BLDG-2022-11177
AC OSWP-2022-10247

ICHD - ENVIRONMENTAL HEALTH DIVISION

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

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

PERMIT # OSWP-2022-8477

PIN # 4624-47-2407

APPLICANT / OWNER: Johnstone Shryock LLC T/A Artisan Custom Homes APPLICANT ADDRESS: 21016 Catawba Ave., Cornelius, NC 28031

SITE ADDRESS: 150 GREYFRIARS RD, MOORESVILLE, NC 28117 PHONE: (704) 309-0382 ALT. PHONE: (704) 309-3430

SITE DIRECTIONS: W Brawley School Rd -> L Greyfriars -> lot on R SAP CONTROLLED: YES ☐ NO ☑

SUBDIVISION: CL&T SECTION: 6 LOT #: 526 LOT AREA: 0.8 DESIGN FLOW: 360 L.T.A.R.: 0.3

Septic Tank: 1250 (gal)	STB: 760	Date: 12-8-23	☑ New System ☐ Repair ☐ Expansion	System Type: III	☑ Residence	No. Bedrooms: 3	Water Supply: New Well
Pump Tank: 1275 (gal)	PT: 3163	Date: 12-5-23	System Description: VPPBPS - PM		☐ Business	No. Persons: 6	
Pump Make:	Model:	Serial #:	Repair System Description: Existing bed - 2 bedroom only		☐ Other	No. Employees:	
# Nitrification Fields: 1	# Lines: 4	Linear Ft.: 200	Maintenance Agreement Required: ☐ YES ☑ NO		☐ Slab	☑ Crawl Space	
Trench Width: 24	Trench Bottom Depth (from [redacted]): 34 MAX		Gravel Depth: 0	☐ GRAVITY ☑ PRESSURE	☐ Basement w/ Plumbing	☐ Basement w/o Plumbing	

Comments / Conditions: See permit specifications given by LSS/AOWE

INITIAL SITE SKETCH

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

AWT

LSS# 1227 Jeff Vaughan

AS BUILT SKETCH

Tanks
Lines } SH 1/23/24
PM

Tanks size approved by Trevor Hackney
PRESSURE SET
FLOATS SW 2/12/24

Irrigation cut & capped - not functioning at time of final. Reconnection w/ any lines. <10 from septic will be a violation

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. Weber Date: 11/29/22

AUTHORIZATION TO CONSTRUCT by: D. Weber Date: 12/5/22

Installed By: Gbl Christenberry

OPERATION PERMIT by: D. Weber Date: 4/23/24

Existing System Inspected By: Date:

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

Alarm did not on Irrigation by septic line

Electrical not on separate breakers or split between Alarm & Pump. MW.

BLDG-2022-11177
AC OSWP-2022-10247

ICHD - ENVIRONMENTAL HEALTH DIVISION

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

PERMIT # OSWP-2022-8477

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

PIN # 4624-47-2407

APPLICANT / OWNER: Johnstone Shryock LLC T/A Artisan Custom Homes APPLICANT ADDRESS: 21016 Catawba Ave., Cornelius, NC 28031

SITE ADDRESS: 150 GREYFRIARS RD, MOORESVILLE, NC 28117 PHONE: (704) 309-0382 ALT. PHONE: (704) 309-3430

SITE DIRECTIONS: W Brawley School Rd -> L Greyfriars -> lot on R SAP CONTROLLED: YES ☐ NO ☑

SUBDIVISION: CL&T SECTION: 6 LOT #: 526 LOT AREA: 0.8 DESIGN FLOW: 360 L.T.A.R.: 0.3

Septic Tank: 1250 (gal)	STB: 7600	Date: 12-8-23	☑ New System ☐ Repair ☐ Expansion	System Type: III	☑ Residence	No. Bedrooms: 3	Water Supply: New Well
Pump Tank: 1275 (gal)	PT: 3603	Date: 12-5-23	System Description: VPPBPS - PM		☐ Business	No. Persons: 6	
Pump Make:	Model:	Serial #:	Repair System Description: Existing bed - 2 bedroom only		☐ Other	No. Employees:	
# Nitrification Fields: 1	# Lines: 4	Linear Ft.: 200	Maintenance Agreement Required: ☐ YES ☑ NO		☐ Slab	☑ Crawl Space	
Trench Width: 24	Trench Bottom Depth (Deepest): 34 MAX		Gravel Depth: 0	☐ GRAVITY ☑ PRESSURE	☐ Basement w/ Plumbing	☐ Basement w/o Plumbing	

Comments / Conditions: See permit specifications given by LSS/AOWE

INITIAL SITE SKETCH

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

AWT

LSS# 1227 Jeff Vaughan

AS BUILT SKETCH

Tanks
Lines } SH 1/23/24
PM

Tanks size approved by Trevor Hackney

PRESSURE SET
FLOATS SW 2/12/24

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. Meberg Date: 11/29/22

AUTHORIZATION TO CONSTRUCT by: D. Meberg Date: 12/5/22

Installed By: GW Chrisenberry

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.

BLDG - 2022 - 11177
AC OSWP-2022-10247

ICHD - ENVIRONMENTAL HEALTH DIVISION

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

PERMIT # OSWP-2022-8477

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

PIN # 4624-47-2407

APPLICANT / OWNER: Johnstone Shryock LLC T/A Artisan Custom Homes APPLICANT ADDRESS: 21016 Catawba Ave., Cornelius, NC 28031

SITE ADDRESS: 150 GREYFRIARS RD, MOORESVILLE, NC 28117 PHONE: (704) 309-0382 ALT. PHONE: (704) 309-3430

SITE DIRECTIONS: W Brawley School Rd -> L Greyfriars -> lot on R SAP CONTROLLED: YES ☐ NO ☑

SUBDIVISION: CL&T SECTION: 6 LOT #: 526 LOT AREA: 0.8 DESIGN FLOW: 360 L.T.A.R.: 0.3

Septic Tank: 1250 (gal)	STB: 760	Date: 12-8-23	☑ New System ☐ Repair ☐ Expansion	System Type: III	☑ Residence	No. Bedrooms: 3	Water Supply: New Well
Pump Tank: 1275 (gal)	PT: 3603	Date: 12-5-23	System Description: VPPBPS - PM		☐ Business	No. Persons: 6	
Pump Make:	Model:	Serial #:	Repair System Description: Existing bed - 2 bedroom only		☐ Other	No. Employees:	
# Nitrification Fields: 1	# Lines: 4	Linear Ft.: 200	Maintenance Agreement Required: ☐ YES ☑ NO		☐ Slab	☑ Crawl Space	
Trench Width: 24	Trench Bottom Depth (Shallow): 34 MAX		Gravel Depth: 0	☐ GRAVITY ☑ PRESSURE	☐ Basement w/ Plumbing	☐ Basement w/o Plumbing	

Comments / Conditions: See permit specifications given by LSS/AOWE

INITIAL SITE SKETCH

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

AWT

LSS# 1227 Jeff Vaughan

AS BUILT SKETCH

Tanks
Lines
PM
} SH 1/23/24

Tanks size approved by Trevor Hackney

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☐ 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. Weber Date: 11/29/22

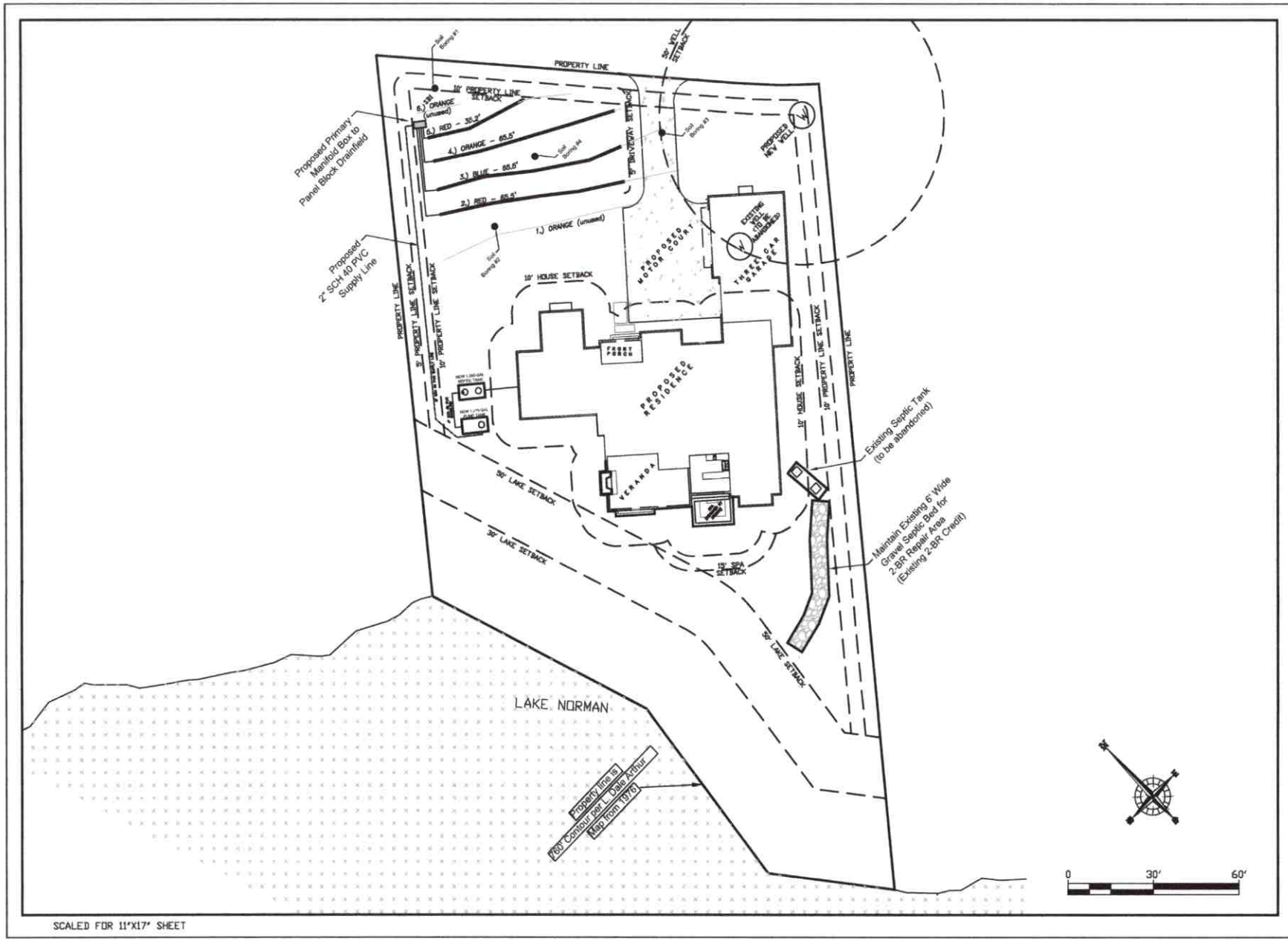
AUTHORIZATION TO CONSTRUCT by: D. Weber Date: 12/5/22

Installed By: GW Chrisenberry

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.



AWT
Engineers and Soil Scientists
Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0669
www.agriwaste.com

Artisan Custom Homes
Murphy Residence WWTS

Owner Information:
Artisan Custom Homes
c/o John Shyrock
21016 Catawba Ave.
Cornelius, NC 28031
(704) 309-0382
john@artisancustomhomes.com

Property Information:
150 Greyfriars Road
Mooresville, NC 28117
Wake County
PIN# 4634472407

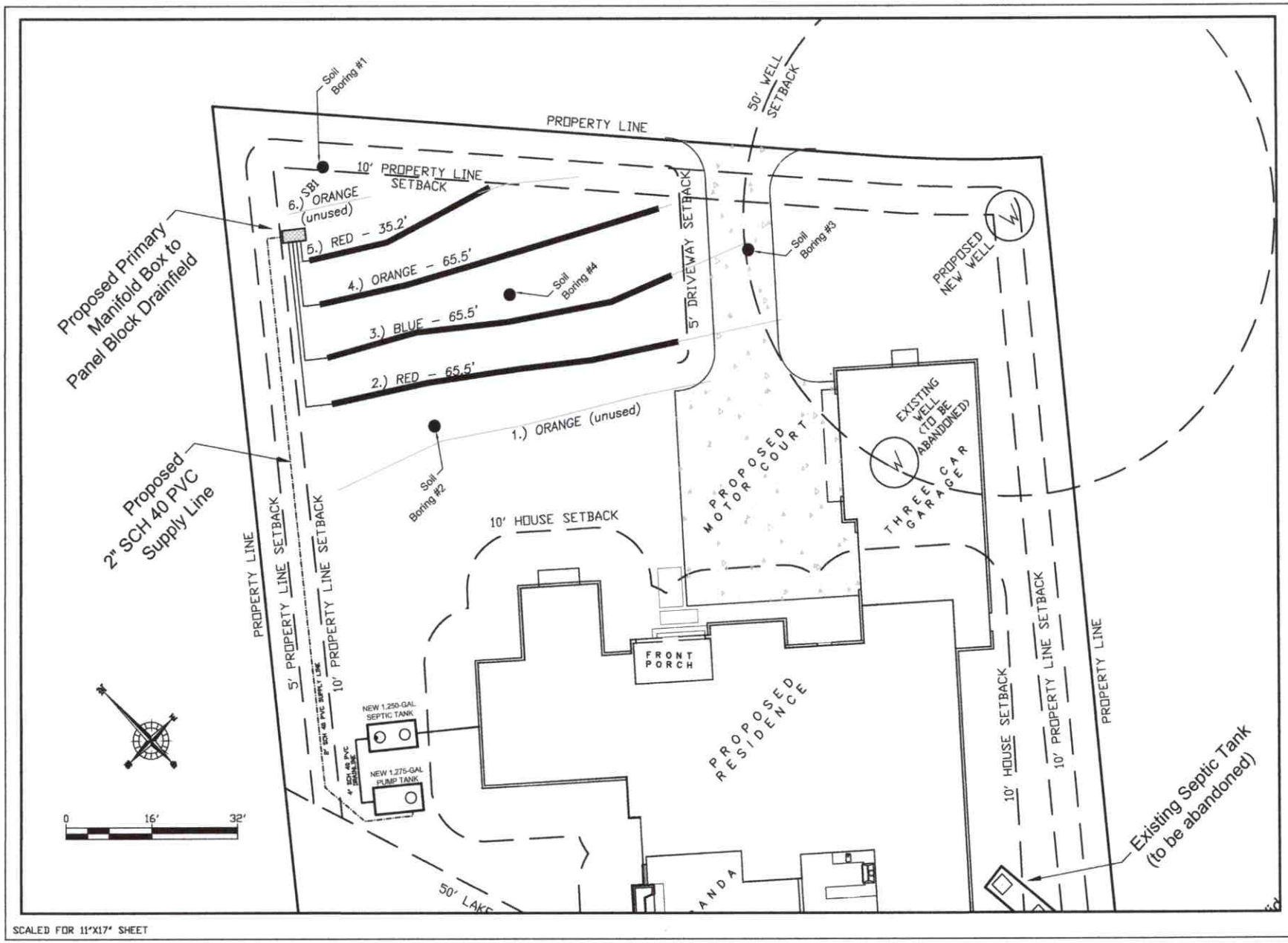
FOR REVIEW ONLY

REV.	ISSUED DATE	DESCRIPTION
1.)	11/22/22	Revised Setbacks

SHEET TITLE
Property Layout

DRAWN BY: S. Jones	CREATED ON: 10/4/22
REVISED BY: S. Jones	REVISED ON: 11/22/22
RELEASED BY:	RELEASED ON:

DRAWING NUMBER
WW-1



SCALED FOR 11"X17" SHEET

AWT
Engineers and Soil Scientists
Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0689
www.agriwaste.com

Artisan Custom Homes
Murphy Residence WWTS

Owner Information:
Artisan Custom Homes
c/o John Shyrock
21016 Catawba Ave.
Cornelius, NC 28031
(704) 309-0382
john@artisancustomhomes.com

Property Information:
150 Greyfriars Road
Mooresville, NC 28117
Iredell County
PIN# 4824472407

FOR REVIEW ONLY

REV.	ISSUED DATE	DESCRIPTION
1.)	11/22/22	Revised Setbacks

SHEET TITLE
Primary Drainfield Layout

DRAWN BY:	CREATED ON:
S. Jones	10/4/24
REVISED BY:	REVISED ON:
S. Jones	11/22/22
RELEASED BY:	RELEASED ON:

DRAWING NUMBER
WW-2

Engineers and Soil Scientists
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919-859-0669
www.agriwaste.com





Soil Suitability for Domestic Sewage Treatment and Disposal Systems
150 Greyfriars Rd, Mooresville, NC. 28117
Iredell County PIN: 4624-47-2407

PREPARED FOR: Artisan Custom Homes, Client

PREPARED BY: Jeff Vaughan, Licensed Soil Scientist
Trevor Hackney, Environmental Scientist

DATE: October 7, 2022

Soil suitability for domestic sewage treatment and disposal systems was evaluated on March 24, 2022, for the property located on 150 Greyfriars Road, Mooresville, NC. Jeff Vaughan and Trevor Hackney of Agri-Waste Technology, Inc. (AWT) conducted the soil evaluation. This evaluation was done to facilitate permitting for a 3-bedroom home. This report and attached documents were prepared *to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3). The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2).*

A drawing of the site plan, septic layout, and boring locations is included in Attachment 1. Profile descriptions for each boring are included in Attachment 2. Additional documentation about the property is included in Attachment 3.

The total property area is approximately 0.8 acres. A small two-bedroom home is currently on the property served by an existing bedded trench septic system. This drain field was delineated by AWT during the evaluation and is planned to be used as the repair field for the new primary system proposed in the front yard. The new proposed primary septic system is a pressure manifold system using panel block style trench. This property was initially repair area exempt based on the original Plat date (June 1976).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems
The drawing in Attachment 1 details the property boundaries, soil boring locations, location of existing drain field, and layout of new drain field trenches (Completed by AWT). Four soil borings were assessed on the property. Soil borings were examined to determine soil suitability for on-site sewage disposal systems in accordance with 15A

18A .1900 Rules for Sewage Treatment and Disposal Systems. These borings were advanced with a hand auger. All soil borings are being utilized for the drain field area.

A septic layout was performed to demonstrate available space (.1945). The layout in Attachment 1 indicates there is available space for a three-bedroom pressure manifold septic system using panel block trenches to achieve a 50% reduction. The repair field will be the existing bedded trench on the property.

The proposed LTAR (Long Term Acceptance Rate) by AWT is 0.3 GPD/ft^2. The soils on this property are group IV soils within the distribution and treatment zone as used to define the LTAR. Since usable soil depths meet or exceed 46" AWT is recommending the use of vertical panel block trench to utilize the 50% reduction for the primary septic system. With an LTAR of 0.3 GPD/ft^2, 200 linear feet of panel block trench is necessary to support a three-bedroom home initial system. The maximum trench bottom should not exceed 34". The attached drawing proves that 231 linear feet of trench can be installed for the primary system.

Any disturbances or grading done in the usable area will change the potential of using the area designated for a drain field. Prior to moving forward with building on the property, Iredell County Environmental Health Department should be contacted to complete the necessary review of this documentation to issue an IP (Improvement Permit) for the property and the CA (Construction Authorization).

Conclusions

An IP (Improvement Permit) and CA (Construction Authorization) for this property can be issued with the site plan that is in Attachment 1. A CA permit will be required in order to secure a building permit for the property. The county issues an Operation Permit after the system has been installed to meet the specifications of the Authorization to Construct. Additional septic layouts have been or will be performed as needed. It will be critical to not disturb any of the proposed septic area or there is a risk that the IP and CA will be revoked. The LSS/AOWE Evaluation and attached documents were prepared *to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3). The LSS/AOWE evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)*

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

Sincerely,

Jeff Vaughan

Trevor Hackney

Trevor Hackney

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: 12/7/22 (Date) by DW (Initials)

Permit Number: OSWP-2022-8477 / OSWP-2022-10247 (ID) AC

G.S. 130A-335(a6) states the following: *'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'*

In accordance with G.S. 130A-335(a5) the construction authorization application is:

☐ 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 Owner on _____ (Date)

State Authorized Agent: _____ Date: _____

☐ Denied (See attached report.)

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

State Authorized Agent: _____ Date: _____

☒ Complete

State Authorized Agent: D. Weberg Date of Issuance: 12/8/22

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) 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, or if information submitted in the application was falsified, inaccurate or misleading. 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 location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.

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: 11/29/27

See attached site sketch

County: Iredell

CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: 4624-47-2407

Issued To: Artisan Custom Homes

Property Location: 150 Greyfriars Road, Mooresville, NC. 28117

AOWE/PE Plans/Evaluations Provided: Yes ☒ No ☐ If yes, name and license number of AOWE/PE: Jeff Vaughan, 10003E

Facility Type: Single Family Residence

☒ New ☐ Expansion ☐ Repair System Relocation ☐

Basement? ☐ Yes ☒ No Basement Fixtures? ☐ Yes ☒ No

Type of Wastewater System** Pressure Manifold 50% Reduction (Initial) Existing Drain field (Repair)

Design Daily Flow: 360 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

Installation Requirements/Conditions

Septic Tank Size: 1250 gallons Total Trench/Bed Length: 231 feet Trench/Bed Spacing: 8 feet on center

Drainfield square footage: 600 Trench/Bed Width: 24 inches LTAR: 0.3 gpd/ft²

Soil Cover: 16 inches Slope Adjusted Maximum Trench/Bed Depth: 34 inches

Aggregate Depth: _____inches above pipe _____inches below pipe _____inches total

Pump Tank Size (if applicable): 1275 gallons Requires more than 1 pump? ☐ Yes ☒ No

Pump Requirements: 23.9 ft. TDH vs. 36.68 GPM Grease Trap Size (if applicable): NA 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

****If applicable:**

I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.

Owner/Legal Representative Print Name: _____

Owner/Legal Representative Signature: _____ Date: _____

Pre-Construction Conference Required: Yes ☐ No ☒

Conditions: Existing well must be abandon and a new well installed

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: Jeff Vaughan

AOWE/PE Signature: _____ Date: 10/7/2022

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

See attached site sketch

County: Iredell

IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: 4624-47-2407

Issued To: Artisan Custom Homes

Property Location: 150 Greyfriars Road, Mooresville, NC. 28117

Subdivision: Crescent Lane + Timber Corp Lot #: 526 Block: _____ Section: _____

LSS Report Provided: Yes ☒ No ☐

If yes, name and license number of LSS: Jeff Vaughan, 1227

New ☒ Repair ☐ Expansion ☐ System Relocation ☐

Proposed Structure: Single family residence

Proposed Wastewater System Type: Pressure Manifold 50% Reduction (Initial) Existing Bedded Trench (Repair)

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

Proposed Design Daily Flow: 360 GPD Proposed LTAR (Initial): 0.3GPD/ft2 Proposed LTAR (Repair): Existing

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

Number of bedrooms: 3 Number of Occupants: 6 Other: _____

Pump Required: ☒ Yes ☐ No ☐ May be required based upon final location and elevations of facilities

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

Type of Water Supply: ☒ Private well ☐ Public 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:

Existing well must be abandon and a new well installed

Licensed Soil Scientist Print Name: Jeff Vaughan

Licensed Soil Scientist Signature: _____ Date: 10/7/2022

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

See attached site sketch

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: 11/22/22 (Date) by DW (Initials)

Permit Number: OSWP-2022-8477

G.S. 130A-335(a4) states the following: *'If a local health department fails to act on an application for an improvement permit submitted pursuant to subsection (a3) of the section within 10 business days of receipt of a complete application, the local health department shall issue the improvement permit.'*

In accordance with G.S. 130A-335(a3) the improvement permit application is:

☐ 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 Owner on _____ (Date)

State Authorized Agent: _____ Date: _____

☐ Denied (See attached report.)

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

State Authorized Agent: _____ Date: _____

☒ Complete *corrections needed to design for CA

State Authorized Agent: D. Wieberg Date of Issuance: 11/29/22

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2), (a3), and (a4) 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 site is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. 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 conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner.

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: 11/29/27

See attached site sketch

Vertical Panel Block Pressure Manifold Design (Primary)

Designed by: SJ
Revised: 11/29/2022

Site Information

Project: Artisan Custom Homes - Murphy
Site Address: 150 Greyfriars Rd
Mooresville, NC 28117
County: Iredell

Design Information

Estimated Daily Flow:	360	gal/day
L.T.A.R.:	0.3	gal/day/ft^2
L.T.A.R. + 5%:	0.315	gal/day/ft^2
Trench Width:	3	ft.
Line Length Required:	400	ft. (Conventional)
Line Length w/ 50% Reduction:	200	ft. (Panel Block)
L.T.A.R. Reduced:	0.600	gal/day/ft2
L.T.A.R. Reduced + 5%:	0.630	gal/day/ft2

DRAINFIELD INFO. - **Primary**

Proposed Type of System/Distribution: ***Pump to Manifold using Vertical Panel Block***

Line No.	Flag Color	Line Length (ft.)	Number Of Panels	Tap Size	Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
2	Red	35.2	8	1/2in SCH 80	5.48	0.156	0.523
3	Blue	65.5	15	3/4in SCH 80	10.1	0.154	0.517
4	Orange	65.5	15	3/4in SCH 80	10.1	0.154	0.517
5	Red	65.5	15	3/4in SCH 80	10.1	0.154	0.517
TOTAL		**231.7**	**53**		**35.78**		0.519

Determination of Dose Volume - Primary System

Total Run Time	10.06	min
Volume per Panel	3.60	gal
Number of Panels	53	
Dose Volume	191	gal/dose
Runtime/Dose (min)	5.33	min
Volume/depth	20.16	gal/in
Estimated Drawdown	9.46	in

Manifold Box

Number of Taps = 4
Manifold Length = 3.5 ft. (approximate)

PUMP DESIGN

Designed by: SJ
Revised: 10/4/2022

System (initial/repair): **Primary**

Project: Artisan Custom Homes - Murphy
Site Address: 150 Greyfriars Rd
Mooresville, NC 28117
County: Iredell

Friction Losses

Suction Head =	0 ft.		*(submersible = 0)*
Elev. Difference (highest point from pump) =	14.00 ft.		
Design Pressure At Outlet =	2 ft.		
Supply Line - 2.0" *Schedule 40 PVC*			
Pipe Diameter (ID) =	2.047 in.	Flow =	35.78 gpm
Pipe Length =	130 ft.	Velocity =	3.49 ft/sec
Pipe Length for Fittings =	13 ft.		
Est. Friction Loss per 100' =	2.27 ft/100 ft.		
Estimated Friction Loss =	3.25 ft.		
Pressure Filter Friction Loss =	1.16 ft.		*(from manufacturer)*
Friction Loss - Taps/Special Fittings =	3.5 ft.		
TOTAL =	**23.90 ft.**		

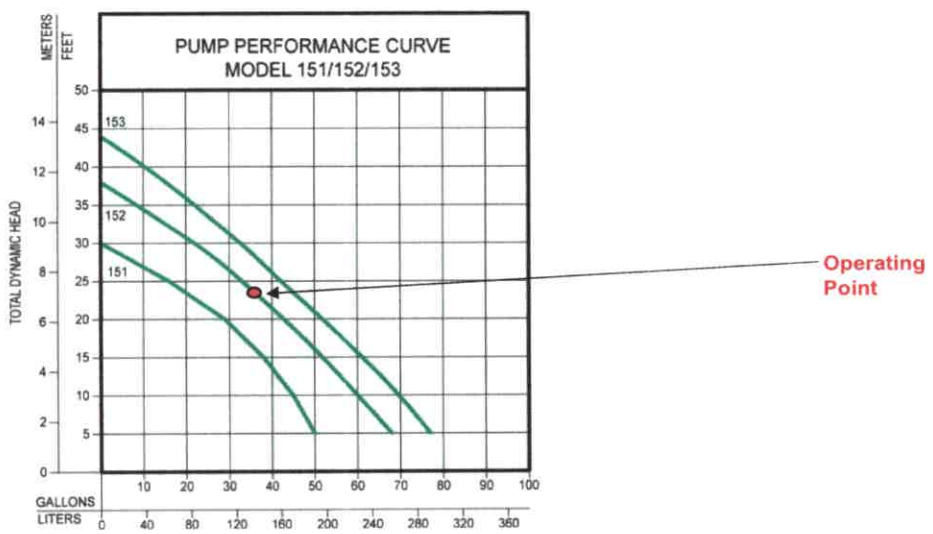
Flow for Antisiphon Hole

Hole Diameter =	1/8	in.
Hole Flowrate =	0.90	gpm

Pump Efficiency =	0.7	*(assumed, typical)*
Motor Efficiency =	0.9	*(assumed for electric pumps)*
Flow =	**36.68**	**gpm**
Required Horsepower =	0.35	hp
TDH =	**23.90**	**ft.**

Pump Selection

Manufacturer: **Zoeller**
Model: **N152**
Horsepower: **0.40**



Engineers and Soil Scientists

Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0669
www.agriwaste.com

October 7, 2022

To: John Shryock
150 Greyfriars Rd.
Mooresville, NC 28117
Iredell County
Parcel/PIN: 4624472407

Re: Site/Soil Investigation for Iredell County
Parcel/PIN: 4624472407

I, John Shryock (*applicant name, print*), acknowledge that "the LSS Evaluation attached to this application is to be used to produce design and construction features for permitting in accordance with NC Session Law 2022-11/S372."

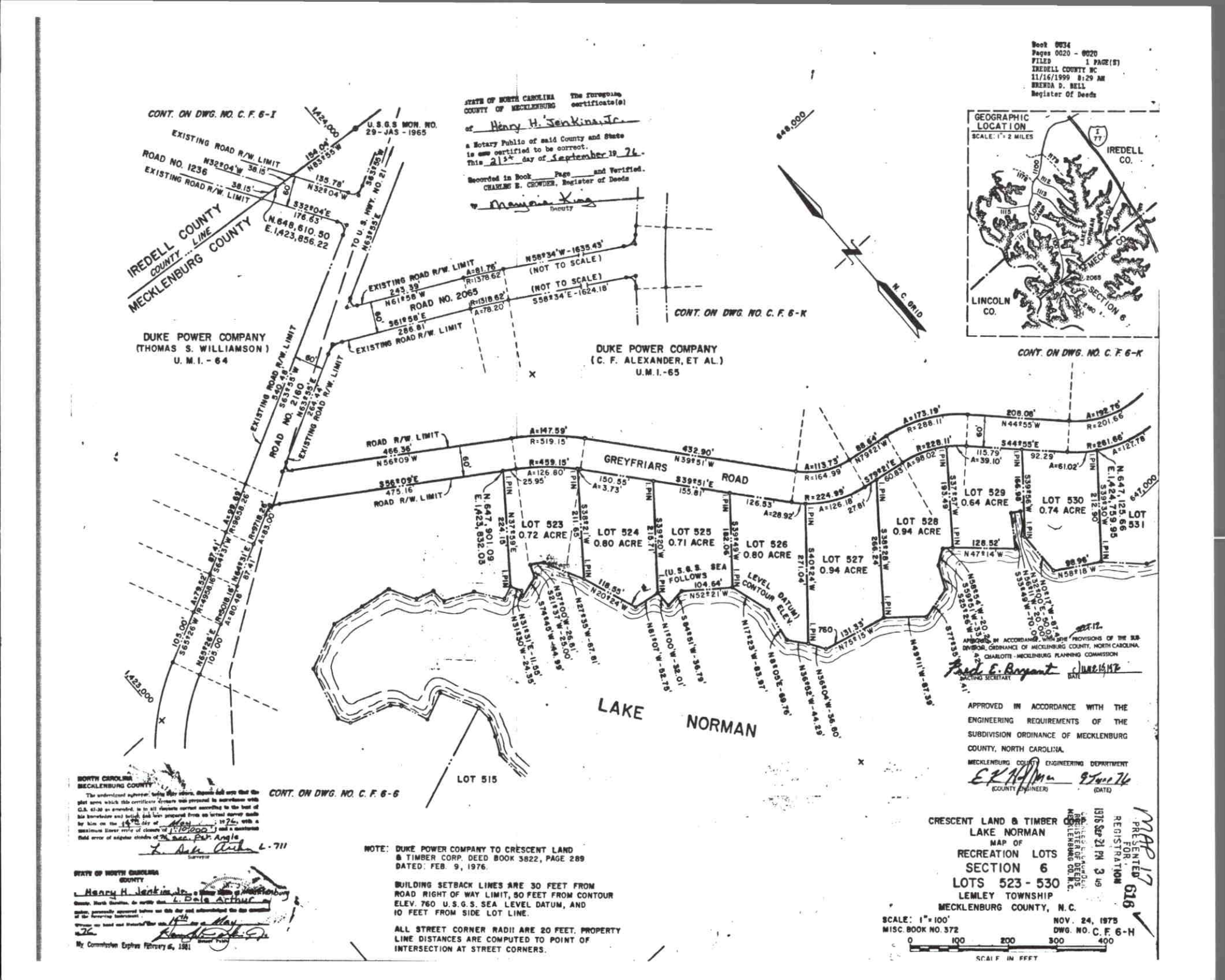
Applicant Signature: John E Shryock III

Date: 10-11-22

Sincerley,

Chris McGee, LSS
Soil Scientist
Agri-Waste Technology, Inc.

Book 0034
Pages 0020 - 0020
FILED 1 PAGE(S)
IREDELL COUNTY NC
11/16/1999 8:29 AM
BRENDA D. BELL
Register Of Deeds



APPROVED IN ACCORDANCE WITH THE PROVISIONS OF THE SUBDIVISION ORDINANCE OF MECKLENBURG COUNTY, NORTH CAROLINA.
CHARLOTTE-MECKLENBURG PLANNING COMMISSION
Fred E. Bryant (ACTING SECRETARY) NOV 15 1976 (DATE)

APPROVED IN ACCORDANCE WITH THE ENGINEERING REQUIREMENTS OF THE SUBDIVISION ORDINANCE OF MECKLENBURG COUNTY, NORTH CAROLINA.
MECKLENBURG COUNTY ENGINEERING DEPARTMENT
E K Hoffman (COUNTY ENGINEER) 9 Nov 76 (DATE)

NORTH CAROLINA
MECKLENBURG COUNTY

The undersigned registered surveyor certifies that the plat shown which this certificate accompanies was prepared in accordance with G.S. 47-30 as amended, to all elements contained according to the best of his knowledge and belief, and has been prepared from an actual survey made by him on the 19th day of May, 1976, with a maximum linear error of closure of 1:10000 and a maximum field error of angular closure of 25 sec. Per Angle

L. Dale Arthur L-711
Surveyor

STATE OF NORTH CAROLINA
COUNTY

Henry H. Jenkins, Jr. a Notary Public of Mecklenburg County, North Carolina, do certify that L. Dale Arthur personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and Notarial Seal this 4th day of May, 1976.

Notary Public

My Commission Expires February 6, 1981

NOTE: DUKE POWER COMPANY TO CRESCENT LAND & TIMBER CORP. DEED BOOK 3822, PAGE 289 DATED: FEB. 9, 1976.

BUILDING SETBACK LINES ARE 30 FEET FROM ROAD RIGHT OF WAY LIMIT, 50 FEET FROM CONTOUR ELEV. 760 U.S.G.S. SEA LEVEL DATUM, AND 10 FEET FROM SIDE LOT LINE.

ALL STREET CORNER RADII ARE 20 FEET. PROPERTY LINE DISTANCES ARE COMPUTED TO POINT OF INTERSECTION AT STREET CORNERS.

CRESCENT LAND & TIMBER CORP.
LAKE NORMAN
MAP OF
RECREATION LOTS
SECTION 6
LOTS 523 - 530
LEMLEY TOWNSHIP
MECKLENBURG COUNTY, N.C.

SCALE: 1" = 100'
MISC. BOOK NO. 372
NOV. 24, 1975
DWG. NO. C. F. 6-H

0 100 200 300 400
SCALE IN FEET

MAP 17 PRESENTED FOR REGISTRATION 1976 Sep 23 PM 3 49 616
MECKLENBURG CO. REGISTER OF DEEDS N.C.

COUNTY: Iredell Co.__

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

CLIENT: __Artisan Custom Homes_____ APPLICATION DATE_____
ADDRESS:____ _____150 Greyfriars Road, Mooresville, NC. 28117 DATE EVALUATED: __3/24/2022 _
PROPOSED FACILITY: _Single Family Residence___PROPOSED DESIGN FLOW (.1949): ___360 GPD____ PROPERTY SIZE: ___0.8 ac.____
LOCATION OF SITE: 150 Greyfriars Road, Mooresville, NC. 28117_____ PROPERTY RECORDED: _____
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)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
SB 1	5%	0-11"	SCL; GR	SS; SP; FR	-	48"	-	-	Provisionally Suitable 0.3
		11-48"	C; SBK	SS; SP; FI					
SB 2	3%	0-10"	SCL;GR	SS; SP; FR		48"	-	-	Provisionally Suitable 0.3
		10-48"	C; SBK	SS; SP; FI					
SB 3	5%	0-10"	SCL; GR	SS; SP; FR	-	48"	-	-	Provisionally Suitable 0.3
		10-48"	C; SBK	SS; SP; FI					
SB 4	5%	0-16"	SCL; GR	SS; SP; FR	-	48"	-	-	Provisionally Suitable 0.3
		16-48"	C; SBK	SS; SP; FI					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	Provisionally Suitable	Existing Drain field
System Type(s)	Conventional 50% Reduction	Existing Drain field
Site LTAR	0.3 GPD/Ft^2	Existing Drain field

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

EVALUATED BY: ___Jeff Vaughan_____
OTHER(S) PRESENT: _____Trevor Hackney_____

COMMENTS

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: 11/22/22 (Date) by DW (Initials)

Permit Number: OSWP-2022-8477

G.S. 130A-335(a6) states the following: *'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'*

In accordance with G.S. 130A-335(a5) the construction authorization application is:

☐ 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 Owner on _____ (Date)

State Authorized Agent: _____ Date: _____

☒ Denied (See attached report.) Need: well abandoned, floor plans, PM design correction

Copies of this were sent to the AOWE/PE and the Owner on 11/29/22 (Date)

State Authorized Agent: D. Meberg Date: 11/29/22

☐ Complete

State Authorized Agent: _____ Date of Issuance: _____

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) 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, or if information submitted in the application was falsified, inaccurate or misleading. 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 location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.

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: _____

See attached site sketch

Vertical Panel Block Pressure Manifold Design (Primary)

Designed by: SJ
Revised: 10/4/2022

Site Information

Project: Artisan Custom Homes - Murphy
Site Address: 150 Greyfriars Rd
Mooresville, NC 28117
County: Iredell

Design Information

Estimated Daily Flow:	360	gal/day
L.T.A.R.:	0.3	gal/day/ft^2
L.T.A.R. + 5%:	0.315	gal/day/ft^2
Trench Width:	3	ft.
Line Length Required:	400	ft. (Conventional)
Line Length w/ 50% Reduction:	200	ft. (Panel Block)
L.T.A.R. Reduced:	0.600	gal/day/ft2
L.T.A.R. Reduced + 5%:	0.630	gal/day/ft2

DRAINFIELD INFO. - **Primary**

Proposed Type of System/Distribution: ***Pump to Manifold using Vertical Panel Block***

Line No.	Flag Color	Line Length (ft.)	Number Of Panels	Tap Size	Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
2	Red	35.2	8	1/2in SCH 80	5.48	0.156	0.523
3	Blue	65.5	15	3/4in SCH 80	10.1	0.154	0.517
4	Orange	65.5	15	3/4in SCH 80	10.1	0.154	0.517
5	Red	65.5	15	3/4in SCH 80	10.1	0.154	0.517
TOTAL		**231.7**	**53**		**35.78**		0.519

Determination of Dose Volume - Primary System

Total Run Time	10.06	min
Volume per Panel	5.76	gal → 3.69
Number of Panels	53	
Dose Volume	305	gal/dose
Runtime/Dose (min)	8.53	min
Volume/depth	20.16	gal/in
Estimated Drawdown	15.14	in

Manifold Box

Number of Taps = 4
Manifold Length = 3.5 ft. (approximate)

Please correct dose, drawdown, runtime.

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: 11/18/22 (*Date*) by online (*Initials*)

Permit Number: OSWP-2022-8477

G.S. 130A-335(a4) states the following: *'If a local health department fails to act on an application for an improvement permit submitted pursuant to subsection (a3) of the section within 10 business days of receipt of a complete application, the local health department shall issue the improvement permit.'*

In accordance with G.S. 130A-335(a3) the improvement permit application is:

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

The following items are missing:

1) Current site plan shows house in the buffer - update site plan in septic permit packet.

2) Copy of a 3 bedroom septic permit for existing system - without a permit, 2 bedroom credit only & more repair needed.

Copies of this were sent to the LSS and the Owner on 11/21/22 (*Date*)

State Authorized Agent: Danielle A Wieberg Digitally signed by Danielle A Wieberg Date: 2022.11.21 15:22:48 -05'00' Date: 11/21/22

☐ Denied (See attached report.)

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

State Authorized Agent: _____ Date: _____

☐ Complete

State Authorized Agent: _____ Date of Issuance: _____

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2), (a3), and (a4) 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 site is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. 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 conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner.

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: _____

See attached site sketch

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: 11/18/22 (*Date*) by online (*Initials*)

Permit Number: OSWP-2022-8477

G.S. 130A-335(a6) states the following: *'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'*

In accordance with G.S. 130A-335(a5) the construction authorization application is:

☐ 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 Owner on _____ (*Date*)

State Authorized Agent: _____ Date: _____

☑ Denied (See attached report.)

Copies of this were sent to the AOWE/PE and the Owner on 11/21/22 (*Date*)

State Authorized Agent: Danielle A Wieberg Digitally signed by Danielle A Wieberg Date: 2022.11.21 15:22:00 -05'00' Date: 11/21/22

☐ Complete

State Authorized Agent: _____ Date of Issuance: _____

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) 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, or if information submitted in the application was falsified, inaccurate or misleading. 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 location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.

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: _____

See attached site sketch

County: Iredell

IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: 4624-47-2407

Issued To: Artisan Custom Homes

Property Location: 150 Greyfriars Road, Mooresville, NC. 28117

Subdivision: Crescent Lane + Timber Corp Lot #: 526 Block: _____ Section: _____

LSS Report Provided: Yes ☒ No ☐

If yes, name and license number of LSS: Jeff Vaughan, 1227

New ☒ Repair ☐ Expansion ☐ System Relocation ☐

Proposed Structure: Single family residence

Proposed Wastewater System Type: Pressure Manifold 50% Reduction (Initial) Existing Bedded Trench (Repair)

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

Proposed Design Daily Flow: 360 GPD Proposed LTAR (Initial): 0.3GPD/ft2 Proposed LTAR (Repair): Existing

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

Number of bedrooms: 3 Number of Occupants: 6 Other: _____

Pump Required: ☒ Yes ☐ No ☐ May be required based upon final location and elevations of facilities

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

Type of Water Supply: ☒ Private well ☐ Public 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:

Existing well must be abandon and a new well installed

Repair field will require TS-II pretreatment if used

Licensed Soil Scientist Print Name: Jeff Vaughan

Licensed Soil Scientist Signature: _____ Date: 10/7/2022

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

See attached site sketch

County: Iredell

CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: 4624-47-2407

Issued To: Artisan Custom Homes

Property Location: 150 Greyfriars Road, Mooresville, NC. 28117

AOWE/PE Plans/Evaluations Provided: Yes ☒ No ☐ If yes, name and license number of AOWE/PE: Jeff Vaughan, 10003E

Facility Type: Single Family Residence

☒ New ☐ Expansion ☐ Repair System Relocation ☐

Basement? ☐ Yes ☒ No Basement Fixtures? ☐ Yes ☒ No

Type of Wastewater System** Pressure Manifold 50% Reduction (Initial) Existing Drain field (Repair)

Design Daily Flow: 360 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

Installation Requirements/Conditions

Septic Tank Size: 1250 gallons Total Trench/Bed Length: 231 feet Trench/Bed Spacing: 8 feet on center

Drainfield square footage: 600 Trench/Bed Width: 24 inches LTAR: 0.3 gpd/ft²

Soil Cover: 16 inches Slope Adjusted Maximum Trench/Bed Depth: 34 inches

Aggregate Depth: _____inches above pipe _____inches below pipe _____inches total

Pump Tank Size (if applicable): 1275 gallons Requires more than 1 pump? ☐ Yes ☒ No

Pump Requirements: 23.9 ft. TDH vs. 36.68 GPM Grease Trap Size (if applicable): NA 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

****If applicable:**

I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.

Owner/Legal Representative Print Name: _____

Owner/Legal Representative Signature: _____ Date: _____

Pre-Construction Conference Required: Yes ☐ No ☒

Conditions: Existing well must be abandon and a new well installed

Repair field will require TS-II pretreatment if used

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: Jeff Vaughan

AOWE/PE Signature: Jeff Vaughan Date: 10/7/2022

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

See attached site sketch

County: Iredell

This Section for Local Health Department Use Only

Initial submittal received: _____ by _____
Date *Initials*

Permit Number: _____

G.S. 130A-335(a6) states the following: *'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'*

In accordance with G.S. 130A-335(a5) the construction authorization application is:

☐ 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 Owner on _____
Date

State Authorized Agent: _____ Date: _____

☒ Denied (See attached report.)

Copies of this were sent to the AOWE/PE and the Owner on _____
Date

State Authorized Agent: _____ Date: _____

☐ Complete

State Authorized Agent: _____ Date of Issuance: _____

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) 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, or if information submitted in the application was falsified, inaccurate or misleading. 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 location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.

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: _____

See attached site sketch

-Need well abandoned before A/C

Engineers and Soil Scientists
Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0669
www.agriwaste.com





Soil Suitability for Domestic Sewage Treatment and Disposal Systems
150 Greyfriars Rd, Mooresville, NC. 28117
Iredell County PIN: 4624-47-2407

PREPARED FOR: Artisan Custom Homes, Client

PREPARED BY: Jeff Vaughan, Licensed Soil Scientist
Trevor Hackney, Environmental Scientist

DATE: October 7, 2022

Soil suitability for domestic sewage treatment and disposal systems was evaluated on March 24, 2022, for the property located on 150 Greyfriars Road, Mooresville, NC. Jeff Vaughan and Trevor Hackney of Agri-Waste Technology, Inc. (AWT) conducted the soil evaluation. This evaluation was done to facilitate permitting for a 3-bedroom home. This report and attached documents were prepared *to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3). The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2).*

A drawing of the site plan, septic layout, and boring locations is included in Attachment 1. Profile descriptions for each boring are included in Attachment 2. Additional documentation about the property is included in Attachment 3.

The total property area is approximately 0.8 acres. A small two-bedroom home is currently on the property served by an existing bedded trench septic system. This drain field was delineated by AWT during the evaluation and is planned to be used as the repair field for the new primary system proposed in the front yard. The new proposed primary septic system is a pressure manifold system using panel block style trench. This property was initially repair area exempt based on the original Plat date (June 1976).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems
The drawing in Attachment 1 details the property boundaries, soil boring locations, location of existing drain field, and layout of new drain field trenches (Completed by AWT). Four soil borings were assessed on the property. Soil borings were examined to determine soil suitability for on-site sewage disposal systems in accordance with 15A

18A .1900 Rules for Sewage Treatment and Disposal Systems. These borings were advanced with a hand auger. All soil borings are being utilized for the drain field area.

A septic layout was performed to demonstrate available space (.1945). The layout in Attachment 1 indicates there is available space for a three-bedroom pressure manifold septic system using panel block trenches to achieve a 50% reduction. The repair field will be the existing bedded trench on the property with TS-II pretreatment added because the bed runs into the 50' lake setback from the 760' contour of Lake Norman.

The proposed LTAR (Long Term Acceptance Rate) by AWT is 0.3 GPD/ft^2. The soils on this property are group IV soils within the distribution and treatment zone as used to define the LTAR. Since usable soil depths meet or exceed 46" AWT is recommending the use of vertical panel block trench to utilize the 50% reduction for the primary septic system. With an LTAR of 0.3 GPD/ft^2, 200 linear feet of panel block trench is necessary to support a three-bedroom home initial system. The maximum trench bottom should not exceed 34". The attached drawing proves that 231 linear feet of trench can be installed for the primary system.

Any disturbances or grading done in the usable area will change the potential of using the area designated for a drain field. Prior to moving forward with building on the property, Iredell County Environmental Health Department should be contacted to complete the necessary review of this documentation to issue an IP (Improvement Permit) for the property and the CA (Construction Authorization).

Conclusions

An IP (Improvement Permit) and CA (Construction Authorization) for this property can be issued with the site plan that is in Attachment 1. A CA permit will be required in order to secure a building permit for the property. The county issues an Operation Permit after the system has been installed to meet the specifications of the Authorization to Construct. Additional septic layouts have been or will be performed as needed. It will be critical to not disturb any of the proposed septic area or there is a risk that the IP and CA will be revoked. The LSS/AOWE Evaluation and attached documents were prepared *to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3). The LSS/AOWE evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)*

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

Sincerely,

Jeff Vaughan

Trevor Hackney

Trevor Hackney

Vertical Panel Block Pressure Manifold Design (Primary)

Designed by: SJ
Revised: 10/4/2022

Site Information

Project: Artisan Custom Homes - Murphy
Site Address: 150 Greyfriars Rd
Mooresville, NC 28117
County: Iredell

Design Information

Estimated Daily Flow:	360	gal/day
L.T.A.R.:	0.3	gal/day/ft^2
L.T.A.R. + 5%:	0.315	gal/day/ft^2
Trench Width:	3	ft.
Line Length Required:	400	ft. (Conventional)
Line Length w/ 50% Reduction:	200	ft. (Panel Block)
L.T.A.R. Reduced:	0.600	gal/day/ft2
L.T.A.R. Reduced + 5%:	0.630	gal/day/ft2

DRAINFIELD INFO. - **Primary**

Proposed Type of System/Distribution: ***Pump to Manifold using Vertical Panel Block***

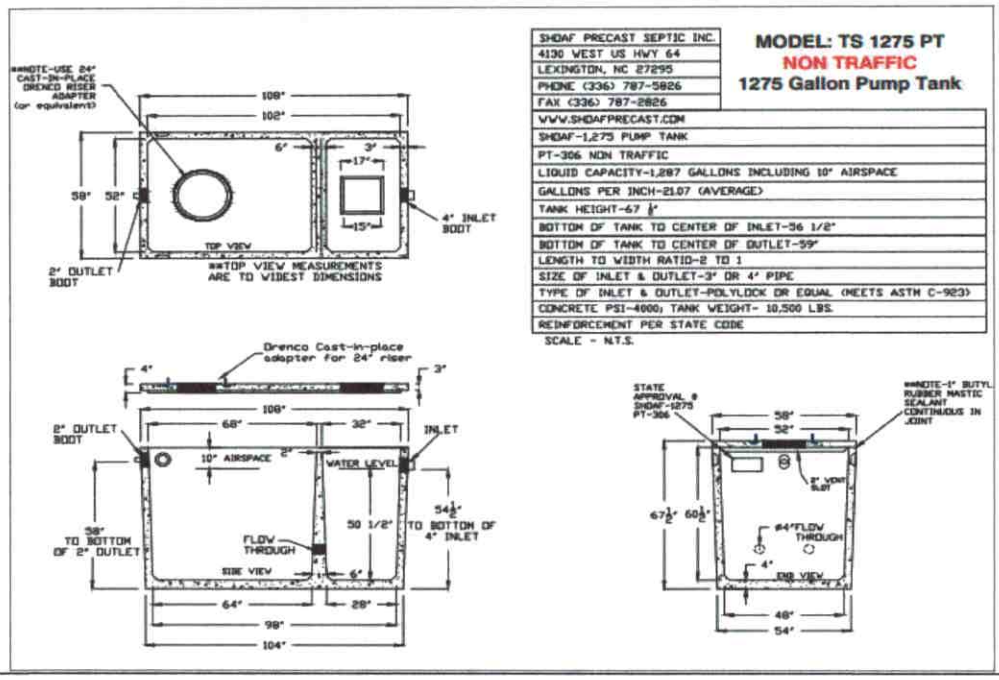
Line No.	Flag Color	Line Length (ft.)	Number Of Panels	Tap Size	Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
2	Red	35.2	8	1/2in SCH 80	5.48	0.156	0.523
3	Blue	65.5	15	3/4in SCH 80	10.1	0.154	0.517
4	Orange	65.5	15	3/4in SCH 80	10.1	0.154	0.517
5	Red	65.5	15	3/4in SCH 80	10.1	0.154	0.517
TOTAL		**231.7**	**53**		**35.78**		0.519

Determination of Dose Volume - Primary System

Total Run Time	10.06	min
Volume per Panel	5.76	gal
Number of Panels	53	
Dose Volume	305	gal/dose
Runtime/Dose (min)	8.53	min
Volume/depth	20.16	gal/in
Estimated Drawdown	15.14	in

Manifold Box

Number of Taps = 4
Manifold Length = 3.5 ft. (approximate)



Interior Height (in.)	**60.5**
Avg. Gals/Inch	**21.07**

Primary System

Elevations, measured from bottom towards top (0 = Interior Bottom of Tank):

Top of pump (including 4" block)	16.3 in.	(Pump approx. 12.125" tall)
Pump Off	18.5 in.	(allows pump to remain submerged)
Pump On	34.00 in.	(set for dose volume)
Alarm on	40.00 in.	(6" above ON Float)

Emergency Storage Available	
Pump Tank	431.9 gal
Days of Storage	1.20 days

(determined from interior top of tank - "High Water Alarm")

PUMP DESIGN

Designed by: SJ
Revised: 10/4/2022

System (initial/repair): **Primary**

Project: Artisan Custom Homes - Murphy
Site Address: 150 Greyfriars Rd
Mooresville, NC 28117
County: Iredell

Friction Losses

Suction Head =	0 ft.		*(submersible = 0)*
Elev. Difference (highest point from pump) =	14.00 ft.		
Design Pressure At Outlet =	2 ft.		
Supply Line - 2.0" *Schedule 40 PVC*			
Pipe Diameter (ID) =	2.047 in.	Flow =	35.78 gpm
Pipe Length =	130 ft.	Velocity =	3.49 ft/sec
Pipe Length for Fittings =	13 ft.		
Est. Friction Loss per 100' =	2.27 ft/100 ft.		
Estimated Friction Loss =	3.25 ft.		
Pressure Filter Friction Loss =	1.16 ft.		*(from manufacturer)*
Friction Loss - Taps/Special Fittings =	3.5 ft.		
TOTAL =	**23.90 ft.**		

Flow for Antishiphon Hole

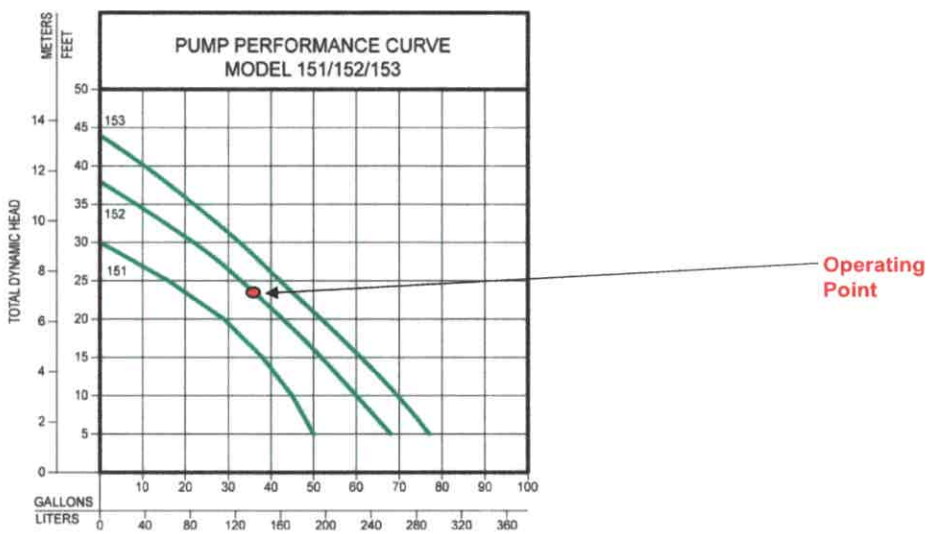
Hole Diameter = 1/8 in.
Hole Flowrate = 0.90 gpm

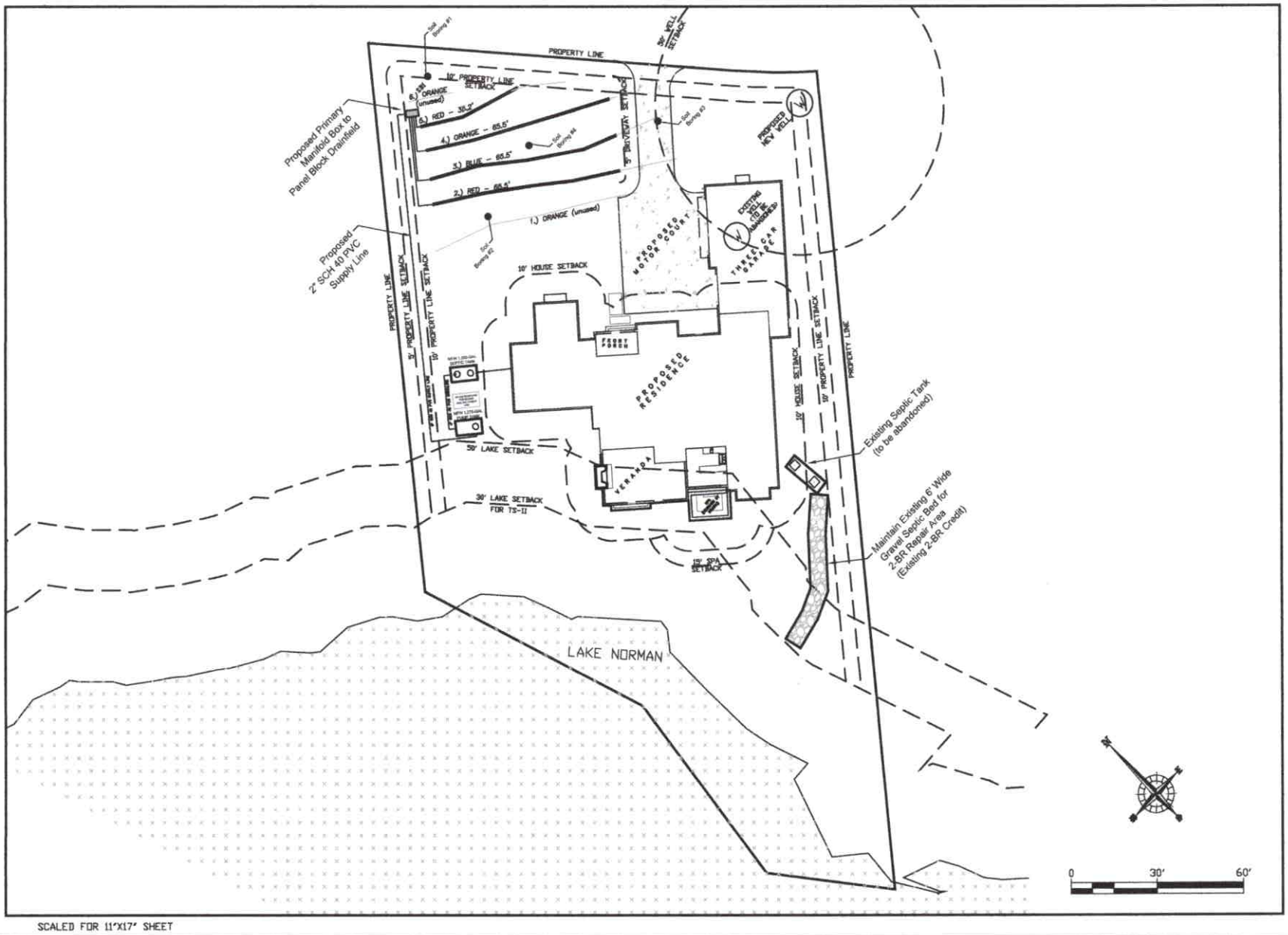
Pump Efficiency = 0.7 *(assumed, typical)*
Motor Efficiency = 0.9 *(assumed for electric pumps)*
Flow = 36.68 gpm

Required Horsepower = 0.35 hp
TDH = 23.90 ft.

Pump Selection

Manufacturer: **Zoeller**
Model: **N152**
Horsepower: **0.40**





SCALED FOR 11"X17" SHEET

AWT
Engineers and Soil Scientists
Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0669
www.agriwaste.com

Artisan Custom Homes
Murphy Residence WWTS

Owner Information:
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21016 Catawba Ave.
Cornelius, NC 28031
(704) 309-0382
john@artisancustomhomes.com

Property Information:
150 Greyfriars Road
Mooresville, NC 28117
Iredell County
PIN# 4624472407

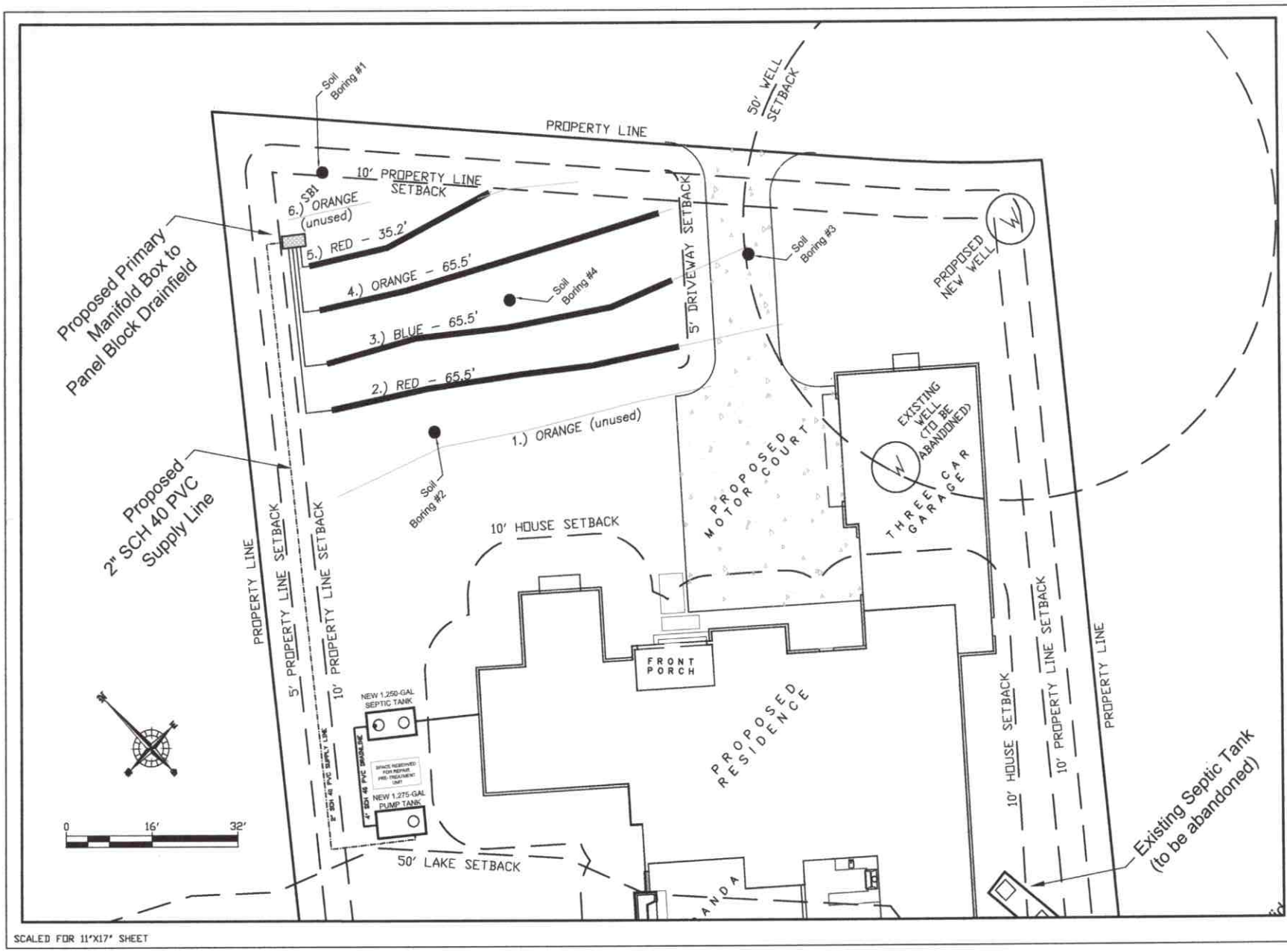
FOR REVIEW ONLY

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Property Layout

DRAWN BY: S. Jones	CREATED ON: 10/4/22
REVISED BY:	REVISED ON:
RELEASED BY:	RELEASED ON:

DRAWING NUMBER
WW-1



AWT
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Artisan Custom Homes
Murphy Residence WWTS

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Cornelius, NC 28031
(704) 309-0382
john@artisancustomhomes.com

Property Information:
150 Greyfriars Road
Mooresville, NC 28117
Wake County
PIN# 4624472407

PROFESSIONAL ENGINEER SEAL

FINAL DESIGN
NOT RELEASED FOR CONSTRUCTION

REV.	ISSUED DATE:	DESCRIPTION

SHEET TITLE
Primary Drainfield Layout

DRAWN BY:	CREATED ON:
S. Jones	10/4/24
REVISED BY:	REVISED ON:
RELEASED BY:	RELEASED ON:

DRAWING NUMBER
WW-2