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BLDR-2025-72929

Residential Subsurface Wastewater Treatment and Disposal System AOWE ATO

for

Lot 48 – Norman Breaks
154 Trellis Lane
Troutman, NC 28166

Tax Parcel Number: 4741217290.000
November 25, 2025

Prepared for:

Van Kaz Builders LLC
20001 Colony Point Lane
Cornelius, NC 28031
248-496-3558

Prepared by:

Larry Thompson, REHS, LSS
Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107-0541
Phone: 704-301-4881
Fax: 206-350-8895
larry@thompsonenv.com





Details

Van Kaz Builders LLC has contracted with Thompson Environmental Consulting, Inc. (TEC) to develop an AOWE permit package for an on-site wastewater treatment and disposal system to serve the 3-bedroom single family residence to be constructed on Lot 48 – Normandy Breaks, 154 Trellis Lane, Troutman, North Carolina.

Based upon an investigation performed by TEC, it was determined that a sufficient amount of "Suitable" Group IV soils are available within the project study area for the installation, of a **Pump to Alternating Dual Field Prefabricated Permeable Block Panel System** (Vertical Installation) for a 3-bedroom residence at a 0.3 gpd/sq./ft. long-term acceptance rate (LTAR).

The system has been installed by Travis Stebbins (Level II Installer 9996) and inspected by TEC. The system has been installed in general accordance with the AOWE permit package submitted to your office. The recommended maintenance plan and as-built drawing are included in this package. This report shall allow the Authorization to Operate to be issued for the certificate of occupancy for the above-mentioned facility.

Maintenance

A. In General

1. **This is an alternating dual drainfield system. To ensure proper functionality, the subfields must be rotated once per year by a certified subsurface system operator. Consistent rotation is crucial for optimal operation and cannot be over emphasized.**
2. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
3. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
4. When it becomes necessary to clean the effluent filter, the filter should be removed, and the accumulated debris washed back into the septic tank – not onto the lawn.
5. Any damp areas, leakages, or malfunctions in the drainfield area should be addressed immediately.
6. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

B. Suggestions to the Property Owner

1. Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
2. Used motor oil or any oily liquids should not be disposed of in a septic tank.
3. Be aware of the amount of water that you are using in the home. Water saving fixtures and devices can be installed on sinks and toilets to reduce the volume of wastewater that you are sending to your drain field.

4. Run dishwashers only when you have a full load.
5. Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drainfield.
6. Do not use chemical additives in your system. Studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and in some cases certain additives have been found to be detrimental to the life of a system.

As-Built Design Specifics

Daily Design Flow:	360 GPD – 3 bedroom house
Septic Tank Size:	1,000 Gallons (minimum)
Pump Tank Size:	1,000 Gallons (minimum)
Pump Requirements:	60.6 GPM at 19 Feet TDH
Effluent Loading Rate:	0.3 GPD per sq. ft.
Drainfield Type:	Vertical PPBPS
Diversion Valve Required:	YES
Distribution Method:	Dual Manifolds
Number of Taps:	3 Taps per Manifold (3) 1 Inch SCH 40 (50-ft Lines)
Pressure Head:	2 Feet
Dosing Volume:	237.6 Gallons
Pump Run Time:	3.92 Minutes
Pump Tank Drawdown:	6 Inches
Number of Subfields:	2
Number of Drainlines per Subfield:	3 (2-ft Wide by 50-ft Long)
Total Drainlines:	6 (2 Subfields of 3 – see above)
Trench Length per Subfield:	150 Linear Feet
Total Trench Length:	300 Linear Feet
Total Number of Panels:	66
Trench Depth:	22 Inches

Final Cover Requirement: 6 Inches

INSTALLER CERTIFICATION

The septic system for the above-reference property has been installed in general accordance with the AOWE permit package prepared by Larry Thompson, LSS.

Signature: Travis stebbins (Nov 26, 2025 06:47:35 EST)

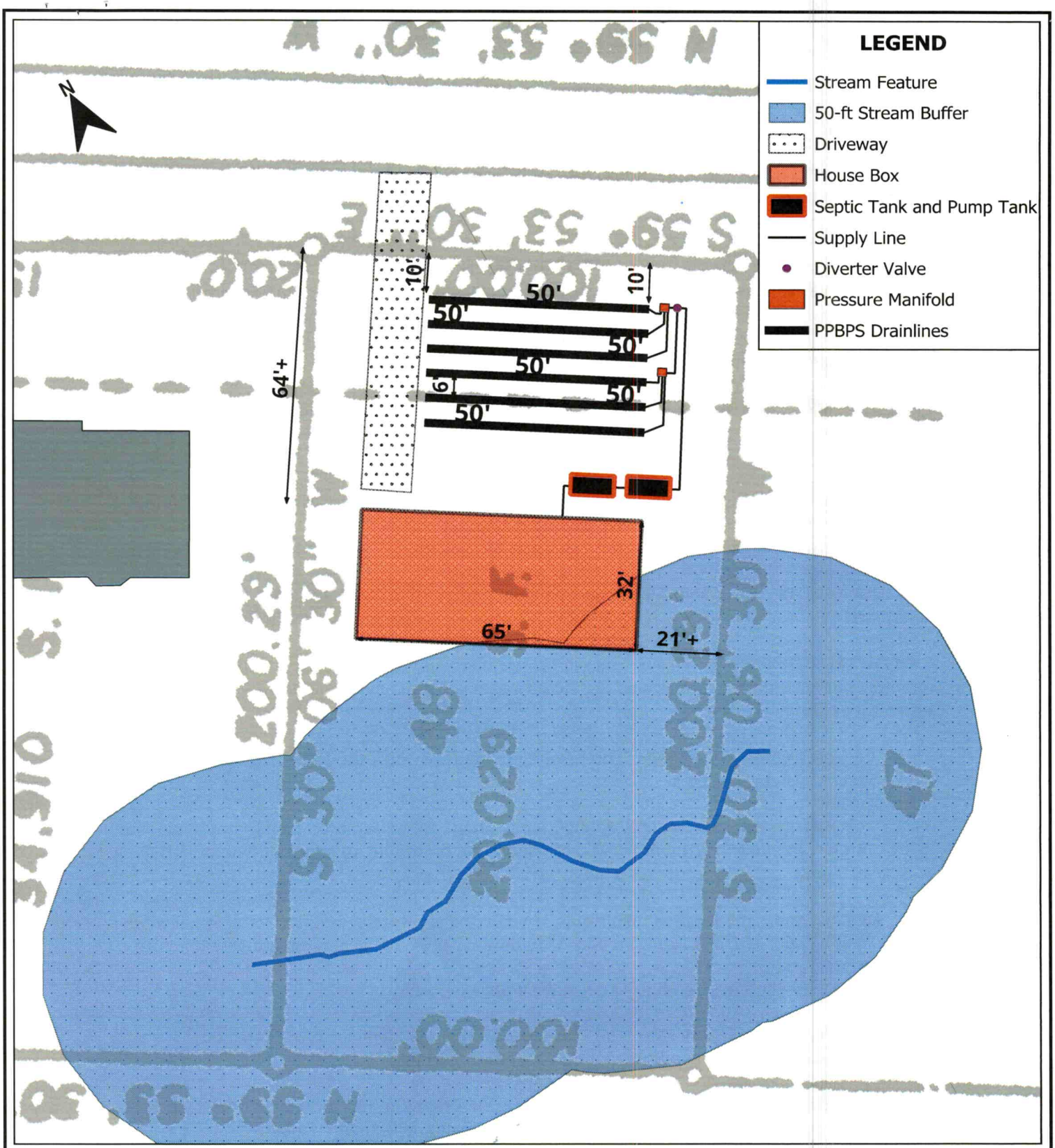
Email: travisstebbins@gmail.com

OWNER'S ACCEPTANCE

The septic system for the above-referenced property was specified by Larry Thompson, LSS, with the final installation work being performed by Travis Stebbins. Mr. Thompson has shared his closeout package with us and we do hereby accept the septic system installed for this project.

Signature: Greg Kasdorf

Email: kazinvestmentsna@gmail.com



Thompson Environmental Consulting WATER · WASTEWATER · WETLANDS	Prepared For: Greg Kasdorf	Septic As-Built 154 Trellis Lane Troutman, NC 28166 Iredell County	Date: November 2025 Scale: 0 15 30 ft TEC Job #: 25-38	Figure 1

INSPECTION AND MAINTENANCE AGREEMENT

STATE OF NORTH CAROLINA

COUNTY OF IREDELL

This agreement is made and entered into this 26th day of November 2025, by and between **Van Kaz Builders LLC** (hereinafter referred to as the "Owner") and **Larry Thompson** (hereinafter referred to as the "Contractor").

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system") is installed, such system being designated a Type V system under the Rules for Sanitary Sewage Collection, Treatment and Disposal found at 15A N.C. Administrative Code 18E; and

WHEREAS, 15A N.C. Administrative Code 18E requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit for said system; and

WHEREAS, 15A N.C. Administrative Code 18E requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity, shall be in effect for as long as the system is in use; and

WHEREAS, the Contractor is a management entity, of a type authorized by 15A N.C. Administrative Code 18E to manage a Type IVd (pressure dosed, gravity distribution) system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below.

1. The Contractor's Obligations. The Contractor shall perform the following services on the Owner's system located at

   - Inspect system components (collection system, filters, control panel, float switches, high water alarm, effluent for excess solids, and drainfield area for ponding or surfacing effluent)

   - Check pressure head at manifolds, switch the drainfield diverter valve to feed the resting subfield, and submit report of findings to the local health department annually.

   The contractor shall inspect the system at least once per year.

   a) The Contractor shall perform the following routine maintenance procedures in accordance with the conditions of the Operation Permit:

   - Perform required maintenance procedures as described in the Contractor's Obligations twice per year and report findings to the local health department annually.

   b) The Contractor shall report the results of its inspections to the local health department at the frequency specified in 15A N.C. Administrative Code 18E for a Type IVd System.

c) If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.

d) The Contractor shall notify the Owner of needed repairs, which are outside of the scope of routine maintenance described in subparagraph (b) above. The Contractors shall perform necessary repairs to the system at the request of the Owner and shall be entitled to payment therefor at the Contractor's normal charge for services and materials.

e) The Contractors shall employ or shall contract with a certified operator(s) if required by 15A N.C. Admin. Code 18E for a Type IVd System.

f) The Contractor shall respond to a request for a nonscheduled service or maintenance call within 72 hours after receipt of such request. Service calls will be billed separately from the annual contract fee.

2. The Owner's Obligations.

a) The Owner shall pay to the Contractor the sum of **$300.00 per year** for periodic inspections, routine maintenance procedures and periodic reports. The annual fee may be amended upon sixty (60) days advance notice to the Owner but may not be increased more than 5 percent per year. The Owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. All fees are due and payable within thirty (30) days of billing. Payments due to the Contractor and unpaid by the Owner after thirty (30) days shall accrue interest from the due date until paid at a rate of 2 percent per month.

b) Within 15 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

c) The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement.

d) The Owner shall pay for any state-required wastewater sampling/testing separately and in addition to the quoted maintenance fee.

3. Term. This Agreement shall remain in effect until terminated.

a) Automatic Termination.
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or the time for taking an appeal has passed.

b) Termination by Mutual Consent.
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination.

c) Termination by the Owner.
The Owner may terminate this Agreement by giving notice to the Contractor and to the local health department thirty (30) days in advance of the date of termination.

d) Termination by the Contractor.

1) The Contractor may terminate this Agreement for cause by giving written notice of intent to terminate this Agreement to the Owner and to the local health department thirty (30) days in advance of the date of termination. Cause shall be defined as:

a. failure to remit payment for any bill for services performed under and in accordance with this Agreement if said bill is not paid within thirty (30) days of receipt by the Owner of the bill. If said bill is paid after notice of termination of this Agreement, the Agreement shall continue in effect; or

b. failure of the Owner to provide to the Contractor authorization to complete needed repairs or satisfactory evidence that needed repairs to the system were completed by another entity within 15 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above. If said authorization to complete needed repairs or evidence of completion of said repairs is provided after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect; or

c. failure of the Owner to allow the Contractor such access to the system as is reasonably necessary in order for the Contractor to comply with the terms of this Agreement.

2) The Contractor may not terminate this Agreement without cause but may assign its rights and duties under this Agreement as provided in paragraph 4, below.

4. Assignment.

a) Assignment by the Owner.
The Owner shall notify the Contractor of the name and address of any purchaser of the property on which the system is located. The Owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser.

b) Assignment by the Contractor.
The Contractor may assign its rights and duties under this Agreement to another management entity, which is qualified pursuant to 15A N.C. Admin. Code 18E to manage a Type V system upon thirty (30) days written notice to the Owner and to the local health department.

5. Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers and contractors as it deems desirable to perform any of the Contractor's duties under this Agreement. The Contractor shall at all times remain responsible for the performance of and payment for all work performed by all subcontractors.

INSPECTION AND MAINTENANCE AGREEMENT

6. Representations. The Parties represent to each other that each has the power, authority and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future.

No Implied Waiver. The waiver by either Party, of the default or a breach by the other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision; and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement.

8. Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows:

To the Owner: Van Kaz Builders LLC
20001 Colony Point Lane
Cornelius, NC 28031
248-496-3558

To the Contractor: Larry Thompson
PO Box 541
Midland, NC 28107
704-301-4881

To the Local Health Department: Iredell County Environmental Health
349 N Center St,
Statesville, NC 28677

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted deliver, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party.

9. Place of Agreement. This Agreement and any questions concerning its validity, the system construction or performance shall be governed by the laws of the State of North Carolina. Not with standing the place of execution, or the order in which the signatures of the Parties are affixed.

10. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, any amendment or modification to this Agreement must be in writing and must be signed by the Parties.

North Carolina Onsite Wastewater Contractor Inspector Certification Board
Authorized Onsite Wastewater Evaluator Permit Option for Non-Engineered Systems
Notice of Intent (NOI) to Construct

X New ___ Expansion ___ Repair ___ Relocation ___ Relocation of Repair Area

Owner or Legal Representative Information:
Name: Van Kaz Builders LLC
Mailing address: 20001 Colony Point Lane City: Cornelius State: NC Zip: 28031
Phone: 2484963558 Email: kazinvestmentsna@gmail.com

Authorized Onsite Wastewater Evaluator Information:
Name: Larry Thompson, LSS, AOWE Certification #: 10016E
Mailing address: PO Box 541 City: Midland State: NC Zip: 28107
Phone: 704-301-4881 Email: larry@thompsonenv.com

Site Location Information:
Site address: 154 Trellis Lane, Troutman, NC 28166
Tax parcel identification number or subdivision lot, block number of property: PID: 4741217290.000
Lot 48 - Normandy Breaks County: Iredell

System Information:
Wastewater System Type: Type IIId - Alternating Dual Field VPPBPS
Daily Design Flow: 360
Saprolite System: ___ Yes X No Subsurface Operator Required: ___ Yes X No
Water Supply Type: X Private Well ___ Public Water Supply ___ Spring ___ Other: ___

Facility Type:
X Residential 3 # Bedrooms 6 Maximum # of Occupants
___ Business Type of Business and Basis for Flow: ___
___ Public Assembly Type of Public Assembly and Basis for Flow: ___

Required Attachments:
X Plat or Site Plan
X Evaluation of Soil and Site Features by Licensed Soil Scientist

Attest: On this the 24th day of March, 2025 by signature below I hereby attest that the information required to be included with this NOI to Construct is accurate and complete to the best of my knowledge. Furthermore, I hereby attest that I have adhered to the laws and rules governing onsite wastewater systems in the state of North Carolina.
This NOI shall expire on 24th day of March, 2030.

Signature of Authorized Onsite Wastewater Evaluator: L Thompson

Signature of Owner or Legal Representative: Greg Kasdorf

Disclosure: The owner may apply for a building permit for the project upon submitting a complete NOI to Construct and the fee required (if any) to the local health department. An onsite wastewater system authorized by an authorized onsite wastewater evaluator shall be transferable to a new owner with the consent of the authorized onsite wastewater evaluator.

Local Health Department Receipt Acknowledgement:
Signature of Local Health Department Representative: ___ Date: ___

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

IREDELL COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH

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

DOCUMENTATION TO AUTHORIZE AN OWNER'S LEGAL REPRESENTATIVE

(Check and sign only ONE of the options below)

☐ **1. * APPLICANT AND OWNER ARE THE SAME. * (*Sign here*)** _____

Applications for permits require the "signature of the owner or owner's legal representative" (15A NCAC 18A .1937). If the owner does not sign the application himself or herself, they can submit any one of the following documents to designate their legal representative: *Power of Attorney; Real Estate Contract; Estate executor; Bankruptcy trustee; Court ordered guardianship*

In the absence of the above documentation, the property owner may provide the local health department with documentation that designates a legal representative. A property owner may:

Complete this form to document his or her legal representative, or provide his or her own form that contains the information in this form. If there are multiple property owners, then all property owners must sign the form that designates a legal representative.

By signing a form that designates a legal representative for purposes of 15A NCAC 18A .1937, the property owner authorizes that representative to act on their behalf in matters pertaining to the application and permitting process, including signing or receiving any application, document or permit. The owner retains full responsibility to meet all permit conditions specified by the local health department.

☑ **2.** I, Van Kaz Builders LLC, am the legal owner(s) of the property located at 154 Trellis Lane, Troutman, NC 28166, identified as PIN (Parcel Identification Number) 4741217290.000, located in Iredell County, North Carolina.

I do hereby authorize (**print legal representative/company name**) Larry Thompson, LSS, AOWE, Thompson Environmental Consulting, Inc., to act as an agent on my behalf in applying for/signing/obtaining any of the documents described below.

- Application for Improvement Permit (IP) / Authorization to Construct (AC)
- Improvement Permit (IP) / Authorization to Construct (AC)
- Application for soil-site evaluation (new/repair)
- Application/permit for private drinking water well/well abandonment
- Application for Compliance Inspection

I agree to abide by all decisions and/or conditions between the legal representative acting on my behalf and the Iredell County Department of Public Health, Environmental Health Division.

Greg Kasdorf
Signature of Owner(s)

Mar 24, 2025
Date

Mooresville - Environmental Health
latasha.fleming@iredellcountync.gov

Fax: 704-662-3239
610 E. Center Avenue, Mooresville, NC 28115

Statesville - Environmental Health
ronda.hart@iredellcountync.gov
debra.comeaux@iredellcountync.gov
Fax: 704-871-3483
349 N. Center Street, Statesville, NC 28677

Residential Subsurface Wastewater Treatment and Disposal System AOWE Proposal

for

Lot 48 – Norman Breaks
154 Trellis Lane
Troutman, NC 28166

Tax Parcel Number: 4741217290.000
March 24, 2025

Prepared for:

Van Kaz Builders LLC
20001 Colony Point Lane
Cornelius, NC 28031
248-496-3558

Prepared by:

Larry Thompson, REHS, LSS
Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107-0541
Phone: 704-301-4881
Fax: 206-350-8895
larry@thompsonenv.com





***This AOWE permit is issued for an alternating dual dispersal drainfield, designed to meet all minimum setback requirements for a house without a foundation drain. Precision is critical during the construction and installation of the system. To protect the drainfield, vehicular traffic must be strictly prohibited in the area. TEC strongly recommends installing orange barrier fencing around the drainfield and maintaining it throughout the project's duration. No additional grading should occur in the septic drainfield area, as any grading or soil compaction caused by vehicular traffic may result in immediate permit revocation.**

Details

Van Kaz Builders LLC has contracted with Thompson Environmental Consulting, Inc. (TEC) to develop an AOWE permit package for an on-site wastewater treatment and disposal system to serve the 3-bedroom single family residence to be constructed on Lot 48 – Normandy Breaks, 154 Trellis Lane, Troutman, North Carolina. The property will be served by a private well.

Based upon an investigation performed by TEC, it was determined that a sufficient amount of "Suitable" Group IV soils are available within the project study area for the installation, of a **Pump to Alternating Dual Field Prefabricated Permeable Block Panel System** (Vertical Installation) for a 3-bedroom residence at a 0.3 gpd/sq./ft. long-term acceptance rate (LTAR).

This proposal is being submitted pursuant to and meets the requirements of G.S. 130A-336.2. (AOWE Permitting).

Location

From Statesville, take US-21 South to Autumn Leaf Road. Turn right onto Autum Leaf Road and left onto Trellis Lane. 154 Trellis Lane is located on the right at the end of the street.

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18E, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, September 30, 2024.

Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System; Sixth Edition, published by T & J Panel.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
NC Authorized Onsite Wastewater Evaluator No. 10016E
SC Certified Professional Soil Classifier No. 111
NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer No. 1762
NC Certified Wastewater System Inspector No. 17621

Plans and Specifications

A. Septic Tank

1. The septic tank shall be State approved, watertight, structurally sound, and 1,000 gallons (minimum) in capacity.
2. The septic tank will be fitted with an approved effluent filter.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

B. Pump Tank

1. The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1,000 gallons in capacity. Again, it is the responsibility of the septic tank contractor to thoroughly inspect each pump tank prior to accepting delivery.
2. All pipe penetrations into the tank shall be booted (i.e., C-293 boot with a stainless-steel strap).
3. The pump tank shall have access risers that extend, at a minimum, 6 inches above finished grade and must have less than 36 inches of fill over its top once finished grade has been established (a reinforced concrete tank will be required if finished soil cover is 36 inches or greater in depth).
4. The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4x rated control panel. Pump and float control wiring should be long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
5. Panel and control equipment shall include lightning protection, be protected from unauthorized access, and always remain accessible to the system operator.
6. The pump removal system will be via a pump tether made of nylon rope or its equivalent. The tether material should be resistant to mildew and rot.

C. Pipe, Fittings and Supply Line

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC and fitted with pressure rated couplings.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
1. **Supply line will consist of a 2-inch SCH 40 PVC pipe with pressure fittings.**
2. **An effluent flow diversion valve will be required prior to the pressure manifolds for this project. The diversion valve shall be resistant to 500 pounds crushing strength and corrosion resistant; shall be installed below finished grade in a valve box and be accessible and operable from the ground surface**

D. Pressure Manifolds

1. Two pressure manifolds will be required to distribute wastewater to the two subfields.
2. The pressure manifolds shall be contained within an adequately sized box/vault that will allow future repair lines to be installed and is designed to allow for drainage of effluent that may accumulate in it during flushing and head pressure adjustments. The box should be placed upon a gravel base.
3. A gate valve shall be provided at each pressure manifold box to allow for final pressure adjustment (2 foot of head pressure as per design).
4. The pressure manifolds shall be constructed of SCH 80 PVC.
5. **There shall be 3 taps of varying sizes in each manifold. The 60-ft long lines will be fed by 1 inch SCH PVC taps. The 30-ft long lines will be fed by ¾ inch SCH 40 PVC taps (direct thread or saddle).**
6. The connecting pipe between the pressure manifold taps and the drainfield shall be constructed of PVC.

E. Drainfield Installation

1. The proposed drainfield location has been marked on-site utilizing metal stemmed flags. Once this area has been approved by the county, the property owner/builder should mark this area and isolate it from construction traffic. Prior to the system installation, the septic contractor shall contact the county for a preconstruction conference at which time the drainfield area will be re-verified.
2. Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition. If the installer has doubts as to whether the drainfield area is dry enough to begin construction, the environmental health specialist for this area should be contacted for permission to proceed with the installation.
3. The specified system is a pump-to a vertical prefabricated permeable block panel system (alternating dual drainfields) – specifically the panel system manufactured by T&J Panel Wastewater Treatment System, Patent No. 4013559; telephone: 1-800-222-2577. The installer must follow the manufacturer's guidelines for installing the T&J Panel System and should request an installation manual from the manufacturer prior to beginning construction.
4. **Each subfield consists of three (3) lateral trenches, each being 2-feet wide by varying lengths. Each subfield will have two (2) 60-ft long lines and one (1) 30-ft long line.**
5. It is essential that the lateral trenches be constructed on contour with the land, with each trench being excavated level from beginning to end. The use of a tripod mounted engineer's level is essential to assure that each trench is constructed as level as possible.
6. **The specified trench depth for this system is 22 inches. Each trench shall be placed on a minimum of 6-foot on centers.**
7. Once trenches are dug, the side walls shall be raked, and a light dusting of lime applied.
8. Backfill the trench with 6 inches of sand and level to grade. Once leveled, place 1 x 6-inch boards on top of the sand the entire length of each trench. Once the grade boards have been set, the panels may be set into the trench. The panels should be placed 6 inches apart.
9. Once the panels have been set, line the top portion of each chamber with the T&J supplied sand alternative product (SAP – geotextile fabric). GE Foam Sealer or tar seal rope should

be placed in the bottom of the U-outs to form seals around the pipe as shown in earlier drawings.

10. Once the GE Foam Sealer or tar seal rope is in place, a section of 2 inch PR160 pipe is cut to span from inside of the two chambers to the next two chambers of the following panel. If tar seal rope is used, it should be of tar or butyl that is soft and pliable to obtain a watertight seal.
11. Once the connection and sealing are complete, a block cap is placed on each end of the panel covering all openings. (These will be delivered with the panels.) The cap block may well serve as an inspection port at some future date. The trench is then ready to be backfilled to the top of the panel with the same backfill sand used in the trench bottom. With the sand to the top of the panel, trenches should be left for the AOWE to inspect.

F. Proper Operation Check

1. After all components of the wastewater disposal system have been installed and connected, the system shall be checked for proper operation.
2. With the electrical power turned off, fill the pump tank with water until the liquid rises to a level high enough to activate the high-water alarm float. Turn on the electrical power. The alarm, alarm light and pump should activate at this time. Turn off the electrical power once these checks have been performed and prepare to set the head pressure at the valve box.

G. Pressure Head Adjustment

1. The pressure head must be adjusted to match the design specifications (2-Feet). The pressure head is measured by the height of the liquid coming from the pressure manifold.
2. Prepare a length of pipe (standpipe), cut to the desired head pressure height and fitted with a threaded adapter that will screw into the pressure manifold. Turn on pump and adjust the manifold gate valve within the supply manifold box to achieve the specified head pressure (liquid height in the standpipe should equal the design head pressure).
3. Once the pressure head has been adjusted, allow the pump to run through the remainder of the cycle. The pump float switch will automatically turn the pump off if it is operating properly. Make sure that the effluent pump is completely submerged in the remaining water, adjusting the float switch(es) as needed. This completes the checks for proper operation of the pump, alarm, and float switches.
4. At this point, the manifold standpipe may be removed and replaced with a threaded plug.

H. Final Landscaping

1. **Final cover over the drainfield shall be at least 6 inches deep. Additional soil cover will be required for this project.**
2. The drainfield shall be shaped to shed rainwater and be free from low spots.
3. The drainfield area should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

I. Utility Conflicts

1. The builder and property owner must take special care in planning for water, power, gas, telephone, and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation. If there are any questions regarding preferred routes, contact the local health department as soon as possible.
2. Lawn irrigation should not be placed over the drainfield area.
3. **Due to the site constraints, TEC highly recommends that the builder work with a well contractor on the front end of this project. The well will need to be installed prior to beginning home construction. All applicable setbacks must be met or permit is automatically revoked.**

Maintenance

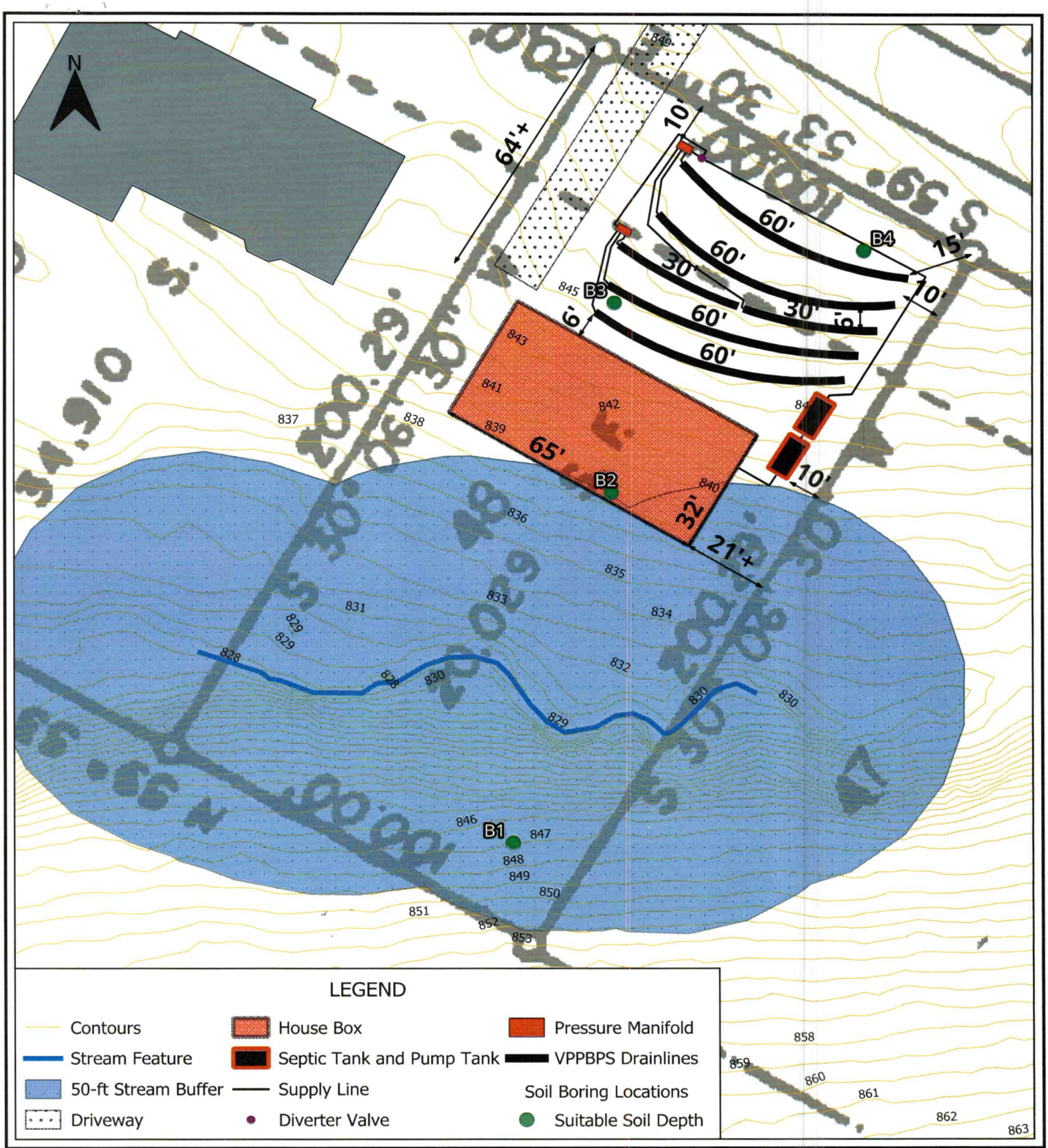
J. In General

1. **This is an alternating dual drainfield system. To ensure proper functionality, the subfields must be rotated on a regular basis. TEC strongly recommends alternating the subfields every six (6) months. Consistent rotation is crucial for optimal operation and cannot be emphasized enough.**
2. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
3. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
4. When it becomes necessary to clean the effluent filter, the filter should be removed, and the accumulated debris washed back into the septic tank – not onto the lawn.
5. Any damp areas, leakages, or malfunctions in the drainfield area should be addressed immediately.
6. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

Design Specifics

Daily Design Flow:	360 GPD – 3 bedroom house
Septic Tank Size:	1,000 Gallons (minimum)
Pump Tank Size:	1,000 Gallons (minimum)
Pump Requirements:	50.5 GPM at 19 Feet TDH
Recommended Pump:	Liberty FL50 or Equivalent
Effluent Loading Rate:	0.3 GPD per sq. ft.

Drainfield Type:	Vertical PPBPS
Diversion Valve Required:	YES
Distribution Method:	Dual Manifolds
Number of Taps:	3 Taps per Manifold (2) 1 Inch SCH 40 (60-ft Lines) (1) ¾ Inch SCH 80 (30-ft Lines)
Pressure Head:	2 Feet
Dosing Volume:	126 Gallons
Pump Run Time:	2.5 Minutes
Pump Tank Drawdown:	6 Inches
Number of Subfields:	2
Number of Drainlines per Subfield:	3 (2-ft Wide by Varying Lengths) (2) 60-ft Long Lines (1) 30-ft Long Line
Total Drainlines:	6 (2 Subfields of 3 – see above)
Trench Length per Subfield:	90 Linear Feet
Total Trench Length:	180 Linear Feet
Total Number of Panels:	35
Trench Depth:	22 Inches
Final Cover Requirement:	6 Inches



Thompson Environmental Consulting
WATER · WASTEWATER · WETLANDS

Prepared For:
Greg Kasdorf

Proposed Septic Layout

154 Trellis Lane
Troutman, NC 28166
Iredell County

Date: March 2025
Scale: 0 15 30 ft
TEC Job #: 25-38

Figure 1

Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107

PROPERTY ID #: 4741217290.000
COUNTY: Iredell

SOIL/SITE EVALUATION
***for* ON-SITE WASTEWATER SYSTEM**

OWNER:
ADDRESS:
PROPOSED FACILITY: Res. PROPOSED DESIGN FLOW (.1949): 360 GPD
LOCATION OF SITE: 154 Trellis Lane, Troutman, NC 28166

DATE EVALUATED: 04-12-22
PROPERTY SIZE: 0.459-acre
PROPERTY RECORDED:

WATER SUPPLY: ☑ Private ☐ Public ☐ Well ☐ Spring ☐ Other Lot 48 - Normandy Breaks
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	
1	LS 11%	0-10	GR/SL	FR/NS/NP/NEXP		42"			PS 0.3
		10-42	SBK/SCL	FI/SS/SP/SEXP					
2	LS 10%	0-4	GR/SL	FR/NS/NP/NEXP		41"			PS 0.3
		4-41	SBK/C	FI/S/P/SEXP					
3	LS 10%	0-5	GR/SCL	FR/SS/SP/SEXP		38"			PS 0.3
		5-38	SBK/C	FI/S/P/SEXP					
4	LS 10%	0-6	GR/SCL	FR/SS/SP/SEXP		42"			PS 0.3
		6-42	SBK/C	FI/S/P/SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	VPPBPS	VPPBPS
Site LTAR	0.3	0.3

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): P.Suitable

EVALUATED BY: Mac Haupt, LSS
OTHER(S) PRESENT:

LICENSED SOIL SCIENTIST — LARRY S. THOMPSON — 1287 — STATE OF NORTH CAROLINA

COMMENTS:
*Alternating Dual Drainfields Would Be Required.

LEGEND

use the following standard abbreviations

LANDSCAPE POSITION	GROUP	SOIL TEXTURE	CONVENTIONAL .1955 LTAR*	LPP .1957 LTAR*	MINERALOGY/ CONSISTENCE	STRUCTURE
CC (Concave Slope)	I	S (Sand)	1.2 - 0.8	0.6 - 0.4	SEXP (Slightly Expansive)	G (Single Grain)
CV (Convex Slope)		LS (Loamy Sand)			EXP (Expansive)	M (Massive)
D (Drainage Way)						CR (Crumb)
DS (Debris Slump)	II	SL (Sandy Loam)	0.8 - 0.6	0.4 - 0.3		GR (Granular)
FP (Flood Plain)		L (Loam)				SBK (Subangular Blocky)
FS (Foot Slope)						ABK (Angular Blocky)
H (Head Slope)	III	Si (Silt)	0.6 - 0.3	0.3 - 0.15		PL (Platy)
L (Linear Slope)		SiCL (Silty Clay Loam)				PR (Prismatic)
N (Nose Slope)		CL (Clay Loam)				
R (Ridge)		SCL (Sandy Clay Loam)			**MOIST**	**WET**
S (Shoulder Slope)		SiL (Silt Loam)				
T (Terrace)					VFR (Very Friable)	NS (Non-sticky)
	IV	SC (Sandy Clay)	0.4 - 0.1	0.2 - 0.05	FR (Friable)	SS (Slightly Sticky)
		SiC (Silty Clay)			FI (Firm)	S (Sticky)
		C (Clay)			VFI (Very Firm v. Very Sticky)	VS (Very Sticky)
		O (Organic)	None	None	EFI (Extremely Firm)	NP (Non-plastic)
						SP (Slightly Plastic)
						P (Plastic)
						VP (Very Plastic)

*Adjust LTAR due to depth, consistence, structure, soil wetness, landscape, position, wastewater flow and quality.

NOTES

HORIZON DEPTH	In inches below natural soil surface
DEPTH OF FILL	In inches from land surface
RESTRICTIVE HORIZON	Thickness and depth from land surface
SAPROLITE	S(suitable) or U(unsuitable)
SOIL WETNESS	Inches from land surface to free water or inches from land surface to soil colors with chroma 2 or less - record Munsell color chip designation
CLASSIFICATION	S (Suitable), PS (Provisionally Suitable), or U (Unsuitable)

Evaluation of saprolite shall be by pits.

Long-term Acceptance Rate (LTAR): gal/day/ft^2

Show profile locations and other site features (dimensions, reference or benchmark, and North).

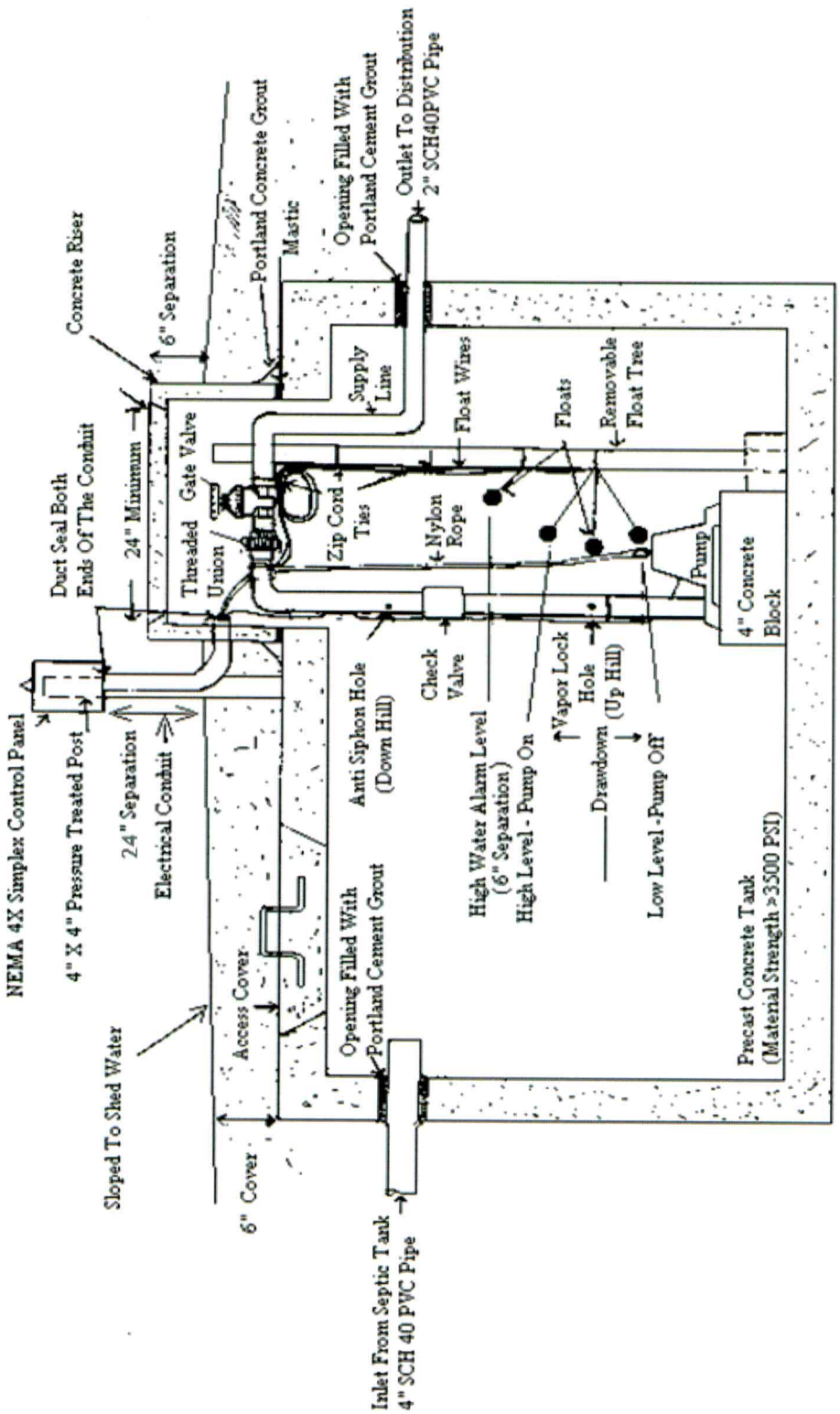
SEE ATTACHED FIGURE

Thompson Environmental Consulting, Inc
PO Box 541
Midland, NC 28107-0541

Tax ID Number: 4741217290.000

Location: 154 Trellis Lane

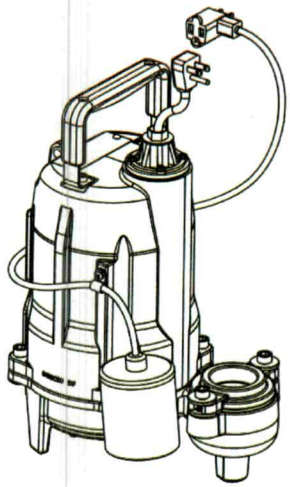
Recommended Pump Tank Design

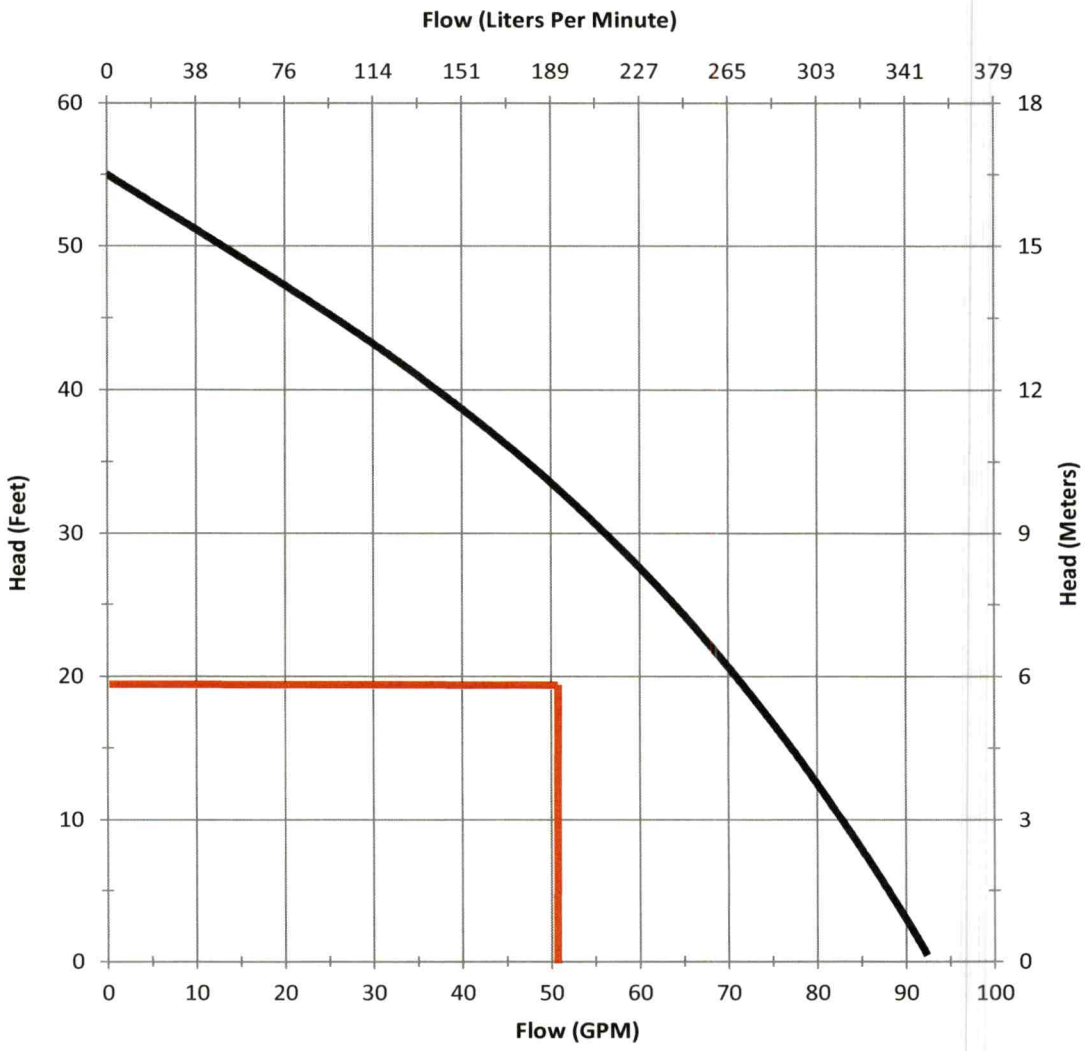


Liberty Pumps®

Pump Specifications

FL50 Series 1/2 hp Submersible Effluent Pump

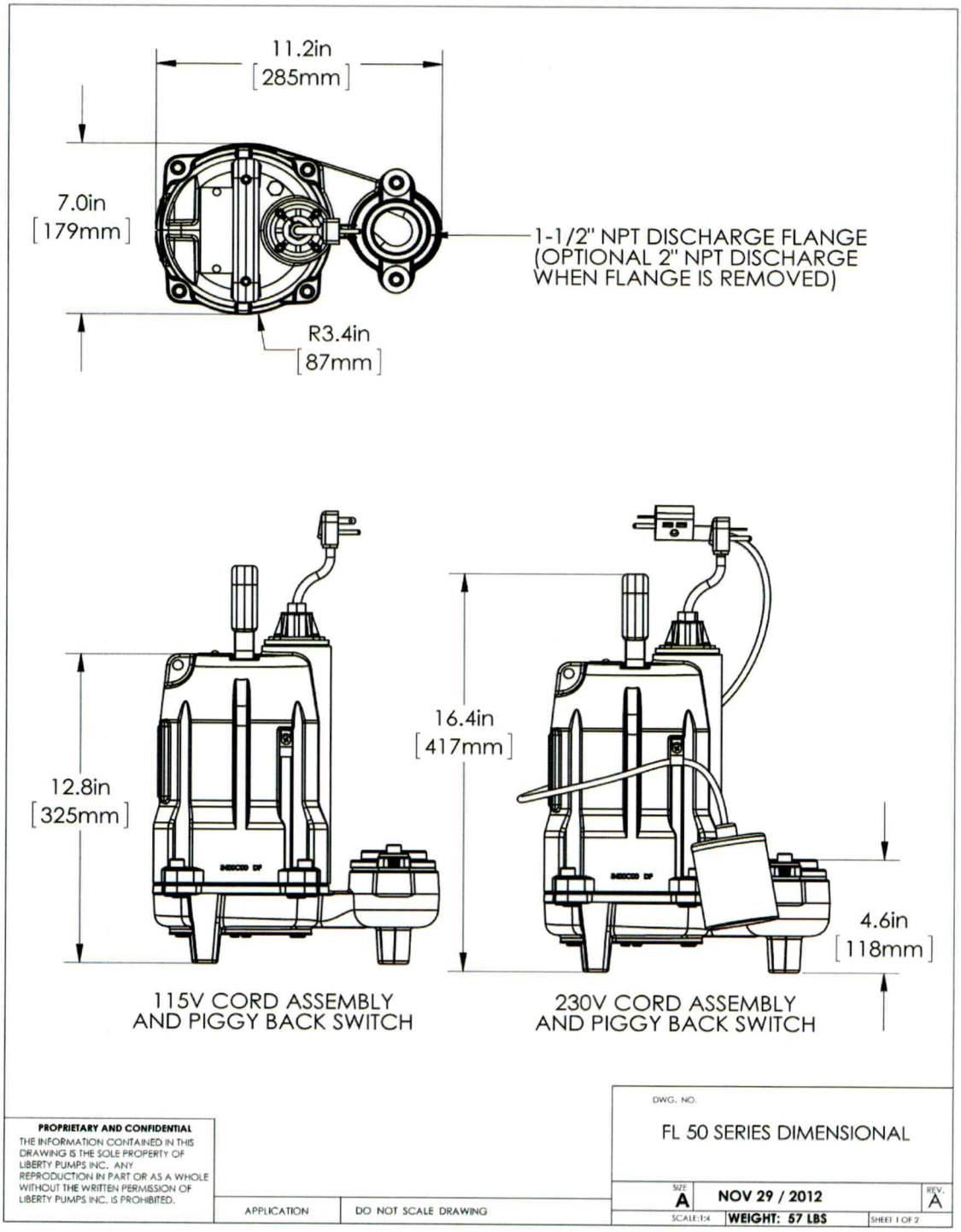




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Liberty Pumps

FL50-Series Dimensional Data



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PO Box 541
Midland, NC 28107-0541

Tax ID Number: 4741217290.000

Location: 154 Trellis Lane

Recommended Pressure Manifold Design
(Number of Taps May Vary)

