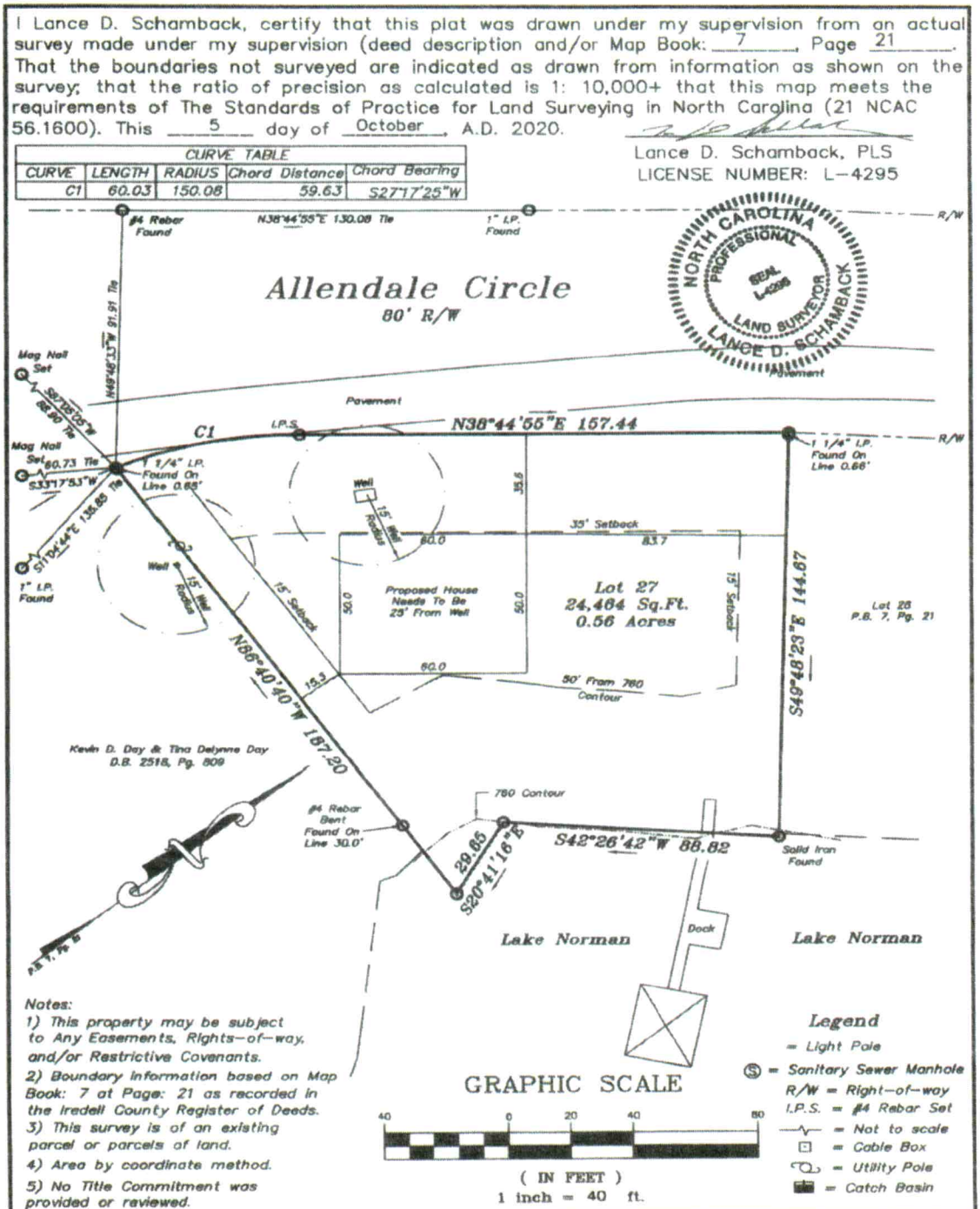
SURVEY COURTESY OF LANCE D. SCHAMBACK, PLS-4295. DATED 10/5/2020.

I Lance D. Schamback, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description and/or Map Book: 7, Page 21). That the boundaries not surveyed are indicated as drawn from information as shown on the survey; that the ratio of precision as calculated is 1: 10,000+ that this map meets the requirements of The Standards of Practice for Land Surveying in North Carolina (21 NCAC 56.1600). This 5 day of October, A.D. 2020.

Lance D. Schamback, PLS
LICENSE NUMBER: L-4295

NORTH CAROLINA PROFESSIONAL SEAL L-4295 LAND SURVEYOR LANCE D. SCHAMBACK

CURVE TABLE				
CURVE	LENGTH	RADIUS	Chord Distance	Chord Bearing
C1	60.03	150.08	59.63	S27°17'25"W



Notes:

1) This property may be subject to Any Easements, Rights-of-way, and/or Restrictive Covenants.
2) Boundary Information based on Map Book: 7 at Page: 21 as recorded in the Iredell County Register of Deeds.
3) This survey is of an existing parcel or parcels of land.
4) Area by coordinate method.
5) No Title Commitment was provided or reviewed.

Legend

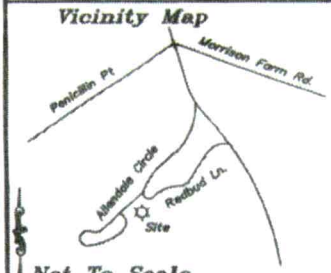
- = Light Pole
- (S) = Sanitary Sewer Manhole
- R/W = Right-of-way
- I.P.S. = #4 Rebar Set
- = Not to scale
- = Cable Box
- = Utility Pole
- = Catch Basin

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

Vicinity Map



Not To Scale

Boundary Survey
FOR
Chad Goodin Custom Homes

PROPERTY DESCRIPTION

LOT 27,
Allendale Point Subdivision
Plat Book 7, Page 21
165 Allendale Circle

Fallstown Township, Iredell County, NC

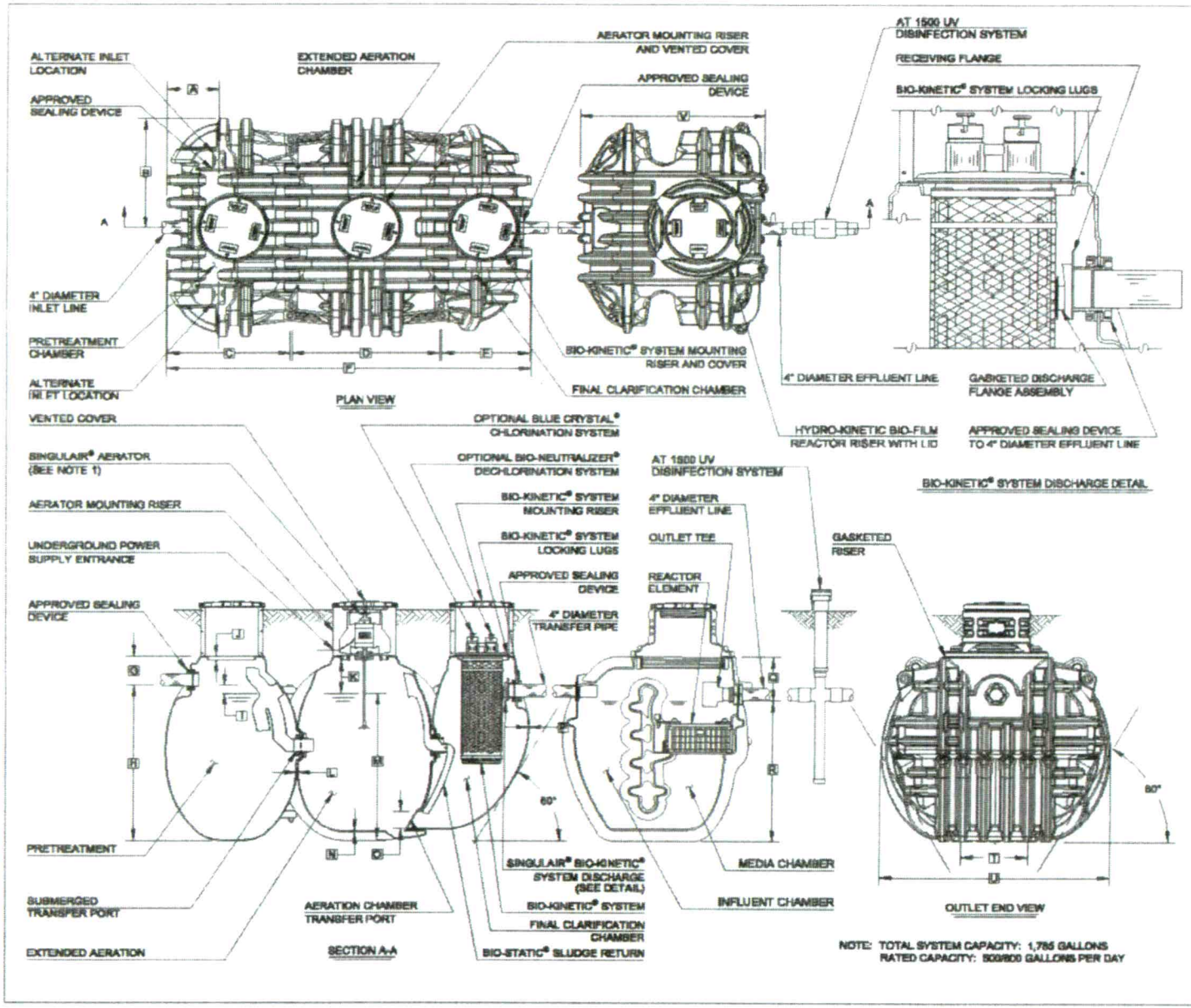
SCALE: 1" = 40'

FIELD BOOK:

FILE: 2020-240

TAX PARCEL ID:
4629609472

Schamback Surveying, P.A.
Post Office Box 4143
Mooresville, NC 28117
(704) 622-9915
C-3218



GENERAL NOTES:

1. SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF.
2. FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. FALL THROUGH BIO-FILM REACTOR IS ONE INCH. INLET INVERT IS TEN AND ONE HALF INCHES BELOW TANK TOP.
3. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE. ON DEEPER INSTALLATIONS OTHER RISERS MUST BE EXTENDED TO GRADE.
4. REMOVABLE COVERS ON RISERS ARE EACH SECURED TO PREVENT UNAUTHORIZED ACCESS.
5. CONTACT THE LOCAL, LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.
6. MAXIMUM DISTANCE BETWEEN SINGULAIR® TANK AND UV IS THREE FEET. MAXIMUM DISTANCE BETWEEN UV AND SAMPLING PORT IS THREE FEET.

PROJECT ENGINEER'S APPROVAL:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: _____

NAME: _____

CONTRACTOR'S CERTIFICATION:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: _____

NAME: _____

CRITICAL DIMENSIONS

A	1'- 8 1/2"	N	0'- 0 3/8"
B	3'- 3"	O	0'- 6"
C	3'- 5 1/8"	P	0'- 0 3/8"
D	4'- 1 3/4"	Q	1'- 3 1/2"
E	2'- 5 3/4"	R	4'- 2 1/2"
F	10'- 3"	S	5'- 5"
G	5'- 10 1/2"	T	1'- 11"
H	4'- 7 1/2"	U	5'- 5"
I	0'- 3"	V	5'- 5"
J	0'- 1 1/2"	W	
K	1'- 0"	X	
L	0'- 0 3/8"	Y	
M	4'- 4"	Z	

NOTE: TOTAL SYSTEM CAPACITY: 1,785 GALLONS
RATED CAPACITY: 500/600 GALLONS PER DAY

U.S. AND FOREIGN PATENTS PENDING

norweco

SINGULAIR® GREEN 500 - 600/600 SYSTEM WITH BIO-FILM REACTOR AND AT 1500 UV DISINFECTION SYSTEM

DRAWN: MT
SCALE: NTS
DATE: 10-7-14
DRAWING NO.: PC-5-0998

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

MANUFACTURER DRAWINGS

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
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5	10/3/2022	BNG	--	AS-BUILT DRAWINGS.

M 06

TCW Wastewater
5600 Lakeview Road
Charlotte, NC 28269 US
+1 7047764443
info@tcwwastewater.com
www.tcwwastewater.com

Receipt

Received From
Judy Verross
165 Allendale Cr
Troutman, NC 28166

Date: 09/20/2022

Reference No:

Invoice Number	Invoice Date	Due Date	Original Amount	Balance	Payment
36428	09/19/2022	09/19/2022	850.00	850.00	850.00

Memo:

Amount Credited:	$0.00
Total:	$850.00

No additional transfer fees or taxes apply.
Payment services brought by:
Intuit Payments Inc.
2700 Coast Avenue, Mountain View, CA 94043
Phone number 1-888-536-4801
NMLS #1098819

For more information about Intuit Payments' money transmission licenses, please visit https://www.intuit.com/legal/licenses/payment-licenses/.

RECEIVED DEC 1 1 2020

313340

IREDELL COUNTY HEALTH DEPARTMENT *ENVIRONMENTAL HEALTH DIVISION*

(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)

AP-313340
$500.00

1. APPLICATION FOR: ___Improvement Permit X Authorization To Construct ___ Existing System Inspection

2. **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 check ( ) beside whichever is submitted if applicable ___Custom Site Plan, Scaled no more than 1 Inch = 60 Feet

3. **Applicant Information:**

Applicant Name	Mailing Address	Home Phone #	Alternate Phone #
Judy Verros	934 Granville Rd Chanoh NC 28207	(704) 890 1040	

Owner Name	Mailing Address	Home Phone #	Alternate Phone #

4. **Property Information:**

165 Allendale Circle Troutman, NC 28166 — #27
Street Address — Subdivision Name — Section/Phase and Lot Number

Driving Directions: I77N to exit 42 (L) Troutman, (L) Autumn Leaf (L) Perth, (R) State Park (L) Morrison Farm Rd (R) Allendale

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

X New, Single Family Residence — Maximum Number of Bedrooms ___ — ( ) Crawl Space Foundation?
( ) New, Multi-Family Residence — Maximum Number of Occupants ___ — ( ) Concrete Slab Foundation?
( ) Expansion of Existing Septic System — If Expansion, Current Number of Bedrooms ___ — ( ) Basement w/Plumbing?
( ) Repair To Failing Septic System due to ___ — ( ) Basement w/out Plumbing?
( ) Other ___

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 ___

( ) Alternative ( ) Conventional ( ) Innovative ( ) Modified Conventional X Other PE submitted plan

8. **Please Answer The Following** ( ) Yes X No Does the site contain any jurisdictional wetlands?
To The Best of Your Ability: ( ) Yes X No Is any non-domestic sewage (i.e. industry) to be generated?
( ) Yes X 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: Judy Verros — 12/10/20
Property owner or owner's legal representative signature (SIGNATURE REQUIRED) — DATE

IREDELL COUNTY HEALTH DEPARTMENT *ENVIRONMENTAL HEALTH DIVISION*:

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:

_____ Property Line measurements are clearly identified… **_____ All proposed structures are indicated…**

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

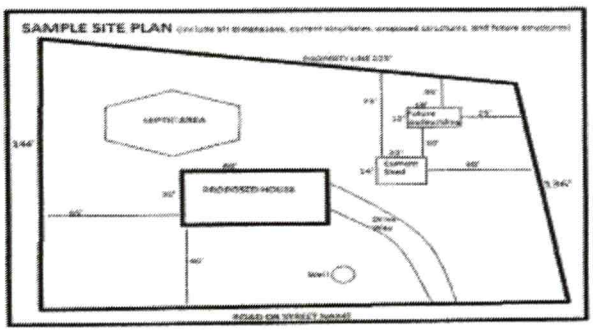
_____ Front and side setbacks from property line… **_____ Preferred driveway location and configuration, preferred well location…**

_____ Area you prefer your septic system to be placed… **_____ 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**



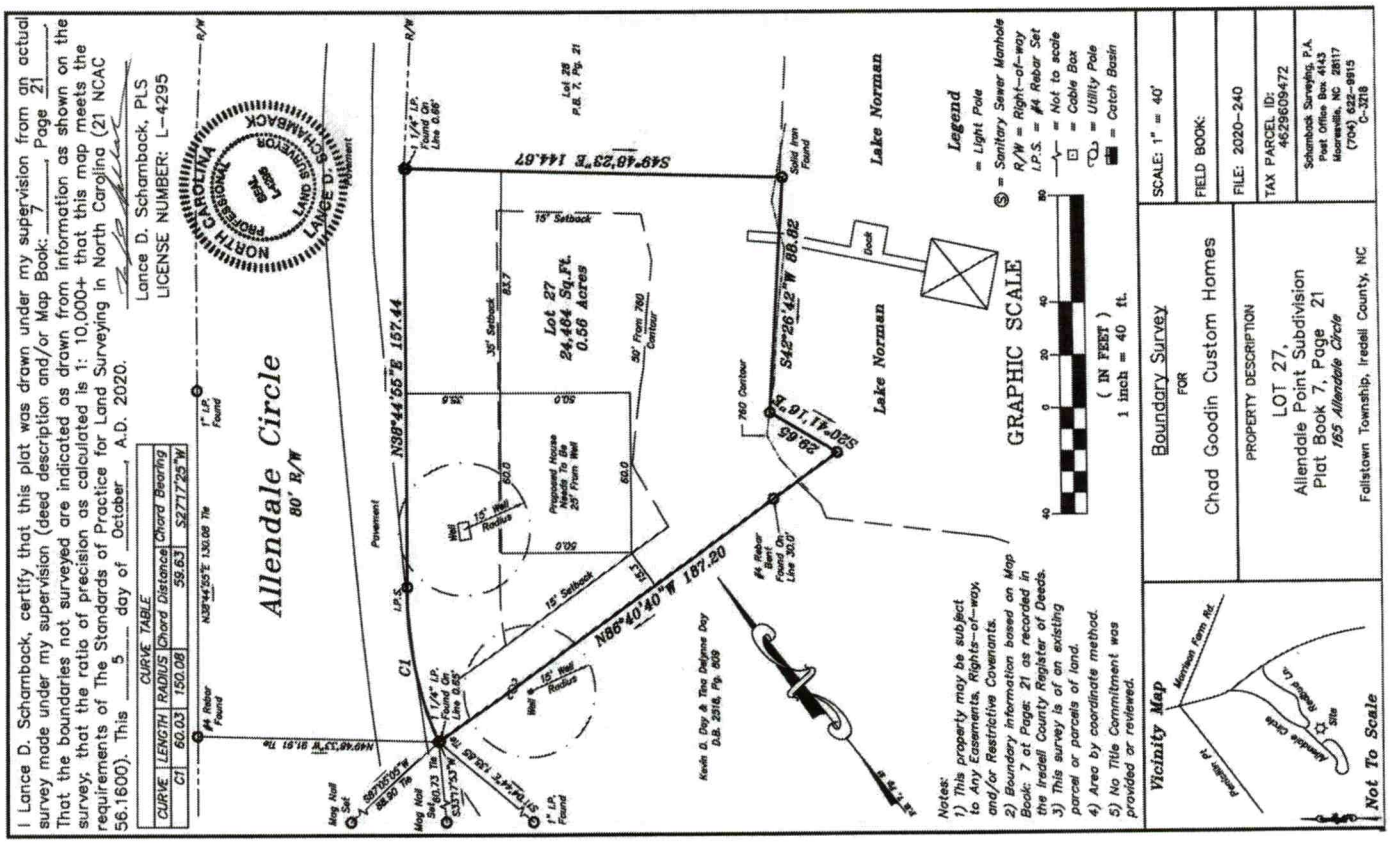
USE THIS SPACE TO DRAW YOUR SITE PLAN

Signature: Rayanne Clewis

REQUIRED **property owner or owner's legal representative signature.**

12/10/20

DATE



SURVEY COURTESY OF LANCE D. SCHAMBACK, PLS-4295. DATED 10/5/2020.

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

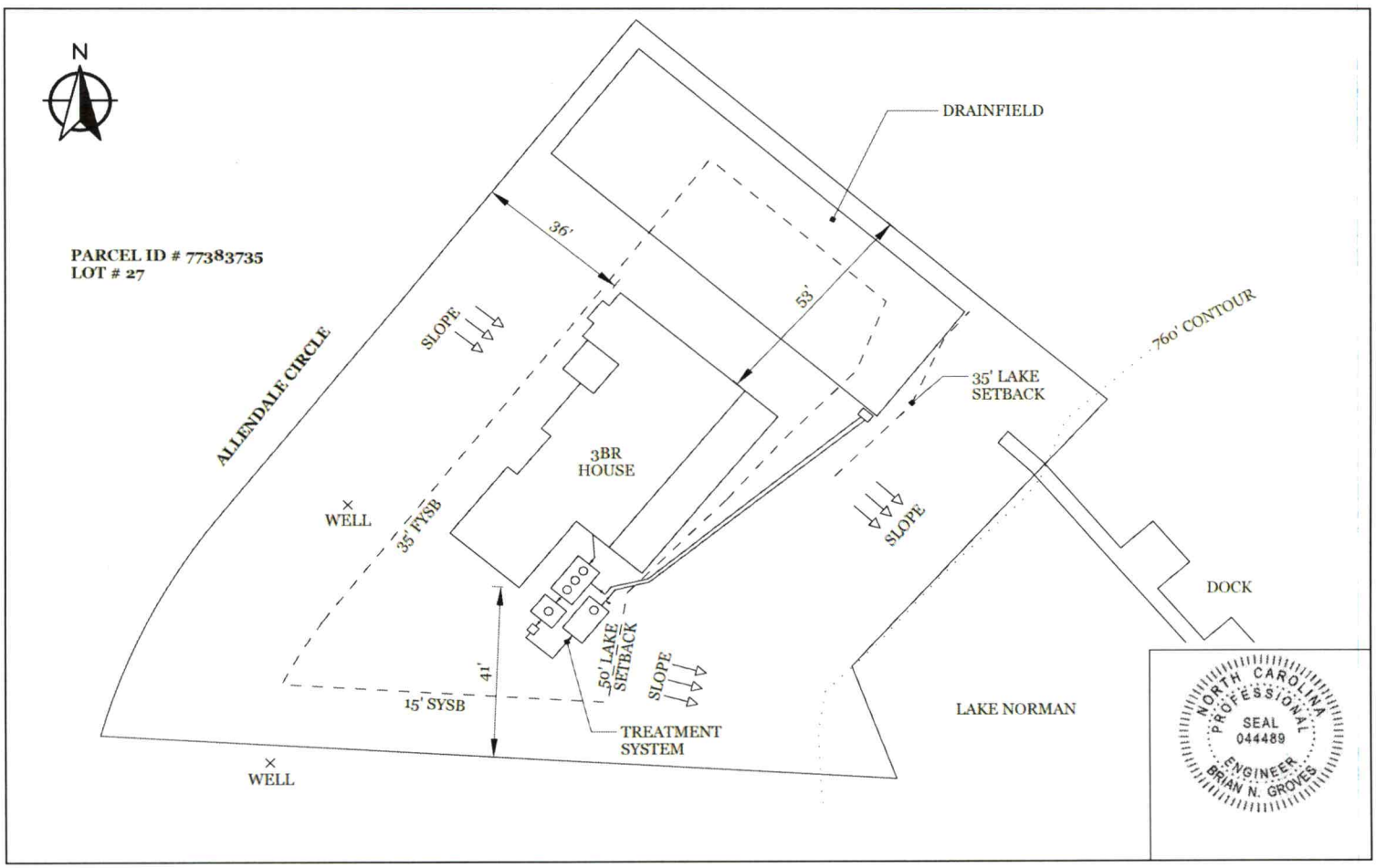
PROPERTY PLOT PLAN

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
2	11/29/2020	BNG	--	UPDATED HOUSE LOCATION AND DIMENSIONS.
3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	.../.../...	--	--	--

M 05



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

SITE OVERVIEW

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	.. .. / .. .. /	--	--	--

M 01

IREDELL COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH

DOCUMENTATION TO AUTHORIZE AN OWNER'S LEGAL REPRESENTATIVE

Applications for permits require the "signature of the owner or owner's legal representative" (15A NCAC 18A .1937). If the owner does not sign the application himself or herself, they can submit any one of the following documents to designate their legal representative:

Power of Attorney; Real Estate Contract; Estate executor; Bankruptcy trustee; Court ordered guardianship

In the absence of the above documentation, the property owner may provide the local health department with documentation that designates a legal representative. A property owner may:

Complete this form to document his or her legal representative, or provide his or her own form that contains the information in this form.

If there are multiple property owners, then all property owners must sign the form that designates a legal representative.

By signing a form that designates a legal representative for purposes of 15A NCAC 18A .1937, the property owner authorizes that representative to act on their behalf in matters pertaining to the application and permitting process, including signing or receiving any application, document or permit. The owner retains full responsibility to meet all permit conditions specified by the local health department.

I, Judy C. Verross, am the legal owner(s) of the property located at 145 Allendale Circle #27, identified as PIN (Parcel Identification Number) _____, located in Iredell County, North Carolina.

I do hereby authorize (**print legal representative/company name**) Jacob Terrell Bimini - Builders, to act as an agent on my behalf in applying for/signing/obtaining any of the documents described below.

- Application for Improvement Permit (IP) / Authorization to Construct (AC)
- Improvement Permit (IP) / Authorization to Construct (AC)
- Application for soil-site evaluation (new/repair)
- Application/permit for private drinking water well/well abandonment
- Application for Compliance Inspection

I agree to abide by all decisions and/or conditions between the legal representative acting on my behalf and the Iredell County Department of Public Health, Environmental Health Division.

Signature of Owner(s)	Date	Signature of Witness	Date
			12/10/20

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

Statesville - Environmental Health
adrienne.shea@co.iredell.nc.us
Fax: 704-871-3483
349 N. Center Street, Statesville, NC 28677

3133540

IREDELL COUNTY PLANNING & DEVELOPMENT
PO BOX 788, STATESVILLE NC 28687-0788
349 N. Center Street / Building Standards Center
(704) 878-3118 / FAX (704)878-3171

Residential Zoning Permit Application

What are you building?(Please check) ***No building or addition shall be used for commercial, business, or other non-residential use unless appropriate permits and approval are obtained from Iredell County for commercial use.**

Stick built X Modular___ Duplex___ Singlewide___ Doublewide___ Pier___ Addition___ Bedroom addition___

Accessory dwelling (ie: M-I-L Suite, guest house) ___ Accessory building (ie: garage, shed)___ Swimming pool___

Are there any other structures currently on the property such as dwellings, sheds, garages? (Please list type below)
N/A

Is there a septic tank on the property? Yes (No) If residence how many bedrooms? 3 and stories? 2

Please describe project (Details, Purpose, or Use): Single family New construction

Please list square footage of project (Pier, Addition, Accessory Dwelling, Accessory Building only): 4992

Does the property have community water? Yes (No) If yes, please list who provides it: _____

Does the property have community sewer? Yes (No) If yes, please list who provides it: _____

Owner Information

Property Owner's Name Judy Verross Phone # 704-890-1040

Owner's Current Address 934 Granville Road Charlotte, NC 28207

Property Information

Property Address ~~165~~ Allendale Circle Troutman, NC 28166 (165 ok kmw) Parcel # 4629609472.000

Subdivision: Allendale Point Lot: 27 Zoning: R-20 Watershed: Y (N) Flood Plain: Y (N) Township: 15

Directions to property (from a MAIN ROAD) Turn on to State Park Road, TL on Morrison Farm road, TR on Allendale Circle

Application Information

Applicant's Name or Company Bimini Builders Applicant's Phone # 704-641-1437

Applicant's Address 125 Trade Court Suite F PMB 187 Mooresville, NC 28117

If Company, Representative's Name and Title Bill Bondurant, Construction Manager

IN APPLYING FOR A ZONING PERMIT I CERTIFY THAT ALL INFORMATION ON THIS APPLICATION IS CORRECT AND THAT ALL WORK WILL COMPLY WITH IREDELL COUNTY ZONING REGULATIONS. THE IREDELL COUNTY PLANNING & DEVELOPMENT DEPARTMENT WILL BE NOTIFIED OF ANY CHANGES THAT ARE MADE TO THIS PROJECT. I AM AWARE THAT THIS IS AN APPLICATION ONLY - NOT A PERMIT - AND DOES NOT CONSTITUTE APPROVAL OF THIS PROJECT. HOWEVER, IF THIS PROJECT IS APPROVED, THIS SIGNATURE IS VALID FOR MY PERMIT.

SIGNATURE OF APPLICANT Bill Bondurant DATE 12/10/2020

IREDELL COUNTY · NC

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

APPLICATION NUMBER
313340 Issue Date:

Permit Type: ZONING

Parcel Number	Street Address	Jurisdiction
4629609472.000	165 ALLENDALE CIR	Iredell County

Owner Information	Applicant Information
Name: VERROSS JUDY C	Name: BIMINI BUILDERS
Address:	Address: 125 TRADE COURT SUITE F MOORESVILLE, NC 28117
Phone:	Phone:

Use Requested	Zone Code
Single Family Dwelling	R-20

Lot Acreage	F Setback	B Setback	L Setback	R Setback	Watershed	Flood Zone
0	50	35	15	15	WSIV-CA Catawba/Lake Norman	YES

Remarks

SFD

Lake Lots: Must meet both the 50-foot setback from the 760' contour line and the 35-foot setback from the rear property line for any structure.

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.

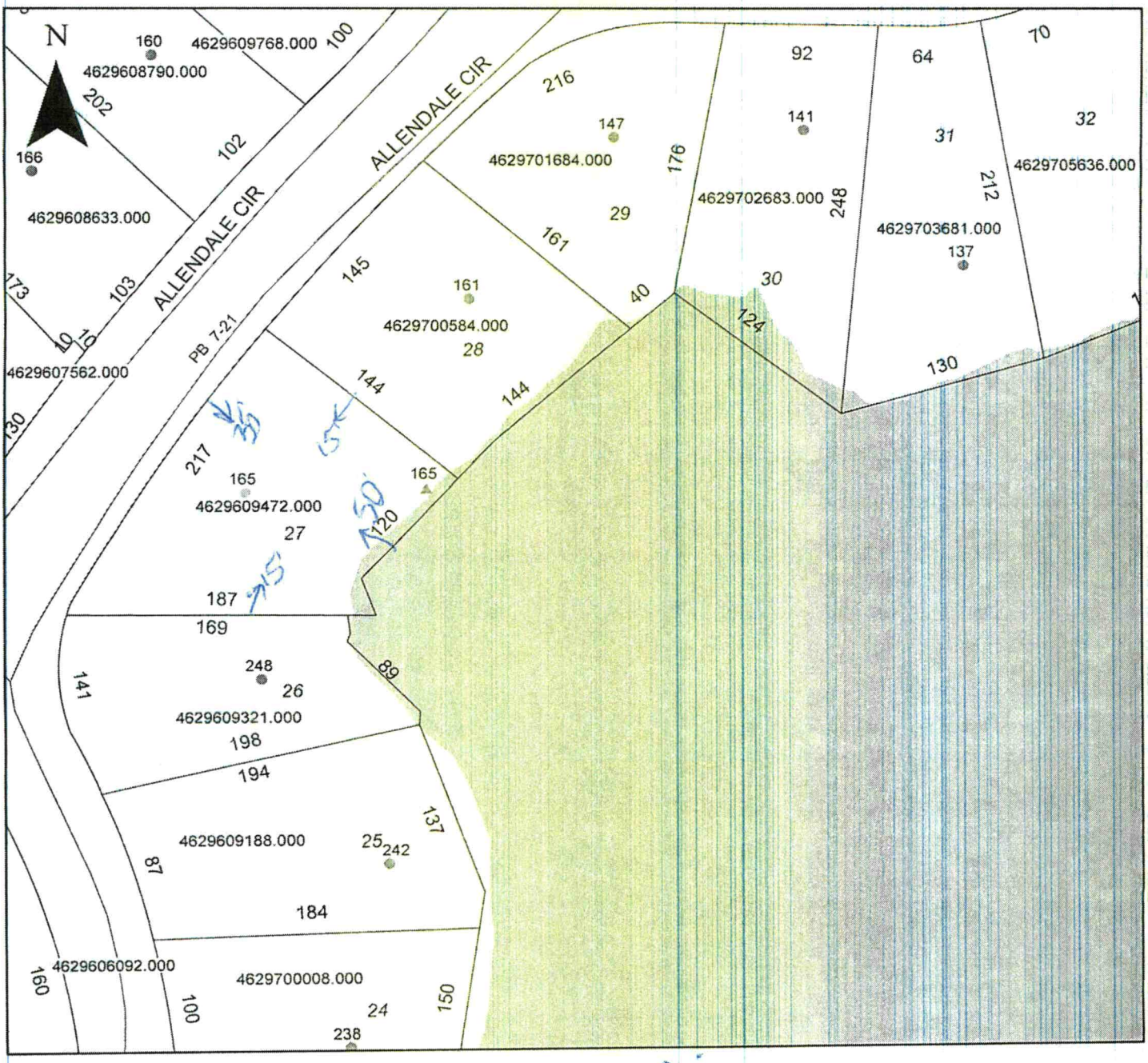
Date: 12/11/2020

Signature of Owner/Contractor

Permit Number	313340	TOTAL FEES:	$77.25

313340

ZONING DISCLAIMER



Property Address 165 Allendale Cir

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.

Bill Bender

Applicant

12/11/20

Date

Type V
AP 313340

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH

ROY COOPER
GOVERNOR

MANDY COHEN, MD, MPH
SECRETARY

DANIEL STALEY
DIRECTOR

COMMON FORM FOR ENGINEERED OPTION PERMIT
See Instructions for Use in Appendix A

Except for "Date received", this Section to be completed by the Professional Engineer licensed in accordance with G.S. 89C

LHD USE ONLY: Initial submittal of this NOI received: 1-8-2021 (Date) by BAB (Initials)

PART 1: Notice of Intent to Construct (NOI)

☒ New ☐ Expansion

☐ Repair – LHD Permit Number _____ ☐ Repair – EOP Permit Number _____

1. Facility Owner's name: (Owner, Company Name, Utility, Partnership, Individual, etc.): Judy Verross

Mailing address: 934 Granville Road City: Charlotte State: NC Zip: 28207

Telephone number: 704-890-1040 E-mail Address: jcverross@yahoo.com

2. Professional Engineer (PE) name: Brian Groves, PE License number: 44489

Mailing address: 15333 Idlewild Road City: Matthews State: NC Zip: 28104

Telephone number: 704-654-8850 E-mail Address: bngroves@gmail.com

3. Licensed Soil Scientist (LSS) name: Larry Thompson, LSS License number: 1287

Mailing address: PO Box 541 City: Midland State: NC Zip: 28107

Telephone number: 704-301-4881 E-mail Address: larry@thompsonenv.com

4. Licensed Geologist (LG) (if applicable) name: N/A License Number: _____

Mailing address: _____ City: _____ State: _____ Zip: _____

Telephone number: _____ E-mail Address: _____

5. On-site Wastewater Contractor name: Juan Carlos Rocha License number: 5240

Mailing address: 2602 Gold Mine Road City: Monroe State: NC Zip: 28110

Telephone number: 704-242-3402 E-mail Address: carlosseptic@gmail.com

6. Proof of Errors and Omissions or other appropriate liability insurance for the following persons is attached that includes the name of the insurer, name of the insured and the effective dates of coverage:

☒ PE ☒ LSS ☐ LG ☒ On-site Wastewater Contractor

7. Property location (physical address, tax parcel identification number or subdivision lot, block number of the property to be permitted): Lot 27 – Allendale Point, 165 Allendale Circle, Troutman, NC 28166
   County Name: Iredell County Tax Parcel Number: 4629609472.000
8. Type of facility: ☒ Place of residence No. Bedrooms: 3 No. Occupants: 6
   ☐ Place of business Basis for flow calculation: _____
   ☐ Place of public assembly Basis for flow calculation: _____
9. Factors that would affect the wastewater load: Design is for domestic wastewater strength only.
10. Type, location, and classification (per Rule .1961) of wastewater system: Pre-treated drip dispersal system to be located to the left of the proposed house site. System Type V(c).
11. Design wastewater flow: 360 gpd *(For flow > 3,000 gpd and industrial process, duplicate plans shall be sent to the State.)*
    Design wastewater strength: ☒ domestic ☐ high strength ☐ industrial process
12. A plat as defined in G.S. 130A 334(7a) is attached: ☒ Yes ☐ No
13. Owner meets requirements of ownership or control of the system per 15A NCAC 18A .1938(j): ☒ Yes ☐ No
14. Easement, right of way or encroachment agreement required per 15A NCAC 18A .1938(j): ☐ Yes ☒ No
    If yes, documentation filed in _____ County Register of Deeds in Deed book _____ Page _____
15. Multi-party agreements required, as applicable, pursuant to 15A NCAC 18A .1937(h): ☐ Yes ☒ No
    If yes, agreements filed in _____ County Register of Deeds in Deed book _____ Page _____
16. Location of proposed or existing wells (drinking water, irrigation, geothermal, groundwater monitoring, sampling, etc.) and any potable and non-potable water conveyance lines is indicated on attached plans and complies with 15A NCAC 18A .1950: ☒ Yes ☐ No
    This is a saprolite system. ☐ Yes ☒ No
17. Evaluation(s) of soil conditions and site features in accordance with G.S. 130A-335(a1) signed and sealed by a LSS is attached: ☒ Yes ☐ No
18. Evaluation of geologic and hydrogeologic conditions signed and sealed by a LG is attached ☐ Yes ☒ NA
19. Proposed landscape, site, drainage, or soil modifications are attached: ☐ Yes ☒ NA

Attestation by Professional Engineer licensed in North Carolina pursuant to G.S. 89C

I, Brian Groves, PE hereby attest that the information required to be included with
Registered Professional Engineer (Print Name)
this Notice of Intent to Construct is accurate and complete to the best of my knowledge and that the proposed system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336-.1(e)(6).

Brian Groves (Nov 30, 2020 22:00 EST) Nov 30, 2020

Signature of Licensed Professional Engineer *Date*

This section is for Owner use to either designate PE as their legal representative or to self-submit the NOI.

Designation of Registered Professional Engineer as legal representative of Owner for this Notice of Intent:

I, Judy Veross hereby designate Brian Groves, PE

Print Name of Owner *Print Name of Registered Professional Engineer*

as my legal representative for purposes of this Notice of Intent pursuant to G.S. 130A-336.1.

Judy C Veross (Nov 30, 2020 21:39 EST) Nov 30, 2020

Signature of Owner *Date*

Owner self-submittal of NOI:

I, _____ hereby submit this NOI prepared by _____

Print Name of Owner *Print Name of Licensed PE*

pursuant to G.S. 130A-336.1.

_____ _____

Signature of Owner *Date*

NOTES:

LIABILITY: The Department, the Department's authorized agents or local health departments shall have no liability for wastewater systems designed, constructed and installed pursuant to an Engineered Option Permit. [(NC General Statute 130A-336.1(f)]

RIGHT OF ENTRY: The submittal of this **Notice of Intent to Construct** *grants right of entry to the Local Health Department and the State to the referenced property.*

ISSUANCE OF BUILDING PERMIT: Once the LHD deems that the Notice of Intent to Construct is complete via signature in the section above, the owner may apply to the local permitting agency for a permit for electrical, plumbing, heating, air conditioning or other construction, location or relocation activity under any provision of general or special law pursuant to G.S. 130A-338.

This section for Local Health Department use only.

PART 2: ***LHD Completeness Review of the Notice of Intent to Construct***

"(c) Completeness Review for Notice of Intent to Construct. – The local health department shall determine whether a notice of intent to construct, as required pursuant subsection (b) of this section, is complete within 15 business days after the local health department receives the notice of intent to construct. A determination of completeness means that the notice of intent to construct includes all of the required components. If the local health department determines that the notice of intent to construct is incomplete, the department shall notify the owner or the professional engineer of the components needed to complete the notice. The owner or professional engineer may submit additional information to the department to cure the deficiencies in the notice. The local health department shall make a final determination as to whether the notice of intent to construct is complete within 10 business days after the department receives the additional information from the owner or professional engineer. If the department fails to act within any time period set out in this subsection, the owner or professional engineer may treat the failure to act as a determination of completeness."

The review for completeness of this Notice of Intent was conducted in accordance with G.S. 130A-336.1(c). This NOI is determined to be:

☐ INCOMPLETE (If box is checked, Information in this section is required.)

Based upon review of information submitted by the PE in Part 1, the following items are missing: _____

_____

Copies of this form listing missing items were sent to the design PE and the Owner on _____
Date

via _____ with directions to re-submit missing items using Page 5 of this form.
Email, FAX, USPS, hand-delivered

_____ _____ _____
Print Name of Authorized Agent of the LHD *Signature of Authorized Agent of the LHD* *Date*

☑ COMPLETE (If box is checked, information in this section is required.)

Based upon review of information submitted by the PE in Part 1 of this form, this NOI is deemed COMPLETE.

Copies of this signed form were sent to the design PE and the Owner on 1-8-2021 via Email.
Date *Email, FAX, USPS, hand-delivered*

A copy of this NOI and tracking information was sent to the State on 1-8-2021 via Email.
Date *Email, FAX, USPS, hand-delivered*

Benjamin A. Botkins Benjamin A. Botkins 1-8-2021
Print Name of Authorized Agent of the LHD *Signature of Authorized Agent of the LHD* *Date*

Re-submittal of NOI with missing items included

This Section is for use by PE to submit items noted as missing during LHD Completeness Review above.
Resubmittals must be accompanied by a cover letter from the PE.

LHD USE ONLY: This NOI resubmittal received: _____ by _____
Date *Initials*

Item # from initial NOI	Resubmittal description

Attestation by Professional Engineer licensed in North Carolina pursuant to G.S. 89C

I, _____ hereby attest that the information re-submitted for this Notice of
Licensed Professional Engineer (Print Name)
Intent to Construct is accurate and complete to the best of my knowledge and that the proposed system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336-.1(e)(6).

_____ _____
Signature of Licensed Professional Engineer *Date*

The section below is for Local Health Department use after submittal of items noted as missing above.

LHD Follow-up Completeness Review of Notice of Intent to Construct

This follow-up review for completeness of this Notice and Intent was conducted in accordance with G.S. 130A-336.1(c). This NOI is determined to be:

☐ INCOMPLETE
Based upon review of information submitted by the PE in the RESUBMITTAL above, this Notice of Intent remains INCOMPETE because the following items from Part 1 of this form remain missing: _____
_____.

Copies of this signed form were sent to the design PE and the Owner on _____ via _____.
Date *Email, FAX, USPS, Hand-delivered*

_____ _____ _____
Print name of authorized Agent of the LHD *Signature of authorized Agent of the LHD* *Date*

☐ COMPLETE
Based upon review of information submitted by the PE in the RESUBMITTAL above in addition to information provided in Part 1 of this form, this NOI is deemed complete.

Copies of this signed form were sent to the PE and the Owner on _____ via _____.
Date *Email, FAX, USPS, Hand-delivered*

A complete copy of this form with tracking information was sent to the State: _____ via _____.
Date *Email, FAX, USPS, hand-delivered*

_____ _____ _____
Print name of authorized Agent of the LHD *Signature of authorized Agent of the LHD* *Date*

PART 3: **Authorization to Operate (ATO)**

Except for date received, the Section below is to be completed by the Owner or by the PE designated to act as their legal representative for the EOP.

LHD USE ONLY: Initial submittal of request for ATO received: _____ by _____
Date *Initials*
Date of Post-construction Conference: _____

The following items are included in this submittal for an Authorization to Operate under an EOP:

1. Signed and sealed copy of the Engineer's report that includes:
   a. Signed and sealed evaluation of soil conditions and site features ☐ Yes ☐ No
   b. Drawings, specifications, plans ☐ Yes ☐ No
   c. Reports on special inspections and final inspection ☐ Yes ☐ No
   d. Management Program manual ☐ Yes ☐ No
   e. On-site Wastewater Contractor's signed statement ☐ Yes ☐ No
   f. Signed and sealed statement pursuant to 15A NCAC 18A .1938(h) ☐ Yes ☐ No
2. Fee (as applicable) ☐ Yes ☐ No
3. Notarized letter documenting Owner's acceptance of the system from the PE ☐ Yes ☐ No

Attestation by the Owner or the PE for Authorization to Operate

I, _____ hereby attest that all items indicated above have been provided to the
Print name of Owner or Professional Engineer

_____County LHD and the system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336-.1(e)(6).

_____ _____
Signature of Owner or Professional Engineer *Date*

This section for LHD Use Only.

LHD Review of required information for the ATO

☐ INCOMPLETE
Based upon review of information submitted by the Owner or PE in the Section above, the following items are missing from the information required for an Authorization to Operate for an EOP: _____
_____.

Copies of this signed form were sent to the design PE and the Owner on _____ via _____.
Date *Email, FAX, USPS, Hand-delivered*

_____ _____ _____
Print name of authorized Agent of the LHD *Signature of authorized Agent of the LHD* *Date*

☐ COMPLETE
Based upon review of information submitted by the Owner or PE in the Section above, this Authorization to Operate is hereby issued in accordance with G.S. 130A-336.1(m).

A copy of this complete NOI/ATO with tracking information was sent to the State on _____ via _____.
Date *Email, FAX, USPS, Hand-delivered*

_____ _____ _____
Print name of authorized Agent of the LHD *Signature of authorized Agent of the LHD* *Date*

ISSUANCE OF CERTIFICATE OF OCCUPANCY: Once the LHD determines completeness based upon the PE submission, the owner may apply to the local permitting agency for permanent electrical service to a residence, place of business or place of public assembly pursuant to G.S. 130A-339.

CERTIFICATES OF INSURANCE

BRIAN-3 OP ID: TR

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/10/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Vaughan Insurance Group, LLC PO Box 52534 Tulsa, OK 74152-0534 David Vaughan 918-779-7880	CONTACT NAME: Ty Rainey PHONE (A/C, No, Ext): 918-779-7880 FAX (A/C, No): 918-779-7885 E-MAIL ADDRESS: ty@vaughanins.com
INSURED Brian Groves 15333 Idlewild Rd Matthews, NC 28104	INSURER(S) AFFORDING COVERAGE / NAIC # INSURER A : Mid Continent Casualty Company 23418 INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR			04-GL-001031806	01/01/2020	01/01/2021	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ Excluded
	X Professional			04-GL-001031806	01/01/2020	01/01/2021	PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 3,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 3,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) N / A						E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER FORIN-1

For Informational Purposes

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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THOMP-0 OP ID: D2

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 09/15/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER 918-779-7880 Vaughan Insurance Group, LLC PO Box 52534 Tulsa, OK 74152-0534 David Vaughan	CONTACT NAME: David Vaughan Jr PHONE (A/C, No, Ext): 918-779-7880 FAX (A/C, No): 918-779-7885 E-MAIL ADDRESS: dlvjr@vaughanins.com
INSURED Thompson Environmental Consulting, Inc. PO Box 541 Midland, NC 28107-0541	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Mid Continent Casualty Company — 23418 INSURER B : Hartford Underwriters Ins Co — 30104 INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY							
	CLAIMS-MADE X OCCUR			04-GL-001047474	09/25/2020	09/25/2021	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
	X Professional Liab			04-GL-001047474	09/25/2020	09/25/2021	MED EXP (Any one person)	$ EXCLUDED
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 3,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 3,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						X PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N	N/A		38WECNW6175	10/17/2019	10/17/2020	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER FORIN-1

For Informational Purposes

CANCELLATION

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AUTHORIZED REPRESENTATIVE



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Erie Insurance

100 Erie Ins. Pl. • Erie, PA 16530

CERTIFICATE OF INSURANCE

- THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY -

CERTIFICATE HOLDER COPY

NAME AND NUMBER OF AGENCY		DATE ISSUED
ROBBINS & ASSOCS INS AGY INC 500 N CHURCH ST	JJ2464	04/25/2020
MONROE , NC 28110-4806	704-226-1300	NAME AND ADDRESS OF CERTIFICATE HOLDER
NAME AND ADDRESS OF NAMED INSURED		THOMPSON ENVIRONMENTAL CONSULTING INC PO BOX 541 MIDLAND NC 28107-
LAGO VISTA LAWNCARE & LANDSCAPING SERVICE LLC * 2602 GOLDMINE RD MONROE NC 28110-8947		

This is to certify that policies, as indicated by Policy Number below, are in force for the Named Insured at the time that the certificate is being issued.

TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE	POLICY EXPIRATION DATE	LIMITS OF INSURANCE		
GENERAL LIABILITY COMMERCIAL GENERAL LIABILITY OCCURRENCE FORM GEN'L AGGREGATE LIMIT APPLIES PER: PROJECT	Q260521176	02/05/2020	02/05/2021	EACH OCCURRENCE	$ 1000000	
				FIRE DAMAGE (Any one premises)	$ 1000000	
				MED EXP (Any one person)	$ 5000	
				PERSONAL & ADV INJURY	$ 1000000	
				GENERAL AGGREGATE	$ 2000000	
				PRODUCTS-COMP/OP AGG	$ 2000000	
				BODILY INJURY (EACH PERSON) BODILY INJURY (EACH ACCIDENT)	$ $	
				PROPERTY DAMAGE	$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$	
				EACH OCCURRENCE		
				AGGREGATE		
WORKERS COMPENSATION AND EMPLOYERS LIABILITY	Q893000667	05/30/2020	05/30/2021	STATUTORY		
				BODILY INJURY BY: ACCIDENT	$ 100000	EACH ACCIDENT
				DISEASE	$ 500000	POLICY LIMIT
				DISEASE	$ 100000	EACH EMPLOYEE

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

CANCELLATION: SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

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ERIE INSURANCE

SEE REVERSE SIDE

AUTHORIZED REPRESENTATIVE Marc Cipriani

PROJECT DESIGN AND PLAT

Residential Subsurface Wastewater Treatment and Disposal System Engineered Option Permit

for

Lot 27 – Allendale Point
165 Allendale Circle
Troutman, NC 28166

Tax Parcel Number: 4629609472.000
December 2, 2020

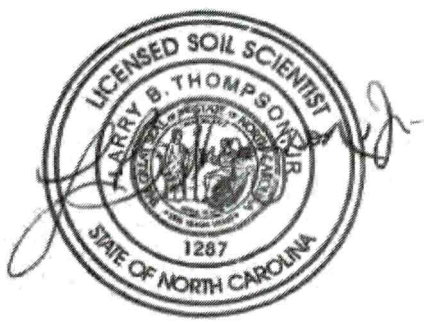
Prepared for:

Judy Verross
934 Granville Road
Charlotte, NC 28207
704-890-1040



Prepared by:

Brian Groves, PE
Larry Thompson, REHS, LSS
PO Box 541
Midland, NC 28107-0541
Phone: 704-654-8850 (Brian)
Phone: 704-301-4881 (Larry)
bngroves@gmail.com
larry@thompsonenv.com



cc: Iredell County Environmental Health

Details

The following wastewater treatment and disposal system design is submitted to the Iredell County Environmental Health (ICEH) as part of an Engineered Option Permit package for a 3-bedroom single-family residence to be located on Lot 27 – Allendale Point, 165 Allendale Circle, Troutman, NC 28166 (Iredell County Tax Parcel Number: 4629609472.000). The property will be served by an existing private well.

Based upon a soil and site evaluation performed by Thompson Environmental Consulting, Inc. (TEC), it has been determined that there is a sufficient amount of "Suitable" Group IV soils available for the installation of a pre-treated drip dispersal system for a 3-bedroom residence at a 0.15 gpd/sq/ft long-term acceptance rate. The proposed advanced pre-treatment unit will be the Norweco Singulair Green® Bio-Kinetic® with the Hydro-Kinetic® Bio-Film Reactor and Norweco AT 1500 Ultra-Violet Light Disinfection Unit, while the dripfield components will be provided by Geoflow. The subdivision plat was recorded with the Iredell County Register of Deeds on March 6, 1963, making it exempt from repair area requirements per 15A NCAC 18A .1945 AVAILABLE SPACE.

The following design is being submitted under NC General Statute 130A-336.1 (Engineered Option Permit).

Location

From Statesville, take US-21 South to Wagner Street. Turn right onto Wagner Street and right onto State Park Road. Travel 1.4 miles and tun left onto Morison Farm Road. Travel 2.6 miles and turn right onto Redbud Lane. Stay straight on Allendale Circle and lot will be located on the left.

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 2017.

Controlled Wastewater System Approval No: CDWS-2007-01-R1; Norweco Singulair Green Bio-Kinetic with Hydro-Kinetic Bio-Film Rector Advanced Wastewater Pretreatment Units, March 13, 2015.

Innovative Wastewater System Approval No: IWWS-2000-2R; Geoflow's Subsurface Drip System, May 17, 2007.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
SC Professional Soil Classifier No. 111

NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer/Inspector No. 1762/17621

Primary Designer's Credentials

NC Professional Engineer No. 44489

Plans and Specifications

A. Norweco Singulair® Green Bio-Kinetic® Unit and Hydro-Kinetic® Bio-Film Reactor

1. The Norweco Singulair Green® TNT-500 self-contained treatment unit is required for this project.
2. The Singulair Green® TNT-500 unit consists of a three-compartment tank with the first compartment as a pre-treatment tank, the second compartment as an extended aeration tank and the third compartment as a final clarification tank. The Bio-Kinetic® system is installed in the third compartment. The third compartment also includes a flow equalization device installed in the tank outlet end.
3. The Norweco Hydro-Kinetic® Bio-Film reactor is a separate unit and is installed following the Bio-Kinetic unit.
4. Effluent from the Hydro-Kinetic® Bio-Film reactor will pass through the Norweco AT 1500 ultraviolet light disinfection unit prior to entering the drainfield pump tank.
5. Effluent samples shall be collected from the outlet end of the disinfection unit or a tap on the drainfield force main. The tap should be located before the drip system spin filter(s). The preferred location for the tap is in the drainfield pump tank discharge line, in the riser assembly, and at an elevation that will allow for easy collection from the riser top.
6. The Singulair Green® TNT-500 unit shall include the Norweco Service Pro® WASP™ Integrated System Control Panel.
7. System installer shall be Norweco certified.
8. System operator shall be Norweco certified.

B. Dripfield Dosing Tank

1. The dripfield dosing tank shall be of one-piece construction, watertight, structurally sound and 1,000 gallons in capacity. It is the responsibility of the septic tank contractor to thoroughly inspect the pump tank prior to accepting delivery.
2. 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).
3. The specified pump is the Norweco HB105 high-head submersible effluent pump.
4. Floats, pump and control circuits, and the control panel shall meet all state requirements. Panel and control equipment shall include lightning protection, be

protected from unauthorized access, and always remain accessible to the system operator.

5. The pump and alarm controls shall be provided with manual circuit disconnects within the same watertight, corrosion resistant, Nema 4x rated Norweco Service Pro® WASP™ Integrated System Control Panel (controls aerator, AT 1500 UV and effluent pump for drip dispersal field).
6. The peak enable float shall be located at or above the high-water alarm activation level.
7. Float switch tie downs must be made of a corrosion resistant material (all metal in the tanks shall be stainless steel). Floats should be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).
8. 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.
9. The effluent sample port shall be installed on the discharge line from the drain-field pump tank and shall be comprised of a ball or gate valve, with downturn mounted within arm's length of the riser top, to allow for convenient sampling.
10. Backfill around the Norweco Singulair Green® TNT-600, Norweco Hydro-Kinetic® Bio-Film reactor, Norweco AT 1500 ultraviolet light disinfection unit and pump tank shall occur in 6" lifts, with moderate compaction applied between lifts to minimize soil settling post construction. Compaction should occur in accordance with installation specifications of the Norweco system and pump tank manufacturer.

C. Pipe and Fittings

1. All discharge piping, supply lines, valves and disconnects shall be made of Schedule 40 PVC with pressure fittings.
2. All joints must be properly "welded" utilizing appropriate PVC cement for each application unless otherwise noted by the parts manufacturer.
3. Connection pipes between tanks shall be 4-inch Schedule 40 PVC.
4. Supply lines and manifolds shall be 1.25-inch Schedule 40 PVC.
5. Return line shall be 1-inch Schedule 40 PVC.
6. The washback line from the headworks unit to the septic tank shall be 1.25-inch Schedule 40 PVC.

D. Geoflow Pre-Engineered Dripfield 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 from construction traffic. Prior to the system installation, the septic contractor shall contact the system designer for a preconstruction conference at which time the drainfield area will be re-verified.
2. Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition. If the installer has doubts as to whether the drainfield area is dry enough to begin construction, the system designer should be contacted for permission to proceed with the installation.

3. The specified system is a Geoflow Pre-Engineered drip dispersal system.
4. The Geoflow system headworks shall be self-contained within a single vault and including valves and spin clean filter.
5. The dripfield consists of 4 zones, each with 5 laterals (60-foot long runs) of Geoflow drip tubing measuring 300 feet each. Total length of drip tubing is 1,200 linear feet.
6. The proposed trench depth for this system is 6 inches.
7. The drip line shall consist of a nominal size ½ inch linear low-density polyethylene tubing with turbulent flow drip emitters bonded to the inside wall.
8. The laterals are to be installed on contour with the land and per the detail shown in the attached drawings.
9. The air/vacuum relief valves provide instant and continuous vacuum relief and non-continuous air relief and must be installed at the highest point on the drainfield on both supply and return lines.
10. Each zone will have a return manifold with its own check valve. Check valves must be installed to prevent back flow to zones not being dosed while allowing uninterrupted flush back to the headworks unit.
11. Connections to the manifold shall be made with PVC tees and lockslip adapters.
12. Connections lines (solid tubing) shall be conveyed over earthen dams constructed at least 2 inches higher than the driplines served to retain effluent in the lines at the end of each dose cycle.
13. Connections from solid tubing to the GeoFlow PC drip tubing shall be made utilizing lockslip fittings.
14. The trenches should be left open for the final inspection by the system designer.

E. Final Landscaping

1. Final cover over the drainfield will be 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.

F. 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. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation. If there are any questions regarding preferred routes, contact the system designer.
2. Lawn irrigation should not be placed over the drainfield area.

Maintenance

G. In General

The designed system is classified as a Type V(c) wastewater treatment and disposal system and requires ongoing maintenance. State regulations require that a system of this type be managed by a person certified by the North Carolina Department of Environment and Natural Resources to operate subsurface wastewater systems (Section .1961 Maintenance of Sewage Systems). A "Maintenance Contract" between the system owner and an Operator in Responsible Charge (ORC) will be required by the ICEH prior to the issuance of a final system approval or Operation Permit. Based upon the Norweco Singulair Green® TNT approval, the ORC shall be either an employee of Norweco or authorized in writing by Norweco to operate and maintain the system.

1. System management entity, inspection/maintenance and reporting frequency requirements shall be comparable to at least Type V(a) systems in Rule .1961(b), Table V(b), except that the maximum inspection interval for systems up to 1500 gallons per day shall be quarterly for the first year of operation and every six months thereafter if the system remains in compliance.
2. The ORC shall provide monitoring reports to the local health department which include a log of all malfunction incidences/notifications, maintenance activities and wastewater volume delivered to each zone between each required monitoring period. Minimum maintenance during each required inspection shall include visual observations of the drip field(s), checking/cleaning filter screen(s), measured dosing flow rate to each zone, and recording of flow meter reading, pump run times and cycle counts. Flushing flow rates and pressure head measurements during flushing at the inlet and outlet of each field zone shall be taken at least once per year.
3. Effluent filters should be inspected semi-annually. When it becomes necessary to clean the effluent filters, the filters should be removed, and the accumulated debris washed back into the septic or pump tank – not onto the lawn.
4. All piping and valves should be inspected semi-annually for damage and corrections/repairs made immediately.
5. The pump and float controls/switches should be inspected semi-annually to assure proper operation
6. The drainfield area should be maintained to prevent overgrowth of vegetation. Any damp areas, leakages or malfunctions should be addressed immediately.

Norweco Singulair Green® TNT Specific Maintenance

Norweco Singulair Bio-Kinetic® with Hydro-Kinetic® Bio-Film Reactor TNT systems shall be operated and maintained according to the latest version of Norweco's O&M manual.

On a quarterly basis for the first year and every six months thereafter (provided that the system remains in compliance), the designated ORC shall provide a report

2. Effluent sampling shall comply with 15A NCAC 18A .1970(n)(3) and (5).
3. Effluent samples shall be collected from the outlet end of the disinfection unit or a tap on the discharge line from the drainfield pump tank. The treatment numbers listed below are based upon the TS-II treatment standards – the site-specific soils require only TS-I pretreatment levels:
    a. CBOD < 10 mg/l
    b. TSS < 10 mg/l
    c. NH4-N < 10 mg/l
    d. TN < 20 mg/l or > 60% removal
    e. Fecal Coliform < 1,000 colonies/ml
3. Effluent sampling shall not commence until at least 30 seconds of continuous discharge through the sample tap has been completed.
4. The system shall be tested for effluent $CBOD_5$, TSS, NH3-N, TKN, NOx-N, and fecal coliform bacteria (parameters listed above).
5. Reporting shall be done quarterly.
6. All samples shall be collected, preserved, and analyzed in accordance with 40 CFR 136. A state certified wastewater laboratory shall analyze samples for the treatment performance standards and complete chain of custodies shall be maintained.

to the system owner, Norweco and the local health department within 30 days of each inspection. At a minimum, the report shall specify:

1. The date and time of inspection
2. System operating conditions measured and observed according to VII.D and VIII.E,
3. Results from any laboratory analysis of any influent and effluent samples
4. Maintenance activities performed since the last inspection report,
5. An assessment of overall system performance,
6. A list of any improvements or maintenance needed,
7. A determination of whether the system is malfunctioning, and the specific nature of the malfunction, and
8. Any changes made in system settings based on recommendations form the manufacturer.

At each Norweco component inspection, the ORC shall, at a minimum, observe, monitor, and record the following:

1. Proper operation of system aerator, noting any unusual sounds or physical appearance.
2. Air flowrate for the system aerator.
3. Solids level in aeration chamber.
4. Clarity of effluent.
5. Water tightness of tanks, risers, and pipe connections at the tanks.
6. Cleaning, if needed, of the Bio-Kinetic filtration system.
7. Operation of pumps, floats, valves, electrical controls, and alarms.
8. Drainfield pump delivery rate (drawdown test), determination of the average pump run time, and drainfield dosing volume.
9. Any structural damage, accessibility issues, adequate ventilation, excess odors, ponding of effluent, insect infestations, vegetative growth over the drainfield, or surfacing of effluent on the drainfield area.
10. Samples of influent and effluent as required.
11. Logging all work performed on the Service Pro website.

<u>Influent Sampling</u>

1. Influent sampling shall comply with 15A NCAC 18A .1970(n)(3) and (5).
2. Influent samples shall be taken from the influent pipe to the treatment system.
    a. BOD not to exceed 350 mg/l
    b. TSS not to exceed 200 mg/l
    c. TKN not to exceed 100 mg/l
    d. FOG not to exceed 30 mg/l.

<u>Effluent Sampling</u>

1. Effluent samples are to be collected every six months for a period of two years.

Design Specifics

Daily Design Flow:	360 GPD
Effluent Loading Rate:	0.15 GPD per sq. ft.
Norweco Singulair Green TNT-500 Unit:	1
Norweco Hydro-Kinetic Bio-Film Reactor:	1
Disinfection Unit:	Norweco AT1500 UV
Drainfield Dosing Tank:	1,000 Gallons (One Piece)
Control Panel:	Norweco Service Pro WASP
Total Length of Drip Line:	1,200 Linear Feet
Number of Zones:	4
Number of Laterals per Zone:	5 (60 Linear Feet each)
Number of Emitters:	600
Installation Depth:	6 Inches
Supply/Return Line Length and Diameter:	(4) 1.25" Sch 40 Supply Lines (1) 1" Sch 40 Return Line
Length of Supply and Return Lines:	50 Feet
Pump Requirements:	10.45 GPM at 60.83 Ft. TDH
Drainfield Run Time:	6.50 Minutes
Drainfield Rest Time:	53.50 Minutes
Doses Per Zone Per Day:	6
Recommended Drainfield Pump:	Norweco HB105

norweco

Engineering the future of water and wastewater treatment

Project Name:	165 Allendale Circle
Contact Name:	Judy Verross
Prepared By:	Brian Groves, PE
Date:	11/14/2020

Fill in all fields highlighted in yellow.
Fields highlighted in blue are automatically calculated.
Fields highlighted in red indicate a design problem that must be addressed.

TOTAL FIELD			
Total Quantity of Effluent to be Disposed per Day	360	Gallons / Day	Maximum Daily Flow is 1,500 Gallons per Day
Soil Loading Rate	0.150	Gallons / Square Foot / Day	
Total Dispersal Field Area	2,400	Square Feet	Maximum Area is 12,000 Square Feet

FLOW PER ZONE			
Number of Zones	4		Maximum is 6 Zones
Dispersal Area per Zone	600	Square Feet	
Drip Tubing Spacing	24	Inches	24 Inches is Standard
Drip Emitter Spacing	24	Inches	Based on Standard Norweco Drip Tubing
Tubing Required per Zone	300	Linear Feet	
Total Drip Tubing Required	1,200	Linear Feet	
Total Number of Emitters per Zone	150		
Emitter Drip Rate	1.02	Gallons / Hour	Based on Standard Norweco Drip Tubing
Dose Rate per Zone	2.55	Gallons / Minute	

DESIGN REQUIREMENTS			
Drip Field Pressure	20	PSI	25 PSI Standard. 10 PSI Minimum, 45 PSI Maximum
Flush Velocity	2.00	Feet / Second	2 Feet / Second is Standard
Number of Laterals	5		
Maximum Length of Each Drip Tubing Lateral Line	265	Feet	
Actual Length of Each Drip Tubing Lateral Line	60	Feet	
Flush Flow Required per Drip Line	1.48	Gallons / Minute	
Total Flow Required to Maintain Flushing Velocity	7.40	Gallons / Minute	
Total System Flow Required (plus 5%)	10.45	Gallons / Minute	

PUMP CALCULATIONS			
Supply Manifold Size	1-1/4	Inches	
Return Manifold Size	1	Inches	
Distance From Pump Tank to Drip Field	50	Feet	
Field Head			
Head Loss Based on Field Pressure	46.20	Feet	
Static Head			
Height From Pump Outlet to Pump Tank Outlet	3	Feet	
Height From Pump Tank Outlet to Drip Field	3	Feet	
Total Static Head	6	Feet	
Friction Head (Supply Line)			
Equivalent Length of Fittings	5	Feet	
Length of Pipe From Pump Tank to Drip Field	50	Feet	
Total Equivalent Length of Supply Line Pipe	55	Feet	
Total Supply Line Friction Head	0.80	Feet	
Friction Head (Return Line)			
Equivalent Length of Fittings	5	Feet	
Length of Pipe From Drip Field to Pump Tank	50	Feet	
Total Equivalent Length of Return Line Pipe	55	Feet	
Total Return Line Friction Head	2.01	Feet	
Tubing Head			
Head Loss Through Drip Tubing	0.44	Feet	
Headwork / Filter Assembly Head			
Head Loss Through Headworks Assembly	2.20	Feet	
Zone Valve Head			
Head Loss Through Zone Indexing Valve	3.18	Feet	
Total Dynamic Head (TDH)	60.83	Feet	
Actual Pump Delivery Based on Calculated TDH	27.5	Gallons per Minute	Based on Norweco Model HB105 Pump

PUMP TIMER SETTINGS			
Doses per Zone per Day	6		Based on a Single Pump Timer and Alternated Zones
Total Doses per Day	24		
Dose Time per Zone per Day	35.50	Minutes	Rounded up to nearest 1/4 minute
Total Dose Time per Day	142.00	Minutes	Rounded up to nearest 1/4 minute
Time per Dose	5.92	Minutes	
Time Required to Pressurize Drip Field	0.37	Minutes	Based on Norweco Model HB105 Pump
Pump "On" Time Setting	6.50	Minutes	Rounded up to nearest 1/4 minute
Pump "Off" Time Setting	53.50	Minutes	Rounded up to nearest 1/4 minute

norweco®

Engineering the future of water and wastewater treatment

Project Name:	165 Allendale Circle
Contact Name:	Judy Verross
Prepared By:	Brian Groves, PE
Date:	11/14/2020

DRIP IRRIGATION DESIGN SUMMARY

SYSTEM PARAMETERS

Total Quantity of Effluent to be Disposed per Day	360	Gallons / Day
Soil Loading Rate	0.150	Gallons / Square Foot / Day
Total Dispersal Field Area	2,400	Square Feet
Drip Field Pressure	20	PSI
Flush Velocity	2.00	Feet / Second
Distance From Pump Tank to Drip Field	50	Feet

ZONE PARAMETERS

Number of Zones	4	
Dispersal Area per Zone	600	Square Feet
Number of Laterals	5	
Drip Tubing Lateral Line Length	60	Feet
Drip Tubing per Zone	300	Linear Feet
Total Number of Emitters per Zone	150	
Dose Rate per Zone	2.55	Gallons / Minute
Doses per Zone per Day	6	

COMPONENT PARAMETERS

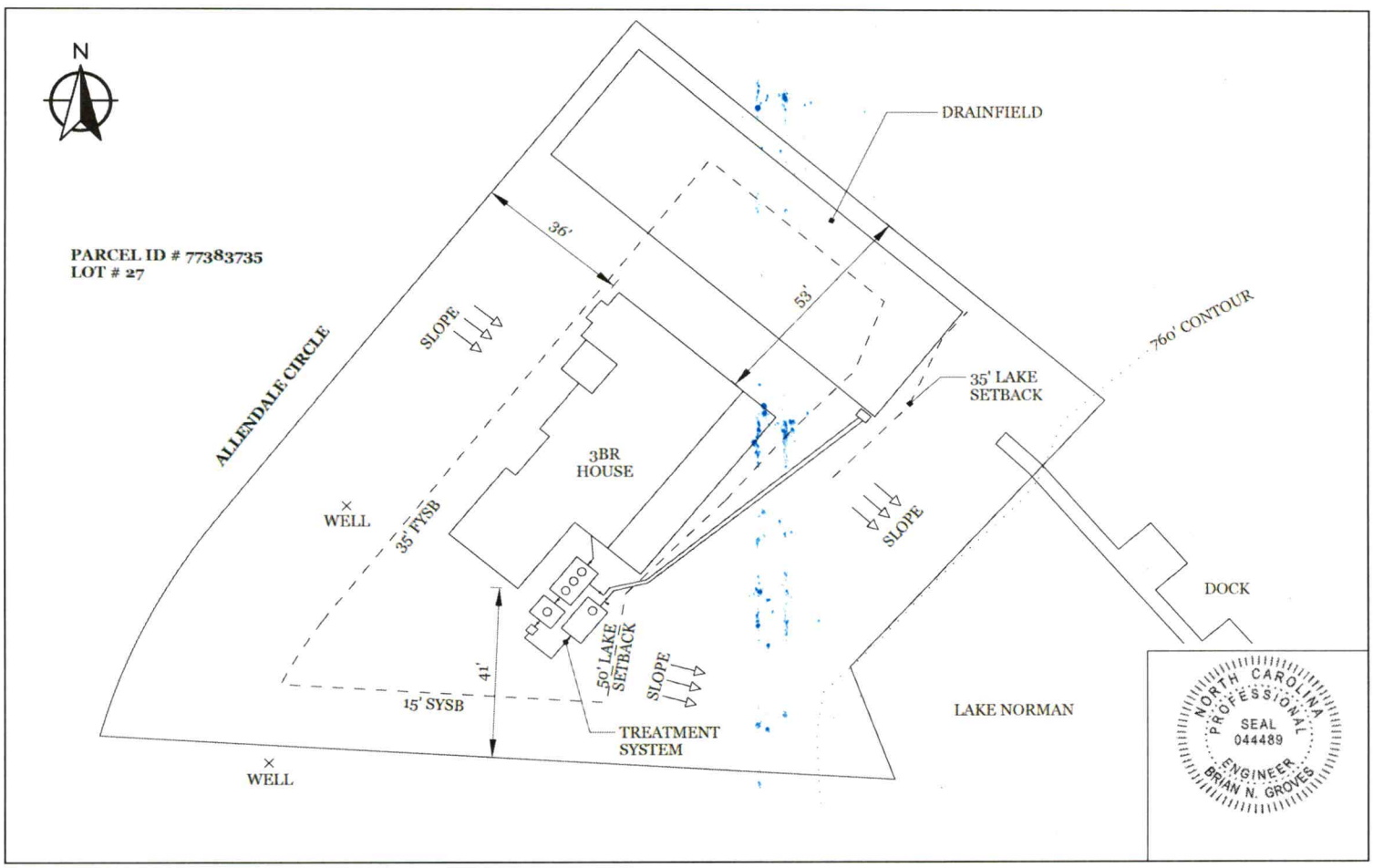
Total Drip Tubing Required	1,200	Linear Feet
Emitter Drip Rate	1.02	Gallons / Hour
Drip Tubing Spacing	24	Inches
Drip Emitter Spacing	24	Inches
Supply Manifold Size	1 1/4	Inches
Return Manifold Size	1	Inches

PUMP PARAMETERS

Total Static Head	6.00	Feet
Total Friction Loss	51.65	Feet
Total Dynamic Head	60.83	Feet
Minimum Pump Delivery	10.45	Gallons / Minute

PUMP TIMER SETTINGS

Pump "On" Time Setting	6.50	Minutes
Pump "Off" Time Setting	53.50	Minutes



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

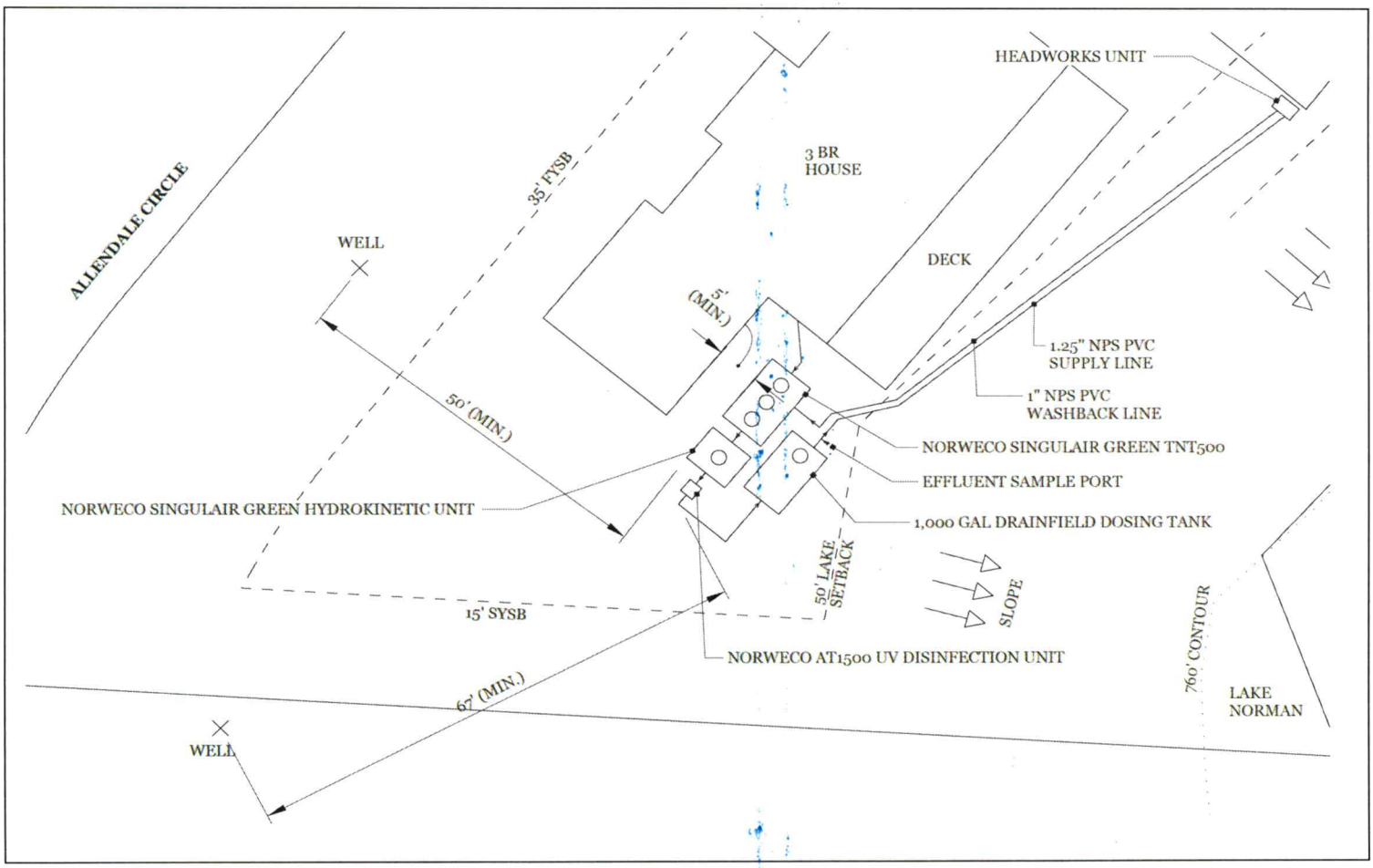
SITE OVERVIEW

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
2	11/29/2020	BNG	--	UPDATED HOUSE LOCATION AND DIMENSIONS.
3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
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M 01



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

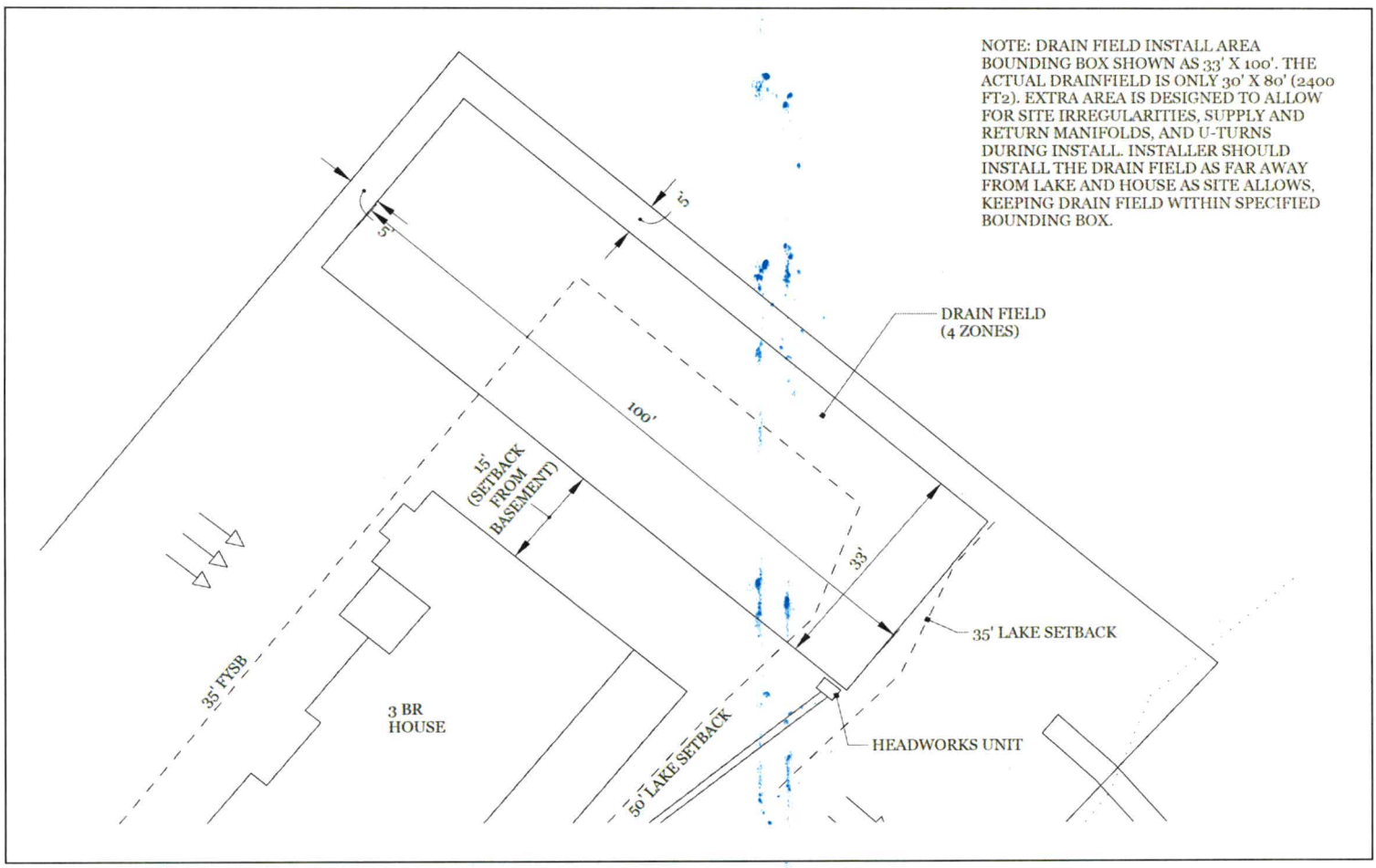
TREATMENT SYSTEM DETAIL

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
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M 02



BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

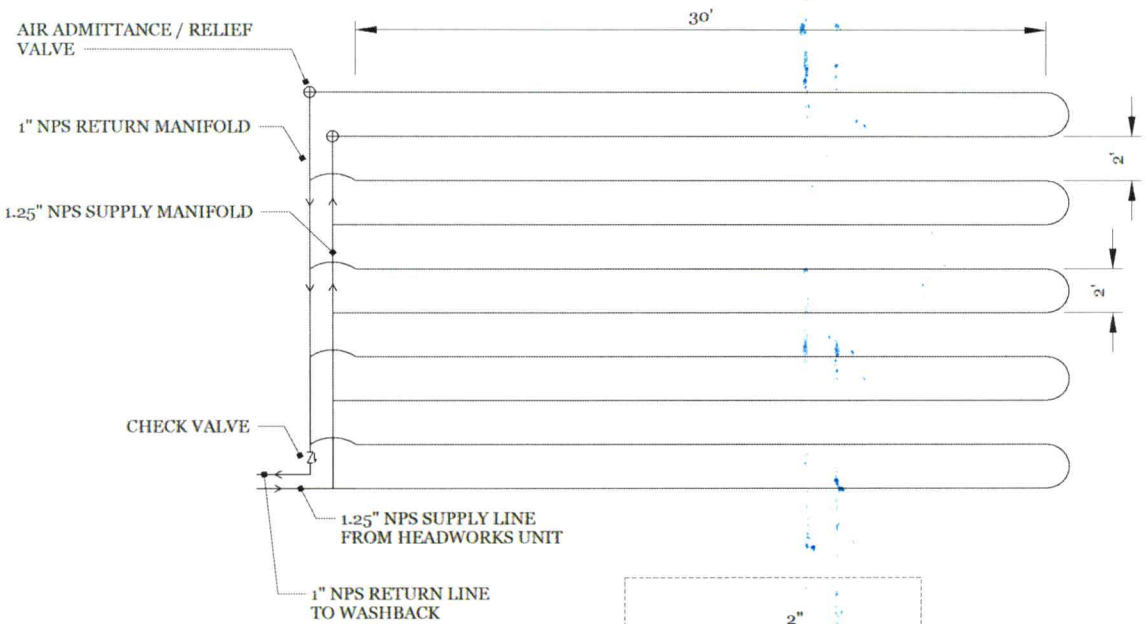
DRAIN FIELD OVERVIEW

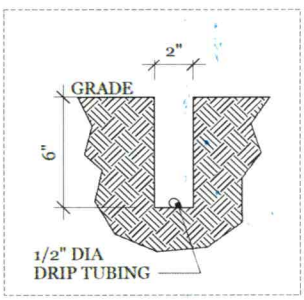
TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	.. .. /.. .. /.. ..	--	--	--

M 03





NOTES:
1. DRAIN FIELD ZONE DETAIL IS TYPICAL FOR EACH OF 4 ZONES.
2. TOTAL OF 60 FEET OF DRIP TUBING PER LATERAL, WITH 5 LATERALS PER ZONE. TOTAL OF 150 EMITTERS PER ZONE.
3. TOTAL DRIP TUBING REQUIRED IS 1200 FEET.
4. DRIP TUBING TO BE SPACED 24 INCHES APART, WITH EMITTERS SPACED 24 INCHES APART.

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

DRAIN FIELD DETAIL

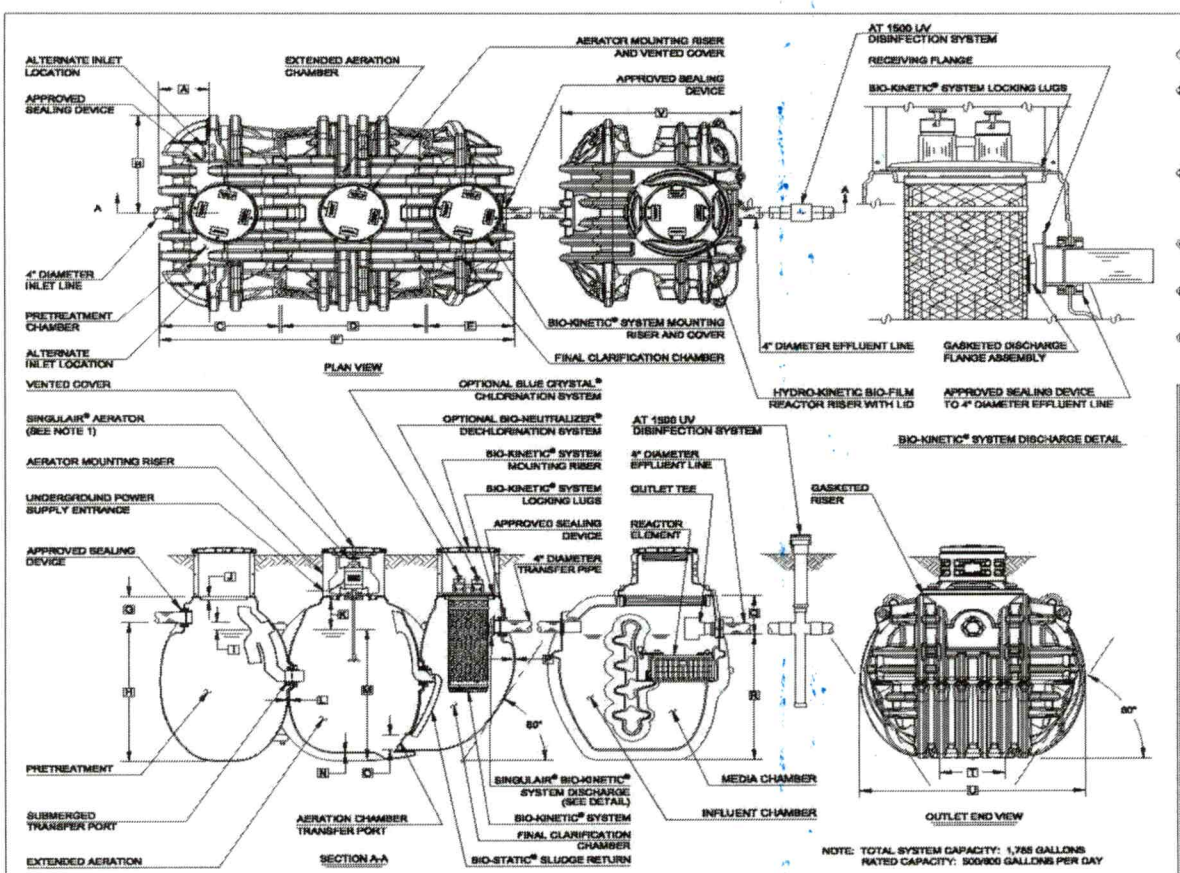
TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
5	.../.../...	--	--	--

M 04

SOIL REPORT



GENERAL NOTES:

1. SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF.
2. FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. FALL THROUGH BIO-FILM REACTOR IS ONE INCH. INLET INVERT IS TEN AND ONE HALF INCHES BELOW TANK TOP.
3. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE. ON DEEPER INSTALLATIONS OTHER RISERS MUST BE EXTENDED TO GRADE.
4. REMOVABLE COVERS ON RISERS ARE EACH SECURED TO PREVENT UNAUTHORIZED ACCESS.
5. CONTACT THE LOCAL, LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.
6. MAXIMUM DISTANCE BETWEEN SINGULAIR® TANK AND UV IS THREE FEET. MAXIMUM DISTANCE BETWEEN UV AND SAMPLING PORT IS THREE FEET.

PROJECT ENGINEER'S APPROVAL:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE:

NAME:

CONTRACTOR'S CERTIFICATION:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE:

NAME:

CRITICAL DIMENSIONS

A	1'- 6 1/2"	N	0'- 0 3/8"
B	3'- 3"	O	0'- 6"
C	3'- 5 1/4"	P	0'- 0 3/8"
D	4'- 1 3/4"	Q	1'- 3 1/2"
E	2'- 3 3/4"	R	4'- 2 1/2"
F	10'- 3"	S	8'- 8"
G	0'- 10 1/2"	T	1'- 11"
H	4'- 7 1/2"	U	6'- 9"
I	5'- 3"	V	5'- 5"
J	0'- 1 1/2"	W	
K	1'- 9"	X	
L	0'- 9 3/8"	Y	
M	4'- 4"	Z	

U.S. AND FOREIGN PATENTS PENDING

norweco

SINGULAIR® 1500/2 BIO - 500/600 SYSTEM WITH BIO-FILM REACTOR AND AT 1500 UV DISINFECTION SYSTEM

MT
SSS
10-7-14
NTS
PC-0-0958

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

MANUFACTURER DRAWINGS

TREATED DRIP SEPTIC SYSTEM DESIGN
JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

REVISIONS

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
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3	12/2/2020	BNG	TEC	IFC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
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M 06

BRIAN N. GROVES, PE

15333 IDLEWILD RD
MATTHEWS, NC 28104

PROPERTY PLOT PLAN

TREATED DRIP SEPTIC SYSTEM DESIGN

JUDY VERROSS
165 ALLENDALE CIRCLE
TROUTMAN, NC 28166

	DATE	DWG	CHK	REMARKS
1	11/22/2020	BNG	TEC	CONCEPTUAL HOUSE LOCATION FOR CLIENT REVIEW.
2	11/29/2020	BNG	--	UPDATED HOUSE LOCATION AND DIMENSIONS.
3	12/3/2020	BNG	TEC	IPC DRAWING PACKAGE.
4	12/7/2020	BNG	--	REVISED HOUSE LOCATION.
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REVISIONS

M	05

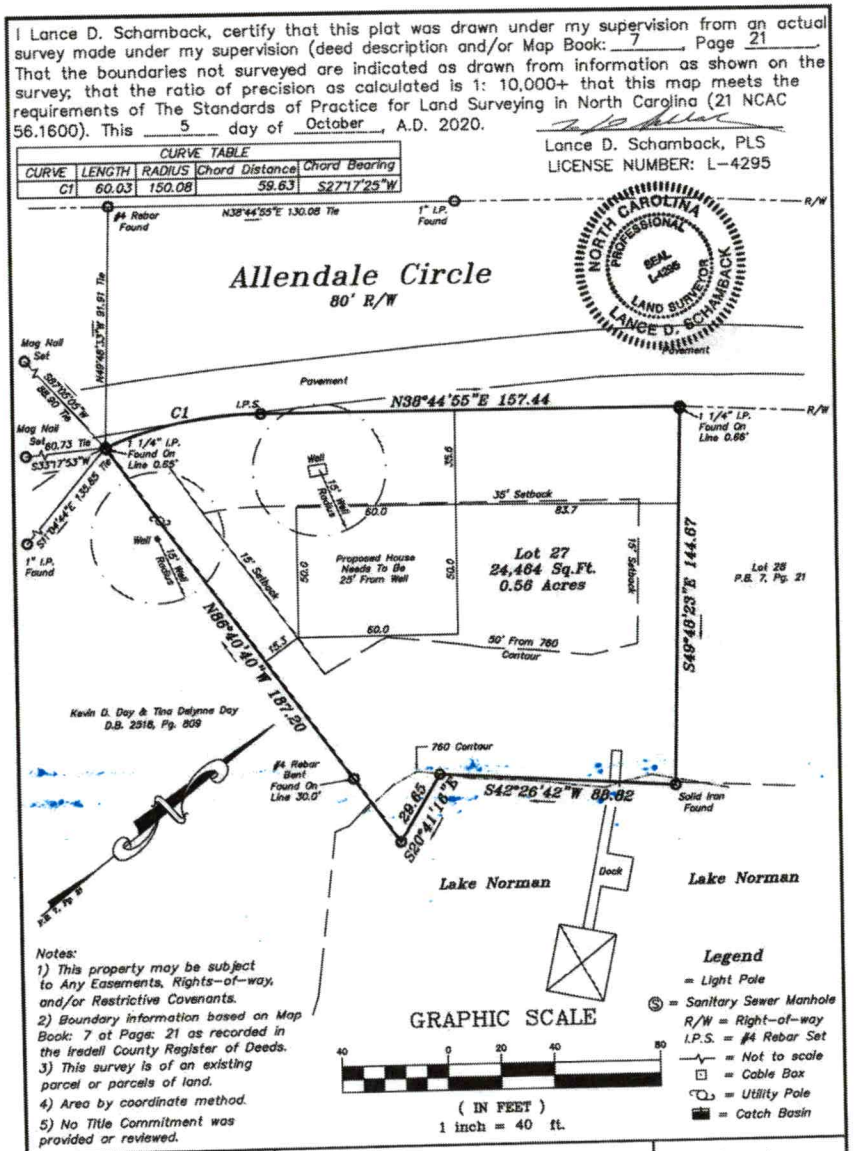
SURVEY COURTESY OF LANCE D. SCHAMBACK, PLS-4295, DATED 10/5/2020.

I Lance D. Schamback, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description and/or Map Book: 7, Page 21). That the boundaries not surveyed are indicated as drawn from information as shown on the survey; that the ratio of precision as calculated is 1: 10,000+ that this map meets the requirements of The Standards of Practice for Land Surveying in North Carolina (21 NCAC 56.1600). This 5 day of October, A.D. 2020.

Lance D. Schamback, PLS
LICENSE NUMBER: L-4295

NORTH CAROLINA PROFESSIONAL SEAL L-4295 LAND SURVEYOR LANCE D. SCHAMBACK

CURVE TABLE				
CURVE	LENGTH	RADIUS	Chord Distance	Chord Bearing
C1	60.03	150.08	59.63	S27°17'25"W



Notes:

1) This property may be subject to Any Easements, Rights-of-way, and/or Restrictive Covenants.
2) Boundary information based on Map Book: 7 at Page: 21 as recorded in the Iredell County Register of Deeds.
3) This survey is of an existing parcel or parcels of land.
4) Area by coordinate method.
5) No Title Commitment was provided or reviewed.

Legend

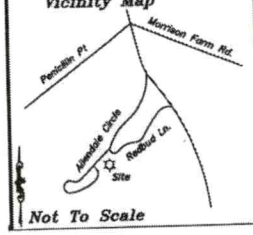
= Light Pole
Ⓢ = Sanitary Sewer Manhole
R/W = Right-of-way
I.P.S. = #4 Rebar Set
= Not to scale
= Cable Box
= Utility Pole
= Catch Basin

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

Vicinity Map



Not To Scale

Boundary Survey
FOR
Chad Goodin Custom Homes

PROPERTY DESCRIPTION
LOT 27,
Allendale Point Subdivision
Plat Book 7, Page 21
165 Allendale Circle
Fallstown Township, Iredell County, NC

SCALE: 1" = 40'
FIELD BOOK:
FILE: 2020-240
TAX PARCEL ID: 4629609472

Schamback Surveying, P.A.
Post Office Box 4143
Mooresville, NC 28117
(704) 622-9915
C-3218

INTRODUCTION & SITE DESCRIPTION

This Soil and Site Evaluation was performed on Lot 27 of the Allendale Point subdivision, located at 165 Allendale Circle, Troutman, North Carolina (Iredell County Tax Parcel: 4629609472.000). A deed for this property was located with a recordation date of March 6, 1963, making this lot exempt from repair area requirements per .1945 AVAILABLE SPACE (recorded subdivision plat attached).

Thompson Environmental Consulting, Inc. (TEC) was retained to determine whether the soils were suitable for an onsite subsurface wastewater treatment and disposal system. 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, 2018).

INVESTIGATION METHODOLOGY & SITE PHYSICAL CHARACTERISTICS

Soil profiles were evaluated, 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 is currently undeveloped and vegetated by mixed deciduous trees. Lot improvements include an existing well and boat dock.

FINDINGS

A field survey was conducted on September 18, 2020 by Larry Thompson, LSS. Four soil profiles were described, and their locations noted in the attached Figure 1.

All borings were rated as Provisionally Suitable for the installation of a subsurface wastewater treatment and disposal system and are denoted in the attached Figure as green circles. Surfaces typically exhibited friable sandy loam textures with weak, medium, granular structure ranging in depth from 2 to 4 inches in depth. Subsurface horizons exhibited firm clay to clay textures with moderate, medium, subangular blocky structure ranging in depth from 45 to 48 inches. A long-term acceptance rates (LTAR) of 0.3 gal./day/sq. ft. would be recommended for these soils (0.15 gal./day/sq. ft. if using subsurface drip dispersal)

CONCLUSION

The soils observed will support the installation of a subsurface wastewater treatment and disposal system at a 0.3 gal./day/sq. ft. LTAR, or 0.15 gal./day/sq. ft. if using subsurface drip dispersal. TEC recommends that a minimum of 3,000 square feet of suitable soil area be allocated and left completely available for the installation of PPBPS or subsurface drip dispersal system for a 3-bedroom single family residence.

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.

SOIL AND SITE EVALUATION

Lot 27 – Allendale Point
165 Allendale Circle
Troutman, NC 28166

Prepared For:

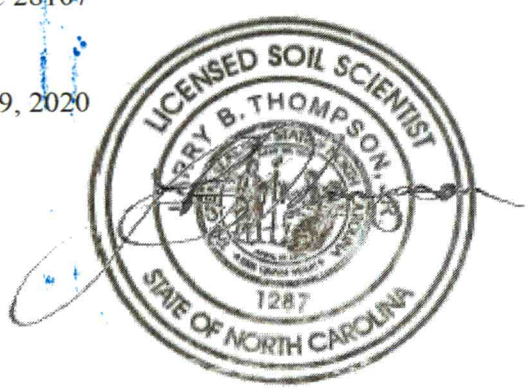
Judy Verross
934 Granville Road
Charlotte, NC 28207

Prepared By:

Thompson Environmental Consulting
WATER • WASTEWATER • WETLANDS

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

September 19, 2020



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

Sheet 1 of 1
PROPERTY ID #: 4629609472.000
COUNTY: Iredell

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

OWNER: Pinky Leavis
ADDRESS: 162 Northmont Drive Statesville NC 28625
PROPOSED FACILITY: Res PROPOSED DESIGN FLOW (.1949): 360GPD
LOCATION OF SITE: 165 Allendale Circle, Troutman, NC
DATE EVALUATED: 9-18-20
PROPERTY SIZE: 0.56 Ac
PROPERTY RECORDED: 1963
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
1	LS 18%	0-2 2-20 20-48	GR/SL SBK/CL SBK/CL	FR/NS/NP/SCR FI/SS/SP/SCR FR/SS/SP/SCR	—	48"	—	—	PS 0.3
2	LS 18%	0-24 24-45	SBK/C SBK/CL	FI/SS/SP/SCR FR/SS/SP/SCR	—	45"	II SA @ 45"	—	PS 0.3
3	LS 18%	0-2 2-20 20-45	GR/SL SBK/C SBK/CL	FR/NS/NP/SCR FI/SS/SP/SCR FR/SS/SP/SCR	—	45"	II SA @ 45	—	PS 0.3
4	LS 18%	0-4 4-26 26-48	GR/SL SBK/C SBK/CL	FR/NS/SP/SCR FI/SS/SP/SCR FR/SS/SP/SCR	—	45"	—	—	PS 0.3

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	Exempt
System Type(s)	PPBPS/DrD	↓
Site LTAR	0.3/0.15	↓

OTHER FACTORS (.1946): Provisional
SITE CLASSIFICATION (.1948): Provisional
EVALUATED BY: Larry Thompson
OTHER(S) PRESENT:

LICENSED SOIL SCIENTIST LARRY B. THOMPSON, JR. #1267 STATE OF NORTH CAROLINA

COMMENTS:

Updated February 2014

LEGEND

use the following standard abbreviations

LANDSCAPE POSITION	GROUP	SOIL TEXTURE	CONVENTIONAL .1955 LTAR*	LPP .1957 LTAR*	MINERALOGY/ CONSISTENCE	STRUCTURE
CC (Concave Slope) CV (Convex Slope) D (Drainage Way) DS (Debris Slump) FP (Flood Plain) FS (Foot Slope) H (Head Slope) L (Linear Slope) N (Nose Slope) R (Ridge) S (Shoulder Slope) T (Terrace)	I	S (Sand) LS (Loamy Sand)	1.2 - 0.8	0.6 - 0.4	SEXP (Slightly Expansive) EXP (Expansive)	G (Single Grain) M (Massive) CR (Crumb) GR (Granular) SBK (Subangular Blocky) ABK (Angular Blocky) PL (Platy) PR (Prismatic)
	II	SL (Sandy Loam) L (Loam)	0.8 - 0.6	0.4 - 0.3		
	III	Si (Silt) SiCL (Silty Clay Loam) CL (Clay Loam) SCL (Sandy Clay Loam) SiL (Silt Loam)	0.6 - 0.3	0.3 - 0.15		
	IV	SC (Sandy Clay) SiC (Silty Clay) C (Clay)	0.4 - 0.1	0.2 - 0.05		
		O (Organic)	None	None		

MOIST	WET
VFR (Very Friable)	NS (Non-sticky)
FR (Friable)	SS (Slightly Sticky)
FI (Firm)	S (Sticky)
VFI (Very Firm v. Very Sticky)	VS (Very Sticky)
EFI (Extremely Firm)	NP (Non-plastic)
	SP (Slightly Plastic)
	P (Plastic)
	VP (Very Plastic)

*Adjust LTAR due to depth, consistence, structure, soil wetness, landscape, position, wastewater flow and quality.

NOTES

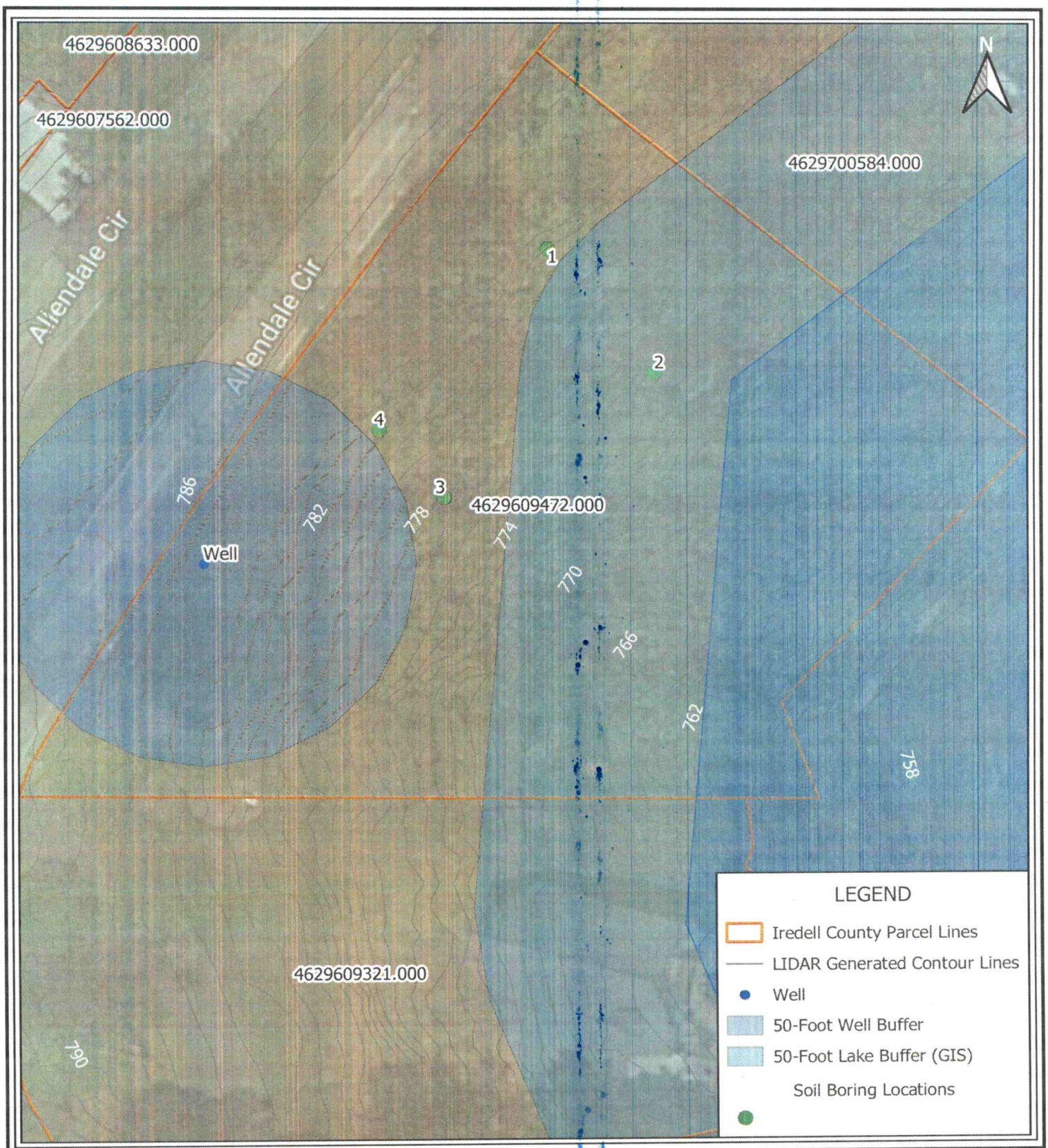
HORIZON DEPTH	In inches below natural soil surface
DEPTH OF FILL	In inches from land surface
RESTRICTIVE HORIZON	Thickness and depth from land surface
SAPROLITE	S(suitable) or U(unsuitable)
SOIL WETNESS	Inches from land surface to free water or inches from land surface to soil colors with chroma 2 or less - record Munsell color chip designation
CLASSIFICATION	S (Suitable), PS (Provisionally Suitable), or U (Unsuitable)

Evaluation of saprolite shall be by pits.

Long-term Acceptance Rate (LTAR): gal/day/ft^2

Show profile locations and other site features (dimensions, reference or benchmark, and North).

SEE FIGURE 1



Thompson Environmental Consulting

Prepared For:

Judy C. Verross

Soil and Site Evaluation

165 Allendale Circle
Troutman, NC 28166

Iredell County

Date: September 2020

Scale: 0 15 30 ft

TEC Job #: 20-127

Figure 1

A PLAT SHOWING

ALLENDALE POINT

