RECEIVED JUL 10 2019

Paid $150.00
#246480

477 Stillwater - Cl T S17 Lot 68

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: 7/10/19 (Date) by RHS (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.): Echol Marshall - Owner

Mailing address: 4719 Sylvan Road City: Richmond State: VA. Zip: 23225

Telephone number: 804-398-8209 E-mail Address: echol.marshall@gmail.com

2. Professional Engineer (PE) name: Michael Lash, PE. License number: NC.#14265

Mailing address: 1104 Cindy Carr Drive City: Matthews State: NC. Zip: 28105

Telephone number: 704-847-3031 E-mail Address: mikel@lashengineering.com

3. Licensed Soil Scientist (LSS) name: Kathleen Saunders, The Oak Group, PA. License number: #1313

Mailing address: 121 Holt Lane City: Moorseville State: NC. Zip: 28117

Telephone number: 704-578-4951 E-mail Address: KathleenMSaunders@gmail.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: 1st Choice Septic & Env Services License number: #1879i

Mailing address: 3661 Eaker Road City: Cherryville State: NC. Zip: 28021

Telephone number: 704-447-5500 E-mail Address: info@1stchoiceservicenc.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

LHD Reference: 246480

7. Property location (physical address, tax parcel identification number or subdivision lot, block number of the property to be permitted): 477 Stillwater Road, Troutman, NC.

   County Name: Iredell

8. Type of facility: [X] Place of residence No. Bedrooms: 5 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: Standard Residential Wastewater, Summer Home

10. Type, location, and classification (per Rule .1961) of wastewater system: Septic & AquaSafe TSI treatment using the existing drain field and adding T&J Panels. Treatment & Disposal in rear of house. Type Vc

11. Design wastewater flow: 600 gpd *(For flow > 3,000 gpd and industrial process, duplicate plans shall be sent to the State.)*
    Design wastewater strength: [X] domestic [ ] high strength [ ] industrial process

12. A plat as defined in G.S. 130A 334(7a) is attached: [X] Yes [ ] No

13. Owner meets requirements of ownership or control of the system per 15A NCAC 18A .1938(j): [X] Yes [ ] No

14. Easement, right of way or encroachment agreement required per 15A NCAC 18A .1938(j): [ ] Yes [X] 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 [X] 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: [X] Yes [ ] No
    This is a saprolite system. [ ] Yes [X] 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: [X] Yes [ ] No

18. Evaluation of geologic and hydrogeologic conditions signed and sealed by a LG is attached [ ] Yes [X] NA

19. Proposed landscape, site, drainage, or soil modifications are attached: [X] Yes [ ] NA

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

I, Michael Lash, 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).

Signature of Licensed Professional Engineer 6/28/19 *Date*

NORTH CAROLINA PROFESSIONAL SEAL 14265 ENGINEER MICHAEL W. LASH

LHD Reference: 246480

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, ECHOL MARSHALL FOR STILLWATER 477 LLC hereby designate Michael Lash, 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.

[signature] 6-28-2019

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

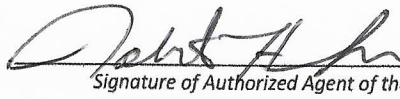
_____ _____ _____
Print Name of Authorized Agent of the LHD *Signature of Authorized Agent of the LHD* *Date*

☑ 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 7/12/19 via Email.
Date *Email, FAX, USPS, hand-delivered*

A copy of this NOI and tracking information was sent to the State on 7/12/19 via Email.
Date *Email, FAX, USPS, hand-delivered*

Robert Heath Snow  07/12/19
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*

LHD Reference: 246480

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: _____ (Date) by _____ (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 — [X] Yes [ ] No
   b. Drawings, specifications, plans — [X] Yes [ ] No
   c. Reports on special inspections and final inspection — [X] Yes [ ] No
   d. Management Program manual — [X] Yes [ ] No
   e. On-site Wastewater Contractor's signed statement — [X] Yes [ ] No
   f. Signed and sealed statement pursuant to 15A NCAC 18A .1938(h) — [X] Yes [ ] No
2. Fee (as applicable) — [X] Yes [ ] No
3. Notarized letter documenting Owner's acceptance of the system from the PE — [X] Yes [ ] No

Attestation by the Owner or the PE for Authorization to Operate

I, Michael Lash, 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).

NORTH CAROLINA PROFESSIONAL SEAL 14265 ENGINEER MICHAEL W. LASH

Signature of Owner or Professional Engineer — 10/29/19 *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*

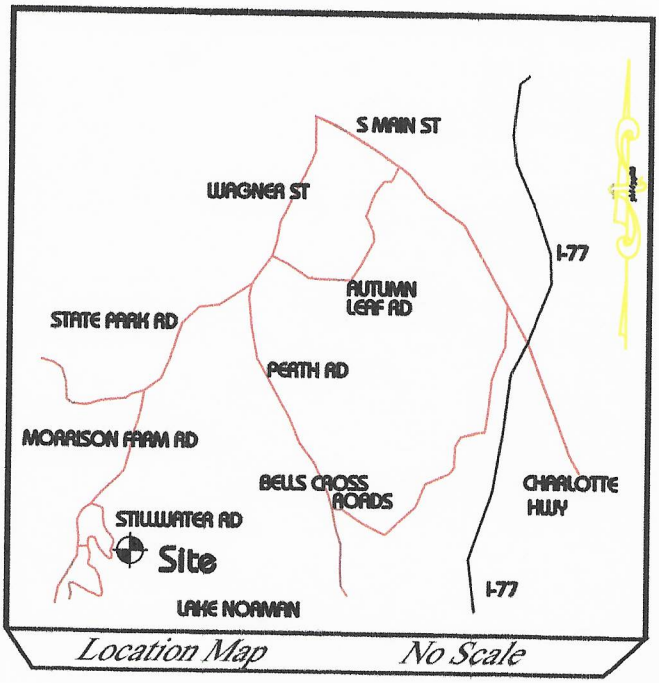
[ ] COMPLETE

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 _____ (Date) via _____ (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.



Location Map *No Scale*

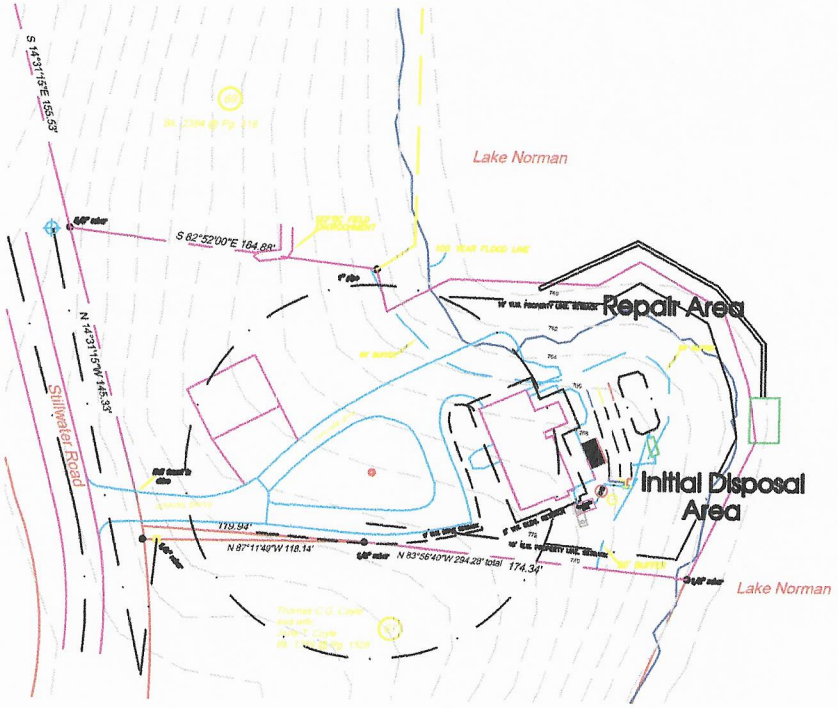
ECHOL MARSHAL
4719 SYLVAN RD.
RICHMOND, VA
23225

North

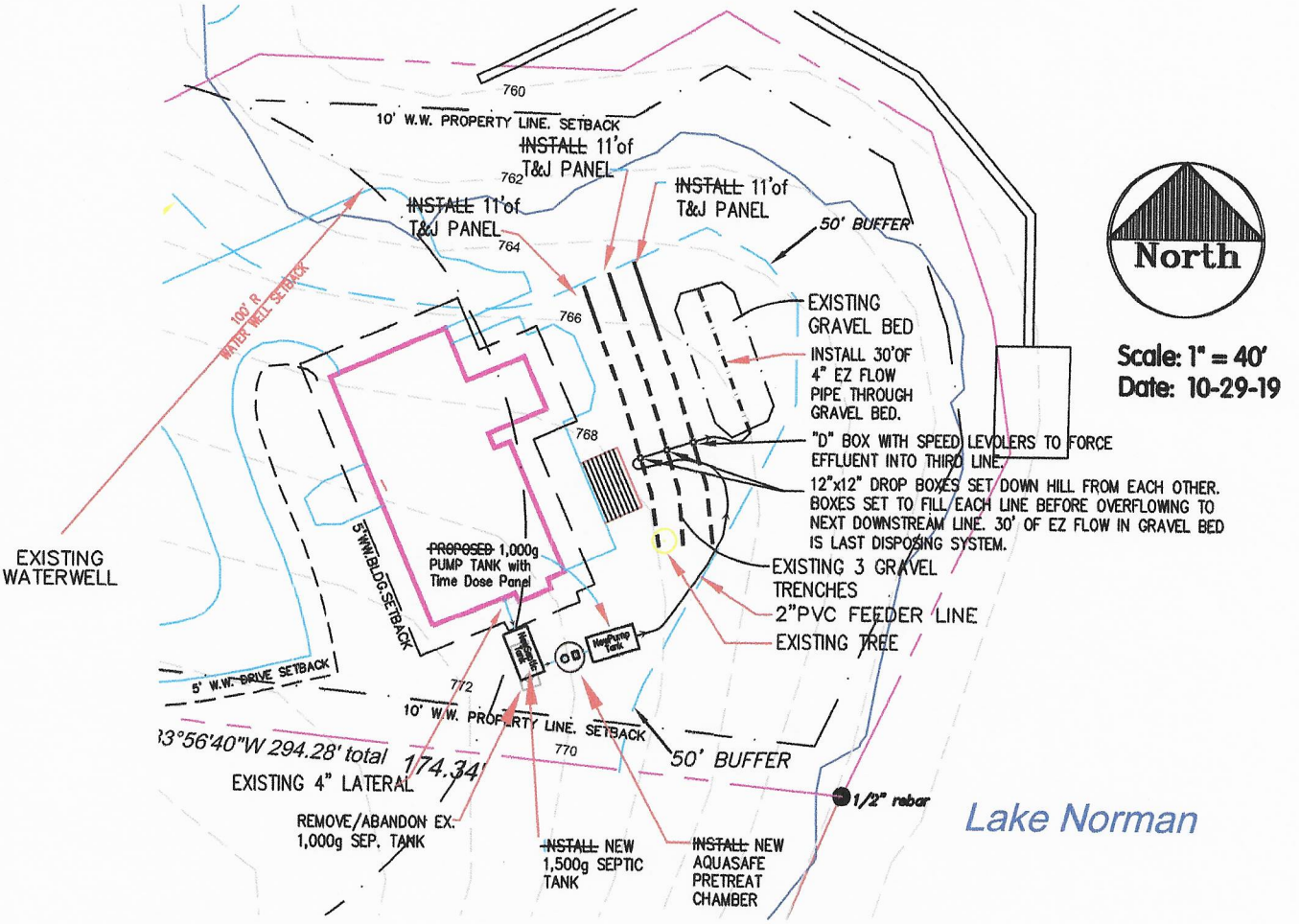
Wastewater Facility for:

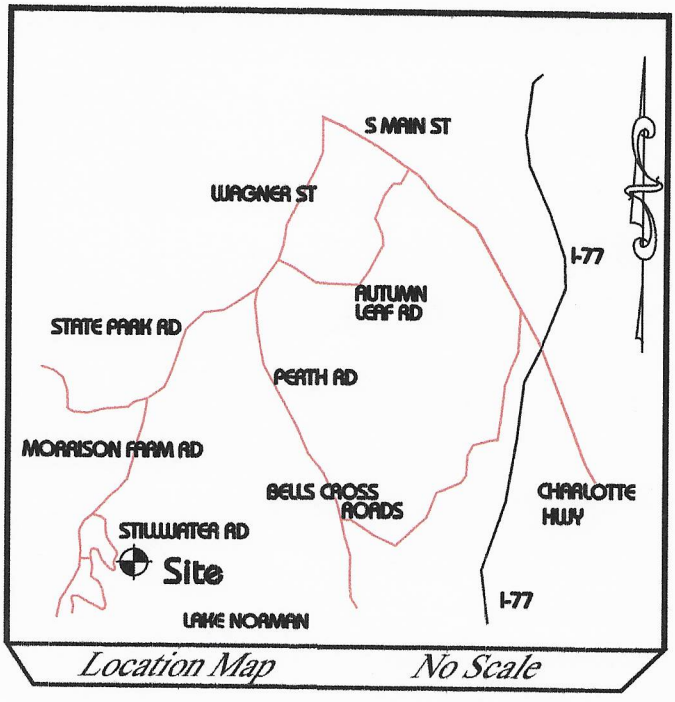
ECHOL MARSHAL
477 STILLWATER RD.
TROUTMAN, NC 28166
IREDELL COUNTY, NC.

Scale: 1" = 100'
Date: 7-3-19



LASH ENGINEERING
Consulting Civil Engineer/Planner
1104 Cindy Carr Drive
Matthews, N.C. 28105
Phone: 704/847-3031
email: mikel@lashengineering.com
Firm License #C-2433





ASBUILT

Wastewater Facility for:

ECHOL MARSHAL
477 STILLWATER RD.
TROUTMAN, NC 28166
IREDELL COUNTY, NC.

LASH ENGINEERING
Consulting Civil Engineer/Planner
1104 Cindy Carr Drive
Matthews, N.C. 28105
Phone: 704/847-3031
email: mikel@lashengineering.com
Firm License #C-2433

COPY

Lash Engineering, Inc.
Civil/Consulting/Wastewater/Planning
1104 Cindy Carr Drive
Matthews, NC 28105
Phone: 704-847-3031
mikel@LashEngineering.com

Lash Engineering, Inc.

October 29, 2019

Echol Marshall
477 Stillwater Road
Troutman, NC. 28166
Iredell County, NC.

Re: Contractor/Installer Responsibility

This installer of the wastewater system was chosen for this project because of his experience and performance on other wastewater pre-treat drip-tubing projects. He has the necessary credentials with the State and has completed similar projects in the past. He was contacted and agreed to review the plans. We discussed the project and he prepared an estimate/proposal for the project and was chosen as the contractor/installer for the project and agreed to be listed on the EOP form. He thereby submitted the required General Liability Insurance requirements as part of the EOP process.

In relation to the project, there are no special inspections necessary that require an acknowledgment.

His contact information is:

First Choice Service, Inc.
Jon Watts
3661 Eaker Road
Cherryville, NC 28021
info@1stchoiceservicenc.com
704-995-2164

If there are any questions, then please do not hesitate to call.

Thanks,
Michael Lash, P.E.

Lash Engineering, Inc.
Civil/Consulting/Wastewater/Planning
1104 Cindy Carr Drive
Matthews, NC 28105
Phone: 704-847-3031
mikel@LashEngineering.com

Lash Engineering, Inc.

October 29, 2019

Echol Marshall
477 Stillwater Road
Troutman, NC. 28166
Iredell County, NC.

Final Submittal Letter for Owner to Health Department

The following is a list of documents that are required for submittal to the Health Department from the Owner or their representative.

Owner shall submit to the Health Department:

1. A copy of the Engineer's Report.
2. The signed and notarized letter stating receipt of Engineer's Report.
3. There is no fee required for the Certification process.

The address & contact information for the Health Department is below:

Statesville Environmental Health
349 N Center Street
Statesville, NC 28677

Contact:
Heath Snow
Iredell County Environmental Health - Statesville Office
704-878-5305
Fax: 704-871-3483

The Health Department has 15 calendar days to verify that the information has been submitted in conformance with the EOP process. Upon verification, the Health Department will issue the Owner a letter of confirmation that states the documents and information contained herein have been received and that the wastewater system may operate in accordance with rules adopted by the Commission. This will complete the EOP wastewater permitting process.

If there are any questions, then please do not hesitate to call.

Thanks,
Michael Lash, PE.

Lash Engineering, Inc.

Lash Engineering, Inc.
Civil/Consulting/Wastewater/Planning
1104 Cindy Carr Drive
Matthews, NC 28105
Phone: 704-847-3031
mikel@LashEngineering.com

Marshall Wastewater Facility
Sub-Surface Drip Wastewater System
Submittal 7-2-19

Table of Contents

EOP Submittal

1. Title Sheet
2. Table of Contents
3. Engineers Option Permit - Common Form – signed & sealed
4. Topographic Survey – Dedmon Surveys
5. Boundary Survey – Benbow Surveys
6. GIS Property Report
7. Engineers Project Summary
8. Earthwise Designs Soils Reports
9. Lash Engineering– Omissions & Errors
10. Earthwise Designs – Omissions & Errors
11. Installer General Liability (Installer)
12. Owner Wastewater Operation & Maintenance Manual
13. Operator Wastewater Checklist
14. AquaSafe Owner's Manual
15. Marshall Wastewater Plans

Other Included Information (separate Binder)

16. AquaSafe Treatment Test Results
17. AquaSafe other State Approvals

NOTES:

* PROPERTY MAY BE SUBJECT TO RECORDED OR UNRECORDED RIGHTS OF WAYS OR EASEMENTS NOT OBSERVED
* OWNER TO VERIFY ALL SETBACKS AND ZONING REGULATIONS PRIOR TO ANY PLANNING OR CONSTRUCTION.
* DIMENSIONS OF ALL IMPROVEMENTS SHOWN ON THIS PLAT SHOULD NOT BE SCALED OR RELIED UPON FOR DESIGN OR CONSTRUCTION WITHOUT A FIELD VERIFICATION OF ALL DIMENSIONS.
* DIGITAL COPIES OF THIS FILE ARE FOR REFERENCE ONLY AND MAY NOT BE USED FOR DESIGN WORK.
* NO PORTION OF THE RESIDENTIAL STRUCTURE IS LOCATED IN THE 100 YEAR FLOOD PLAIN.
* A PORTION OF THIS PROPERTY IS LOCATED IN A 100 YEAR FLOOD PLAIN.

40 0 40 80 120

GRAPHIC SCALE – FEET

Curve	Radius	Length	Chord	Chord Bear.
C1	238.74'	19.11'	19.10'	N 12°24'54" W

Course	Bearing	Distance
L1	S 13°34'00" E	23.07'
L2	N 62°17'00" E	38.00'
L3	S 88°05'00" E	78.96'
L4	N 60°06'00" E	25.81'
L5	S 60°15'00" E	51.09'
L6	S 18°55'00" E	41.79'
L7	S 08°06'00" E	29.62'
L8	S 24°47'46" W	81.69'

LEGEND

R\W RIGHT-OF-WAY
E\P EDGE OF PAVEMENT
C\L CENTERLINE
UTILITY POLE
LIGHT POLE
OVERHEAD UTILITY LINE

PB 13-67

LAKE NORMAN
ALL DOCKS, PIERS OR OTHER IMPROVEMENTS BUILT ON LAKE ARE NOT SHOWN ON THIS SURVEY PLAT

LOT #69
PB 13-67

#6 REBAR

S 82°52'00"E 164.90'

NEIGHBORING SEPTIC FIELD ENCROACHES 4.6'

1/2" PIPE

APPROXIMATE 760' CONTOUR LINE

SEAWALL

APPROXIMATE 100 YEAR FLOOD LINE

#4 REBAR

#4 REBAR

1.137 AC +-
LOT #68 & A PORTION OF LOT #67
PB 13-67 - DB 2538-608 - DB 2432-1154

64.14'

EXISTING SEPTIC FIELD

50' BUFFER

98.89'

DOCK

STILLWATER ROAD - 60' R\W
SR NO. 1447

N 14°27'00"W 145.32'

39.45'

GARAGE

CONCRETE

CONCRETE DRIVEWAY

WELL

1.5 STORY FRAME HOME

DECK

PORCH

ORANGE LINE
RED LINE
PINK LINE

OAK TREE

SEPTIC TANK

24.07'

GRAVEL DRIVEWAY

C1

#4 REBAR

N 87°16'44"W 118.19'

#4 REBAR

N 83°56'54"W 174.34'

#4 REBAR

PORTION OF LOT #67
DB 950-355

PHYSICAL SURVEY
FOR

STILLWATER 477, LLC

LOT #68 & A PORTION OF LOT #67, SECTION 17,
CRESCENT LAND & TIMBER
477 STILLWATER RD, TROUTMAN, NC

FALLSTOWN TOWNSHIP, IREDELL COUNTY, NC

SCALE: 1" = 40'

DEDMON SURVEYS

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

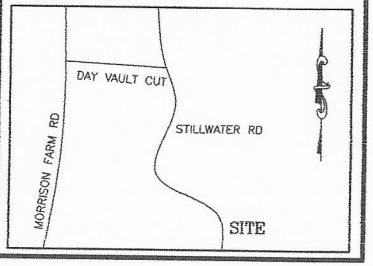
NORTH CAROLINA PROFESSIONAL SEAL L-3899 LAND SURVEYOR ROBERT J. DEDMON

I, ROBERT J. DEDMON, CERTIFY THAT THIS PLAT WAS DRAWN FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DB 2538, PG 608)(PB 13, PG 67); THAT THE RATIO OF PRECISION AS CALCULATED EXCEEDS 1:10,000'; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH GS 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, APRIL 9, 2019.

Robert J. Dedmon 3899
PROFESSIONAL LAND SURVEYOR LICENSE NO.

SURV. BY: WT	DRAWN: RD	JOB# RSWATER

VICINITY MAP



Lash Engineering, Inc.
Civil/Consulting/Wastewater/Planning
1104 Cindy Carr Drive
Matthews, NC 28105
Phone: 704-847-3031
mikel@LashEngineering.com

Lash Engineering, Inc.

Project Summary for:

Marshall Residence Wastewater Facility

477 Stillwater Road
Troutman, NC. 28166
Parcel ID 4629-94-6744

The original house and sewer system were originally constructed in 1987 and consists of a Septic Tank with a gravel bed system. The original septic bed system is approximately 12'x 40'. This system has not failed to date and is located further from the house and closer to the lake. This wastewater system was expanded in 2012. Three additional gravel beds were added (approximately 50'long) and are located closer to the house. A septic tank was added to the original 4 row gravel trench to serve the 3 new gravel trenches. This is a little unorthodox – but seems to be working. The house is currently permitted for 4 bedrooms. The original and existing wastewater disposal lines will be utilized for the residence. As stated before, the existing wastewater system was originally installed in 1987. The septic tank is unconventional with a concrete slab for a roof and no apparent risers. I do not know if the tank has a baffle wall or an effluent filter. Many septic tanks have been replaced within this time frame of use. It cannot be determined how much useful life the original septic tank has available.

The owner wants to expand the 4-bedroom house to 5 bedrooms by renovating the interior of the house. There are several ways to address the wastewater expansion to the system that could utilize both in and out of the 50' buffer – using current rules and regulations associated with the use of buffer soils for wastewater disposal. We think it would be prudent to remove the older (original) septic tank but realize that having the 2 tanks was part of the reason for the 4-bedroom permit. Its location and method of influent makes this tank less efficient and, in many cases, prevents the drain field downstream of it from being utilized. We see several opportunities to make this system better from a treatment and disposal perspective while acquiring an additional bedroom in capacity.

The Septic Tank near the house is somewhat new and probably has a baffle wall, effluent filter but I didn't see any risers – this would need to be checked or verified. Access to the tank is needed for cleaning, pumping and maintenance and is best accomplished by an access riser on both ends. I'm assuming the septic tank is a 1,000-gallon tank which by itself is insufficient for a 5-bedroom house. We have proposed to remove both septic tanks and replace the tank next to the house with a new 1,500g septic tank, two risers and an effluent filter. The septic tank is a dual compartment unit, sized for 2/3 of the volume on the inlet side, and 1/3 of the volume on the

outlet side. The septic tank serves two purposes: first, as a settlement chamber to allow the solids to fall out of the wastewater; second, the septic tank initiates the breakdown of the effluent by providing a suitable environment for anaerobic decomposition. A state approved effluent filter is also installed in the septic tank to assist in removing the larger solids. The effluent filter is screen-type and sized with 1/8-inch openings. The effluent filter is required to be removed and cleaned a minimum of once every 2 years; more frequent cleaning may be required as determined by the routine system inspection and maintenance. The septic tank should be pumped clean at routine intervals; typically, every 4 to 5 years, according to the amount of sludge/scum accumulation. The cleaning is required to remove the solid matter that accumulates at the bottom of the tank because of household by-products such as: paper products, greases, food waste, etc. The effluent exits the septic tank through the effluent filter then it is routed through a pipe by gravity flow to the PreTreat unit and then by gravity to the distribution box. This represents the end of the treatment process and the beginning of the sub-surface gravel & panel disposal system.

A pretreat tank (AquaSafe) is proposed directly behind the new septic tank. This would further clean the effluent and make the existing drain fields more efficient and longer lasting. The existing drain fields are well documented with dimensions, however upon discovery in the field it is difficult to verify that the lines are as long as what is shown on the permit. Depending on the available depth of soils, T&J Panels and chambers can be installed within the 50' buffer provided that the rules and regulations are all followed. There is also additional available soils on the north side of the three gravel trenches. The additional bedroom (from 4 to 5) can be acquired by extending these lines with T & J Panels for added quality of treatment and disposal. Each line is to be extended 11' for an additional 33' of T & J Panels.

The system shall be installed by certified contractors, and the entire system shall be certified as complete by Lash Engineering, Inc. The system must be installed by a State Licensed Grade IV Installer, and under the State's approval requirements, must be inspected twice a year. The operator must be a minimum of State Grade I sub-surface operator and shall be certified by experience for these type systems. The operator/inspector shall visit the site every six months (min.) or as required by the permit, and shall check the system for such items as proper septic tank performance, check for leaks, document any fault conditions that have occurred and what was done to correct the problem and checked thoroughly for leaks or ponding, which could indicate a broken drip line.

Lash Engineering, Inc., in conjunction with the Installer, will provide a final certification packet including a letter stating that the system was installed properly and that all connections and programming have been checked. If significant changes have occurred during the construction process, then a final "As-Built" drawing showing those changes made due to site-specific conditions will be supplied to the Owner along with the Certification.

Please contact Lash Engineering, Inc. if you have any questions or concerns at 704-847-3031.

Thanks,
Mike