BLDR-2022-9379

ICHD - ENVIRONMENTAL HEALTH DIVISION

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

PERMIT # OSWP-2023-35683

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

PIN # 4624-14-9898

APPLICANT / OWNER: Soil & Forestry SVCS | APPLICANT ADDRESS: 126 3rd Creek Rd, Statesville NC 28677

SITE ADDRESS: 109 THRASHER LN, MOORESVILLE, NC 28117 | PHONE: | ALT. PHONE:

SITE DIRECTIONS: W Brawley School -> R Yellowjacket -> L Thrasher -> lot on R | SAP CONTROLLED: YES ☐ NO ☑

SUBDIVISION: CL&T | SECTION: 6 | LOT #: 411 | LOT AREA: 0.78 | DESIGN FLOW: 480 | L.T.A.R.: 0.3

Septic Tank: 1000 (gal)	STB: Infiltrator	Date:	☒ New System ☐ Repair ☐ Expansion	System Type: IV	☑ Residence	No. Bedrooms: 4	Water Supply: Existing Well
Pump Tank: 1000 (gal)	PT: Infiltrator	Date:	System Description: LPVPPBPS		☐ Business	No. Persons: 8	
Pump Make: Liberty	Model: 290HV	Serial #:	Repair System Description: TS-II LPVPPBPS		☐ Other	No. Employees:	
# Nitrification Fields: 1	# Lines: 6	Linear Ft.: 267	Maintenance Agreement Required: ☑ YES ☐ NO		☐ Slab	☑ Crawl Space	
Trench Width: 24	Trench Bottom Depth (Low side): 30		Gravel Depth: 0	☐ GRAVITY ☑ PRESSURE	☐ Basement w/ Plumbing	☐ Basement w/o Plumbing	

Comments / Conditions:

INITIAL SITE SKETCH

This permit is issued pursuant to G.S. 130A-335(a2), (a3) & (a4) using the signed and sealed LLS/LG Evaluation attached here, from:

Soil & Forestry Services of Carolinas
A. Rollans

LSS# 1231 / AOWE 10027E

AS BUILT SKETCH

Tanks 8/7/23 SW
Lines 10/6/23 SH
Valve Box

System installed as shown

To complete OP
✓ Irrigation cut off
✓ blinker
✓ check electrical into control panel
SW 11/22/2023

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

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

Owner / Applicant Signature: | Date:

IMPROVEMENT PERMIT by: D. Meyer | Date: 9/21/23

AUTHORIZATION TO CONSTRUCT by: D. Meyer | Date: 9/21/23

Installed By: Chris Hedrick

OPERATION PERMIT by: Sarah Williams | Date: 11/22/2023

Existing System Inspected By: | Date:

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

BLDR-2022-9379

ICHD - ENVIRONMENTAL HEALTH DIVISION

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

PERMIT # OSWP-2023-35683

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Soil & Forestry Services of Carolinas
A. Rollans

LSS# 1231 / AOWE 10027E

AS BUILT SKETCH

Tanks 8/7/23 SW
Lines 10/6/23 SH
Valve Box

System installed as shown

To complete OP
- Irrigation cut off
- 6" riser
- check electrical into control panel

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Owner / Applicant Signature: | Date:

IMPROVEMENT PERMIT by: D.Meberg | Date: 9/21/23

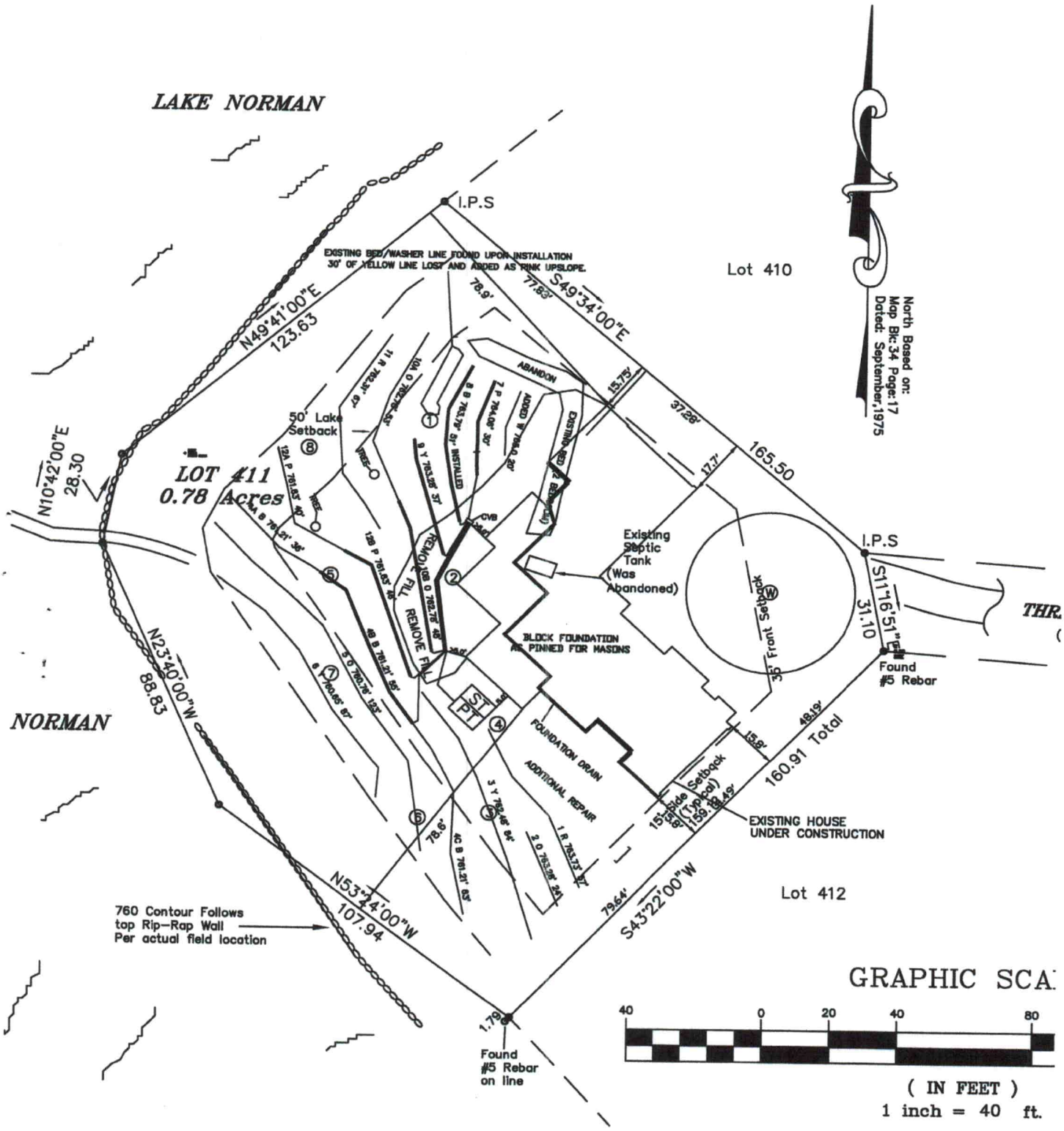
AUTHORIZATION TO CONSTRUCT by: D.Meberg | Date: 9/21/23

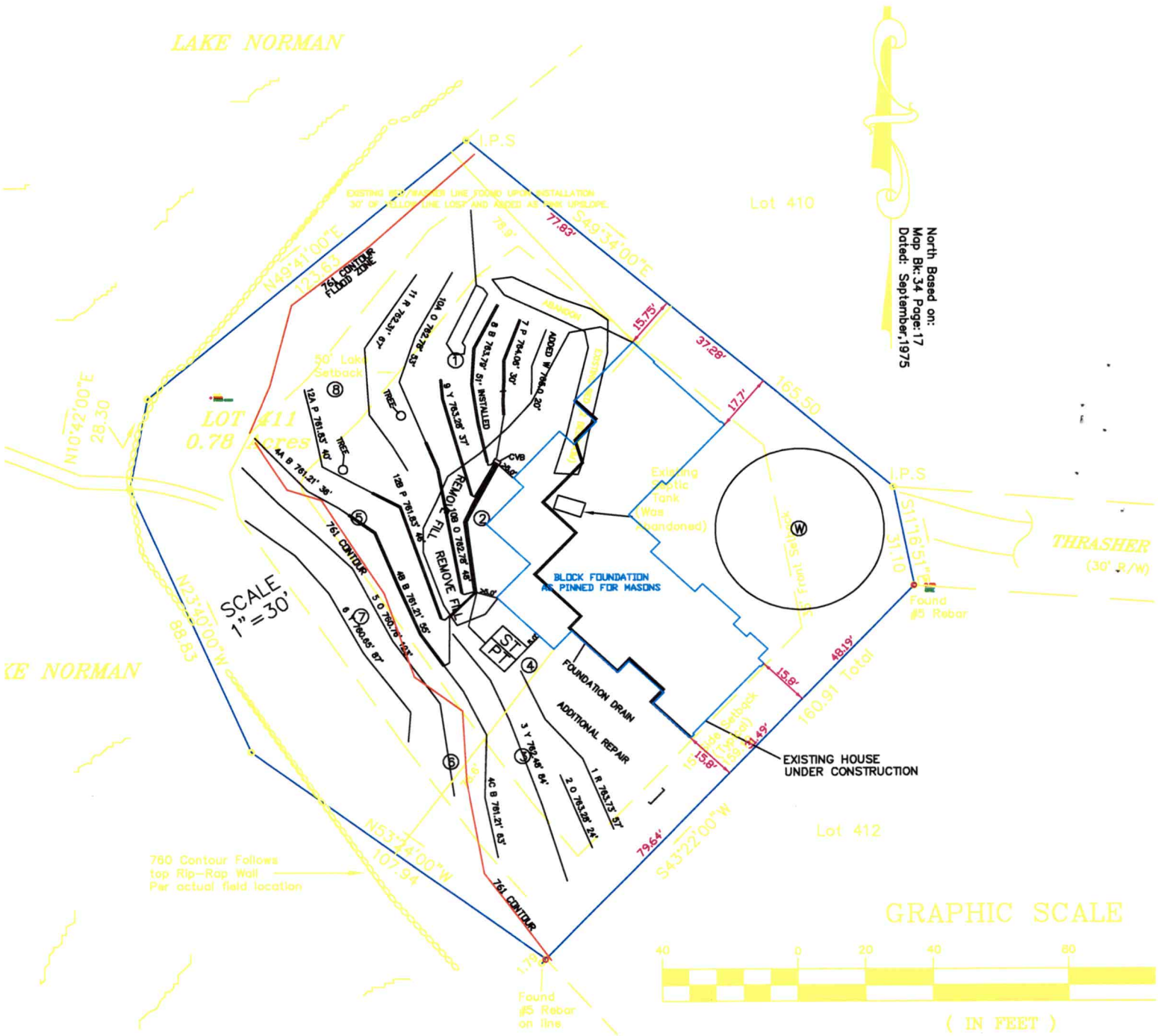
Installed By: Chris Hedrick

OPERATION PERMIT by: | Date:

Existing System Inspected By: | Date:

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


LAKE NORMAN
NORMAN
I.P.S
EXISTING BED/WASHER LINE FOUND UPON INSTALLATION
30' OF YELLOW LINE LOST AND ADDED AS PINK UPSLOPE.
N49°41'00"E
123.63
N10°42'00"E
28.30
N23°40'00"W
88.83
N53°44'00"W
107.94
S49°34'00"E
77.83'
78.9'
S43°22'00"W
79.64'
165.50
37.28'
15.75'
17.7'
31.10
S11°16'51"E
160.91 Total
48.19'
15.8'
159.19'
Lot 410
Lot 412
LOT 411
0.78 Acres
50' Lake
Setback
Existing
Septic
Tank
(Was
Abandoned)
Front Setback
BLOCK FOUNDATION
AS PINNED FOR MASONS
FOUNDATION DRAIN
ADDITIONAL REPAIR
EXISTING HOUSE
UNDER CONSTRUCTION
15' Side Setback (Typical)
ABANDON
REMOVE FILL
INSTALLED
760 Contour Follows
top Rip-Rap Wall
Per actual field location
Found
#5 Rebar
Found
#5 Rebar
on line
1.79'
North Based on:
Map Bk: 34 Page: 17
Dated: September, 1975
GRAPHIC SCA
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.


LAKE NORMAN
I.P.S
Lot 410
S49°34'00"E
77.83'
N49°41'00"E
123.63'
761 CONTOUR FLOOD ZONE
50' Lake Setback
LOT 411
0.78 acres
N10°42'00"E
28.30'
37.28'
15.75'
17.7'
165.50'
I.P.S
S11°16'51"E
51.10'
THRASHER
(30' R/W)
Found #5 Rebar
Existing Septic Tank (Was Abandoned)
Front Setback
BLOCK FOUNDATION AS PINNED FOR MASONS
REMOVE FILL
FOUNDATION DRAIN
ADDITIONAL REPAIR
EXISTING HOUSE UNDER CONSTRUCTION
48.19'
160.91' Total
15.8'
Side Setback (25')
31.49'
Lot 412
S43°22'00"W
79.54'
N23°40'00"W
88.83'
N53°34'00"W
107.94'
760 Contour Follows top Rip-Rap Wall Per actual field location
761 CONTOUR
Found #5 Rebar on line
SCALE 1" = 30'
North Based on: Map Bk:34 Page:17 Dated: September,1975
GRAPHIC SCALE
40 0 20 40 80
(IN FEET)

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

Project#: 21-0012
August 30th, 2023

BRYANT O'TUEL
Attn: *Bryant O'tuel*
Email: bryantotuel@gmail.com

RE: Soil & Site Evaluation for a 4 Bedroom Residence (Crawl Space) at 109 Thrasher Lane, 0.78 ac, PIN#: 4624149898, Mooresville, NC 28117, Iredell County, North Carolina.

Bryant:

At your request Soil & Forestry Services of the Carolinas (S&FS) has performed soil/site evaluations on parcel noted above. The Lot size is noted on the attached soil evaluation form. The purpose of our work was to identify soil areas with potential to support subsurface wastewater disposal systems and provide design details for Session Law submittals to Iredell County Health Department.

Site Conditions

At the time of our evaluation land cover on the property was grass with an existing house under construction. Topography within the evaluated area was gentle slope near the house site with gentle percentage of slope in the proposed drainfield area. There is an existing system (bed) on property. An additional bed/washer line was encountered by the septic installer during excavation of the second drainline (Yellow). The original line length of 67 feet was reduced to 37 feet to avoid the gravel bed. An additional line (Pink) of 30 feet was added upslope to make up for the lost trench length. Some existing fill from backfill around the house (see Plan) must be removed to install some lines on original grade. Existing house envelope, property lines and Lake Buffers (50' & 30') were surveyed and Autocad Files provided. These features are illustrated in the Site Plan along with our proposed system and repair in the design.

Methodology

We initially evaluated soil areas through the use of hand augers for soil morphological data. Soil morphological conditions including color, texture, structure, etc. were reviewed in the field with boring locations on the property flagged and located via survey & tape measure. All of the soil borings (8 total) were referenced for the proposed septic layout and are within or immediately adjacent to the proposed septic. Soil suitability was determined by referencing 15A NCAC 18A.1900 "Laws and Rules for Sewage Treatment and Disposal Systems". *Soil & Site Evaluation Forms* were utilized to record the soil morphological data for each boring and were previously submitted to the Health Department. An on-

ground layout of system was performed using a laser level. Pin flag locations of the layout were also located by survey & tape measure. Detailed system & repair information is summarized in the following paragraph for this Lot.

109 Thrasher Lane *(See Attached Design)*
The septic layout for this lot (8' centers) yielded a total of 921 linear feet of line. The primary system is proposed as 267' of PPBPS (50% Reduction) drainfield with Low Pressure distribution. Trench depth (Low Side) is specified at 30 inches. The repair system is has a total of 654' of PPBPS (Reduction depends on line location with respect to Lake Buffers) drainfield with Low Pressure distribution available. The repair field will require TS-II Pretreatment to reduce the horizontal setback to the Lake. Trench depth (Low Side) is specified at 30 inches. See Information to Installer Page and Site Plan for details.

Session Law Requirements

All information needed to issue the IP must be submitted with the application. The application shall include all information described in 15A NCAC 18A .1937(d) and be accompanied by a signed and dated statement from the applicant (owner or owner's legal representative) that reads as follows:

"The LSS/LG evaluation(s) attached to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3)."

Owner

Date

Print Name M BRYANT O'TUEL
Signature _____ 1 SEP 2023

The LSS evaluation shall include a statement bearing the LSS seal and signature that reads as follows:

"The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)."

Disclaimer
This report reflects the findings of S&FS, PA. *This LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)."* Any site modifications that impact the proposed septic areas on the site may nullify this design for 109 Thrasher Lane System design requirements and site requirements shall be adhered to for installation and Operations Permits to be issued by the local Health Department. If you have questions regarding these requirements a Pre-Construction meeting should be scheduled to discuss. Please contact S&FS if you have any questions regarding this report or the attached information. S&FS also offers septic system inspection, wetland delineation and forestry services.

LICENSED SOIL SCIENTIST
SAMUEL A. ROLLANS
STATE OF NORTH CAROLINA

S. Ashley Rollans, LSS
Attachment: *Septic Design*

I understand that the documentation and fees, as required in G.S. 130A-335(a2), (a3), (a5), and (a6), attached to this application are to be used to issue an Improvement Permit and/or Construction Authorization pursuant to G.S. 130A-335(a2),(a3), and (a5). I understand that authorized county and state officials are granted right of entry to the property indicated on this application to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that if the information in the application for an Improvements Permit and/or Construction Authorization is falsified, changed, or the site is altered, then the Improvement Permit and Construction Authorization shall become invalid.

* Applicant Signature: _____ Date: 1 SEP 2023

* Owner's Signature: _____ Date: 1 SEP 2023

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence at 109 Thrasher Lane (Lot 411 CL&T), Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
System Tapsheet	5
Site Plan/System Plan	6
Calculations	7
Profile Descriptions	SUBMITTED
Septic Application	ONLINE
IP Form	8
CA Form	9

LICENSED SOIL SCIENTIST
SAMUEL A. ROLLANS
1231
STATE OF NORTH CAROLINA

August 30, 2023
Project #: 21-0012
Design By: Soil & Forestry Services of the Carolinas, PA

INFORMATION FOR THE INSTALLER:

The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.

- Tanks shall be approved by NC DHHS, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation.
- Repair is specified as a PPBPS installation w/TS-II Pretreatment
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 24" wide and have no more than 1/4" fall in 10 feet.
- **Existing System must be properly abandoned/avoided. Tank already removed.**
- **Existing Fill noted on Site Plan must be removed to install lines on original grade.**
-

PROPERTY ID #: 4624149898
COUNTY: Iredell

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

OWNER: Bryant O'Tuel
ADDRESS: 117 Whaling Ln, Mooresville NC 28117
PROPOSED FACILITY: 4BR
PROPOSED DESIGN FLOW (.1949): 480 gpd
LOCATION OF SITE: 109 Thrasher Ln, Mooresville NC 28117
APPLICATION DATE
DATE EVALUATED: 2020
PROPERTY SIZE: 0.78 AC
PROPERTY RECORDED: Yes

WATER SUPPLY: ☒ Private ☐ Public ☑ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☒ Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B6	L/3%	0-8	Fill			42	—	—	PS .3
		8-12	BSL Gr	Fr SS SP					
		12-14	RBSCL wfsbk	Fr SS SP					
		14-43	BRC wmsbk	Fr SS SP					
		43-50	RBCL wfsbk	Fr SS SP	Few foc. SAP				
B7	L/3%	0-11	Fill			39	—	—	PS .3
		11-13	RBCL wmsbk	Fr SS SP					
		13-38	BRC wmsbk	Fr SS SP					
		38-50	RBCL wfsbk	Fr SS SP					
B8	L/3%	0-10	RBCL/SCL wfsbk	Fr SS SP		50	—	—	PS .3
		10-32	BRC wmsbk	Fr SS SP					
		32-50	RBCL wfsbk	Fr SS SP	Few SAP				

LICENSED SOIL SCIENTIST Samuel A. Rollans 1231 STATE OF NORTH CAROLINA

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

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): PS

EVALUATED BY: S. Ashley Rollans
OTHER(S) PRESENT: Chad Wagner

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet)

Sheet 2 of 2

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 4624149898
DATE OF EVALUATION: 6/13/12
COUNTY: Iredell

Stewart & Chris / 109 Thrasher Ln

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B1	4/3%	0-12	BRcl wsbk	FrSSSPSExP	-fsap	48"	-	-	PS 0.3
		12-48	Rcwmsbk	" " " "					
B2	4/5%	0-6	Fill		-fsap	48	-	-	PS 0.3
		6-14	Bcl sr	FrSSSPSExP					
		14-30	RCwmsbk	" " " "					
		30-48	RYclw/sbk	" " " "					
B3	4/10%	0-8	B l sr	FrSSSPSExP	-fsap -csap	48	-	-	PS 0.3
		8-21	RBclwmsbk	" " " "					
		21-43	Rcmmsbk	" " " "					
		43-48	RYclwfsbk	" " " "					
B4	4/20%	0-7	B l sr	FrSSSPSExP	-fsap	48	-	-	PS 0.3
		7-48	Rcmmsbk	" " " "					
B5	4/4%	0-8	B l sr	FrSSSPSExP	-fsap	48	-	-	PS 0.3
		8-30	Rcwmsbk	" " " "					
		30-48	RYclwfsbk	" " " "					

COMMENTS:

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Bryant O'Tuel

Address: 109 Thrasher Lane
Mooresville, NC 28117

Phone: 704.224.5388

County: Iredell

Location: 109 THRASHER LANE (CL&T LOT #411)

Source of Wastewater Flow: 4 Bedroom Single Family Residence

Estimated Gallons Per Day Flow: 480

System Flow: 25.83

Design Specifications

Drainfield Size: 267

Loading Rate (gpd/ft.^{2}): 0.3

Depth of Gravel in Trench: NA (PPBPS)

Gravel Size: NA (PPBPS)

Max Trench Depth (Low Side): 30 in. Repair: 30 in.

Trench Width: 24 in.

Septic Tank Size: 1000

Pump Tank Size: 1000

Estimated Supply Line Length: 60

Supply Line Diameter: 2 in. SCH 40 PVC

Supply Line Volume: 10.44

Dosing Volume: 226.80

Supply Manifold: N/A

Supply Manifold Length: N/A

Supply Manifold Volume: N/A

Recommended Float Controls: SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents

Recommended Control Panel: SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.

Pressure Head: 2 ft.

Friction Head: 1.07

Elevation Head: 6.00

Total Dynamic Head: 10.43

Threaded Union: In Tank

Gate Valves: 1 in Tank
1 per lateral

Check Valves: In Tank

Anti-Siphon Hole: NA

Additional Comments: Soil suitability was performed by Soil & Forestry Services of the Carolinas

109 THRASHER LANE (CL&T LOT #411)
LP PPBPS

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	534
TOTAL LATERAL LENGTH:	267
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	266.6666667
SUPPLY LINE LENGTH:	60
TOTAL DYNAMIC HEAD:	10.43
MANIFOLD SIZE:	N/A
DOSING VOLUME:	226.80
PUMP TANK DRAW DOWN*:	10.8
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

109 THRASHER LANE (CL&T LOT #411)

Project #: 21-0012

LAYOUT FOR 4 BEDROOM HOME

August 30, 2023

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM					765.00		
INSTR. 1							
HOUSE CNR					765.00		
P. TANK					763.50		
1	RED				763.73	57	57
2	ORANGE				763.28	24	24
3	YELLOW				762.48	84	84
4A	BLUE				761.21	36	36
4B	***BLUE***				***761.21***	***55***	***55***
4C	BLUE				761.21	63	63
5	ORANGE				760.76	123	123
Added	WHITE				765.00	20	20
6	YELLOW				760.65	87	87
7	***PINK***				***764.06***	***30***	***30***
8	***BLUE***				***763.79***	***51***	***51***
9	***YELLOW***				***763.28***	***37***	***37***
10A	ORANGE				762.78	53	53
10B	***ORANGE***				***762.78***	***48***	***48***
11A	RED				762.31	67	67
12A	PINK				761.83	40	40
12B	***PINK***				***761.83***	***46***	***46***
					Total	**921**	**921**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***267***	***0.300***	***MOD.***	***0.300***	***PPBPS***	***LOW PRESSURE***
Repair	654	0.300	MOD.	0.300	PPBPS w/TS-II Pretreatment	LOW PRESSURE

Notes:

**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**** All proposed lines located (with elevations) by a Licensed Surveyor.**

LP PPBPS TAPSHEET -109 THRASHER LANE (LOT 411 CL&T)

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
7	*PINK*	*765.00*	*30*	0.156	**0.41**	60	7
8	*BLUE*	*763.79*	*51*	0.156	**0.41**	102	12
9	*YELLOW*	*763.28*	*37*	0.156	**0.41**	74	9
10B	*ORANGE*	*762.78*	*48*	0.156	**0.41**	96	11
12B	*PINK*	*761.83*	*46*	0.156	**0.41**	92	11
4B	*BLUE*	*761.21*	*55*	0.156	**0.41**	110	13
							63
	total	**feet =**	**267**	**gal/min =**	**25.83**		
			Des. Flow	**480**			
			Pump Run=	**8.78**			
			soil LTAR	**0.3**			
			LTAR +5%	**0.315**			
			LTAR with mod.	**0.6**			
			LTAR with mod.. + 5%	**0.63**			

.156 equals 5/32 inch hole

CALCULATIONS

Location 109 THRASHER LANE (LOT 411 CL&T)

Project Number 21-0012

Lot No: Lot 411

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.300	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	60	ft.
Supply Line Volume	10.44	gal.
Required Feet of Line	266.6667	ft.
Amount of Line from Layout	267	ft.
Gallons per Minute	25.83	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	63	
Dosing Volume	226.80	gal.

Note: Dosing Volume based on 100% of # of panels times 3.6 gal/panel

Tank Draw Down	10.8	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	8.78	minutes
Elevation Head	6	ft.
Pressure Head	2	ft.
Friction Factor	1.78	ft./100 ft. *(From the interpolater.)*
Friction Head	1.07	ft.
Total Dynamic Head (+15%)	10.43	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42

Permit #: _____

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

ROY COOPER • Governor
KODY H. KINSLEY • Secretary
MARK BENTON • Deputy Secretary for Health
SUSAN KANSAGRA • Assistant Secretary for Public Health
Division of Public Health

Submittal Includes: ☑ (a2) Improvement Permit ☑ (a2) Construction Authorization ☐ Fee $_____

IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)

County: Iredell

PIN/Lot Identifier: 4602414989 8

Issued To: Bryant O'Tuel

Property Location: 109 Thrasher Lane, Mooresville NC 28117

Subdivision (if applicable) CL&T Lot #: 411 Block: _____ Section: _____

LSS Report Provided: Yes ☑ No ☐

If yes, name and license number of LSS: Samuel Ashley Rollins

New ☑ Expansion ☐ System Relocation ☐ Change of Use ☐

Proposed Structure: 4 Bedroom Home

Number of bedrooms: 4 Number of Occupants: 8 Other: _____

Design Wastewater Strength: ☑ domestic ☐ high strength ☐ industrial process

Proposed Design Daily Flow: 480 GPD Proposed LTAR (Initial): 0.3 Proposed LTAR (Repair): 0.3

Proposed Wastewater System Type*: PPBPS-Low Pressure (Initial) Pump Required: ☑ Yes ☐ No ☐ May be required

Proposed Wastewater System Type*: PPBPS-Low Pressure (Repair) Pump Required: ☑ Yes ☐ No ☐ May be required

**Please include system classification for proposed wastewater system types in accordance with 15A NCAC 18A .1961 Table V(a)*

Saprolite System (initial): ☐ Yes ☑ No Saprolite System (repair): ☐ Yes ☑ No

Fill System (Initial): ☐ Yes ☑ No If yes, specify: ☐ New ☐ Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Fill System (repair): ☐ Yes ☑ No If yes, specify: ☐ New ☐ Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Usable Soil Depth (Initial): 48" Usable Soil Depth (Repair): 48"

Max. Trench Depth (Initial)‡: 30" Max. Trench Depth (Repair)‡: 30" ***‡ Measured on the downhill side of the trench***

Artificial Drainage Required: ☐ Yes ☑ No If yes, please specify details: _____

Type of Water Supply: ☑ Private well ☐ Public well ☐ Shared well ☐ Municipal Supply ☐ Spring ☐ Other: _____

Drainfield location meets requirements of Rule .1945: Yes ☑ No ☐ Drainfield location meets requirements of Rule .1950: Yes ☐ No ☐

Permit valid for: ☑ Five years [site plan submitted pursuant to GS 130A-334(13a)] ☐ No expiration [plat submitted pursuant to GS 130A-334(7a)]

Permit conditions: See design

Licensed Soil Scientist Print Name: Samuel Ashley Rollins

Licensed Soil Scientist Signature: Samuel A Rollins Date: 8/31/23

The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2).

See attached site sketch

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES • DIVISION OF PUBLIC HEALTH

LOCATION: 5605 Six Forks Road, Building 3, Raleigh, NC 27609
MAILING ADDRESS: 1632 Mail Service Center, Raleigh, NC 27699-1632
www.ncdhhs.gov • TEL: 919-707-5854 • FAX: 919-845-3972

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

Permit #: OSWP-2023-35683

This Section for Local Health Department Use Only

Initial submittal received: 9/21/23 (*Date*) by DW (*Initials*)

G.S. 130A-335(a3) states the following:

When an applicant for an Improvement Permit submits to a local health department an Improvement Permit application, the permit fee charged by the local health department, the common form developed by the Department, and a soil evaluation pursuant to subsection (a2) of this section, the local health department shall, within five business days of receiving the application, conduct a completeness review of the submittal. A determination of completeness means that the Improvement Permit includes all of the required components. If the local health department determines that the Improvement Permit is incomplete, the local health department shall notify the applicant of the components needed to complete the Improvement Permit. The applicant may submit additional information to the local health department to cure the deficiencies in the Improvement Permit. The local health department shall make a final determination as to whether the Improvement Permit is complete within five business days after the local health department receives the additional information from the applicant. If the local health department fails to act within any period set out in this subsection, the applicant may treat the failure to act as a determination of completeness. The Department shall develop a common form for use as the Improvement Permit.

The review for completeness of this Improvement Permit was conducted in accordance with G.S. 130A-335(a3). This Improvement Permit is determined to be:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing:

_____

_____

Copies of this were sent to the LSS and the Applicant on _____ (*Date*)

State Authorized Agent: _____ Date: _____

☑ Complete

State Authorized Agent: DWisberg Date: 9/21/23

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2) and (a3) using the signed and sealed LSS/LG evaluation(s) attached here. The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This permit is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit.

The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to evaluations, submittals, or actions from a licensed soil scientist or licensed geologist pursuant to GS 130A-335(a2).

Improvement Permit Expiration Date: 9/21/28

See attached site sketch

Permit #: _____

CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)

County: Iredell

PIN/Lot Identifier: 4624149998

Issued To: Bryant O'Tuel

Property Location: 109 Thrasher Lane, Mooresville NC 28117

AOWE/PE Plans/Evaluations Provided: Yes ☑ No ☐ If yes, name and license number of AOWE/PE: Samuel Ashley Rollans #10027E

Facility Type: 4 Bedroom Home

☑ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

Basement? ☐ Yes ☑ No Basement Fixtures? ☐ Yes ☐ No

Type of Wastewater System* PPBPS-Low Pressure (Initial) PPBPS-Low Pressure (Repair)

**Please include system classification for proposed wastewater system types in accordance with 15A NCAC 18A .1961 Table V(a)*

Design Daily Flow: 480 GPD Wastewater Strength: ☑ domestic ☐ high strength ☐ industrial process

Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? ☐ Yes ☑ No
(if yes, please provide engineering documentation)

Installation Requirements/Conditions

Septic Tank Size: 1,000 gallons Total Trench/Bed Length: 267 feet Trench/Bed Spacing: 8 feet on center

Trench/Bed Width: 24" inches LTAR: 0.3 gpd/ft²

Soil Cover: 6" inches Slope Corrected Maximum Trench/Bed Depth‡: 30 inches ‡ ***Measured on the downhill side of the trench***

Aggregate Depth: _____inches above pipe _____inches below pipe _____inches total

Pump Tank Size (if applicable): 1,000 gallons Requires more than 1 pump? ☐ Yes ☑ No

Pump Requirements: 10.43 ft. TDH vs. 25.83 GPM Grease Trap Size (if applicable): _____ gallons

Distribution Method: ☐ Serial ☐ D-Box or Parallel ☐ Pressure Manifold(s) ☑ LPP ☐ Other: _____

Artificial Drainage Required: Yes ☐ No ☑ If yes, please specify details: _____

Legal Agreements *(If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)*

Multi-party Agreement Required [.1937(h)]: ☐ Yes ☑ No

Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]: ☐ Yes ☑ No

Declaration of Restrictive Covenants: ☐ Yes ☑ No

Pre-Construction Conference Required: Yes ☐ No ☑

Conditions: See design

The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, .1958, and .1959 are incorporated by reference into this permit and shall be met. Systems shall be installed in accordance with the attached system layout.

AOWE/PE Print Name: Samuel Ashley Rollans Expiration Date: TBD By Local HD

AOWE/PE Signature: Samuel A Rollans Date: 8/31/23

This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).

See attached site sketch

NC ONSITE WASTEWATER EVALUATOR Certificate Number 10027E

Permit #: OSWP-2023-35683

This Section for Local Health Department Use Only

Initial submittal received: 9/21/23 (*Date*) by DW (*Initials*)

G.S. 130A-335(a5) states the following:

When an applicant for a Construction Authorization, or an Improvement Permit and Construction Authorization together, submits a Construction Authorization, or an Improvement Permit and Construction Authorization application together, the permit fee charged by the local health department, the common form developed by the Department, and any necessary signed and sealed plans or evaluations conducted by a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator, the local health department shall, within five business days of receiving the application, conduct a completeness review of the submittal. A determination of completeness means that the Construction Authorization or Improvement Permit and Construction Authorization includes all of the required components. If the local health department determines that the Construction Authorization or Improvement Permit and Construction Authorization is incomplete, the local health department shall notify the applicant of the components needed to complete the Construction Authorization or Improvement Permit and Construction Authorization. The applicant may submit additional information to the local health department to cure the deficiencies in the Construction Authorization or Improvement Permit and Construction Authorization. The local health department shall make a final determination as to whether the Construction Authorization or Improvement Permit and Construction Authorization is complete within five business days after the local health department receives the additional information from the applicant. If the local health department fails to act within any period set out in this subsection, the applicant may treat the failure to act as a determination of completeness. The applicant may apply for the building permit for the project upon the decision of completeness of the Construction Authorization or Improvement Permit and Construction Authorization by the local health department or if the local health department fails to act within five business days. The Authorized On-Site Wastewater Evaluator or licensed engineer submitting the evaluation pursuant to this subsection may request that the local health department revoke or suspend the Construction Authorization or Improvement Permit and Construction Authorization for cause. Upon written request of the Authorized On-Site Wastewater Evaluator or licensed engineer, the local health department shall suspend or revoke the Construction Authorization or Improvement Permit and Construction Authorization pursuant to G.S. 130A-23. The Department shall develop a common form for use as the Construction Authorization.

The review for completeness of this Construction Authorization was conducted in accordance with G.S. 130A-335(a5). This Construction Authorization is determined to be:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing: _____

_____

Copies of this were sent to the AOWE/PE and the Applicant on _____ (*Date*)

State Authorized Agent: _____ Date: _____

☑ Complete

State Authorized Agent: DWisberg Date of Issuance: 9/21/23

This Construction Authorization is issued pursuant to G.S. 130A-335(a2) and (a5) using the signed and sealed plans or evaluations attached here. This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. The Construction Authorization shall not be affected by a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit.

The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to plans, evaluations, preconstruction conference findings, submittals, or actions from a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator in GS 130A-335(a2), (a5), and (a7). The Department, the Department's authorized agents, and the local health departments shall be responsible and bear liability for their actions and evaluations and other obligations under State law or rule, including the issuance of the operations permit pursuant to GS 130A-337.

Construction Authorization Expiration Date: 9/21/28

See attached site sketch