4710-96-1270

231 Sunny Path
S/D: Corp of Guardianship
Lot 3
OSWP-2022-1458

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

ROY COOPER • Governor
KODY H. KINSLEY • Secretary
HELEN WOLSTENHOLME • Interim Deputy Secretary for Health
MARK T. BENTON • Assistant Secretary for Public Health
Division of Public Health

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: 8/12/2022 (Date) by BB (Initials)

PART 1: Notice of Intent to Construct (NOI) - Please check all that apply

☑ Single System or ☐ Multiple Systems

AND

☑ New ☐ Expansion ☐ Relocation of all or part of the Existing System ☐ Relocation of Repair Area

☐ Repair – LHD Permit Number _____ ☐ Repair – EOP/LSS COVID 19/AOWE Permit Number _____

1. Facility Owner's name: (Owner, Company Name, Utility, Partnership, Individual, etc.): James C Taylor

Mailing address: 231 Sunny Path City: Statesville State: NC Zip: 28677

Telephone number: 336-886-7089 336-858-0672 E-mail Address: James taylor@catllc.net

2. Professional Engineer (PE) name: Brett G. Schaefer License number: 036114

Mailing address: 6945 Curlee Ct. City: Charlotte State: NC Zip: 28277

Telephone number: 631-786-4601 E-mail Address: brett@alternativesepticservices.com

3. Licensed Soil Scientist (LSS) name: Steven J. Melin License number: 1254

Mailing address: 15 Lone Coyote Ridge City: Fletcher State: NC Zip: 28732

Telephone number: 828-551-9903 E-mail Address: SJMelin@gmail.com

4. Licensed Geologist (LG) (if applicable) name: _____ License number: _____

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

Telephone number: _____ E-mail Address: _____

5. On-Site Wastewater Contractor name: Brian Grissom License number: 6821

Mailing address: 168 Hwy 274, Ste 155 City: Lake Wylie State: SC Zip: 29710

Telephone number: 803-627-4917 E-mail Address: brian@alternativesepticservices.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): PIN: 4710-76-1270.000
   County Name: Iredell
8. Type of facility: ☑ Place of residence No. Bedrooms: 2 No. Occupants: 4
   ☐ Place of business Basis for flow calculation: _____
   ☐ Place of public assembly Basis for flow calculation: _____
9. Factors that would affect the wastewater load: N/A (Domestic Wastewater)
10. Type and location of proposed wastewater system: Engineered Wastewater Treatment System (Type Vc) located on Sunny Path Lane property Figure 1).
11. Design wastewater flow: 240 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. 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
14. 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
15. Evaluation of geologic and hydrogeologic conditions signed and sealed by a LG is attached ☐ Yes ☑ NA
16. 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, Brett G. Schaefer 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).

Brett G. Schaefer 5/2/22

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, _____ hereby designate _____
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.

_____ _____
Signature of Owner *Date*

Owner self-submittal of NOI:

I, James C Taylor hereby submit this NOI prepared by Brett G Schaefer
Print Name of Owner *Print Name of Licensed PE*

pursuant to G.S. 130A-336.1.

_____ 8-11-2022
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 Engineer Option Permit [G.S. 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 below, 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 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 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 8/16/22 via Email.
Date *Email, FAX, USPS, hand-delivered*

A copy of this NOI and tracking information was sent to the State on 8/16/22 via Email.
Date *Email, FAX, USPS, hand-delivered*

Benjamin A. Botkins Benjamin A Botkins 8/16/22.
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 the PE.

LHD USE ONLY: Initial submittal of request for ATO received: _____ (Date) by _____ (Initials)

Date of Post-construction Conference: _____

Post-construction Conference waived in accordance with G.S. 130A-336.1(j): _____

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 the information in G.S. 130A-336.1(k)(1) and 15A NCAC 18A .1971(f)	☑ Yes	☐ No
2.	Operation and management program and ORC contract, if applicable	☑ Yes	☐ No
3.	Fee (as applicable)	☑ Yes	☐ No
4.	Notarized letter documenting Owner's acceptance of the system from the PE	☑ Yes	☐ No
5.	Owner meets requirements of ownership or control of the system per 15A NCAC 18A .1938(j)	☑ Yes	☐ No
6.	Easement, right of way, or encroachment agreement required per 15A NCAC 18A .1938(j)	☐ Yes	☑ No
7.	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 _____

Attestation by the Owner or the PE for Authorization to Operate

I, Brett G. Schaefer (*Print name of Owner or Professional Engineer*) hereby attest that all items indicated above have been provided to the 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).

Brett G. Schaefer 8/2/2022

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 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 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 1/19/23 (Date) via email (Email, FAX, USPS, Hand-delivered).

Cory Whicker Cory Whl 1/19/23

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 ATO 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.

Alternative Septic Services, LLC

168 HWY 274 #155
Lake Wylie, SC, 29710

August 5, 2022

This agreement provides that a trained and certified technician (and certified NC Subsurface Operator) shall perform routine maintenance for a specified period of one year from the date of signed agreement. Please note that Alternative Septic Services provides two years of free operation upon installation of our drip irrigation systems. The treatment system shall be serviced twice annually, and the following steps will be performed.

Check control panel and ATU for proper function.
Grab samples will be sent to an approved laboratory.
Check filter and clean as needed.
Check and clean air filter. Check air release valves.
Check effluent quality and treatment unit for aeration.
Field flush drain field.

The owner/purchaser is solely responsible for keeping a maintenance program in place with a certified service provider / licensed NC Subsurface Operator. The owner must follow manufacturer's instructions for proper use of the system.

This agreement does not cover the cost of additional service visits (if necessary) or the repair or replacement of component parts not covered under manufactures warranty. Service calls are billed at 135.00 per hour.

The cost of this agreement is 750.00 per year.

This agreement is for 231 Sunny Path Lane Statesville, NC. This agreement is transferable to new homeowners.

Accepted by:

Please return signed agreement to:
Alternative Septic Services LLC
168 Highway 274 #155 Clover, SC 29710

Alternative Septic Services, LLC

August 5, 2022

Mr. Brett Schaefer, PE
6945 Curlee Ct
Charlotte, NC 28277

Mr. Schaefer,

An EOP was obtained from the Iredell County Department of Public Health for a proposed septic system at 231 Sunny Path Lane Statesville, NC. The septic system as set forth in the EOP was installed by Alternative Septic Services, LLC (Brian Grissom #6821) and inspected by Steve Melin on August 5, 2022

WE hereby accept the engineered septic system as installed by Alterative Septic Services, LLC as being completed in accordance with specifications set forth in the EOP documents.

Sincerely,

_____ or _____

State of NORTH CAROLINA
County of IREDELL

I, JONATHAN K CLENDENIN, a Notary for IREDELL County, State of NC,
do hereby certify that JAMES TAYLOR
_____ personally appeared
before me this day and acknowledge the due execution of the foregoing instrument.

Witnessed my hand an official seal, this 22 day of AUGUST, 2022

JONATHAN K CLENDENIN
Notary Public
Iredell Co., North Carolina
My Commission Expires Feb. 19, 2025

_____

Seal

August 2, 2022

Alternative Septic Services, LLC

Re: 231 Sunny Path Lane, Statesville, NC
Alternative Onsite Wastewater Treatment System As-Built

PIN: 4710-76-1270.000

Gentlemen:

Enclosed is the As-built plan for 231 Sunny Path Lane, Statesville, North Carolina as installed by Alternative Septic Services, LLC (NC Certification: 6821) on August 1, 2022. This system was installed as designed.

The drain field was observed to be in the general location as originally designed and using all components from the original design on the south side of the two (2) bedroom residence. The drainfield components meet all horizontal (minimum 10 feet from property lines) and vertical (minimum 12 inches above a restrictive horizon) setbacks as designated by NCDEQ regulations *15A NCAC 18A, Sanitation, Section .1900, Sewage Treatment and Disposal Systems.*

Please note that the as-built location and/or orientation of the wastewater treatment system tanks may vary from the proposed location and/or orientation during construction due to site conditions and building placement. The tanks also adhere to the setbacks (minimum 5 feet from the property line and building) provided by NCDEQ regulations *15A NCAC 18A, Sanitation, Section .1900, Sewage Treatment and Disposal Systems*, regardless of tank orientation.

The as-built plan has been completely analyzed and should function as intended. I recommend final approval.

Sincerely,

Brett G. Schaefer, PE



Alternative Septic Services, LLC

15 LONE COYOTE RIDGE; FLETCHER, NC 28732
EMAIL: SJMELIN@GMAIL.COM CELL: (828) 551-9903

August 5, 2022

Re: 231 Sunny Path Lane Statesville, NC
Alternative Onsite Wastewater Treatment System

Parcel ID #: 4710-76-1270.000

To whom it may concern,

This letter is intended satisfy the requirement that the system at 231 Sunny Path Lane was designed and installed according to recommendations in the Soils Report.

I hereby certify that the system was installed consistent with the Soils Report. This includes installing a Clearstream treatment unit that feeds 600 linear feet of drip irrigation tubing for the 2-bedroom. Please note that the 0.20 LTAR and 18" drip depth were utilized as specified in the Soils Report.

I greatly appreciate your time. Please feel free to contact me if additional information is required.

Kind Regards,

Steven J. Melin

Steven J. Melin, LSS
Alternative Septic Services, LLC

Alternative Septic Services, LLC

168 HWY 274 #155
Lake Wylie, SC, 29710

August 5,2022

Re: 231 Sunny Path Lane Statesville, NC
Alternative Onsite Wastewater Treatment System

Dear Environmntal Health,

This letter is intended satisfy the requirement that the system at Sunny Path Lane was installed according to recommendations in the Engineering and Soil Scientist Report.

I hereby certify that the system was installed consistent with the Engineering and Soil Scientist Report. This included installing a pretreatment (Clear Stream) tank that feeds a total of 600 linear feet of GeoFlow drip irrigation tubing for the 2-bedroom residence

I greatly appreciate your time. Please feel free to contact me if additional information is required.

Kind Regards,



Brian Grissom,
Certified Septic Installer (Level IV) – Certification #6821
Alternative Septic Services
803-627-4917

Alternative Septic Services, LLC

168 HWY 274 #155
Lake Wylie, SC, 29710

August 5, 2022

This agreement provides that a trained and certified technician (and certified NC Subsurface Operator) shall perform routine maintenance for a specified period of one year from the date of signed agreement. Please note that Alternative Septic Services provides two years of free operation upon installation of our drip irrigation systems. The treatment system shall be serviced twice annually, and the following steps will be performed.

Check control panel and ATU for proper function.
Grab samples will be sent to an approved laboratory.
Check filter and clean as needed.
Check and clean air filter. Check air release valves.
Check effluent quality and treatment unit for aeration.
Field flush drain field.

The owner/purchaser is solely responsible for keeping a maintenance program in place with a certified service provider / licensed NC Subsurface Operator. The owner must follow manufacturer's instructions for proper use of the system.

This agreement does not cover the cost of additional service visits (if necessary) or the repair or replacement of component parts not covered under manufactures warranty. Service calls are billed at 135.00 per hour.

The cost of this agreement is 750.00 per year.

This agreement is for 231 Sunny Path Lane Statesville, NC. This agreement is transferable to new homeowners.

Accepted by:

Please return signed agreement to:
Alternative Septic Services LLC
168 Highway 274 #155 Clover, SC 29710

Alternative Septic Services, LLC

168 Highway 274 #155
Clover, SC 29710
803-242-2639

February 15, 2022

To Whom It May Concern:

Brett Schaefer Professional Engineer, Steve Melin Soil Scientist, and Brian Grissom Onsite Wastewat

Contractor/Installer are covered under the liability umbrella policy UL90727799 (see attached).

Please contact us with any questions or concerns.

Thank you,

Sal Vicari

Alternative Septic Services
Sal Vicari
168 Hwy 274 #155
Clover, SC 29710
803-242-2639

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
02/22/2022

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	CONTACT NAME: Holly Parrish	
Correll Insurance Group-Rock Hill 319 Oakland Ave Rock Hill SC 29730	PHONE (A/C, No, Ext): (803) 324-2984	FAX (A/C, No):
	E-MAIL ADDRESS: hparrish@correllinsurance.com	

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A :	Pennsylvania National Mutual Casualty Ins Co	14990
INSURER B :	Accident Fund Insurance Company of America	10166
INSURER C :	National Fire & Marine Insurance Company	20079
INSURER D :		
INSURER E :		
INSURER F :		

INSURED
Alternative Septic Services LLC
168 Highway 274 Suite 155
Clover SC 29710

COVERAGES **CERTIFICATE NUMBER:** 21-22 Master **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 GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:	Y		GL90727799	03/09/2021	03/09/2022	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
A	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [ ] HIRED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] NON-OWNED AUTOS ONLY 19			AU90757292	07/24/2021	07/24/2022	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Underinsured motorist	$ $ $ $ $ 1,000,000
A	[X] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 1,025			UL90727799	03/09/2021	03/09/2022	EACH OCCURRENCE AGGREGATE $	$ 1,000,000 $ 1,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [Y] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	Y	WCV 6186769	04/04/2021	04/04/2022	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
C	Professional Liability			F85108210AEM	07/09/2021	07/09/2022	Each Occurrence Policy Aggregate	$1,000,000 $2,000,000

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

Covered under above listed policies are:
Brett Schaefer - Professional Engineer, Steven Melin - Licensed Soil Scientist, Brian Grissom - On-site Wastewater Contractor

CERTIFICATE HOLDER

North Carolina Public Health
Health and Human Services

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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Drain Field and Drain Line Calculation Sheet

Address: 231 Sunny Path Lane,
Statesville, NC (2 BR House)

Number of Bedrooms 2

Soil Scientist: Alternative Septic Services, LLC

Drain Loading Rate: 0.2

Given Gal Per Day	Soils Report (LR) Loading Rate/SF	GPD/LR=SF	Drain Lines 2 Feet OC SF/2=LF
240	0.2	1200.00	600.00
LF	Emitters 2' OC	# of Emitters	
600.00	2	300.00	
# of Emitters	Emitter Flow (GPH)	GPH	
300.00	0.53	159.00	
GPH	Minutes	GPM (Dosing Rate)	
159.00	60	2.65	
GPD	# of Doses/Day	Gal per Dose	
240	12	20.00	
Gal per Dose	GPM (Dosing Rate)	Run Time in Minutes	PT=Pressure Time 2.79 min.
20.00	2.65	7.55	
Dosing Every 240 Minutes	Run Time-Minutes	Rest Time-Minutes	
240	7.55	232.45	

Calculations for length of drain lines are based on the recommendations of Alternative Septic Services, LLC
Registered Soil Classifier. Recommended flow rate (LR/SF): 0.2
Dosing Rate based on emitter flow rate of 0.53 Gallons per Hour.
Drain field area to be located within GPS Coordinates as noted on drawing.
All water from roofs, roads, and other impervious areas must be diverted away from the drain field area.

During construction activities: secure drain field area to prevent any manipulation of soil.





ane
VC

Wastewater Treatment System As-Built

30 15 0 15 30

SCALE
1" = 30

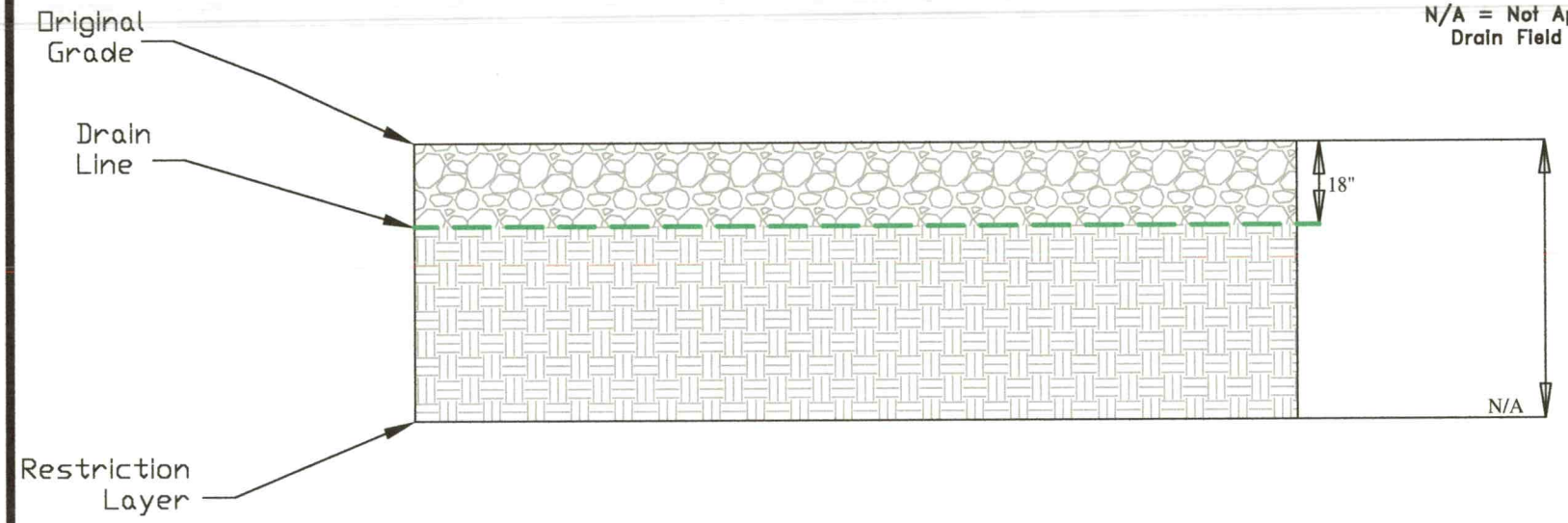
Legend

Drain Line

Backfill

Native Soil

N/A = Not Applicable in Drain Field Location



General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

NORTH CAROLINA PROFESSIONAL SEAL 036114 ENGINEER BRETT G. SCHAEFER

Brett G. Schaefer

PROJECT:	CLIENT:	TITLE:		
231 Sunny Path Lane Statesville, NC		WWT Cross Section	DRAWN BY: BS	DESIGNED BY: BS
			SCALE: N.T.S.	DATE: 5/2/22
				FIGURE NO.: 2

May 2, 2022

Re: 231 Sunny Path Lane, Statesville, NC
Alternative Onsite Wastewater Treatment System

PIN: 4710-76-1270.000

Gentlemen:

As requested, I, Brett Schaefer, designing engineer for Alternative Septic Services, LLC have utilized the wastewater treatment system specifications and calculations supplied by Clearstream Wastewater Systems, Inc. for the proposed alternative onsite wastewater system for the residence located at the above referenced site. Based on the data collected from the soil classifications performed by others and our understanding of the pre-engineered system, I, Brett Schaefer, designing engineer for Alternative Septic Services, LLC, contend that the proposed systems will function satisfactorily and in accordance with the requirements of 15A NCAC 18A – Sanitation; Section .1900 – Sewage Treatment and Disposal Systems.

Included in **Attachment I** is the Onsite Soil and Site Evaluation Report, submitted by Alternative Septic Services, LLC., which summarizes the data, collected during the site visit on April 18, 2022. The proposed drain field is to be in the vicinity of the GPS coordinates shown on the attached drawing (**Figure 1**). Soil design parameters were primarily based on data collected from the soil borings. The drain field design is based on the given soils report and must be located within the GPS coordinates.

Included in **Attachment II** are the calculation worksheet and the Proposed WWT System Layout Map (**Figure 1** & **Figure 2**).

The following design specifications are based on a proposed wastewater treatment system for a two (2) bedroom extension at the current residence with 240 gallons per day (GPD) flow rate, a 0.20 GPD/SF loading rate for the drain field and the repair area. A minimum 1,200 ft^2 drain field and a minimum 1,200 ft^2 repair area shall be in the areas represented by soil borings A1, A2, and A3 (**Figure 1**). The lines shall be installed 18 inches below grade within the drain field and within the repair area (if the repair area is necessary).

- Please review and adhere to the *On-site Soil and Site Evaluation* found in **Attachment I** as special care is required to maintain drain field integrity and for additional construction notes for this site.

The drain field shall be shaped to shed rainwater and be free of low spots. In addition, all water from roofs, driveways and other impervious areas must be diverted away from the drain field. Irrigation systems shall not be installed within the drain field. The system shall consist of a 500NU ATU wastewater treatment system. The pump tank shall contain the 20EB Blaster Pump which shall be sufficient to supply the drain lines with treated water. Please note the location and orientation of the 500NU ATU may vary due to construction and site limitations. Also note that the engineer is responsible for supervising construction and inspection (in person or by Responsible Charge), and the preparation of as-built plans of actual installation. The system shall not be installed in wetlands.

Included in **Attachment III** are the Design, Installation, Maintenance and Owner's Manual.

This septic system must be installed and maintained by Alternative Septic Services, LLC (NCDEQ License Pending). Alternative Septic Services, LLC is a certified Clearstream Wastewater Systems, Inc. and Geoflow installer and has met the requirements set by both manufacturers. It is required that the Property Owner sign a contract agreement with Alternative Septic Services, LLC as operator of this system. System maintenance inspections will require four (4) inspections the first year and two (2) inspections per year thereafter for the life of the onsite wastewater treatment system. This contract must be agreed and signed before system installation begins.

If the contract between the Property Owner and Alternative Septic Services, LLC is dissolved, a new contract will be required by the Property Owner with an operator that is trained and certified by Clearstream Wastewater Systems, Inc. and Geoflow, Inc.

If you have any questions or require additional information, please feel free to contact Alternative Septic Services, LLC.

Sincerely,

Brett G. Schaefer, PE



Attachment I

Soils Report

Alternative Septic Services, LLC

15 LONE COYOTE RIDGE; FLETCHER, NC 28732
EMAIL: SJMELIN@GMAIL.COM CELL: (828) 551-9903

ON-SITE SOIL AND SITE EVALUATION

231 Sunny Path Lane
0.56-Acre Tract
Iredell County, North Carolina
Parcel ID# 4710-76-1270.000
2-Bedroom (240 GPD)

Prepared for:

Prepared by:
Alterative Septic Services



Steven J. Melin #1254

Steven J. Melin, LSS

April 18, 2022

Alternative Septic Services, LLC

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EMAIL: SJMELIN@GMAIL.COM CELL: (828) 551-9903

231 Sunny Path Lane (0.56-Acre Tract) **04-18-2022**
PIN# 4710-76-1270.000 (Iredell County, NC)
Saprolite System: No

Onsite Wastewater Septic System Overview:

The following report has been prepared by Alternative Septic Services (Steve Melin, LSS #1254) for a 0.56-acre lot at 231 Sunny Path Lane in Statesville (Iredell County), NC. Please note that a 2-bedroom house is proposed (240 GPD). The following report prepared is intended to be permitted under the privatization rules. Please note that the report / application needs to be submitted by a professional engineer (PE).

Application Type:	NOI (EOP) (2-BDR)					
Number of Bedrooms:	Proposed Septic System	**GPD**	**Soil Group**	**Soil Texture**	**LTAR**	**Linear Feet Required Calculation (in Square and Linear Feet)**
Initial Septic System:	Aerobic Drip Irrigation	240	III	Sandy Clay Loam	0.20 drip LTAR	240 gpd / 0.20 gpd/ft^2 = 1,200 ft^2 or 600 linear feet of drip tubing 2' off center (See calculations below)
Repair Septic System:	Aerobic Drip Irrigation	240	III	Sandy Clay Loam	0.20 drip LTAR	240 gpd / 0.20 gpd/ft^2 = 1,200 ft^2 or 600 linear feet of drip tubing 2' off center (See calculations below)
Easement Required:	No					

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Onsite Wastewater Septic System Configuration and Recommendations:

The following recommendations are proposed a 0.56-acre lot at 231 Sunny Path Lane in Statesville (Iredell County), NC. The proposed system design/layout is for a two-bedroom house. The septic area has been evaluated and determined to contain Group III soils (the most restrictive texture being sandy clay loam at the drip tubing depths). A long-term acceptance rate (LTAR) of 0.20 has been assigned to these soils for aerobic drip irrigation at an 18" depth (below any fill layers) (*See attached soil descriptions).*

It is recommended to utilize an aerobic drip irrigation type system for the septic drainfield. The (initial) septic system will require 600 linear feet of drip tubing to accommodate the 2-bedroom septic system. The recommended drip tubing depth is 18 inches (on contour). Please note that engineering plans will be required for the tank(s) and distribution to the drainfield. The square and linear footage required for installation of this system is illustrated below.

2-bedroom home x 120 gallon per bedroom per day = 240 gallons per day (gpd)
Group III, Sandy Clay Loam, 0.20 gallons per square foot per day (Drip LTAR)
Square Footage required: 240 gpd / 0.20 LTAR = 1,200 square feet or 600 linear feet 2' o/c
Note: Not a Saprolite System

It is recommended to utilize an aerobic drip irrigation type system for the repair septic drainfield. The (repair) septic system will require 600 linear feet of drip tubing to accommodate the 2-bedroom septic system. The recommended drip tubing depth is 18 inches (on contour). The square and linear footage required for installation of this system is illustrated below.

2-bedroom home x 120 gallon per bedroom per day = 240 gallons per day (gpd)
Group III, Sandy Clay Loam, 0.20 gallons per square foot per day (Drip LTAR)
Square Footage required: 240 gpd / 0.20 LTAR = 1,200 square feet or 600 linear feet 2' o/c
Note: Not a Saprolite System

Alternative Septic Services, LLC

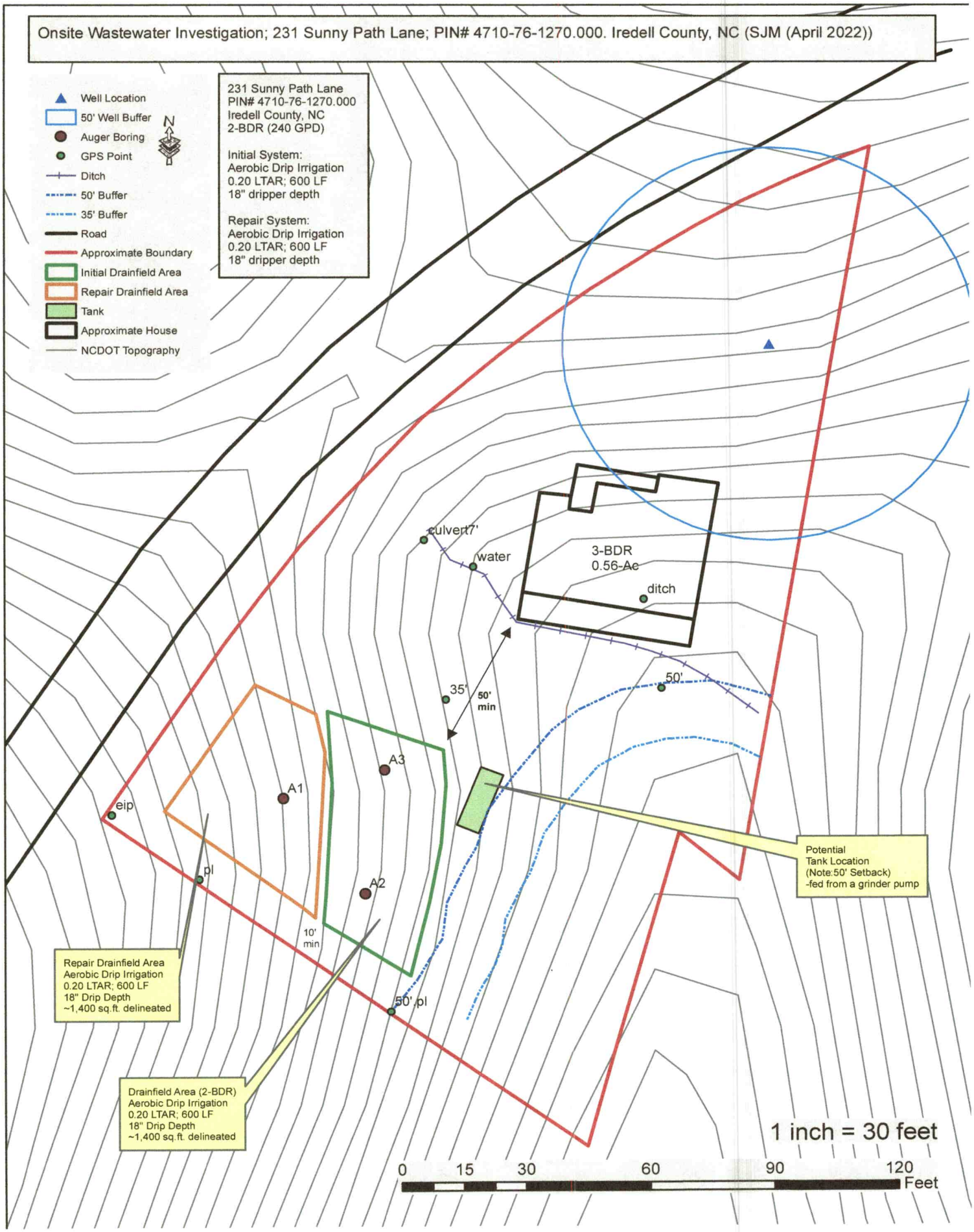
15 LONE COYOTE RIDGE; FLETCHER, NC 28732
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The proposed septic system area has been delineated on the attached map. It is recommended/required to utilize 600 linear feet of drip material for the septic drainfield. *(See attached site plan for detail.)* It is also recommended to delineate the system again prior to installation.

Onsite Wastewater Septic System Setbacks (Buffers) and Site Recommendations:

The following items are recommended to preserve the integrity of the proposed site and surrounding area.

1. It is recommended to encase all septic system supply lines where they cross roads, drives and/or power lines *(pursuant to Laws and Rules for Sewage Treatment, and Disposal Systems 15A NCAC 18A .11,200)*
2. It is recommended to divert all stormwater runoff away from all proposed septic areas.
3. Engineering Plans will be required for the actual permit.
4. NSF-40 Pretreatment (or higher) is recommended.
5. The proposed septic system designs/layouts are based on dodging large trees or other obstacles that may hinder the installation or operation of the septic system.
6. The proposed onsite wastewater system is based off of theoretical calculations based on data obtained at the site. Actual system performance is not guaranteed.
7. The proposed initial septic system and repair system must maintain a setback (Buffer), specified by North Carolina Department of Environment and Natural Resources (NCDENR), including: 5' horizontal from the house and all foundations, 50' horizontal from any surface water, 100' horizontal minimum from all wells (can be reduced to 50' under circumstances), 5' horizontal from all property lines and water lines, 10' horizontal from any other septic system (except repair) and 8' horizontal from cut banks (unless filled and compacted, 5' horizontal setback).


Onsite Wastewater Investigation; 231 Sunny Path Lane; PIN# 4710-76-1270.000. Iredell County, NC (SJM (April 2022))
Well Location
50' Well Buffer
Auger Boring
GPS Point
Ditch
50' Buffer
35' Buffer
Road
Approximate Boundary
Initial Drainfield Area
Repair Drainfield Area
Tank
Approximate House
NCDOT Topography
N
231 Sunny Path Lane
PIN# 4710-76-1270.000
Iredell County, NC
2-BDR (240 GPD)
Initial System:
Aerobic Drip Irrigation
0.20 LTAR; 600 LF
18" dripper depth
Repair System:
Aerobic Drip Irrigation
0.20 LTAR; 600 LF
18" dripper depth
culvert7'
water
3-BDR
0.56-Ac
ditch
35'
50' min
50'
A1
A2
A3
eip
pl
10' min
50' pl
Potential
Tank Location
(Note:50' Setback)
-fed from a grinder pump
Repair Drainfield Area
Aerobic Drip Irrigation
0.20 LTAR; 600 LF
18" Drip Depth
~1,400 sq.ft. delineated
Drainfield Area (2-BDR)
Aerobic Drip Irrigation
0.20 LTAR; 600 LF
18" Drip Depth
~1,400 sq.ft. delineated
1 inch = 30 feet
0 15 30 60 90 120
Feet

Alternative Septic Services, LLC

15 Lone Coyote Ridge
Fletcher, NC 28732

231 Sunny Path Lane
PIN# 4710-76-1270.000 (Iredell County)
2-BDR (240 GPD)
Saprolite System: No

4/18/2022

Septic System Calculation Worksheet

Initial System = Aerobic Drip Irrigation
Recommended Drip Tubing Depth: 18"

Gal / Day	Trench Width (Inches)	Trench Equivalency (Feet)	Soil Depth on 0% Slope
240			30

Slope	Auger#	Suitable Soil Depth (in.)	Total Suitable Depth/ Sap. Depth (in.)	Soil Needed (slope adjusted) (in.)	[1] Total Depth of Saprolite Required (2:1 ratio) factoring Soil Depth (in.)	Fill Material Required (in.)	Morphological Based Field LTAR
42%	A1	32	32	30.0	N/A	0	0.2
47%	A2	32	32	30.0	N/A	0	0.2
40%	A3	32	32	30.0	N/A	0	0.2
					LTAR Utilized		**0.20**
					Linear Feet Required		**600**

Repair System = Aerobic Drip Irrigation
Recommended Drip Tubing Depth: 18"

Gal / Day	Trench Width (Inches)	Trench Equivalency (Feet)	Soil Depth on 0% Slope
240			30

Slope	Auger#	Suitable Soil Depth (in.)	Total Suitable Depth/ Sap. Depth (in.)	Soil Needed (slope adjusted) (in.)	[1] Total Depth of Saprolite Required (2:1 ratio) factoring Soil Depth (in.)	Fill Material Required (in.)	Morphological Based Field LTAR
42%	A1	32	32	30.0	N/A	0	0.2
47%	A2	32	32	30.0	N/A	0	0.2
40%	A3	32	32	30.0	N/A	0	0.2
					LTAR Utilized		**0.20**
					Linear Feet Required		**600**

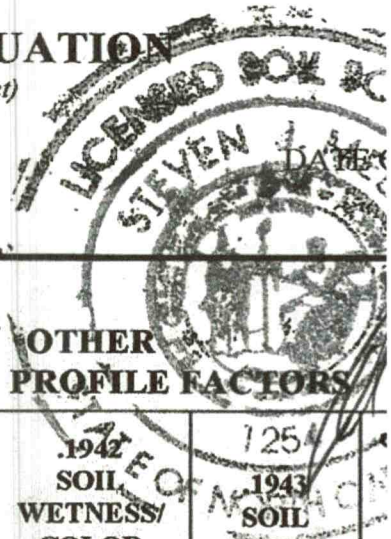
[1] [(soil depth needed-soil depth) x 2] + Soil depth = sap. Depth needed.
Above equation only to be used if the difference in soil depth needed and actual soil depth present = 12" or less

SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

231 Sunny
Path Loam



DATE

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	OTHER PROFILE FACTORS .1943 SOIL DEPTH
1	loam 42%	0-10	fill			
		Ap 10-18	lmgr /sbk	FR	10YR 3/2	
		Bt 18-32	lmsbk /gsbk	FR/ss/sp	7.5YR 4/4	>32
2	loam 47%	Bt 0-11	2msbk /sbk	fi	2.5YR 3/4	
		BC 11-32	2msbk /scbk	FR/ss/sp	5YR 4/6	>32
3	loam 40%	Bt 0-10	lmsbk /sbk	FR	5YR 5/4	
		B 10-32	lmfsbk /sbk	FR/ss/sp	7.5YR 5/4 mm	>32
4						

Attachment II

Calculation Worksheets

Proposed Wastewater System Layout

Drain Field and Drain Line Calculation Sheet

Address: 231 Sunny Path Lane,
Statesville, NC (2 BR House)

Number of Bedrooms 2

Soil Scientist: Alternative Septic Services, LLC

Drain Loading Rate: 0.2

Given Gal Per Day	Soils Report (LR) Loading Rate/SF	GPD/LR=SF	Drain Lines 2 Feet OC SF/2=LF
240	0.2	1200.00	600.00
LF	**Emitters 2' OC**	**# of Emitters**	
600.00	2	300.00	
# of Emitters	**Emitter Flow (GPH)**	**GPH**	
300.00	0.53	159.00	
GPH	**Minutes**	**GPM (Dosing Rate)**	
159.00	60	2.65	
GPD	**# of Doses/Day**	**Gal per Dose**	
240	12	20.00	
Gal per Dose	**GPM (Dosing Rate)**	**Run Time in Minutes**	**PT=Pressure Time 2.79 min.**
20.00	2.65	7.55	
Dosing Every 240 Minutes	**Run Time-Minutes**	**Rest Time-Minutes**	
240	7.55	232.45	

Calculations for length of drain lines are based on the recommendations of Alternative Septic Services, LLC
Registered Soil Classifier. Recommended flow rate (LR/SF): 0.2
Dosing Rate based on emitter flow rate of 0.53 Gallons per Hour.
Drain field area to be located within GPS Coordinates as noted on drawing.
All water from roofs, roads, and other impervious areas must be diverted away from the drain field area.

During construction activities: secure drain field area to prevent any manipulation of soil.



GEOFLOW SUBSURFACE DRIP

Field Flow

Job Description:	*231 Sunny Path Lane, Statesville, NC (2 BR House)*
Contact:	*Alternative Septic Services, LLC*
Prepared by:	*Brett G. Schaefer, PE*
Date:	*May 2, 2022*

Please fill in the shaded areas and drop down menus:
This spreadsheet serves as a guide, and is not a complete hydraulic design.

Worksheet 1- Field Flow

Total field

	Total Quantity of effluent to be disposed per day	240	gallons / day
	Hydraulic loading rate	0.2	gallons / sq.ft. / day
	Minimum Dispersal Field Area	1,200	square ft.
	Total Dispersal Field Area	1,200	square ft.

Flow per zone

Number of Zones		**1**	zone(s)
	Dispersal area per zone	1,200	square ft.
	Choose line spacing between WASTEFLOW lines	2	ft.
	Choose emitter spacing between WASTEFLOW emitters	2	ft.
	Total linear ft.per zone (minimum required)	600	ft. per zone
	Total number of emitters per zone	300	emitters per zone
	Select Wasteflow dripline (16mm)	Wasteflow PC - 1/2gph	dripline
	Pressure at the beginning of the dripfield	40	psi
	Feet of Head at the beginning of the dripfield	92.4	ft.
	What is the flow rate per emitter in gph?	0.53	gph
	Dose flow per zone	**2.65**	**gpm**

Note: A few States or Counties require additional flow for flushing. Please check your local regulation
Flush velocity calculation below is for PC dripline. Classic dripline requires less flow to flush than PC.
Please refer to Geoflow's spreadsheet "Design Flow and Flush Curves" at www.geoflow.com or call 800

	If required, choose flush velocity	0.5	ft/sec
	How many lines of WASTEFLOW per zone?	6	lines
	Fill in the *actual* length of longest dripline lateral	100	ft.
	Flush flow required at the end of each dripline	0.37	gpm
	Total Flow required to achieve flushing velocity	2.22	gpm
	Total Flow per zone- worst case scenario	**4.87**	**gpm**

GEOFLOW SUBSURFACE DRIP

Field Flow

Job Description:	*231 Sunny Path Lane, Statesville, NC (2 BR House)*
Contact:	*Alternative Septic Services, LLC*
Prepared by:	*Brett G. Schaefer, PE*
Date:	*May 2, 2022*

Please fill in the shaded areas and drop down menus:
This spreadsheet serves as a guide, and is not a complete hydraulic design.

Select Filters and zone valves

	Select Filter Type	Vortex Screen Filter	
	Recommended Filter (item no.)	AP4E-1F	1" Screen Filter 0-20gpm
	Select Zone Valve Type	Electric Solenoid	
	Recommended Zone Valve (item no.)	0	0

Dosing

	Number of doses per day / zone:	12	doses
	Timer ON. Pump run time per dose/zone:	7.33	mins:secs
	Timer OFF. Pump off time between doses	1:52	hrs:mins
	Per Zone - Pump run time per day/zone:	1:30	hrs:mins
	All Zones - Number of doses per day / all zones	12	doses / day
	Allow time for field to pressurize	0:00:30	hrs:mins:secs
	Filter flush timer	0:00:20	hrs:mins:secs
	Drain timer	0:05:00	hrs:mins:secs
	Field flush timer	0:01:00	hrs:mins:secs
	Field flush counter	3	cycles
	Time required to complete all functions per day	**2:52**	hrs:mins
Dose volume per zone		20	gallons per dose

Allow time in the day for controller to have pressurization and drainage time.

GEOFLOW SUBSURFACE DRIP

Pump Size

Job Description:	231 Sunny Path Lane, Statesville, NC (2 BR House)
Contact:	Alternative Septic Services, LLC
Prepared by:	Brett G. Schaefer, PE
Date:	5/2/2022

Pressure losses may be grossly overstated, particularly if designing with WASTEFLOW Classic
The letters on the diagram(right) match the letters in section 2 below.

Worksheet - Pump Sizing

Section 1 - Summary from Worksheet 1

Flow required to dose field	2.65	0.2
Flow required to flush field	2.22	gpm
Flow required to dose & flush field	4.87	gpm
Filter		AP4E-1F
No. of Zones	1	zones
Zone valve		-
Dripline		Wasteflow PC - 1/2gph
Dripline longest lateral	100.00	ft.

Section 2	Ft of head	Pressure
A. Flush line - Losses through return line		
Size of flush line in inches	.5 inch	
Length of return line	200 ft.	
Equivalent length of fittings	5 ft.	
Elevation change. (if downhill enter 0)	**0** ft.	
Pressure loss in 100 ft of pipe	14.26 ft.	6.18 psi
Total pressure loss from end of dripline to return tank	*29.2 ft.*	12.66 psi
B. Dripline - Losses through Wasteflow dripline		
Length of longest dripline lateral	**100** ft.	
Minimum dosing pressure required at end of dripline	23.10 ft.	10.00 psi
Loss through dripline during flushing	2.59 ft.	1.12 psi
Total minimum required dripline pressure	*25.69 ft.*	1.12 *psi*

A+B. Minimum Pressure required at beginning of dripfield				
CALCULATED pressure required at beginning of dripfield	*54.93*	*ft.*	23.78	*psi*
SPECIFIED pressure at beginning of dripfield (from worksht 1)	**92.4**	**ft.**	40.00	*psi*
Great! SPECIFIED Pressure is greater than CALCULATED Pressure requirement. Go to next step				
C. Drip components - Losses through headworks				
Filter	2.3	ft.	1.00	psi
Zone valve pressure loss (not in diagram)	-	ft.	-	psi
Flow meter pressure loss (not in diagram)		ft.	-	psi
Other pressure losses		ft.	-	psi
Total loss through drip components	**2.31**	**ft.**	1.00	psi
D. Supply line - Minimum Pressure head required to get from pump tank to top of dripfield				
Size of supply line in inches	.75	inch		
Length of supply line	0	ft.		
Equivalent length of fittings	5	ft.		
Height from pump to tank outlet	5	ft.		
Elevation change. (if downhill enter 0)	0	ft.		
Pressure loss/gain in 100 ft. of pipe	8.50	ft.	3.68	psi
Total gain or loss from pump to field	***5.4***	***ft.***	2.35	psi
Total dynamic head	**100.1**	**ft.**	43.35	*psi*
Pump capacity *	**4.9**	**gpm**		
Pump Model Number				
Volts / Hp / phase				

* Note: Pump capacity flow assumes flow in dripline does not change during a dose cycle. With Wasteflow Classic this can be grossly over stated For more accurate flows please see Geoflow's **Flushing worksheet**.

If you need assistance designing for this additional flow, please

a. See Geoflow flushing worksheet or

b. Contact Geoflow at 800-828-3388.

Attachment III

Design, Installation, Maintenance

& Owner's Manual

Contact Iredell County if you wish to renew these documents

IREDELL COUNTY HEALTH DEPARTMENT
JANE HINSON, RN BSN MS
HEALTH DIRECTOR

Public Health
Prevent. Promote. Protect.
Iredell County Health Department

Voluntary Relinquishment of Administrative Appeal Rights
(Completion of Form by Property Owner)

9/ _____ (Date)

Owner: _____
Address: _____
_____

Subject: Voluntary Relinquishment of Administrative Appeal Rights

(specify Permit ID/owner's name/property location/site legal description):
231 Sunny Path Lane
Cape of Guardianship Lot 3
AP. 313205

I, _____, voluntarily relinquish my rights to pursue a formal appeal through the Office of
(print full name)

Administrative Hearings pursuant to NC General Statute 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B for the above referenced permit in order for the authorized agent/local health department to issue the applicable permit (new IP and/or CA) for the site. I understand by completing this form the previous permit issued on 3-18-21 (date) for a system

TS-1 Drip Perc Rite IWWS-1993-1-R7AIVB
(system name)

for the site will be "revoked" immediately by the authorized agent/local health department.

Signature of Property Owner

Central Office
318 Turnersburg Hwy
Statesville, NC 28625
704 878-5300

Mooresville Office
610 E. Center Avenue
Mooresville, NC 28115
704 660-3625

Environmental Health
349 N. Center Street
Statesville, NC 28677
704 878-5305 x3456

http://www.co.iredell.nc.us/Departments/Health/