ICHD - ENVIRONMENTAL HEALTH DIVISION

Statesville Office (704) 878-5305 Mooresville Office (704) 660-3625 PERMIT # 309399.

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

PIN # 4761028232.000.

APPLICANT/OWNER: Garrison Davis / Ashley Rollins APPLICANT ADDRESS: PO Box 832 Mooresville NC 28115

SITE ADDRESS: 109 Fallen Acorn Drive Troutman NC 28166. PHONE: — ALT. PHONE 704-746-5046

SITE DIRECTIONS: Hwy 21 to Ostwalt Amity Rd Right on Weathers Crossing On Fallen Acorn 109 will be on left SAP CONTROLLED: ☐ YES ☒ NO

SUBDIVISION: Oak Ridge PH 2 SECTION: 2 LOT # 42 LOT AREA: 1.1627 Acres DESIGN FLOW: 480 L.T.A.R.: .30

Septic Tank	1000	(gal)	STB 760	Date	9-8-2020	☑ New System ☐ Repair ☐ Expansion	System Type: I II (III) IV V VI	☑ Residence	No. Bedrooms	4	Water Supply
Pump Tank		(gal)	PT	Date		System Description:	Gravity -25% Reduction	☐ Business	No. Persons	8	☑ Private
Pump Make		Model		Serial #		Repair System Description:	P/N - 25% Reduction	☐ Other	No. Employees		☐ Public
# Nitrification Fields	1	# Lines	4	Linear Ft	400	Maintenance Agreement Required:	☐ YES ☑ NO	☐ Slab	☑ Crawl Space		☐ Community
Trench Width	36	Trench Bottom Depth (Bevel)	30 in Max	Gravel Depth	—	☑ GRAVITY	☐ PRESSURE	☐ Basement w/ plumbing		☐ Basement w/o plumbing	

Comments / Conditions:

INITIAL SITE SKETCH

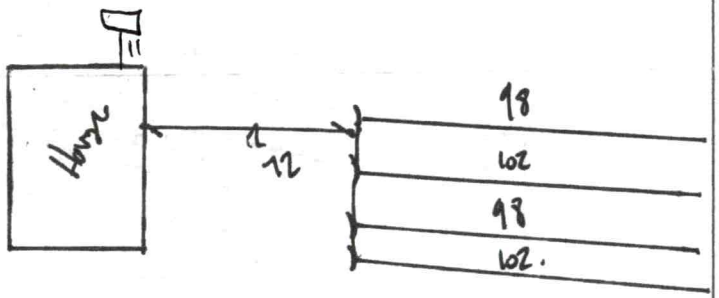
This permit is issued pursuant to Section 11 . (C) of S.L. 2018-114 using the signed and sealed LSS Evaluation by:

Soil + Forestry Services of the Carolinas PA

LSS # 1231.

AS BUILT SKETCH

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



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**

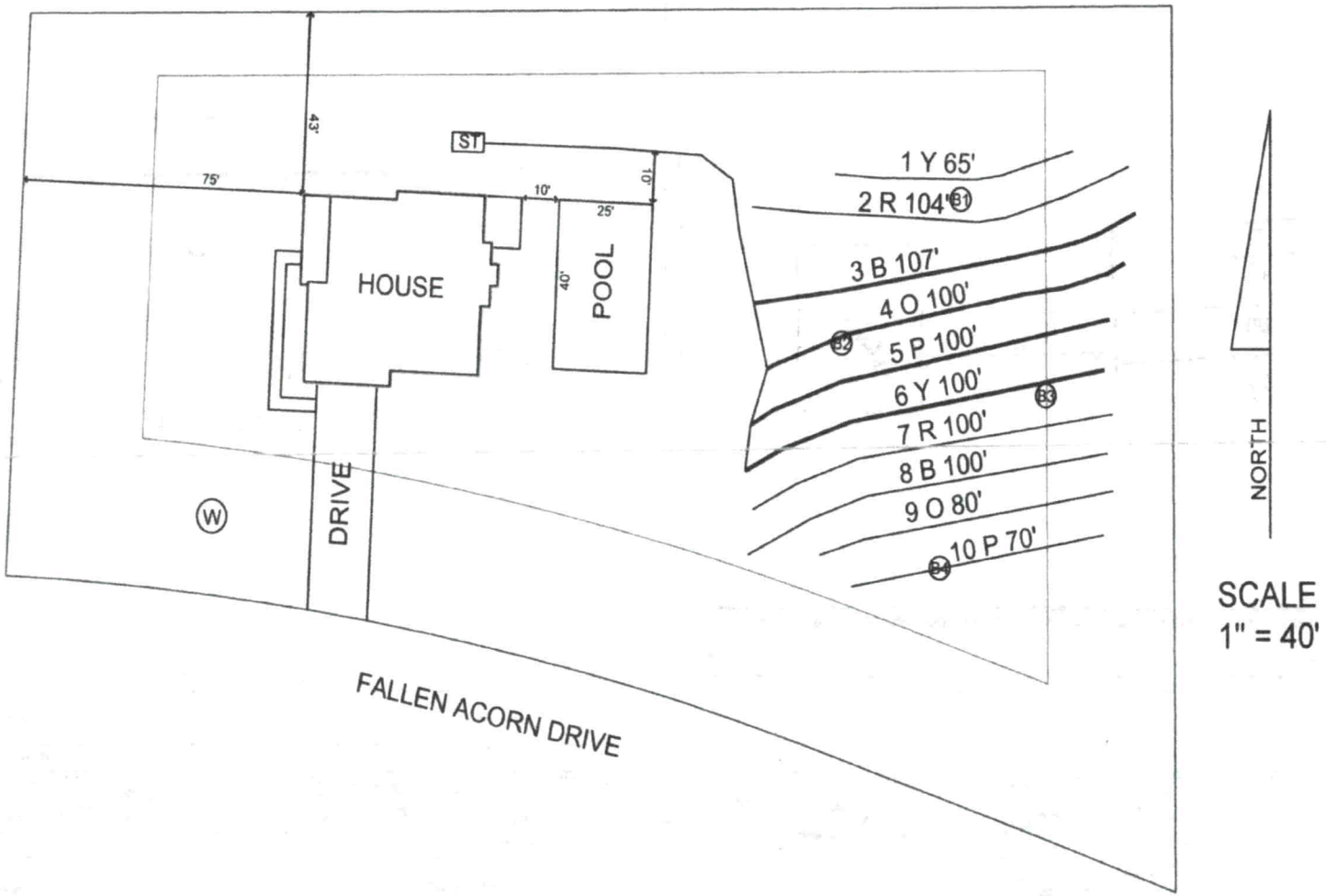
☐ **IMPROVEMENT PERMIT** *with plat valid without expiration.* ☑ **IMPROVEMENT PERMIT** *with site plan valid for 60 mos.* ☑ **AUTHORIZATION TO CONSTRUCT** *valid for period equal to IMPROVEMENT PERMIT--not to exceed 60 mo.*

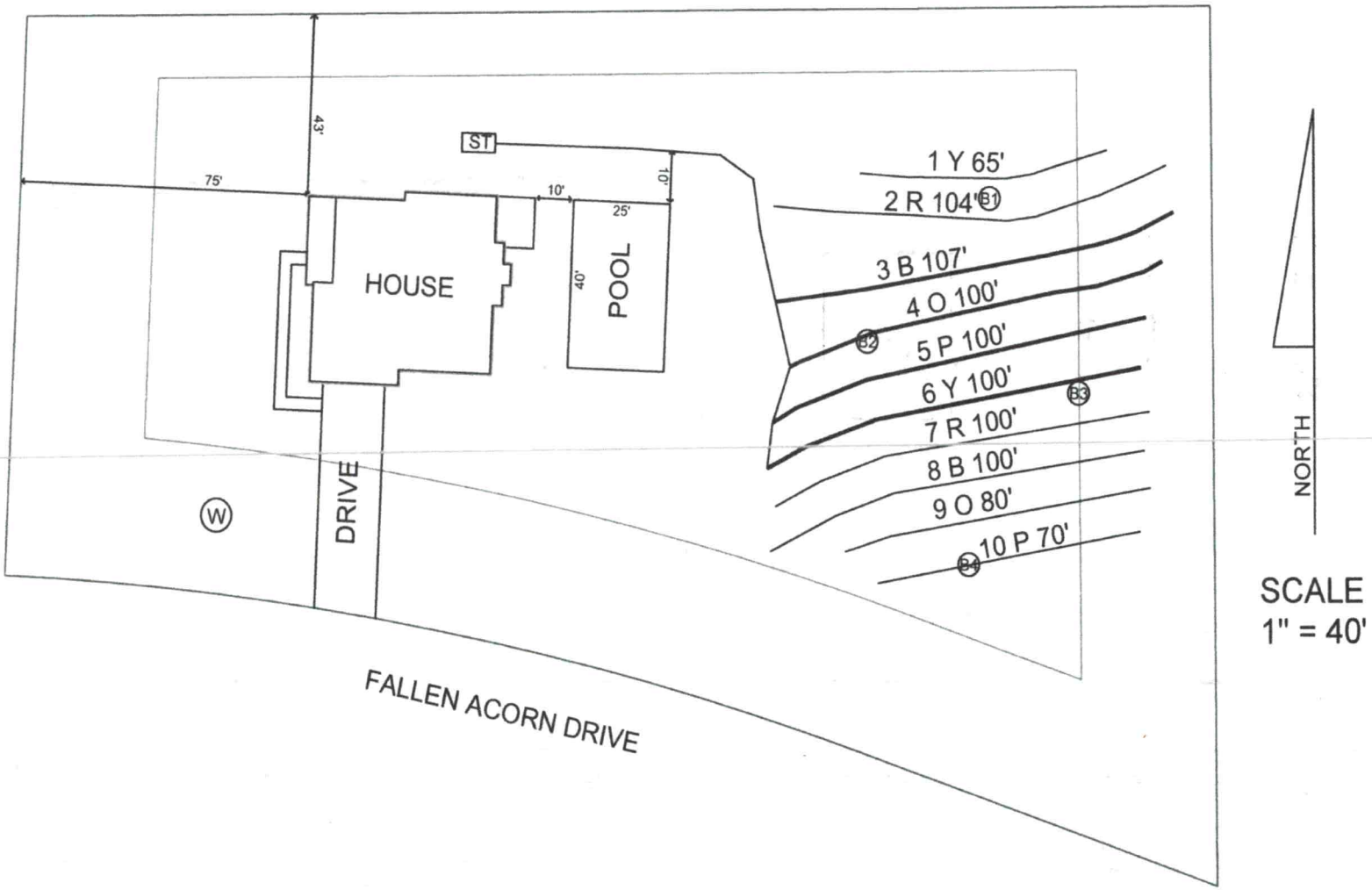
Owner / Applicant Signature: Date: 8-10-20 Installed by: Russel Williams

IMPROVEMENT PERMIT by: Benjamin A. Bolton Date: 8-7-2020 OPERATION PERMIT by: Date: 11-10-2020

AUTHORIZATION TO CONSTRUCT by: Benjamin A. Bolton Date: 8-7-2020 Existing System Inspected by: Date:

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


43'
75'
ST
10'
10'
25'
40'
HOUSE
POOL
DRIVE
W
1 Y 65'
2 R 104'
B1
3 B 107'
4 O 100'
B2
5 P 100'
6 Y 100'
B3
7 R 100'
8 B 100'
9 O 80'
10 P 70'
B4
FALLEN ACORN DRIVE
NORTH
SCALE
1" = 40'


43'
75'
ST
10'
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25'
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PIN # 4761028232.000.

APPLICANT/OWNER: Garrison Davis / Ashly Rollins APPLICANT ADDRESS: PO Box 832 Mooresville NC 28115

SITE ADDRESS: 104 Fallen Acorn Drive Troutman NC 28166. PHONE: — ALT. PHONE 704-746-5046

SITE DIRECTIONS: Hwy 21 to Ostwalt Amity Rd Right on Westlus Creek On Fallen Acorn 104 will be on left SAP CONTROLLED: ☐ YES ☒ NO

SUBDIVISION: Oak Ridge PH 2 SECTION: 2 LOT # 4/2 LOT AREA: 1.1627 Acres DESIGN FLOW: 480 L.T.A.R.: .30

Septic Tank	1000 (gal)	STB	Date	☒ New System	☐ Repair	☐ Expansion	System Type: I II (III) IV V VI	☒ Residence	No. Bedrooms 4
Pump Tank	(gal)	PT	Date	System Description:	Gravity -25% Reduction			☐ Business	No. Persons 8
Pump Make	Model		Serial #	Repair System Description:	P/N - 25% Reduction			☐ Other	No. Employees
# Nitrification Fields	1 # Lines 4		Linear Ft 400	Maintenance Agreement Required:	☐ YES	☒ NO		☐ Slab	☒ Crawl Space
Trench Width	36 Trench Bottom Depth ~~(Low side)~~		30in Max	☒ GRAVITY	☐ PRESSURE			☐ Basement w/plumbing	☐ Basement w/o plumbing

Water Supply: ☒ Private ☐ Public ☐ Community

Comments / Conditions:

INITIAL SITE SKETCH

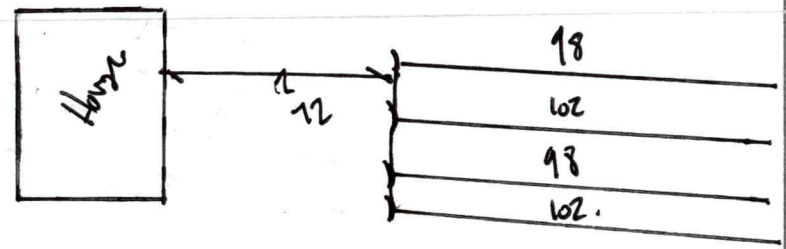
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Owner / Applicant Signature: Date: 8-10-20 Installed by: Russel Williams

IMPROVEMENT PERMIT by: Benjamin A. Bottin Date: 8-7-2020 OPERATION PERMIT by: Date:

AUTHORIZATION TO CONSTRUCT by: Benjamin A. Bottin Date: 8-7-2020 Existing System Inspected by: Date:

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

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

Project#: 20-0067
July 24th, 2020

TRUNORTH HOMES, LLC
Attn: *Garrison Davis*
Email: garrison@trunorthhomes.com

RE: Soil & Site Evaluation for a 4 Bedroom Residence (Crawl Space) at Oak Ridge Subdivision, Lot 42, 1.16 ac Parcel, PIN# 4761028232, 109 Fallen Acorn Drive, Troutman, NC 28166.

Mr. Davis:

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 survey map & 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 submittal to Iredell County Health Department.

Site Conditions

At the time of our evaluation land cover on the property was mostly open/grass. Topography within the evaluated area was gently slope near the house site and proposed drainfield area. Property lines and corners were marked at the time of the evaluation by Bateman Civil Survey Co. The Surveyor provided an Autocad File of the survey as a basemap. The proposed septic layout was located via Trimble Submeter GPS and used to produce the attached *Site Plan*. The house envelope was located via Survey by Bateman Civil Survey Co. The attached Survey provided has house setbacks to property lines.

Methodology

We evaluated soil areas through the use of hand augers. Soil morphological conditions including color, texture, structure, etc. were reviewed in the field with four boring locations on the property flagged and located via GPS. All four of the soil borings are located in the proposed septic layout. 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. The house envelope was located via survey. An on-ground layout of system and repair was performed using a laser level. Pin flag locations of the layout were also located by GPS. Detailed system & repair information is summarized in the following paragraph for this Lot.

DocuSign Envelope ID: 2C24F691-55BD-4AC7-89AF-3FCD64186103

Lot 42 (*See Attached Design*)
The septic layout for this lot (9' centers) yielded a total of 926 linear feet of line. The primary system is proposed as 400 linear feet of Accepted (25% Reduction) drainfield with gravity distribution. Trench depth is specified at 30 inches. The repair system is proposed as 400 linear feet of Accepted (25% Reduction) drainfield with gravity distribution. There is 519 linear feet available for repair. Trench depth is specified at 30 inches.

Session Law Requirements

An LSS Evaluation may be submitted in conjunction with a complete application to the LHD. 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 Evaluation attached to this application is to be used to produce design and construction features for permitting in accordance with SL 2018-114 Section 11.(c).".

Owner Date

Print Name Jeffrey S. Campbell
Signature Jeffrey S. Campbell 7/24/2020
5BF462A10AD9461

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 SL 2018-114 Section 11.(c)."

Disclaimer
This report reflects the findings of S&FS, PA. *This LSS Evaluation is being submitted pursuant to and meets the requirements of SL 2018-114 Section 11.(c).* Any site modifications that impact the proposed septic areas on Lots 42 of Oak Ridge Subdivision may nullify this design. 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.

Sincerely,



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

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

Attached is a proposed design for an Accepted Septic System with gravity dist. for a 4 bedroom single family residence at 109 Fallen Acorn Drive, Lot 42, Troutman 28166, Iredell County, NC.

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
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Site Plan/System Plan---------- 5

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Agent Authorization Form---------- 15



July 20, 2020
Project #: 20-0067
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.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a gravity 25% reduction (Accepted) installation.
- Repair is specified as a gravity 25% reduction (Accepted) installation.

GRAVITY ACCEPTED SYSTEM FOR WASTEWATER TREATMENT

Owner/Applicant: Garrison Davis

Address: 631/300 Brawley School Road
Mooresville, NC 28117

Phone: 704.363.2845

County: Iredell

Location: 109 Fallen Acorn Drive
Troutman NC 28166

Source of Wastewater Flow: 4 Bedroom Single Family Residence

Estimated Gallons Per Day Flow: 480

System Flow: N/A

Design Specifications

Drainfield Size: 400

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

Depth of Gravel in Trench: N/A

Gravel Size: N/A

Max.Trench Depth: 30 in. Repair Trench Bottom 30 in.

Trench Width: 36 in.

Septic Tank Size: 1000

Estimated Supply Line Length: 98

Supply Line Diameter: 4 in. SCH 40 PVC

Supply Line Volume: 63.99

Dosing Volume: N/A

Supply Manifold: N/A

Supply Manifold Length: N/A

Supply Manifold Volume: N/A

Recommended Float Controls: N/A

Recommended Control Panel: N/A

Pressure Head: N/A

Friction Head: N/A

Elevation Head: N/A

Total Dynamic Head: N/A

Threaded Union: N/A

Gate Valves: N/A

Check Valves: N/A

Anti-Siphon Hole: N/A

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

109 Fallen Acorn Drive

ACCEPTED SYSTEM

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	98
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000

Layout Specifications - 109 Fallen Acorn Drive

Project #: 20-0067

LAYOUT FOR 4 BEDROOM HOME

July 20, 2020

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM							
INSTR. 1							
1	YELLOW					65	65
2	RED					104	104
3	***BLUE***					***107***	***100***
4	***ORANGE***					***100***	***100***
5	***PINK***					***100***	***100***
6	***YELLOW***					***100***	***100***
7	RED					100	100
8	BLUE					100	100
9	ORANGE					80	80
10	PINK					70	70
					Total	926	919

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***400***	***0.300***	***ACCEPT.***	***0.300***	***25% RED***	***GRAVITY***
Repair	519	0.300	ACCEPT.	0.300	25% RED	GRAVITY

Notes: **All measures in feet

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

**Nitrification lines were located by GPS.

CALCULATIONS

Location	109 Fallen Acorn Drive Troutman, NC 28117	
Project Number	20-0067	
Lot No:	42	
No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.300	$^{gal}/_{ft^2\,day}$
PPBPS? (YES OR NO)	NO	
Supply Line Length	98	ft.
Supply Line Volume	63.994	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	400	ft.
Gallons per Minute	N/A	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Septic Tank Size	1000	gal.
Panel Volume	N/A	gal.
# of Panels	N/A	
Dosing Volume	N/A	gal.
Tank Draw Down	N/A	
Pump Run Time		
Elevation Head	N/A	ft.
Pressure Head	N/A	ft.
Friction Factor	N/A	ft./100 ft. *(From the interpolater.)*
Friction Head	N/A	ft.
Total Dynamic Head (+15%)	N/A	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