

Bobbitt Design Build, Inc.

**Engineered Option Permit
Conventional Gravity System**

**NW Harnett Fire Station 3
US Hwy 401 N
Harnett County, North Carolina**

Project No.: A21303.00

Submittal Date: May 2, 2022



**Prepared By:
MacConnell & Associates, P.C.**

**501 Cascade Pointe Lane, Suite 103
Cary, NC 27513
Phone: (919) 467-1239**

**P.O. Box 129
Morrisville, NC 27560
Fax: (919) 319-6510**

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Harnett County, North Carolina**

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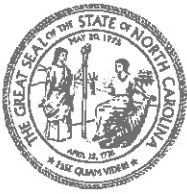
Application Form and Supporting Documents

**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
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NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**

ROY COOPER • Governor
KODY H. KINSLEY • Secretary
HELEN WOLSTENHOLME • Interim Deputy Secretary for Health
MARK T. BENTON • Assistant Secretary for Public Health
Division of Public Health

COMMON FORM FOR ENGINEERED OPTION PERMIT
See Instructions for Use in Appendix A

Except for "Date received", this Section to be completed by the Professional Engineer licensed in accordance with G.S. 89C

LHD USE ONLY: Initial submittal of this NOI received: _____ by _____
Date Initials

PART 1: Notice of Intent to Construct (NOI) - Please check all that apply

Single System or Multiple Systems

AND

New Expansion Relocation of all or part of the Existing System Relocation of Repair Area
 Repair – LHD Permit Number _____ Repair – EOP/LSS COVID 19/AOWE Permit Number _____

1. Facility Owner's name: (Owner, Company Name, Utility, Partnership, Individual, etc.): _____
NW Harnett Volunteer Fire Department, Inc.

Mailing address: 6015 Christian Light Road City: Fuquay Varina State: NC Zip: 27526

Telephone number: (919) 552-8371 E-mail Address: cprince@nwharnettfire.com

2. Professional Engineer (PE) name: Thomas A. Perdue License number: 042668

Mailing address: P.O. Box 129 City: Morrisville State: NC Zip: 27560

Telephone number: (919) 467 1239 E-mail Address: thomas.perdue@macconnellandassoc.com

3. Licensed Soil Scientist (LSS) name: Thomas J. Boyce License number: 1241

Mailing address: P.O. Box 81 City: Pittsboro State: NC Zip: 27312

Telephone number: (919) 868-8135 E-mail Address: nclss1241@gmail.com

4. Licensed Geologist (LG) (if applicable) name: _____ License number: _____

Mailing address: _____ City: _____ State: _____ Zip: _____

Telephone number: _____ E-mail Address: _____

5. On-Site Wastewater Contractor name: David Brantley & Sons, Inc. License number: 1036

Mailing address: 37 Pine Ridge Road City: Zebulon State: NC Zip: 27597

Telephone number: (919) 478-3721 E-mail Address: 1installer@gmail.com

6. Proof of Errors and Omissions or other appropriate liability insurance for the following persons is attached that includes the name of the insurer, name of the insured and the effective dates of coverage:

PE LSS LG On-site Wastewater Contractor

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

LOCATION: 5605 Six Forks Road, Raleigh, NC 27609

MAILING ADDRESS: 1642 Mail Service Center, Raleigh, NC 27699-1642

www.ncdhhs.gov • TEL: 919-707-5874 • FAX: 919-845-3972

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

7. Property location (physical address, tax parcel identification number or subdivision lot, block number of the property to be permitted): US Hwy 401 N Fuquay-Varina, NC 27526 PIN: 0653-68-0029.000

County Name: Harnett

8. Type of facility: Place of residence No. Bedrooms: _____ No. Occupants: _____
 Place of business Basis for flow calculation: 7 Employees * 120 GPD/Employee + 100 GPD (I&I)
 Place of public assembly Basis for flow calculation: _____

9. Factors that would affect the wastewater load: _____

10. Type and location of proposed wastewater system: Initial and Repair System: Type II(a) Conventional Gravity Septic System. Both systems located at the rear of the property.

11. Design wastewater flow: 940 gpd (For flow > 3,000 gpd and industrial process, duplicate plans shall be sent to the State.)

Design wastewater strength: domestic high strength industrial process

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

13. Location of proposed or existing wells (drinking water, irrigation, geothermal, groundwater monitoring, sampling, etc.) and any potable and non-potable water conveyance lines is indicated on attached plans and complies with 15A NCAC 18A .1950: Yes No

This is a saporlite system. Yes No

14. Evaluation(s) of soil conditions and site features in accordance with G.S. 130A-335(a1) signed and sealed by a LSS is attached: Yes No

15. Evaluation of geologic and hydrogeologic conditions signed and sealed by a LG is attached Yes NA

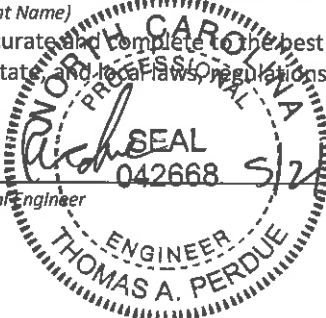
16. Proposed landscape, site, drainage, or soil modifications are attached: Yes NA

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

I, Thomas A. Perdue hereby attest that the information required to be included with
Registered Professional Engineer (Print Name)

this Notice of Intent to Construct is accurate and complete to the best of my knowledge and that the proposed system shall meet applicable federal, State, and local laws, regulations, rules, and ordinances in accordance with G.S. 130A-336-.1(e)(6).

Thomas A. Perdue 5/2/22
Signature of Licensed Professional Engineer Date



This section is for Owner use to either designate PE as their legal representative or to self-submit the NOI.

Designation of Registered Professional Engineer as legal representative of Owner for this Notice of Intent:

I, Chief Chris Prince hereby designate Thomas A. Perdue
Print Name of Owner Print Name of Registered Professional Engineer

as my legal representative for purposes of this Notice of Intent pursuant to G.S. 130A-336.1.

Chief Chris Prince 5/3/22
Signature of Owner Date

Owner self-submittal of NOI:

I, _____ hereby submit this NOI prepared by _____
Print Name of Owner Print Name of Licensed PE

pursuant to G.S. 130A-336.1.

Signature of Owner Date

NOTES:

LIABILITY: *The Department, the Department's authorized agents, or local health departments shall have no liability for wastewater systems designed, constructed, and installed pursuant to an Engineer Option Permit [G.S. 130A-336.1(f)]*

RIGHT OF ENTRY: *The submittal of this Notice of Intent to Construct grants right of entry to the Local Health Department and the State to the referenced property.*

ISSUANCE OF BUILDING PERMIT: *Once the LHD deems that the Notice of Intent to Construct is complete via signature in the section below, the owner may apply to the local permitting agency for a permit for electrical, plumbing, heating, air conditioning or other construction, location, or relocation activity under any provision of general or special law pursuant to G.S. 130A-338.*

This section for Local Health Department use only.

PART 2: LHD Completeness Review of the Notice of Intent to Construct

"(c) Completeness Review for Notice of Intent to Construct. – The local health department shall determine whether a notice of intent to construct, as required pursuant subsection (b) of this section, is complete within 15 business days after the local health department receives the notice of intent to construct. A determination of completeness means that the notice of intent to construct includes all of the required components. If the local health department determines that the notice of intent to construct is incomplete, the department shall notify the owner or the professional engineer of the components needed to complete the notice. The owner or professional engineer may submit additional information to the department to cure the deficiencies in the notice. The local health department shall make a final determination as to whether the notice of intent to construct is complete within 10 business days after the department receives the additional information from the owner or professional engineer. If the department fails to act within any time period set out in this subsection, the owner or professional engineer may treat the failure to act as a determination of completeness."

The review for completeness of this Notice of Intent was conducted in accordance with G.S. 130A-336.1(c). This NOI is determined to be:

INCOMPLETE (If box is checked, Information in this section is required.)

Based upon review of information submitted in Part 1, the following items are missing: _____

Copies of this form listing missing items were sent to the design PE and the Owner on _____

via _____ with directions to re-submit missing items using Page 5 of this form.
Email, FAX, USPS, hand-delivered

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

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

Based upon review of information submitted in Part 1 of this form, this NOI is deemed COMPLETE.

Copies of this signed form were sent to the design PE and the Owner on _____ via _____
Date *Email, FAX, USPS, hand-delivered*

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

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

Re-submittal of NOI with missing items included

This Section is for use by the owner or PE to submit items noted as missing during LHD Completeness Review above. Resubmittals must be accompanied by a cover letter from the PE.

LHD USE ONLY: This NOI resubmittal received: _____ by _____
Date Initials

Item # from initial NOI	Resubmittal description

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

I, _____ hereby attest that the information re-submitted for this Notice of Intent to Construct is accurate and complete to the best of my knowledge and that the proposed system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336.1(e)(6).
Licensed Professional Engineer (Print Name)

Signature of Licensed Professional Engineer Date

The section below is for Local Health Department use after submittal of items noted as missing above.

LHD Follow-up Completeness Review of Notice of Intent to Construct

This follow-up review for completeness of this Notice and Intent was conducted in accordance with G.S. 130A-336.1(c). This NOI is determined to be:

INCOMPLETE

Based upon review of information submitted in the RESUBMITTAL above, this Notice of Intent remains INCOMPLETE because the following items from Part 1 of this form remain missing: _____

Copies of this signed form were sent to the design PE and the Owner on _____ via _____
Date Email, FAX, USPS, Hand-delivered

Print name of authorized Agent of the LHD Signature of authorized Agent of the LHD Date

COMPLETE

Based upon review of information submitted in the RESUBMITTAL above in addition to information provided in Part 1 of this form, this NOI is deemed complete.

Copies of this signed form were sent to the PE and the Owner on _____ via _____
Date Email, FAX, USPS, Hand-delivered

A complete copy of this form with tracking information was sent to the State: _____ via _____
Date Email, FAX, USPS, hand-delivered

Print name of authorized Agent of the LHD Signature of authorized Agent of the LHD Date

PART 3: Authorization to Operate (ATO)

Except for date received, the Section below is to be completed by the Owner or the PE.

<p>LHD USE ONLY: Initial submittal of request for ATO received: _____ by _____ <small>Date Initials</small></p> <p>Date of Post-construction Conference: _____</p>

The following items are included in this submittal for an Authorization to Operate under an EOP:

- Signed and sealed copy of the Engineer's report that includes the information in G.S. 130A-336.1(k)(1) and 15A NCAC 18A .1971(f) Yes No
- Operation and management program Yes No
- Fee (as applicable) Yes No
- Notarized letter documenting Owner's acceptance of the system from the PE Yes No
- Owner meets requirements of ownership or control of the system per 15A NCAC 18A .1938(j) Yes No
- Easement, right of way, or encroachment agreement required per 15A NCAC 18A .1938(j) Yes No
- Multi-party agreements required, as applicable, pursuant to 15A NCAC 18A .1937(h) Yes No
 If yes, agreements filed in _____ County Register of Deeds in Deed Book _____ Page _____

Attestation by the Owner or the PE for Authorization to Operate

I, _____ hereby attest that all items indicated above have been provided to the
Print name of Owner or Professional Engineer

_____ County LHD and the system shall meet applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336-.1(e)(6).

Signature of Owner or Professional Engineer Date

This section for LHD Use Only.

LHD Review of required information for the ATO

INCOMPLETE

Based upon review of information submitted in the Section above, the following items are missing from the information required for an Authorization to Operate for an EOP: _____

Copies of this signed form were sent to the design PE and the Owner on _____ via _____
Date Email, FAX, USPS, Hand-delivered

Print name of authorized Agent of the LHD Signature of authorized Agent of the LHD Date

COMPLETE

Based upon review of information submitted in the Section above, this Authorization to Operate is hereby issued in accordance with G.S. 130A-336.1(m).

A copy of this complete NOI/ATO with tracking information was sent to the State on _____ via _____
Date Email, FAX, USPS, Hand-delivered

Print name of authorized Agent of the LHD Signature of authorized Agent of the LHD Date

ISSUANCE OF CERTIFICATE OF OCCUPANCY: *Once the LHD determines completeness based upon the ATO submission, the owner may apply to the local permitting agency for permanent electrical service to a residence, place of business or place of public assembly pursuant to G.S. 130A-339.*



MACCO-1

OP ID: CH

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
11/04/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER The Adcock Agency, Inc. 215 E. Chatham St. Suite 120 Cary, NC 27511 Christal D. Ham, CPCU,AAI	819-467-8126 CONTACT NAME: John W. Miller, Jr., CPCU,CIC PHONE (A/C, No. Ext): 819-467-8126 FAX (A/C, No): 819-467-8175 EMAIL: jmliller@adcockagency.com
INSURED MacConnell & Associates PC PO Box 129 Morrisville, NC 27560-0129	INSURER(S) AFFORDING COVERAGE INSURER A: ERIE Insurance Exchange INSURER B: Continental Casualty Co (CNA) INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INBR LTR	TYPE OF INSURANCE	ADDL BURR (USD) (A/C)	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
X	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		Q97-0842712	11/04/2021	11/04/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Per occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		Q97-0842712	11/04/2021	11/04/2022	COMBINED SINGLE LIMIT (Per accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB OCCUR CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10000		Q31-1070288	07/10/2021	07/10/2022	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below.	Y/N <input type="checkbox"/> N/A	Q91-1000820	07/10/2021	07/10/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	E&O		AEH591893132	09/17/2021	09/17/2022	E&O 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
ENGINEER; Policy forms and endorsements apply

CERTIFICATE HOLDER

THIS CER

This Certificate is for Informational Purposes Only. Certificate Holder Name and Address Needed to Validate.

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Christal D Ham

Miscellaneous errors and omissions

Markel has over 35 years of experience providing miscellaneous errors and omissions insurance. Our leadership has a wealth of knowledge and expertise in protecting small business owners from litigation stemming from actual or perceived negligence. Our underwriting team has crafted policies that fit your specific needs, while our seasoned, in-house claims professionals will help you successfully navigate a loss or claim should you need their assistance.

Reporting new professional liability claims

New Claims can be reported in writing by website, email, fax, or regular mail. Please refer to your specific policy for all relevant reporting requirements.

To report a new claim, visit markelinsurance.com/file-a-claim and select "BOP/Miscellaneous errors and omissions/Workers compensation" from the drop down. You can also email newclaims@markelcorp.com and include the following:

- Policy number
- Insured and claimant names with contact details
- Date of loss
- Location and description of loss
- All pertinent documentation available (incident report, police report, witness information, photos, etc.)

General claims questions

For information about an already reported Professional Liability claim, email: markelclaims@markelcorp.com, or contact your assigned claim examiner directly.

Additional contact information:

(800) 362-7535 or (800) 3 MARKEL

(855) 662-7535 or (855) 6 MARKEL

Markel Claims Department, P.O. Box 2009,
Glen Allen, VA 23058-2009

While your policy is primarily designed to protect against a variety of professional errors and omissions claims, it may also provide protection for other specific exposures such as pollution claims, disciplinary proceedings, third party discrimination claims, subpoena and public relations expenses, among others. Contact your agent for more information, or if you have reported a Claim, your assigned examiner.

For more information about our programs, risk management articles, and FAQs, please visit markelinsurance.com. To pay your bill or view policy documents, please visit portal.markelinsurance.com.

Risk management and loss prevention

Policyholders have access to loss control and risk management resources that can assist in a better understanding of potential hazards within their operation and ways to reduce claims.

Here's a sample of the many services available:

- Exposure assessments
- Loss analysis tools
- Safety videos
- Safety training materials
- Regulatory program guidance

Designed Protection® for professional service providers and associations – professional service providers hotline

Our panel of Risk Management experts is available to discuss general risk management related concerns and questions. Please visit markelcorp.com/riskmanagement and under "Designed Protection" click "Click here," enter your policy number, then select "Professional Service Providers Hotline" to access our panel of experts.

Visit our website at:

markelinsurance.com/risk-management-home.

For more information about any of Markel's loss control services, contact us at (888) 500-3344 or email losscontrol@markelcorp.com.





MARKEL INSURANCE COMPANY

10275 West Higgins Road, Suite 750
Rosemont, IL 60018

INSURANCE POLICY

Coverage afforded by this policy is provided by the Company (Insurer) and named in the Declarations.

In Witness Whereof, the company (insurer) has caused this policy to be executed and attested and countersigned by a duly authorized representative of the company (insurer) identified in the Declarations.

Kathleen Anne Sturgeon

Ray W. Sales

Secretary

President



MARKEL INSURANCE COMPANY

NOTICE TO POLICYHOLDERS CLAIM REPORTING

Please immediately report a new claim under this policy to:

newclaims@markelcorp.com

For general claims inquiries after a claim has been reported, please email:

markelclaims@markelcorp.com

In order for us to expedite the handling of your claim and quickly refer it to the appropriate party, please have the following information available:

- Claim number (or report as new)
- Your name, contact information and position with the Named Insured
- Date of loss
- Policy number and insured name
- Details of loss

Our address and additional contact information are as follows:

Markel Claims
P.O. Box 2009
Glen Allen, VA 23058-2009
Phone: 800-362-7535 (800) 3MARKEL
Fax: 855-662-7535 (855) 6MARKEL

Markel understands the importance of having knowledgeable claims professionals prepared to answer your questions with personal attention and expertise. With claims professionals located across four time zones, you are sure to find the claims assistance you need -- when you need it.

**PLEASE REFER TO THE POLICY FOR ANY NOTICE AND REPORTING PROVISIONS
AND DUTIES IN THE EVENT OF LOSS OR DAMAGE TO COVERED PROPERTY.**



MARKEL INSURANCE COMPANY

PRIVACY NOTICE

U. S. Consumer Privacy Notice

Rev. 1/1/2020

FACTS	WHAT DOES MARKEL GROUP OF COMPANIES REFERENCED BELOW (INDIVIDUALLY OR COLLECTIVELY REFERRED TO AS "WE", "US", OR "OUR") DO WITH YOUR PERSONAL INFORMATION?
Why?	In the course of Our business relationship with you, We collect information about you that is necessary to provide you with Our products and services. We treat this information as confidential and recognize the importance of protecting it. Federal and state law gives you the right to limit some but not all sharing of your personal information. Federal and state law also requires Us to tell you how We collect, share, and protect your personal information. Please read this notice carefully to understand what We do.
What?	<p>The types of personal information We collect and share depend on the product or service you have with Us. This information can include:</p> <ul style="list-style-type: none"> • your name, mailing and email address(es), telephone number, date of birth, gender, marital or family status, identification numbers issued by government bodies or agencies (i.e.: Social Security number or FEIN, driver's license or other license number), employment, education, occupation, or assets and income from applications and other forms from you, your employer and others; • your policy coverage, claims, premiums, and payment history from your dealings with Us, Our Affiliates, or others; • your financial history from other insurance companies, financial organizations, or consumer reporting agencies, including but not limited to payment card numbers, bank account or other financial account numbers and account details, credit history and credit scores, assets and income and other financial information, or your medical history and records. <p>Personal information does not include:</p> <ul style="list-style-type: none"> • publicly-available information from government records; • de-identified or aggregated consumer information. <p>When you are no longer Our customer, We continue to share your information as described in this Notice as required by law.</p>
How?	All insurance companies need to share customers' personal information to run their everyday business. In the section below, We list the reasons financial companies can share their customers' personal information; the reasons We choose to share; and whether you can limit this sharing. We restrict access to your personal information to those individuals, such as Our employees and agents, who provide you with insurance products and services. We may disclose your personal information to Our Affiliates and Nonaffiliates (1) to process your transaction with Us, for instance, to determine eligibility for coverage, to process claims, or to prevent fraud, or (2) with your written authorization, or (3) otherwise as permitted by law. We do not disclose any of your personal information, as Our customer or former customer, except as described in this Notice.

Reasons We can share your personal information	Do We share?	Can you limit this sharing?
For Our everyday business purposes and as required by law – such as to process your transactions, maintain your account(s), respond to court orders and legal/regulatory investigations, to prevent fraud, or report to credit bureaus	Yes	No
For Our marketing purposes – to offer Our products and services to you	Yes	No
For Joint Marketing with other financial companies	Yes	No
For Our Affiliates' everyday business purposes – information about your transactions and experiences	Yes	No
For Our Affiliates' everyday business purposes – information about your creditworthiness	No	We don't share
For Our Affiliates to market you	No	We don't share
For Nonaffiliates to market you	No	We don't share
Questions? Call (888) 560-4671 or email privacy@markel.com		

Who We are	
Who is providing this Notice?	A list of Our companies is located at the end of this Notice.

What We do	
How do We protect your personal information?	We maintain reasonable physical, electronic, and procedural safeguards to protect your personal information and to comply with applicable regulatory standards. For more information, visit www.markel.com/privacy-policy .
How do We collect your personal information?	We collect your personal information, for example, when you complete an application or other form for insurance perform transactions with Us, Our Affiliates, or others file an insurance claim or provide account information use your credit or debit card We also collect your personal information from others, such as consumer reporting agencies that provide Us with information such as credit information, driving records, and claim histories.
Why can't you limit all sharing of your personal information?	Federal law gives you the right to limit only sharing for Affiliates' everyday business purposes – information about your creditworthiness Affiliates from using your information to market to you sharing for Nonaffiliates to market to you State laws and individual companies may give you additional rights to limit sharing. See the Other Important Information section of this Notice for more on your rights under state law.

Definitions	
Affiliates	<p>Companies related by common ownership or control. They can be financial and nonfinancial companies.</p> <ul style="list-style-type: none"> • Our Affiliates include member companies of Markel Group.
Nonaffiliates	<p>Companies not related by common ownership or control. They can be financial and nonfinancial companies.</p> <ul style="list-style-type: none"> • Nonaffiliates that We can share with can include financial services companies such as insurance agencies or brokers, claims adjusters, reinsurers, and auditors, state insurance officials, law enforcement, and others as permitted by law.
Joint Marketing	<p>A formal agreement between Nonaffiliated companies that together market financial products or services to you.</p> <ul style="list-style-type: none"> • Our Joint Marketing providers can include entities providing a service or product that could allow Us to provide a broader selection of insurance products to you.

Other Important Information
<p>For Residents of AZ, CT, GA, IL, ME, MA, MN, MT, NV, NJ, NC, OH, OR, and VA: Under state law, under certain circumstances you have the right to access and request correction, amendment or deletion of personal information that We have collected from or about you. To do so, contact your agent, visit www.markel.com/privacy-policy, call (888) 560-4671, or write to Markel Corporation Privacy Office, 4521 Highwoods Parkway, Glen Allen, VA 23060.</p> <p>We may charge a reasonable fee to cover the costs of providing this information. We will let you know what actions We take. If you do not agree with Our actions, you may send Us a statement.</p>
<p>For Residents of CA: You have the right to review, make corrections, or delete your recorded personal information contained in Our files. To do so, contact your agent, visit www.markel.com/privacy-policy, call (888) 560-4671, or write to Markel Corporation Privacy Office, 4521 Highwoods Parkway, Glen Allen, VA 23060. We do not and will not sell your personal information.</p> <p>For the categories of personal information We have collected from consumers within the last 12 months, please visit: www.markel.com/privacy-policy.</p>
<p>For Residents of MA and ME: You may ask, in writing, for specific reason, for an adverse underwriting decision.</p>
<p>Markel Group of Companies Providing This Notice: City National Insurance Company, Essentia Insurance Company, Evanston Insurance Company, FirstComp Insurance Company, Independent Specialty Insurance Company, National Specialty Insurance Company, Markel Bermuda Limited, Markel American Insurance Company, Markel Global Reinsurance Company, Markel Insurance Company, Markel International Insurance Company Limited, Markel Service, Incorporated, Markel West, Inc. (d/b/a in CA as Markel West Insurance Services), Pinnacle National Insurance Company, State National Insurance Company, Inc., Superior Specialty Insurance Company, SureTec Agency Services, Inc. (d/b/a in CA as SureTec Agency Insurance Services), SureTec Indemnity Company, SureTec Insurance Company, United Specialty Insurance Company, Inc.</p>



MARKEL INSURANCE COMPANY

U.S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL ("OFAC") ADVISORY NOTICE TO POLICYHOLDERS

No coverage is provided by this Policyholder Notice nor can it be construed to replace any provisions of your policy. You should read your policy and review your Declarations page for complete information on the coverages you are provided.

This Notice provides information concerning possible impact on your insurance coverage due to directives issued by OFAC. **Please read this Notice carefully.**

The Office of Foreign Assets Control (OFAC) administers and enforces sanctions policy, based on Presidential declarations of "national emergency". OFAC has identified and listed numerous:

- Foreign agents;
- Front organizations;
- Terrorists;
- Terrorist organizations; and
- Narcotics traffickers;

as "Specially Designated Nationals and Blocked Persons". This list can be located on the United States Treasury's web site – <https://www.treasury.gov/ofac>.

In accordance with OFAC regulations, if it is determined that you or any other insured, or any person or entity claiming the benefits of this insurance has violated U.S. sanctions law or is a Specially Designated National and Blocked Person, as identified by OFAC, this insurance will be considered a blocked or frozen contract and all provisions of this insurance are immediately subject to OFAC. When an insurance policy is considered to be such a blocked or frozen contract, no payments nor premium refunds may be made without authorization from OFAC. Other limitations on the premiums and payments also apply.



PROFESSIONAL LIABILITY INSURANCE DECLARATIONS

Claims Made and Reported Coverage: The coverage afforded by this policy is limited to liability for only those Claims that are first made against the Insured during the Policy Period or the Extended Reporting Period, if exercised, and reported to Markel Insurance Company during the Policy Period or the Extended Reporting Period, if exercised, or within 60 days after the expiration of the Policy Period or the Extended Reporting Period, if exercised.

Notice: This policy contains provisions that reduce the Limits of Liability stated in the policy by the costs of legal defense and permit legal defense costs to be applied against the deductible, unless the policy is amended by endorsement. Please read the policy carefully.

POLICY NUMBER: MEO1522-03

RENEWAL OF POLICY: MEO1522-02

NAMED INSURED: Thomas Boyce

BUSINESS ADDRESS: 2560 Silk Oak Rd Siler City, NC 27344

POLICY PERIOD: From 10/15/2021 to 10/15/2022

12:01 A.M. Standard Time at address of Insured stated above.

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS OF THIS POLICY, THE COMPANY AGREES WITH THE NAMED INSURED TO PROVIDE THE INSURANCE AS STATED IN THIS POLICY.

- 1. PROFESSIONAL SERVICES: soil scientist
2. LIMITS OF LIABILITY

Professional Liability Coverage

- A. Each Claim: \$1,000,000
B. Policy Aggregate: \$1,000,000

Additional Payments

- A. Contingent Bodily Injury And Property Damage \$0
B. Pollution \$10,000
C. Pre-Claim Assistance Expenses \$20,000
D. Sexual Abuse \$10,000
E. Third Party Discrimination \$25,000

Supplementary Payments

- A. Disciplinary Proceeding \$25,000 per Policy Period
B. Loss Of Earnings And Expense Reimbursement \$10,000
C. Public Relations Expenses \$5,000
D. Subpoena And Record Request Assistance \$5,000

Table with 1 column: Producer Number, Name and Mailing Address. Row 1: 98496, Wade Associates, LLC. - New Bern, PO Box 1209, Davidson, NC, 28036

3. DEDUCTIBLE

- A. Each Claim: \$1,000
- B. Aggregate: \$3,000

4. RETROACTIVE DATE: 10/15/2019

5. PREMIUM RATE: Flat **PREMIUM BASE: \$15,000**

6. PREMIUM FOR POLICY PERIOD


- Minimum: \$400.00
- Deposit: \$400.00
- Adjusted Annual Premium: \$400.00

7. PREMIUM PERCENTAGE FOR EXTENDED REPORTING PERIOD: 200%; 225%; 250%; 275%; 300% or 350%, of the total annual premium, respectively
ADDITIONAL PERIOD: 12 months; 24 months; 36 months; 48 months; 60 months; 72 months

8. FORMS AND ENDORSEMENTS ATTACHED AT POLICY INCEPTION:

See MDIL 1001 attached.

These declarations, together with the Coverage Form and any Endorsement(s), complete the above numbered policy.

Countersigned: 07/19/2021 (Date)	By:  _____ Authorized Representative Signature
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MARKEL INSURANCE COMPANY

MARKEL'S DESIGNED PROTECTION® RISK MANAGEMENT RESOURCES FOR PROFESSIONALS

Welcome to Markel's Designed Protection® leading edge Risk Management Resources.

The following risk management resources are available exclusively to our policyholders at our website www.markelcorp.com/riskmanagement at no additional cost.

HOW TO QUICKLY ACCESS RISK MANAGEMENT RESOURCES:

- Step 1. Go onto our website, www.markelcorp.com/riskmanagement.
- Step 2. Select the Designed Protection services that apply to your policy, to get to the Login screen.
- Step 3. Review the disclaimer, enter your current policy number and click on the button below to access. Your policy number is: MEO1522-03

Available Risk Management Resources include:

Designed Protection® Risk Management Telephone Hotline for Professional Service Providers

This confidential telephone hotline is staffed by a panel of risk management experts that are available to answer general risk management questions.

Designed Protection® for Professional Services Firms – Leading Edge Strategies for Effective Risk Management

This Guide provides information about principles of effective risk management including client satisfaction, billing practices and prompt and effective action in the event of an error or omission.

Top 10 Tips for Liability Loss Avoidance for Professional Services Providers

A concise, bullet point summary of 10 liability risk avoidance strategies.

Please check our website regularly as additional resources are added throughout the year.



MARKEL INSURANCE COMPANY

FORMS SCHEDULE

FORM NUMBER

FORM NAME

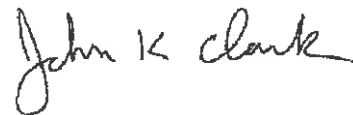
MJIL 1000 06 10	Signature Page
MPIL 1074 07 14	Policyholder Notice
MPIL 1007 01 20	Privacy Notice
MPIL 1083 04 15	U.S. Treasury Department's Office Of Foreign Assets Control ("OFAC") Advisory Notice To Policyholders
MDST 1000 07 17	Professional Liability Insurance Declarations
MPST 1000 08 18	Markel's Designed Protection Risk Management Resources For Professionals
MEIL 1250 07 17	Policy Changes
MST 0001 07 17	Professional Liability Insurance Coverage Form
MEIL 5409 09 10	Nuclear Energy Liability Exclusion Endorsement (Broad Form)
MIL 1214 09 17	Trade or Economic Sanctions
MST 1229 07 17	Minimum Earned Premium
MST 1433-NC 07 17	North Carolina Amendatory

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

POLICY CHANGES

Policy Change
Number

POLICY NUMBER MEO1522-03	POLICY CHANGES EFFECTIVE 10-15-2021	COMPANY Markel Insurance Company
NAMED INSURED Thomas Boyce		AUTHORIZED REPRESENTATIVE 10/15/202110/15/2021 Wade Associates, LLC. - New Bern PO Box 1209 Davidson, NC, 28036
COVERAGE PARTS AFFECTED: Professional Liability		
CHANGES		
MAILING ADDRESS ENDORSEMENT		
In consideration of the premium paid, it is hereby understood and agreed that the mailing of notices by the Company to the Named Insured at the following address shall be equivalent to mailing such notices to the Named Insured at the address stated on the Declarations:		
PO BOX 81 Pittsboro NC 27312		
All other terms and conditions remain unchanged.		



Authorized Representative Signature



Markel Insurance Company

PROFESSIONAL LIABILITY INSURANCE COVERAGE FORM

THIS IS A CLAIMS MADE AND REPORTED POLICY. THIS POLICY REQUIRES THAT A CLAIM BE MADE AGAINST THE INSURED DURING THE POLICY PERIOD OR DURING THE EXTENDED REPORTING PERIOD, IF APPLICABLE, AND REPORTED TO THE COMPANY IN WRITING DURING THE POLICY PERIOD OR THE EXTENDED REPORTING PERIOD, IF APPLICABLE, BUT NO LATER THAN 60 DAYS AFTER THE DATE OF EXPIRATION OF THE POLICY PERIOD OR THE EXTENDED REPORTING PERIOD, IF APPLICABLE. PLEASE READ IT CAREFULLY.

PLEASE NOTE THAT AMOUNTS INCURRED AS CLAIM EXPENSES WILL REDUCE THE LIMIT OF LIABILITY AVAILABLE AND WILL BE APPLIED AGAINST THE DEDUCTIBLE AMOUNT.

The Company, relying upon the statements in the **Application**, which is deemed incorporated into this Policy and forms a part hereof, and in consideration of the payment of the premium, agrees with the **Insured** as follows:

SECTION I – THE INSURED

The word **Insured**, either in the singular or plural, means:

- A. The Named Insured stated in the Declarations;
- B. Any past or current principal, partner, officer, director, member, manager, employee, shareholder or **Independent Contractor** of the Named Insured stated in the Declarations solely while acting on behalf of the Named Insured and within the scope of their duties as such; and
- C. The heirs, executors, administrators, assigns and legal representatives of each **Insured** in Paragraphs A. and B. in the event of death, incapacity or bankruptcy of such **Insured**, but only while acting within the scope of their duties as such on behalf of the Named Insured or the Named Insured's estate.

SECTION II – INSURING AGREEMENTS

A. Professional Liability Coverage

The Company shall pay on behalf of the **Insured** all sums in excess of the Deductible stated in the Declarations, which the Insured becomes legally obligated to pay as **Damages** and **Claim Expenses** as a result of a **Claim** first made against the **Insured** and reported to the Company during the **Policy Period** or during the Extended Reporting Period, if applicable, but no later than 60 days after the expiration date of the **Policy Period** or Extended Reporting Period, if applicable, by reason of:

1. A **Wrongful Act**; or
2. A **Personal Injury**;

in the performance of **Professional Services** rendered or that should have been rendered by the **Insured** or by any person or organization for whose **Wrongful Act** or **Personal Injury** the **Insured** is legally responsible; provided:

- a. The **Wrongful Act** or **Personal Injury** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Wrongful Act** or **Personal Injury**, or any fact, circumstance, situation or incident which would lead a reasonable person in that **Insured's** position to conclude that a **Claim** was likely.

B. Additional Payments

1. Contingent Bodily Injury And Property Damage

The Company shall pay **Contingent Bodily Injury And Property Damage** up to a limit of \$100,000, or a higher limit if stated in the Declarations, per **Policy Period** including the Extended Reporting Period, if applicable, as the direct result of **Wrongful Acts** that occur during the **Policy Period**, provided:

- a. The **Contingent Bodily Injury And Property Damage** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Wrongful Act**, or any fact, circumstance, situation or incident which would lead a reasonable person in that **Insured's** position to conclude that a **Claim** was likely.

No coverage for **Contingent Bodily Injury And Property Damage** is provided by this Policy except as provided by this Section II – Insuring Agreements, B. Additional Payments, 1. Contingent Bodily Injury And Property Damage.

2. Pollution

The Company shall pay those sums that the **Insured** becomes legally obligated to pay as compensatory damages for a **Pollution Incident** up to a limit of \$10,000 per **Policy Period** including the Extended Reporting Period, if applicable, as the direct result of **Wrongful Acts** that occur during the **Policy Period**, provided:

- a. The **Pollution Incident** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Pollution Incident**, or any fact, circumstance, situation or incident which would lead a reasonable person in that **Insured's** position to conclude that a **Claim** was likely.

No coverage for a **Pollution Incident** is provided by this Policy except as provided by this Section II – Insuring Agreements, B. Additional Payments, 2. Pollution.

3. Pre-Claim Assistance Expenses

If, during the **Policy Period** or the Extended Reporting Period, if applicable, the **Insured** provides the Company with written notice of a **Wrongful Act** or **Personal Injury** as provided in Section VIII – Claims Reporting And Notice, B. Discovery Of Potential Claims that is reasonably expected to result in a **Claim** but as to which no **Claim** has yet been made, the Company may, at the Company's sole option, choose to investigate the **Wrongful Act** or **Personal Injury**. Such an investigation will be at the Company's expense and will not reduce the Limits of Liability or be subject to the Deductible provisions of this Policy until one of the following occurs:

- a. A **Claim** results from the **Wrongful Act** or **Personal Injury** under investigation; or
- b. The Company incurs \$20,000 in expenses arising from the investigation.

If a **Claim** is made and reported to the Company, or once the Company incurs \$20,000 in investigative expense, any further payment will be considered **Claims Expense** and will reduce the applicable Limits of Liability and be subject to the Deductible provisions of this insurance.

No coverage for **Pre-Claim Assistance Expenses** is provided by this Policy except as provided by this Section II – Insuring Agreements B. Additional Payments 3. Pre-Claim Assistance Expenses.

4. Sexual Abuse

The Company shall pay those sums the **Insured** becomes legally obligated to pay as **Damages** and **Claim Expenses** because of **Sexual Injury** up to a limit of \$10,000 per **Policy Period** including the Extended Reporting Period, if applicable, as a result of all **Sexual Act(s)** perpetrated or alleged to have been perpetrated by any **Insured** or for allegations that the **Insured** was negligent in hiring, training or supervising any **Insured** who perpetrated or is alleged to have perpetrated a **Sexual Act** resulting in **Sexual Injury** provided:

- a. Such **Sexual Act** is perpetrated or alleged to have been perpetrated during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and

- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Sexual Act** or any fact, circumstance, situation or incident involving such **Sexual Act** which would lead a reasonable person in that **Insured's** position to conclude that a **Claim** was likely.

With respect to this Section II – Insuring Agreements, **B. Additional Payments, 4. Sexual Abuse**, this Policy does not apply to any **Claim** based upon, arising out of, or in any way involving:

- (1) Any **Insured** who perpetrates or is alleged to have perpetrated a **Sexual Act** resulting in **Sexual Injury**; however, the Company will defend such **Insured** and pay **Claim Expenses** on their behalf unless it is established in fact that such **Insured** perpetrated such **Sexual Act**;
- (2) Any manager, supervisor, partner, officer, director or trustee who gains knowledge of any actual or alleged **Sexual Act** and fails to take reasonable care to prevent a future **Sexual Act**;
- (3) Any **Sexual Act** which is perpetrated or alleged to have been perpetrated by an **Insured** who previously perpetrated or is alleged to have previously perpetrated a **Sexual Act**, and after a manager, supervisor, partner, officer, director or trustee has gained knowledge of the previously perpetrated or previously alleged to have been perpetrated **Sexual Act**; or
- (4) Any **Sexual Injury** to any employee of an **Insured**.

No coverage for **Sexual Abuse** is provided by this Policy except as provided by this Section II – Insuring Agreements, **B. Additional Payments, 4. Sexual Abuse**.

5. **Third Party Discrimination**

The Company shall pay those sums the **Insured** becomes legally obligated to pay as **Damages** because of **Third Party Discrimination** up to a limit of \$25,000 per **Policy Period** including the Extended Reporting Period, if applicable, in the performance of **Professional Services** rendered or that should have been rendered by the **Insured**; provided:

- a. The **Third Party Discrimination** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Third Party Discrimination** or any fact, circumstance, situation or incident which would lead a reasonable person in that **Insured's** position to conclude that a **Claim for Third Party Discrimination** was likely.

No coverage for **Third Party Discrimination** is provided by this Policy except as provided by this Section II – Insuring Agreements, **B. Additional Payments, 5. Third Party Discrimination**.

Payments under this Paragraph **B.** are limited to the applicable limits stated in this section, shall be subject to the Limits of Liability stated in the Declarations and shall be subject to the Deductible stated in the Declarations. Once the applicable limit has been paid, the Company's obligation to defend has ended.

C. **Supplementary Payments**

1. **Disciplinary Proceeding**

- a. Upon submission to the Company of satisfactory written proof of payment by the Named Insured, the Company shall reimburse the Named Insured up to \$25,000 per **Policy Period** including the Extended Reporting Period, if applicable, for all reasonable and necessary legal fees and legal expenses incurred in response to a **Disciplinary Proceeding** against the Named Insured first initiated during the **Policy Period**, or the Extended Reporting Period, if applicable; provided:
 - (1) The **Wrongful Act** giving rise to the **Disciplinary Proceeding** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
 - (2) Prior to the effective date of this Policy no **Insured** had any knowledge of such **Wrongful Act** or any fact, circumstance, situation or incident which would lead a reasonable person in the **Insured's** position to conclude that a **Disciplinary Proceeding** was likely.
- b. The **Insured** shall give the Company written notice as soon as practicable of any **Disciplinary Proceeding** first initiated against the **Insured** during the **Policy Period** or the Extended Reporting Period, if applicable. In any event, such **Disciplinary Proceeding** must be reported to the address stated in the Claim Reporting Policyholder Notice attached to this Policy no later than 60 days after the end of the **Policy Period** or the Extended Reporting Period, if applicable.

- c. No reimbursement will be made for the Named Insured's payment of any taxes; criminal or civil fines, penalties or sanctions; registration or licensing fees; or any monetary judgment, award or settlement of any kind.

2. Loss Of Earnings And Expense Reimbursement

- a. Upon submission to the Company of satisfactory written proof of payment by the **Insured**, the Company shall reimburse the Named Insured for all reasonable and necessary expenses incurred by an **Insured** for attendance, at the Company's written request, at any arbitration, **Mediation**, deposition, hearing or trial in connection with a **Claim** to which this Policy applies. The Named Insured shall provide written proof of payment of expenses as soon as practicable to the Company at the address stated in the Claim Reporting Policyholder Notice attached to this Policy within 60 days after incurring such expenses.
- b. The Company shall compensate the Named Insured for an **Insured's** loss of earnings up to a maximum of \$400 per day for any **Insureds** who attend, at the Company's written request, any arbitration, **Mediation**, deposition, hearing or trial in connection with a **Claim** to which this Policy applies.
- c. The maximum the Company will reimburse the Named Insured for all **Insureds** for compensation of all loss of earnings and expense reimbursement per **Policy Period** including the Extended Reporting Period, if applicable, for all **Claims** to which this Policy applies and all attendances at the Company's written request is \$10,000.

No coverage for **Loss of Earnings And Expense Reimbursement** is provided by this Policy except as provided by this Section II – Insuring Agreements, C. Supplementary Payments, 2. Loss of Earnings And Expense Reimbursement.

3. Public Relations Expenses

Upon submission to the Company of satisfactory written proof of payment by the **Insured**, the Company shall reimburse the **Insured** for **Public Relations Expenses** up to a limit of \$5,000 per **Policy Period** including the Extended Reporting Period, if applicable, as the direct result of **Wrongful Act** or **Personal Injury** provided:

- a. The **Wrongful Act** or **Personal Injury** happens during the **Policy Period** or on or after the **Retroactive Date** and before the end of the **Policy Period**; and
- b. Prior to the effective date of this Policy no **Insured** had any knowledge of such **Wrongful Act**, **Personal Injury** or any fact, circumstance, situation or incident which would lead a reasonable person in the **Insured's** position to conclude that a **Claim** was likely.

No coverage for **Public Relations Expenses** is provided by this Policy except as provided by this Section II – Insuring Agreements, C. Supplementary Payments, 3. Public Relations Expenses.

4. Subpoena And Record Request Assistance

In the event that during the **Policy Period**:

- a. The **Insured** first receives a subpoena or a written request for the **Insured's** records or files or notice of deposition relative to a **Wrongful Act** or **Personal Injury** in the performance of **Professional Services** rendered or that should have been rendered by the **Insured** or by any person or organization for whose **Wrongful Act** or **Personal Injury** the **Insured** is legally responsible; and
- b. The **Insured** reports the receipt of such subpoena or request in writing to the Company within 30 days of such receipt and prior to a **Claim** being first made against the **Insured** arising out of such **Wrongful Act** or **Personal Injury**;

then the Company shall pay on behalf of the **Insured** up to \$5,000 per **Policy Period** for reasonable and necessary legal fees and legal expenses incurred for engaging the services of legal counsel selected by the Company to assist the **Insured** in responding to such subpoena or request.

Payments under this Paragraph C. are limited to the applicable limits stated in this section, shall be in addition to the Limits of Liability stated in the Declarations and shall not be subject to the Deductible. Once the applicable limit has been paid, the Company's obligation to defend has ended.

SECTION III – DEFINITIONS

A. Application means:

1. The application for this Policy and for any policy issued by the Company, or any of its affiliates, of which this Policy is a direct or indirect renewal or replacement;
 2. Any attachment to any such application; and
 3. Any other materials or applications submitted with or incorporated into any such application.
- B. Bodily Injury** means bodily injury, sickness or disease sustained by a person, including death resulting from any of these.
- C. Claim** means the **Insured's** receipt of:
1. A written demand for **Damages** or remedial **Professional Services** involving this Policy; or
 2. The service of suit or institution of arbitration proceedings against the **Insured**;
- however, **Claim** shall not include any **Disciplinary Proceeding**.
- D. Claim Expenses** means reasonable and necessary amounts incurred by the Company, or by the **Insured** with the prior written consent of the Company, in the defense of that portion of any **Claim** for which coverage is afforded under this Policy, including costs of investigation, court costs, costs of bonds to release attachments and similar bonds, but without any obligation of the Company to apply for or furnish any such bonds, and costs of appeals; however, **Claim Expenses** shall not include:
1. Salary, wages, overhead, or benefit expenses of or associated with employees or officials of the Named Insured or employees or officials of the Company; or
 2. Salary, wages, administration, overhead, benefit expenses, or charges of any kind attributable to any in-house counsel or captive outside counsel for the Named Insured or the Company.
- E. Contingent Bodily Injury And Property Damage** means any actual or alleged **Bodily Injury** or **Property Damage** based upon or arising out of any **Wrongful Act** of the **Insured** in the performance of **Professional Services**.
- F. Damages** means the monetary portion of any judgment, award or settlement, including punitive or exemplary damages to the extent insurable by law; however, **Damages** shall not include:
1. Multiplied portions of damages in excess of actual damages, including trebling of damages;
 2. The cost of any modifications or changes to the **Insured's** security measures, procedures, software or hardware required or agreed to by the **Insured** to satisfy a judgment, award or settlement;
 3. Any cost required to repair, build or modify property to comply with any award by a court, administrative order, arbitration award or any similar judgment;
 4. Taxes, criminal or civil fines assessed against an **Insured**, or attorneys' fees of a party other than an **Insured** or other penalties imposed by law;
 5. Sanctions;
 6. Matters which are uninsurable under the law pursuant to which this Policy will be construed;
 7. The return, withdrawal, reduction or restitution or payment of any fees, profits or charges for services or consideration or any expenses paid to the **Insured** for services or goods; or
 8. Any cost to correct, perform or re-perform services of a professional nature when the **Insured** had the opportunity and capability to correct, perform or re-perform the services of a professional nature with respect to which such costs were incurred.
- G. Disciplinary Proceeding** means the **Insured's** receipt of any proceeding by a United States of America domiciled regulatory body, disciplinary board or governmental agency, any of which has the authority to investigate charges of professional misconduct in the performance of **Professional Services**; however, **Disciplinary Proceeding** shall not include any criminal proceeding.
- H. Electronic Communications System** means any wired, wireless, radio, electromagnetic, photo-optical or photo-electronic facility for the transmission of electronic communications; any electronic data processing systems or related electronic equipment for the storage of such communications; and any computer.
- I. Financial Planner** means an investment professional who helps individuals or entities set and achieve their financial goals through investments, tax planning, asset allocation, risk management, retirement planning and estate planning, assisting in increasing net worth in furtherance of the individual's or entity's financial objectives.

- J. Gross Revenues** means the gross amount of compensation received by the Named Insured for **Professional Services** during the **Policy Period**.
- K. Independent Contractor** means any natural person under written contract by the Named Insured or **Subsidiary** to perform the same **Professional Services** as the Named Insured or **Subsidiary**, but only while in performing such **Professional Services** on behalf of or at the direction of the Named Insured or **Subsidiary**.
- L. Interrelated Wrongful Act** means **Wrongful Acts** that have as a common connection or nexus any fact, circumstance, situation, event, cause, transaction or series of facts, circumstances, situations, events, causes or transactions.
- M. Mediation** means the voluntary process in which an objective third party who is a qualified professional mediator selected by the parties to the **Claim**, with written agreement of the Company, intervenes between the parties in an attempt to achieve settlement of the **Claim**. **Mediation** does not include litigation, arbitration or any court mandated proceeding.
- N. Mold** means any permanent or transient fungus, mold, mildew or mycotoxin, or any of the spores, scents or by-products resulting therefrom that exist, emanate from, or move anywhere indoors or outdoors, regardless of whether they are proved to cause disease, injury or damage.
- O. Mold Event** means any actual, alleged or threat of contact with, exposure to, or inhalation, ingestion, absorption, discharge, dispersal, seepage, migration, release, escape, presence, growth or reproduction of **Mold**.
- P. Personal Injury(les)** means:
1. Libel, slander or defamation;
 2. Invasion or infringement of the right of privacy;
 3. Malicious prosecution, abuse of process, false arrest or false imprisonment; or
 4. Humiliation or infliction of emotional distress;
- committed in the performance of **Professional Services**.
- Q. Pollutant** means any solid, liquid, gaseous, fuel, lubricant, thermal, acoustic, electrical, or magnetic irritant or contaminant, including but not limited to smoke, vapor, soot, fumes, fibers, radiation, acid, alkalis, petroleums, chemicals, or waste. Waste includes medical waste and all other materials to be disposed of, recycled, stored, reconditioned, or reclaimed.
- R. Pollution Incident** means the actual or alleged emission, discharge, dispersal, seepage, migration, release or escape of **Pollutants** into or upon land, the atmosphere, or any watercourse or body of water, which results in environmental damage, and did not arise from dishonest, fraudulent, malicious, or criminal conduct committed by the **Insured**, at the **Insured's** direction, or with the **Insured's** prior knowledge or from or at property or facilities which are or were at any time owned, leased or rented by any **Insured**. The entirety of such emission, discharge, release or escape will be deemed to be one **Pollution Incident**.
- S. Policy Period** means the period from the inception date of this Policy to the policy expiration date stated in the Declarations, or the effective date of any earlier cancellation or termination.
- T. Pre-Claim Assistance Expenses** means costs, attorneys' fees, experts' fees, charges and expenses incurred by the Company in connection with the investigation or evaluation of any potential **Claim**. **Pre-Claim Assistance Expenses** does not include fees, salaries, regular or overtime wages, overhead, or benefit expenses associated with any **Insured**.
- U. Private Data** means data containing an individual's:
1. Driver's license or other state-issued identification number, social security number, unpublished telephone number, or savings account, checking account, credit card or debit card number each when in combination with the security code, access code, password or pin for such account or card number;
 2. Nonpublic personal information as defined in the Gramm-Leach-Bliley Act of 1999 (GLBA), as amended, and regulations issued pursuant thereto;
 3. Protected health information as defined in the Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended, and regulations issued pursuant thereto, and medical and healthcare information;
 4. Private personal information as defined under a **Security Breach Notice Law**; and

5. Private personal information as defined under the law of a country other than the United States of America, which law is intended to provide for the protection of such private personal information;

not including any lawfully available data accessible by the general public.

- V. Professional Services** means those services stated in the Declarations rendered for others for a fee.
- W. Property Damage** means physical injury to, destruction of or contamination of tangible or intangible property, including all resulting loss of use of that property.
- X. Public Relations Expenses** means actual, necessary and reasonable expenses approved by the Company in writing and incurred by the **Insured** in retaining a public relations consultant to protect or restore the **Insured's** business reputation or in planning, implementing, executing and managing a public relations campaign under the direction of a public relations consultant to counter or minimize any actual or anticipated adverse effects of negative publicity.
- Y. Retroactive Date** means the Retroactive Date stated in the Declarations.
- Z. Security Breach Notice Law** means any law, statute or regulation within the United States of America, its territories or possessions, Puerto Rico or Canada requiring the Named Insured to notify individuals of the compromise or possible compromise of the security of their confidential information in the Named Insured's care, custody or control; the European Union (EU) Data Protection Act of 1995; and the General Data Protection Act of 2018.
- AA. Sexual Act** means sexual abuse, sexual molestation or sexual exploitation arising out of the conduct of the **Insured's Professional Services**.
- BB. Sexual Injury** means **Bodily Injury**, sickness, disease, unlawful detention, false imprisonment, humiliation, emotional distress, mental anguish, sexual dysfunction, invasion of right of privacy, assault or battery, solely when arising out of a **Sexual Act**.
- CC. Subsidiary(ies)** means:
1. Any entity, excluding partnerships or joint ventures, of which the **Insured** owns, or has the right to vote, more than 50% of the outstanding voting securities representing the present right to vote for the election of, or designate the appointment of, directors on a board of directors or equivalent management positions including, but not limited to, members of the board of managers of a limited liability company; or
 2. Any organization operated as a joint venture in which, on or prior to the inception date stated in the Declarations, the **Insured** owns, directly or through one or more **Subsidiaries**, exactly 50% of the organization's outstanding securities with voting rights and, under a written agreement with the organization's remaining owners, has sole control of the organization's management and operations.
- DD. Third Party Discrimination** means conduct of an **Insured** with respect to any natural person who is not an **Insured** or an additional insured that allegedly culminated in any actual or alleged discrimination on the basis of age, color, disability, familial status, marital status, national origin, pregnancy, race, sex, sexual preference, religion or other protected class or characteristic under applicable federal, state or local statute or ordinance.
- EE. Unauthorized Access** means a breach of the Named Insured's **Electronic Communications System**, including:
1. Any intentional violation, interception, or use or misuse of the Named Insured's **Electronic Communications System**, whether or not for profit or gain, by any person, without the permission, knowledge or ratification of the **Insured**;
 2. Access to the Named Insured's **Electronic Communications System** that is with the **Insured's** permission where such permission is the result of fraud or deception, including phishing scams;
 3. Use of the Named Insured's **Electronic Communications System** by a party, including but not limited to a rogue **Employee**, authorized by the **Insured** to use such system, who does so for an unauthorized purpose;
 4. The introduction of viruses, malware, or other programs into the Named Insured's **Electronic Communications System** which contain fraudulent or destructive instructions or code including any inadvertent transmission of such programs to a third party;
 5. A credible threat or an extortion demand, including but not limited to a threat or demand by ransomware, received by the **Named Insured** threatening or portending loss, injury or damage to:
 - a. The Named Insured's **Electronic Communications System**, including programs, electronic data and media which form a part of the Named Insured's **Electronic Communications System**; or

b. Money, securities, bonds or similar financial instruments, solely to the extent that record of such is maintained in digital or electronic format on the Named Insured's **Electronic Communications System**;

for the purpose of extorting money or other valuable consideration from the Named Insured; and

6. Failure to prevent a denial of service attack on the Named Insured's **Electronic Communications System** or to prevent the use of the Named Insured's **Electronic Communications System** by an unauthorized user or code to launch a denial of service attack on a third party.

FF.Unintentional Data Compromise means:

1. Any computer security incident, intrusion, breach, compromise, theft, loss or misuse of the Named Insured's **Private Data** maintained by the Named Insured, including the theft or loss of any paper records;
2. The failure of any third party to prevent the unauthorized viewing, copying or distribution of **Private Data** which the Named Insured has entrusted to such party under a written contract or agreement that specifically requires such party to protect the confidentiality of the **Private Data** so entrusted; or
3. Unintentional breach of the Named Insured's written privacy policy.

GG.Wrongful Act means any negligent act, error or omission in **Professional Services**, and includes **Interrelated Wrongful Acts**.

SECTION IV – EXCLUSIONS

This Policy does not apply to any **Claim**, **Additional Payment** or **Supplementary Payment**:

A. Made against the Insured:

1. By any person or organization or its subrogee, assignee, contractor, subcontractor, or parent organization, **Subsidiary**, division or affiliated organization which was or is operated, managed, owned or otherwise controlled, whether directly or indirectly, or in whole or in part, by:
 - a. Any **Insured** or parent organization or any **Subsidiary**, division or affiliated organization; or
 - b. Any principal, partner, officer, director, member, manager, employee or shareholder of the Named Insured;
2. By any principal, partner, officer, director, member, manager, employee or shareholder of an **Insured** or any subrogee or assignee of such person; or
3. By or on behalf of any person or organization included in the definition of **Insured**; or

B. Based upon or arising out of:

1. The liability of others assumed by the **Insured** under any contract or agreement; however, this exclusion will not apply to liability an **Insured** would have in the absence of the contract or agreement by reason of a **Wrongful Act** of the **Insured** in the performance of **Professional Services**;
2. A **Wrongful Act** or **Personal Injury** committed by an organization, or a principal, partner, officer, director, trustee, member, manager or employee of an organization:
 - a. Not stated in the Declarations; or
 - b. Not included within the description of **Insured** as stated in Section I – The Insured and as limited therein;
3.
 - a. Any obligation of the **Insured** under any workers' compensation, unemployment compensation or disability benefits law or under any similar law; or
 - b. The **Insured's** activities as a fiduciary under the Employee Retirement Income Security Act of 1974, as amended, or similar provisions of any federal, state or local statute or common law;
4. Wrongful termination or other employment related practices;
5.
 - a. Infringement or inducement of infringement of copyright, patent, trademark, service mark, trade name, or trade secret or misappropriation of trade secrets or confidential or proprietary information relating to the Named Insured's business operations;
 - b. Unfair competition based upon infringement of copyright, patent, trademark, service mark, trade name or trade secret;
 - c. The value of trade secrets, confidential processing methods or other confidential or proprietary information; or

- d. Any dispute related to ownership of any intellectual property;
 6. Any warranties or guarantees, express, implied or otherwise, or any cost estimates;
 7. Any unlawful discrimination by any **Insured**; however, this exclusion will not apply to coverage provided under Section II – Insuring Agreement, **B. Additional Payments**, **5. Third Party Discrimination**;
 8. Any conversion, misappropriation, commingling of or defalcation of funds or property;
 9. Any inability or failure of any party to pay or collect monies or to collect or pay federal, state, county or local tax, including, but not limited to, income tax, sales tax or property tax;
 10. The:
 - a. Formation, syndication, operation, administration, reorganization or dissolution of any limited partnership, limited liability company, limited liability partnership or Real Estate Investment Trust (REIT); or
 - b. Syndication of property;
 11. The:
 - a. Preparation of a financial statement, if a compilation, review or audit; or
 - b. Performance of any analytical analysis for the purpose of preparing a financial statement, if a compilation, review or audit;
 12. The failure to effect or maintain, or to advise of the need to effect or maintain, insurance, suretyship or bond;
 13. Any actual or alleged violation of the Securities Act of 1933, Securities Exchange Act of 1934, Investment Company Act of 1940, any state blue sky or securities law or similar state or federal statute or any amendments thereto, or any regulation or order issued pursuant to any of the foregoing statutes;
 14. The cost of recall, recovery, shipment, correction or reprinting caused by a defect or injurious condition in any advertisement or the cost of any services in connection therewith;
 - a. Based upon or arising out of a mistake in advertised price or incorrect description of any article or commodity; alleged false, misleading or deceptive advertising or misrepresentation in advertising or products or services advertised by the **Insured** or others; or
 - b. Based upon or arising out of games of chance or any other gaming or contests including lottery or sweepstakes;
 15. The performance of **Professional Services** with respect to the management of assets under a discretionary or nondiscretionary contract, whether written or oral;
 16. Acts or services as an insurance agent, insurance broker, investment adviser, **Financial Planner**, lawyer, accountant, registered representative or broker/dealer of securities or commodities, mortgage banker, mortgage broker, investment banker, independent third party escrow agent, construction adviser, architect, property developer or real estate agent or broker;
 17. The testing of welds, weld certification or the testing of structural steel; or
 18. Any violation of:
 - a. The Telephone Consumer Protection Act of 1991 (TCPA) and amendments thereto or any similar or related federal, state or local statute, law, rule, ordinance or regulation;
 - b. The CAN-SPAM Act of 2003 and amendments thereto or any similar or related federal, state or local statute, law, rule, ordinance or regulation;
 - c. The Fair Credit Reporting Act (FCRA) and amendments thereto or any similar or related federal, state or local statute, law, rule, ordinance or regulation, including the Fair and Accurate Credit Transactions Act of 2003 (FACTA); or
 - d. Any federal, state or local statute, law, rule, ordinance or regulation, other than the TCPA, CAN-SPAM Act of 2003 or FCRA and amendments thereto, that addresses, prohibits or limits the dissemination, interception, receiving, sending, transmitting, communicating, printing, disposal, collecting, recording or distribution of information or other material; or
- C. Based upon, arising out of, or in any way involving:

1. The insolvency, receivership, bankruptcy, liquidation or financial inability to pay, of any bank, savings and loan, banking firm, registered representative or broker/dealer of securities or commodities, insurance company, reinsurer, risk retention group or captive (or any other self-insurance plan or trust by whatsoever name);
2. The insolvency, receivership, bankruptcy, liquidation or financial inability of any subsidiary not included in the definition of **Insured**;
3. Any actual or alleged violation of any law, whether statutory, regulatory or common law, respecting any of the following activities: antitrust, business competition, unfair trade practices or tortious interference in another's business or contractual relationships;
4. Any acts or services performed by any **Insured** which is not licensed or certified to perform such acts or services if such licensing or certification is required by law;
5. Any conduct of the **Insured** or at the **Insured's** direction that is intentional, willful, dishonest, fraudulent or that constitutes a willful violation of any statute or regulation; however, this exclusion will not apply to:
 - a. The strictly vicarious liability of any **Insured** for the intentional, willful, dishonest or fraudulent conduct of another **Insured** or for the conduct of another **Insured** that constitutes a willful violation of any statute or regulation; or
 - b. **Claim Expenses** incurred until an allegation is determined through final adjudication to be intentional, willful, dishonest or fraudulent or a willful violation of any statute or regulation;
6. The gaining by any **Insured** of any profit, remuneration or advantage to which such **Insured** was not legally entitled; however:
 - a. The Company will continue to defend a **Claim** alleging any of the foregoing conduct until an allegation is determined through final adjudication against any **Insured** as to such conduct, at which time the **Insured** shall reimburse the Company for the costs of defending the **Claim**; and
 - b. Any fact pertaining to any **Insured** will not be imputed to any other **Insured** under this Policy for the purpose of determining the applicability of this exclusion;
7. Any **Wrongful Act** or **Personal Injury** or any fact, circumstance or situation that has been the subject of any notice given prior to the **Policy Period** under any other policy of insurance or to any reinsurer, risk retention group or captive (or any other self-insurance plan or trust by whatsoever name) or insurance representative;
8. Any **Wrongful Act** or **Personal Injury**, any fact, circumstance, situation, incident, **Claim** or suit referred to in an answer to any question of the **Application**;
9.
 - a. Actual, alleged or threatened discharge, disposal, migration, dispersal, release or escape of **Pollutants**; or
 - b. Direction, order or request to test for, monitor, remediate, clean up, remove, contain, treat, detoxify, or neutralize **Pollutants**, or to pay for or contribute to the costs of undertaking such actions;

however, this exclusion does not apply to coverage provided under Section II – Insuring Agreements, B. Additional Payments, 2. Pollution;
10. Any actual or alleged **Bodily Injury** or **Property Damage**; however, this exclusion will not apply to coverage provided under Section II – Insuring Agreements, B. Additional Payments, 1. Contingent Bodily Injury And Property Damage;
11. **Unauthorized Access** to the Named Insured's **Electronic Communications System**;
12. Any **Unintentional Data Compromise**;
13. Any actual or alleged price discounts, prizes, awards, money, or valuable consideration given in excess of a total contracted or expected amount;
14. Any actual or threatened abuse, molestation or exploitation by anyone; however, this exclusion does not apply to coverage provided under Section II – Insuring Agreements, B. Additional Payments, 4. Sexual Abuse; or
15. **Mold or Mold Event.**

SECTION V – TERRITORY

The insurance afforded by this Policy applies worldwide except for any **Claim** made or **Policy Payment** incurred in any country on which the government of the United States of America has imposed trade sanctions, embargoes or any similar regulations that prohibit the transaction of business with or within such country.

SECTION VI – LIMITS OF LIABILITY, DEDUCTIBLES AND INTERRELATED WRONGFUL ACTS

A. Limits Of Liability

1. Each Claim

The liability of the Company for the combined total of **Damages** and **Claim Expenses** for each **Claim** first made and reported against the **Insured** during the **Policy Period** or the Extended Reporting Period, if applicable, will not exceed the Each Claim Limit of Liability stated in the Declarations.

2. Policy Aggregate

Subject to Paragraph 1., the liability of the Company for the combined total of all **Damages** and **Claim Expenses** arising out of all **Claims** first made and reported against the **Insured** during the **Policy Period** and the Extended Reporting Period, if applicable, will not exceed the Policy Aggregate Limit of Liability stated in the Declarations.

B. Deductible

1. Each Claim Deductible

The Deductible stated in the Declarations will be paid by the Named Insured and will be applicable to each **Claim** and will include **Damages** and **Claim Expenses**. Such Deductible amounts will be paid by the Named Insured within 10 days of receipt of written demand by the Company. The total payments requested from the Named Insured in respect of each **Claim** will not exceed the Each Claim Deductible stated in the Declarations.

2. Deductible Credits

With respect to this Policy, if a **Claim** is settled prior to the filing of lawsuit or institution of arbitration, the Deductible for such **Claim** will be reduced by 75% or \$10,000, whichever is less.

If after filing of lawsuit or institution of arbitration, if the Named Insured and the Company agree to the use of **Mediation** and a **Claim** is settled at that **Mediation**, the Deductible for such **Claim** will be reduced by 50% or \$10,000, whichever is less.

The Deductible credits are not additive or cumulative.

3. Aggregate Deductible

Subject to Paragraph 1., the total Deductible payments to be paid by the Named Insured will not exceed the Aggregate Deductible stated in the Declarations for **Damages** and **Claim Expenses** arising out of all **Claims**, other than any Supplementary Payment, first made and reported during the **Policy Period** and the Extended Reporting Period, if applicable.

C. Multiple Insureds, Claims And Claimants

The inclusion herein of more than one **Insured** in any **Claim** or the making of **Claims** by more than one person or organization will not operate to increase the Limits of Liability stated in the Declarations. More than one **Claim** arising out of a single **Wrongful Act**, **Personal Injury**, **Interrelated Wrongful Act** or a series of related **Wrongful Acts** or **Personal Injuries** will be considered a single **Claim**. All such **Claims**, whenever made, will be treated as a single **Claim** and will be deemed to be first made on the date on which the earliest **Claim** arising out of such **Wrongful Act**, **Personal Injury** or **Interrelated Wrongful Act** is made or with respect to written notice given to and accepted by the Company pursuant to Section VIII – Claims Reporting And Notice, **B. Discovery Of Potential Claims**, on the date within the **Policy Period** on which such notice of potential **Claim** is first received by the Company.

SECTION VII – DEFENSE, SETTLEMENTS AND CLAIM EXPENSES

A. Defense, Investigation And Settlement Of Claims

The Company will have the right and duty to defend the **Insured** and to investigate any **Claim** and **Disciplinary Proceeding** under the Policy, regardless of whether allegations are false or fraudulent, pursuant to the following provisions:

1. **Claim Expenses** incurred in defending an **Insured** and investigating a **Claim** will be a part of and will not be in addition to the Limits of Liability stated in the Declarations. Such **Claim Expenses** will reduce the Limits of Liability and will be applied against the Deductible. The Company will have no obligation to pay any **Damages** or to defend or continue to defend any **Claim** or to pay **Claim Expenses** after the Limits of Liability stated in the Declarations have been exhausted by payment(s) of **Damages** or **Claim Expenses**.

2. The Company shall select defense counsel; however, if the law of the state of the Named Insured's domicile, stated in the Declarations, allows the **Insured** to control the selection of defense counsel where a conflict of interest has arisen between the **Insured** and the Company, the Company will provide a list of attorneys or law firms from which the **Insured** may designate defense counsel who will act solely in the interest of the **Insured**, and the **Insured** will direct such defense counsel to cooperate with the Company. Such cooperation will include:
 - a. Providing on a regular basis, but not less frequently than every 3 months, written reports on claimed **Damages**, potential liability, progress of any litigation, any settlement demands, or any investigation developments that materially affect the **Claim**;
 - b. Providing any other reasonable information requested;
 - c. Fully itemized billing on a periodic basis; and
 - d. Reasonably cooperating with the Company and the **Insured** in resolving any disputes, including but not limited to, billing disputes;

and the fees and costs incurred by such defense counsel, including those fees and costs generated by cooperation with the Company, as set forth above, will be included in **Claim Expenses**. Such **Claim Expenses** will be a part of and will not be in addition to the Limits of Liability stated in the Declarations. Such **Claim Expenses** will reduce the Limits of Liability and will be applied against the Deductible.

3. Any payments shall be made in U.S. currency from bank or financial institution located in the United States of America.

B. Consent To Settlement

The Company will not settle any **Claim** without the prior written consent of the first Named Insured, but the Company will have, at all times, the right to recommend a settlement of any **Claim**. If the first Named Insured refuses to settle such **Claim** pursuant to the Company's recommendations and acceptable to the claimant, then the Company's liability in regard to such **Claim** will not exceed the sum of:

1. The amount of **Damages** for which the Company could have settled the **Claim**;
2. **Claim Expenses** accrued as of the date such settlement was proposed in writing by the Company to the Named Insured; and
3. 50% of all covered **Damages** and **Claim Expenses** incurred thereafter on account of such **Claim**.

Such amounts are subject to the provisions of Paragraph A.

SECTION VIII – CLAIMS REPORTING AND NOTICE

A. Claim Reporting Provision

1. It is a condition precedent to coverage afforded by this Policy that the **Insured** will give to the Company written notice as soon as practicable of any **Claim** first made against the **Insured** during the **Policy Period** or the Extended Reporting Period, if applicable, but in no event later than:
 - a. 60 days after expiration of the **Policy Period**; or
 - b. The expiration of the Extended Reporting Period, if applicable.

Such **Claim** must be reported to the address stated in the Claim Reporting Policyholder Notice.

2. Subject to Paragraph 1., in the event a suit is brought against the **Insured**, the **Insured** will immediately forward to the address stated on the Claims Reporting Policyholder Notice every demand, notice, summons or other process received by them or by their representative.

B. Discovery Of Potential Claims

If during the **Policy Period**, the **Insured** first becomes aware of a specific **Wrongful Act** or a **Personal Injury** which is reasonably expected to result in a **Claim** within the scope of coverage of this Policy, then the **Insured** may provide written notice to the Company at address stated in the Claims Reporting Policyholder Notice. If such written notice is received by the Company during the **Policy Period**, then any **Claim** subsequently made against the **Insured** arising out of such **Wrongful Act** or **Personal Injury** will be deemed for the purpose of this insurance to have been first made on the date on which such written notice is received by the Company.

It is a condition precedent to the coverage afforded by this Paragraph B. that written notice shall be given to the Company containing the following information:

1. The description of the specific **Wrongful Act** or **Personal Injury**;
2. The date on which such **Wrongful Act** or **Personal Injury** took place;
3. The injury or damage which has or may result from such **Wrongful Act** or **Personal Injury**;
4. The identity of any injured persons or organization subject to such injury or damage; and
5. The circumstances by which the **Insured** first became aware of such **Wrongful Act** or **Personal Injury**.

In connection with **Pre-Claim Assistance Expenses**, the Company, at its sole option, may investigate such circumstance, **Wrongful Act** or **Personal Injury** as stated in Section II – Insuring Agreements, **B. Additional Payments**.

C. Assistance And Cooperation Of The Insured

The **Insured** shall cooperate with the Company and upon the Company's request, the **Insured** shall:

1. Submit to examination and interview by a representative of the Company, under oath if required;
2. Attend hearings, **Mediations**, depositions and trials;
3. Assist in effecting settlement, securing and giving evidence and obtaining the attendance of witnesses in the conduct of suits; and
4. Give a written statement or statements to the Company's representatives and meet with such representatives for the purpose of determining coverage and investigating any **Claim** or defending any **Insured**;

all without cost to the Company, other than expense reimbursement provided by Section II – Insuring Agreements, **C. Supplementary Payments, 2. Loss Of Earnings And Expense Reimbursement**. The **Insured** will further cooperate with the Company and do whatever is necessary to secure and affect any right of indemnity, contribution or apportionment which the **Insured** may have.

The **Insured** will not, with respect to any **Claim** covered under this Policy, except at their own cost, make any payment, admit any liability, settle any **Claims**, assume any obligation, agree to arbitration or any similar means of resolution of any dispute, waive any rights or incur **Claim Expenses** without the Company's prior written consent, such consent not to be unreasonably withheld. Any costs and expenses incurred by the **Insured** prior to the **Insured** giving written notice of the **Claim** to the Company will be borne by the **Insured** and will not constitute satisfaction of the Deductible.

D. False Or Fraudulent Claims

If any **Insured** will commit fraud in proffering any **Claim**, this insurance will become void as to such **Insured** from the date such fraudulent **Claim** is proffered.

SECTION IX – EXTENDED REPORTING PERIOD

- A.** If the Named Insured nonrenews this Policy or cancels this Policy pursuant to Section **XI – Other Conditions, A. Cancellation**, or if the Company nonrenews this Policy or cancels this Policy pursuant to Section **XI – Other Conditions, A. Cancellation**, for reasons other than nonpayment of premium or Deductible or non-compliance with the terms and conditions of this Policy, then the Named Insured will have the right upon payment of an additional premium calculated at the percentage stated in the Declarations of the adjusted annual premium for the **Policy Period**, subject to adjustment as per Section **XI - Other Conditions, I. Premium And Audit**, calculated on the percentage stated in the Declarations of the annual minimum premium for the Policy, to extend the coverage granted under this Policy for the period of months stated in the Declarations, as elected by the Named Insured, to apply to:
1. **Claims** first made against the **Insured** during the period of months as elected, and reported to the Company pursuant to Section **VIII – Claims Reporting And Notice, A. Claim Reporting Provision**, following immediately upon the effective date of such cancellation or nonrenewal, for any **Wrongful Act** or **Personal Injury** which happened on or after the **Retroactive Date** and prior to the effective date of such cancellation or nonrenewal and which is otherwise covered by this Policy; and
 2. Additional Payments or Supplementary Payments first incurred by or initiated against the **Insured** during the period of months as elected, and reported to the Company pursuant to Section II – Insuring Agreements, **B. Additional Payments** and **C. Supplementary Payments** following immediately upon the effective date of such

cancellation or nonrenewal, for any **Wrongful Act** which happened on or after the **Retroactive Date** and prior to the effective date of such cancellation or nonrenewal and which is otherwise covered by this Policy.

This extended period of coverage as elected by the Named Insured and described in this paragraph will be referred to in this Policy as the Extended Reporting Period.

If, however, this Policy is immediately succeeded by similar claims made insurance coverage on which the **Retroactive Date** is the same as or earlier than that stated in the Declarations, the succeeding insurance will be deemed to be a renewal hereof and, in consequence, the Named Insured shall have no right to purchase an Extended Reporting Period.

The quotation of a different premium, Deductible or Limit of Liability for renewal does not constitute a cancellation or refusal to renew for the purpose of this provision.

- B. As a condition precedent to the right to purchase the Extended Reporting Period, the Named Insured must have paid:
1. All Deductibles when due;
 2. All premiums due for the **Policy Period**; and
 3. All premium and deductible(s) due on any other policy(ies) issued by the Company or any of its affiliated companies in an uninterrupted series of policies of which this Policy is a renewal or replacement.

The right to purchase the Extended Reporting Period will terminate unless a written notice of such election for the Extended Reporting Period is received by the Company within 60 days after the effective date of cancellation or nonrenewal together with payment of the additional deposit premium for the Extended Reporting Period. If such written notice of request and payment of additional premium for the Extended Reporting Period are not so received by the Company, there will be no right to purchase the Extended Reporting Period at a later date.

- C. The Named Insured will pay any additional premium that may be due as a result of audit, promptly when due.
- D. In the event of the purchase of the Extended Reporting Period, the entire premium therefor will be fully earned at its commencement.
- E. The Extended Reporting Period will not in any way increase the Limits of Liability stated in the Declarations.

SECTION X – CHANGES IN EXPOSURE

A. New Organizations

If before or during the **Policy Period** the Named Insured acquires or creates a new **Subsidiary** or acquires an entity by merger or consolidation, to perform the same **Professional Services** as the Named Insured, coverage under this Policy automatically will apply to the new organization, provided:

1. Such coverage will apply only with respect to any **Claim** for a **Wrongful Act** or **Personal Injury** taking place after such acquisition or creation; and
2. There is no other similar insurance available to that organization.

Coverage will be subject to the following:

- a. Coverage is afforded only until 60 days after the Named Insured acquired or formed the organization or the end of the **Policy Period**, whichever is earlier;
- b. The **Retroactive Date** applicable to any **Claim** or **Disciplinary Proceeding** against such organization newly acquired or newly formed by the Named Insured for **Wrongful Acts** or **Personal Injuries** or offenses by **Insureds** will be the date on which the Named Insured newly acquired or newly formed such organization; and
- c. No person or organization is an **Insured** with respect to the conduct of any current or past partnership, joint venture, or limited liability company that is not stated as a Named Insured in the Declarations.

B. Acquisition Of The Insured

If during the **Policy Period** a transaction occurs wherein another organization gains control of the Named Insured through the ownership of more than 50% of the outstanding securities or voting rights representing the present right to vote for the election of directors or equivalent position, or the Named Insured merges into another organization or consolidates with another organization such that the Named Insured is not the surviving organization, then:

1. The first Named Insured must give written notice of such transaction to the Company within 60 days after the effective date of such transaction and provide the Company with such information in connection therewith as the Company may deem necessary; and
2. This Policy will apply only to those **Wrongful Acts** or **Personal Injuries** or offenses which happened on or before the effective date of such transaction.

C. Cessation Of Subsidiaries

If before or during the **Policy Period** an organization ceases to be a **Subsidiary**, coverage with respect to such **Subsidiary** will continue until the end of the **Policy Period** or the Extended Reporting Period if applicable, provided such coverage will apply only with respect to any **Claim** for a **Wrongful Act** or **Personal Injury** taking place prior to the date such organization ceased to be a **Subsidiary**.

SECTION XI – OTHER CONDITIONS

A. Cancellation

1. This Policy may be cancelled by the first Named Insured on behalf of all **Insureds** by mailing to the Company written notice stating when thereafter such cancellation will be effective. If cancelled by the Named Insured, the earned premium will be computed at the customary short rate. Payment or tender of unearned premium will not be a condition precedent to the effectiveness of cancellation, but such payment will be made as soon as practicable.
2. This Policy may be cancelled by the Company by mailing to the first Named Insured, at the address stated in the Declarations, written notice stating when, not less than 30 days thereafter, such cancellation will be effective. However, if the Company cancels the Policy because the Named Insured has failed to pay a premium or Deductible when due, including premium or deductible(s) due on any other policy(ies) issued by the Company or any of its affiliated companies in an uninterrupted series of policies of which this Policy is a renewal or replacement, this Policy may be cancelled by the Company, by mailing a written notice of cancellation to the first Named Insured stating when, not less than 10 days thereafter, such cancellation will be effective. The mailing of notice as aforementioned will be sufficient notice and the effective date of cancellation stated in the notice will become the end of the **Policy Period**. Such notice will be conclusive on all **Insureds**. Delivery of such written notice to the first Named Insured by the Company will be equivalent to mailing. If cancelled by the Company, earned premium will be computed pro rata. Premium adjustment may be made at the time cancellation is effected or as soon as practicable thereafter.

B. Representations

By acceptance of this Policy, the **Insureds** agree as follows that the information and statements contained in the **Application(s)** are:

1. The basis of this Policy and are to be considered as incorporated into and constituting a part of this Policy;
2. Their representations;
3. Deemed material to the acceptance of the risk or hazard assumed by the Company under this Policy; and
4. That this Policy is issued in reliance upon the truth of such representations.

C. Entire Agreement

This Policy, the Declarations, the **Application(s)** and any written endorsements attached hereto will be deemed to be a single unitary contract.

D. General Liability Coverage

It is a condition precedent to coverage provided under Section II – Insuring Agreements, **B. Additional Payments, 1. Contingent Bodily Injury And Property Damage** that the Named Insured maintain during the **Policy Period** and the Extended Reporting Period, if applicable, in-force General Liability Insurance, including the Products and Completed Operations hazard, with an insurance company, risk retention group or captive (or any other self-insurance plan or trust by whatsoever name) which has an A.M. Best's rating of B++ or higher and having an each occurrence limit of liability equal to or greater than the Each Claim Limit Of Liability stated in the Declarations.

E. Other Insurance

This insurance is in excess of the Deductible stated in the Declarations and any other insurance available to the **Insured** whether such other insurance is stated to be primary, contributory, excess, contingent or otherwise, unless such other insurance is written only as a specific excess insurance over the Limits of Liability provided in this Policy.

F. Changes

Notice to any agent or knowledge possessed by any agent or other person acting on behalf of the Company will not affect a waiver or a change in any part of this Policy and will not estop the Company from asserting any right under the terms of the Policy. The terms of this Policy will not be waived or changed, except by written endorsement issued to form a part of this Policy, and this Policy embodies all agreements existing between the **Insureds** and the Company or any of its agents relating to this insurance.

G. Assignment Of Interest

Assignment of interest under this Policy will not bind the Company unless its consent is endorsed hereon.

H. Subrogation

1. In the event of any payment under this Policy, the Company will be subrogated to the right of recovery of all **Insureds** to the extent of such payment. The **Insured** will execute and deliver instruments and papers and do whatever else is necessary to secure such rights. The **Insured** will do nothing to prejudice such rights.
2. The Company will not exercise any such rights against any person or organization included in the definition of **Insured**. Notwithstanding the foregoing, however, the Company reserves the right to exercise any rights of subrogation against an **Insured** in respect of any **Claim** brought about or contributed to by an intentional, willful, dishonest, fraudulent act or omission of such **Insured** or by an act or omission of such **Insured** that constitutes a willful violation of any statute or regulation.
3. Any amount so recovered, whether effected by the Company or by the **Insured**, will first be used for the repayment of expenses incurred toward subrogation; second, for any **Damages** and **Claim Expenses** payment by the **Insured** which is in excess of the amount of the Limit of Liability under this Policy and which is excess of any amount paid by any insurer under any other policy; third, for any damages and claims expenses payment by any excess carrier on behalf of the **Insured**; fourth, for any damages and claim expenses payment by any primary carrier on behalf of the **Insured**; and, last, for repayment of the **Insured's** Deductible.

I. Premium And Audit

Upon expiration of this Policy, the first Named **Insured** will furnish upon request to the Company a statement of the Named **Insured's** actual **Gross Revenues** or other premium base stated in the Declarations for the **Policy Period**. The actual earned premium will be computed thereon at the premium rate stated in the Declarations. If the actual earned premium is more than the deposit premium stated in the Declarations, the Named **Insured** will pay the difference to the Company; if less, the Company will refund the difference to the Named **Insured** except that the Company will be entitled to the minimum premium stated in the Declarations. The Company will have the right to require of the Named **Insured**, at any time within the said **Policy Period** or 1 year thereafter, a sworn statement of the entire amount (or number) of such **Gross Revenues** or other premium base during the whole or any specified part of the said period, and the Named **Insured** will furnish said statement within 10 days after request. The statement referred to will be subject to verification and audit by a duly authorized representative of the Company, who will have the right and opportunity to examine the books and records of the Named **Insured** as respects such **Gross Revenues** or other premium base, and such examination may be made at any time during the said period and within 3 years thereafter. The rendering of any estimate or statement or the making of any previous settlement will not bar the examination herein provided for or the Company's right to additional premium.

J. Inspection

Any of the Company's authorized representatives will have the right and opportunity, whenever the Company so desires, to inspect at any reasonable time the **Insured's** products, goods, operations or premises, but the Company assumes no responsibility or duty by reason of such inspection or the omission thereof. The **Insured** agrees to provide appropriate personnel to assist the Company's representatives during such inspection without cost to the Company.

K. Action Against The Company

1. No action will lie against the Company unless, as a condition precedent thereto, the **Insured** will have fully complied with all of the terms and conditions of this Policy, nor until the amount of the **Insured's** obligation to pay has been fully and finally determined either by judgment against the **Insured** after actual trial or by written agreement of the **Insured**, the claimant and the Company.

2. Nothing contained in this Policy will give any person or organization any right to join the Company as a co-defendant in any action against the **Insured** to determine the **Insured's** liability. Bankruptcy or insolvency of the **Insured** or of the **Insured's** estate will not relieve the Company of any of its obligations hereunder.

L. Authorization

By acceptance of this Policy, the first Named Insured stated in the Declarations will act on behalf of all **Insureds** with respect to the:

1. Giving and receiving of all notices to and from the Company as provided herein;
2. Exercising of the Extended Reporting Period;
3. Cancellation of this Policy in whole or part;
4. Payment of premiums and Deductibles when due; and
5. Receiving of any return premiums that may become due under this Policy; and

all **Insureds** agree that such person or organization will act on their behalf.

M. Spousal And Domestic Partner Coverage

If a **Claim** made against an **Insured** individual includes a **Claim** against that **Insured** individual's lawful spouse solely by reason of:

1. Such spouse's status as the **Insured** individual's spouse; and
2. Such spouse's ownership interest in property from which the claimant seeks recovery for the **Insured** individual's **Wrongful Acts**;

all loss which such spouse becomes legally obligated to pay on account of such **Claim** will be treated for purposes of this Policy as loss which the **Insured** individual is legally obligated to pay on account of the **Claim** made against the **Insured** individual. Such loss will be covered under this Policy only if and to the extent that such loss would be covered under this Policy if incurred by the **Insured** individual. The coverage extension afforded by this subsection does not apply to any **Claim** alleging any **Wrongful Act** by the **Insured** individual's spouse. The term spouse as used in this section includes any natural person qualifying as a domestic partner under the provisions of any applicable federal, state or local law in the United States of America.



Markel Insurance Company

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NUCLEAR ENERGY LIABILITY EXCLUSION ENDORSEMENT (BROAD FORM)

It is agreed that:

1. This policy does not apply:
 - A. Under any Liability Coverage, to bodily injury or property damage
 - (1) with respect to which an Insured under this policy is also an Insured under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters or Nuclear Insurance Association of Canada, or would be an Insured under any such policy but for its termination upon exhaustion of its limit of liability; or
 - (2) resulting from the hazardous properties of nuclear material and with respect to which (a) any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, or (b) the Insured is, or had this policy not been issued would be, entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.
 - B. Under any Medical Payments Coverage, or any Supplementary Payments provision relating to first aid, to expenses incurred with respect to bodily injury resulting from the hazardous properties of nuclear material and arising out of the operation of a nuclear facility by any person or organization.
 - C. Under any Liability Coverage, to bodily injury or property damage resulting from the hazardous properties of nuclear material, if
 - (1) the nuclear material (a) is at any nuclear facility owned by, or operated by or on behalf of, an Insured or (b) has been discharged or dispersed therefrom;
 - (2) the nuclear material is contained in spent fuel or waste at any time possessed, handled, used, processed, stored, transported or disposed of by or on behalf of an Insured; or
 - (3) the bodily injury or property damage arises out of the furnishing by an Insured of services, materials, parts or equipment in connection with the planning, construction, maintenance, operation or use of any nuclear facility, but if such facility is located within the United States of America, its territories or possessions or Canada, this exclusion (3) applies only to property damage to such nuclear facility and any property thereat.

2. As used in this endorsement:

"hazardous properties" include radioactive, toxic or explosive properties;

"nuclear material" means source material, special nuclear material or by-product material;

"source material", "special nuclear material", and "by-product material" have the meanings given them in the Atomic Energy Act of 1954 or in any law amendatory thereof;

"spent fuel" means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a nuclear reactor;

"waste" means any waste material (1) containing by-product material and (2) resulting from the operation by any person or organization of any nuclear facility within the definition of nuclear facility under paragraph (a) or (b) thereof;

"nuclear facility" means

- (a) any nuclear reactor,
- (b) any equipment or device designed or used for (1) separating the isotopes of uranium or plutonium, (2) processing or utilizing spent fuel, or (3) handling, processing or packaging waste,
- (c) any equipment or device used for the processing, fabricating or alloying of special nuclear material if at any time the total amount of such material in the custody of the Insured at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235.
- (d) any structure, basin, excavation, premises or place prepared or used for the storage or disposal of waste.

and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations;

"nuclear reactor" means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;

"property damage" includes all forms of radioactive contamination of property.

All other provisions of the policy shall remain unchanged.



MARKEL INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

TRADE OR ECONOMIC SANCTIONS

The following is added to this policy:

Trade Or Economic Sanctions

This insurance does not provide any coverage, and we (the Company) shall not make payment of any claim or provide any benefit hereunder, to the extent that the provision of such coverage, payment of such claim or provision of such benefit would expose us (the Company) to a violation of any applicable trade or economic sanctions, laws or regulations, including but not limited to, those administered and enforced by the United States Treasury Department's Office of Foreign Assets Control (OFAC).

All other terms and conditions remain unchanged.



Markel Insurance Company

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

MINIMUM EARNED PREMIUM

This endorsement modifies insurance provided under the following:

PROFESSIONAL LIABILITY INSURANCE COVERAGE FORM

The following is added to Paragraph A. Cancellation of Section XI – Other Conditions:

In the event that this Policy is cancelled by the first Named Insured, the Policy premium is subject to a minimum earned premium of 25%.

All other terms and conditions remain unchanged.



MARKEL INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NORTH CAROLINA AMENDATORY

This endorsement modifies insurance provided under the following:

PROFESSIONAL LIABILITY INSURANCE COVERAGE FORM

Section XI – Other Conditions is amended as follows:

1. Paragraph A.2. is replaced by the following:

A. Cancellation

2. This Policy may be cancelled by the Company by mailing to the first Named Insured and to any designated mortgage or loss payee, if any, at the address stated in the Declarations, written notice stating the precise reason for cancellation and when, not less than 30 days thereafter, such cancellation will be effective. However, if the Company cancels the Policy because the Named Insured has failed to pay a premium or Deductible when due, including premium or deductible(s) due on any other policy(ies) issued by the Company or any of its affiliated companies in an uninterrupted series of policies of which this Policy is a renewal or replacement, this Policy may be cancelled by the Company, by mailing a written notice of cancellation to the first Named Insured and to any designated mortgage or loss payee, if any, stating when, not less than 15 days thereafter, such cancellation will be effective. The mailing of notice as aforementioned will be sufficient notice and the effective date of cancellation stated in the notice will become the end of the **Policy Period**. Such notice will be conclusive on all **Insureds**. Delivery of such written notice to the first Named Insured and to any designated mortgage or loss payee, if any, by the Company will be equivalent to mailing. If cancelled by the Company, earned premium will be computed pro rata. Premium adjustment may be made at the time cancellation is effected or as soon as practicable thereafter. Cancellation for nonpayment is not effective if the amount due is paid before the effective date of cancellation.

If the Policy has been in effect for 60 days or more or is a renewal, the Policy may be cancelled for the following reasons:

- a. Nonpayment of premium in accordance with Policy terms;
- b. An act or omission by the **Insured** or its representative that constitutes material misrepresentation or nondisclosure of a material fact;
- c. Violation of Policy conditions, contractual duties or warranties that materially affects insurability;
- d. Material change in risk which could not have been expected initially;
- e. A fraudulent act against the Company by the **Insured** or its representative that materially affects the insurability of the risk;
- f. Willful failure by the **Insured** or its representative to institute reasonable loss control measures after written notice is sent by the Company;
- g. Loss of facultative reinsurance or loss of substantial change in applicable reinsurance;
- h. Conviction of the **Insured** of a crime that materially affects the insurability of a risk of the **Insured**;

- i. A determination by the Commissioner of Insurance of the State of North Carolina that the continuation of the Policy would violate North Carolina law; or
- j. The **Insured** fails to meet requirements of the Company's charter, articles of incorporation or bylaws if the Company is a company organized for the sole purpose of providing members of an organization with insurance coverage in this State.

2. The following conditions are added

Loss Information

Within 45 days after the Named Insured's written request, the Company will provide, if applicable, the following loss information covering a 3 year period:

1. Aggregate information on total **Claims**, including date and description of occurrence, and any paid losses;
2. Aggregate information on total open **Claims**, including date and description of occurrence and amounts of any payments; and
3. Information on notice of any occurrence, including date and description of occurrence.

Nonrenewal

If the Company decides not to renew this Policy or conditions renewal upon reduction of the Policy's coverage, increased Deductible or increase in premium, other than at the request of the Named Insured, then the Company will mail or deliver to the first Named Insured at the address stated in the Declarations, written notice of nonrenewal, stating the actual reason for nonrenewal, at least 45 days prior to the effective date of nonrenewal. A copy of the notice for nonrenewal will also be sent to the Named Insured's agent or broker of record, if any. If notice is mailed, proof of mailing will be sufficient proof of notice.

All other terms and conditions remain unchanged.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/7/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER SIA Group, Inc. 827 Gum Branch Road Jacksonville NC 28540	CONTACT NAME: Brittany Sweet, Certificate Administrator	
	PHONE (A/C, No, Ext): 910-455-7576	FAX (A/C, No): 910-455-7481
E-MAIL ADDRESS: certs@siagroup.com		
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A: Selective Insurance Company of America		12572
INSURER B: FFVA Mutual Insurance Co.		10385
INSURER C:		
INSURER D:		
INSURER E:		
INSURER F:		

COVERAGES

CERTIFICATE NUMBER: 732574211

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liab GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	S 2232973	7/2/2021	7/2/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	S 2232973	7/2/2021	7/2/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 0	Y	Y	S 2232973	7/2/2021	7/2/2022	EACH OCCURRENCE \$ 3,000,000 AGGREGATE \$ 3,000,000 \$
B	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WC850-0050098-2021A	7/2/2021	7/2/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
A	Contractors Equipment			S 2232973	7/2/2021	7/2/2022	Leased/Rented \$125,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

MacConnell & Associates, P.C.
 501 Cascade Point Lane
 Suite 103
 Carry NC 27513

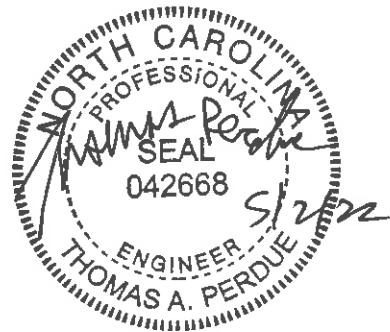
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

Project Narrative



**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
Morrisville, North Carolina 27560**

**Phone: (919) 467-1239
Fax: (919) 319-6510**

Project Narrative

Introduction

Owners	NW Harnett Volunteer Fire Department, Inc.
Developer	Bobbitt Design Build, Inc.
Property Address	US Hwy 401 N, Harnett County
Employees	7
Flow Reduction	0%
Design Flow (GPD)	940

Bobbitt Design Build, Inc. is developing the property located at US Hwy 401 N in Harnett County, North Carolina. The owners propose to construct a five-bedroom fire station with a maximum of 7 employees per shift and 3 shifts per day when the station is fully utilized and is seeking an Engineering Option Permit for an onsite wastewater system. MacConnell & Associates, P.C. has been contracted by Bobbitt Design Build, Inc. for the EOP design with Thomas A. Perdue as the designated PE. The scope of this project is to design a conventional gravity system based on the Soils Evaluation Report prepared by Thomas J. Boyce, LSS.

The design proposes a conventional gravity system with one (1) 2,100-gallon septic tank. The septic tank has been sized for an unadjusted flow of 940 GPD. A 550-gallon oil/water separator will be utilized in the system but all fire trunks will be washed outside of the building.

The proposed wastewater treatment and disposal system does not have any conflicts with existing utilities in the area. The system also maintains all the buffers required in the 15A NCAC 18A .1900 rules amended Jun 1, 1999. The proposed systems shall meet all requirements and specifications outlined in: Innovative Wastewater System Approval No: IWWS-2015-03-R2 and Innovative Wastewater System Approval No: IWWS-2007-1-R1

Proposed System Design

Design daily flows and calculations:

Daily Design Flow:	7 Employees * 120 GPD/Employee = <u>840 GPD</u> + 100 GPD (I&I) = <u>940 GPD</u> (total wastewater for the facility)
System Type:	Septic Tank and EZ Flow Drain Lines.
Septic Tank Volume:	2,100 Gallons
Trench Type:	EZ Flow 1203 H type drainpipe
LTAR:	0.4 GPD/SF
Area Required:	<u>940 GPD</u> / 0.4 GPD/SF = 2350 SF
Linear Feet (with innov.):	2350 SF / 4 SF/LF = <u>587.5 LF</u> Where 4 SF/LF is the equivalency factor for the EZ1203H-GEO system
Linear Feet Provided:	<u>600 LF</u>

Septic Tank

The proposed wastewater treatment system will provide both treatment and solids removal in a new 2,100-gallon septic tank. The tank will be manufactured by David Brantley and Sons, Inc. which has been previously approved by the On-Site Water Protection Branch (OSWP) or approved equal by engineer. This tank will provide greater than 2 days of detention time for adequate treatment and solids removal from the wastewater. Septic tank effluent will drain into the pump tank as wastewater flows into the septic tank. The septic tank will contain a POLYLOK PL-68 or SIM/TECK STF-110 effluent filter to prevent solids from reaching the pump tank.

EZ Flow Drain Lines

The EZ Flow drain lines will be EZflow 1203H – GEO type. The drain lines shall be installed per manufacturer's recommendations. Please note, the OSWP approved equivalency factor of 4.0 SF/LF allows for a 25 percent reduction of the minimum required linear feet for drain lines.

Project Contacts

Names, addresses, phone and fax numbers of the owner, soil scientist, and engineer are as follows:

Developer:

Bobbitt Design Build, Inc
600 Germantown Road
Raleigh, NC 27610
Phone: (910) 225-4291

Owners:

Northwest Harnett Volunteer Fire Department, Inc.,
a North Carolina Corporation
6015 Christian Light Rd.
Fuquay-Varina, NC 27526

Soil Scientist:

Thomas J. Boyce, L.S.S.
P.O. Box 81
Pittsboro, NC 27312
Phone: (919) 868-8135

Engineer:

Mr. Thomas A. Perdue, P.E.
MacConnell & Associates, P.C.
P.O. Box 129
Morrisville, NC 27560
Phone: (919) 467-1239
Fax: (919) 319-6510

Installer

David Brantley & Sons
37 Pine Ridge Road
Zebulon, NC 27597
Phone: (252) 478-3721

**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

Proof of Ownership

**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
Morrisville, North Carolina 27560**

**Phone: (919) 467-1239
Fax: (919) 319-6510**

HARNETT COUNTY TAX ID #
080652 0081

For Registration Matthew S. Willis
Register of Deeds
Harnett County, NC
Electronically Recorded
2021 Sep 17 11:25 AM NC Rev Stamp: \$ 281.00
Book: 4046 Page:223 - 224 Fee: \$ 26.00
Instrument Number: 2021021844

09-17-2021 BY: ED

**STATE OF NORTH CAROLINA
COUNTY OF HARNETT**

**GENERAL
WARRANTY DEED**

Excise Tax: \$281.00

PID: 080652 0081

Prepared by: Mercogliano & Associates, PA, P.O. Box 1381, Fuquay-Varina, NC 27526

Mail to: Grantee

THIS DEED made this 17th day of September, 2021 by and between

GRANTOR	GRANTEE
William Alton Johnson and Sherry A. Johnson, a married couple 8246 US 401N Fuquay Varina, NC 27526	Northwest Harnett Volunteer Fire Department, Inc., a North Carolina Corporation 6015 Christian Light Rd, Fuquay-Varina, NC 27526

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH:

THAT the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land more particularly described as follows:

Being all of 4.671 acres, more or less, as shown in Book of Maps 2021, Page 123, Harnett County Registry.

Subject to easements, rights of way, protective covenants, and other matters of public record.

Subject to 2021 Ad Valorem taxes.

All or a portion of the property hereinabove described was acquired by Grantor by instrument recorded in Book 748, Page 589, Harnett County Registry and Book 1183, Page 981, Harnett County Registry.

submitted electronically by "Mercogliano & Associates, PA"
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Harnett County Register of Deeds.

TO HAVE AND TO HOLD the above-described lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

AND the Grantor covenants with the Grantee, that Grantor is lawfully seized of the premises in fee simple, has the right and power to convey the same in fee simple, that title is marketable and free from any and all encumbrances and that Grantor will forever warrant and defend the title against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.



William Alton Johnson (SEAL)

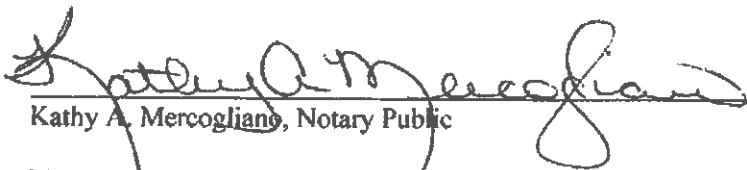


Sherry A. Johnson (SEAL)

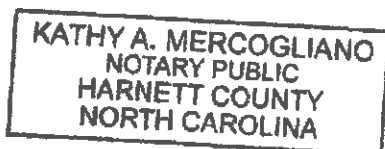
STATE OF NORTH CAROLINA
COUNTY OF HARNETT

I, Kathy A. Mercogliano, a Notary Public of Harnett County, North Carolina, certify that William Alton Johnson and Sherry A. Johnson, each personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial stamp or seal this 17th day of September, 2021.



Kathy A. Mercogliano, Notary Public
My Commission Expires: August 30, 2025



**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

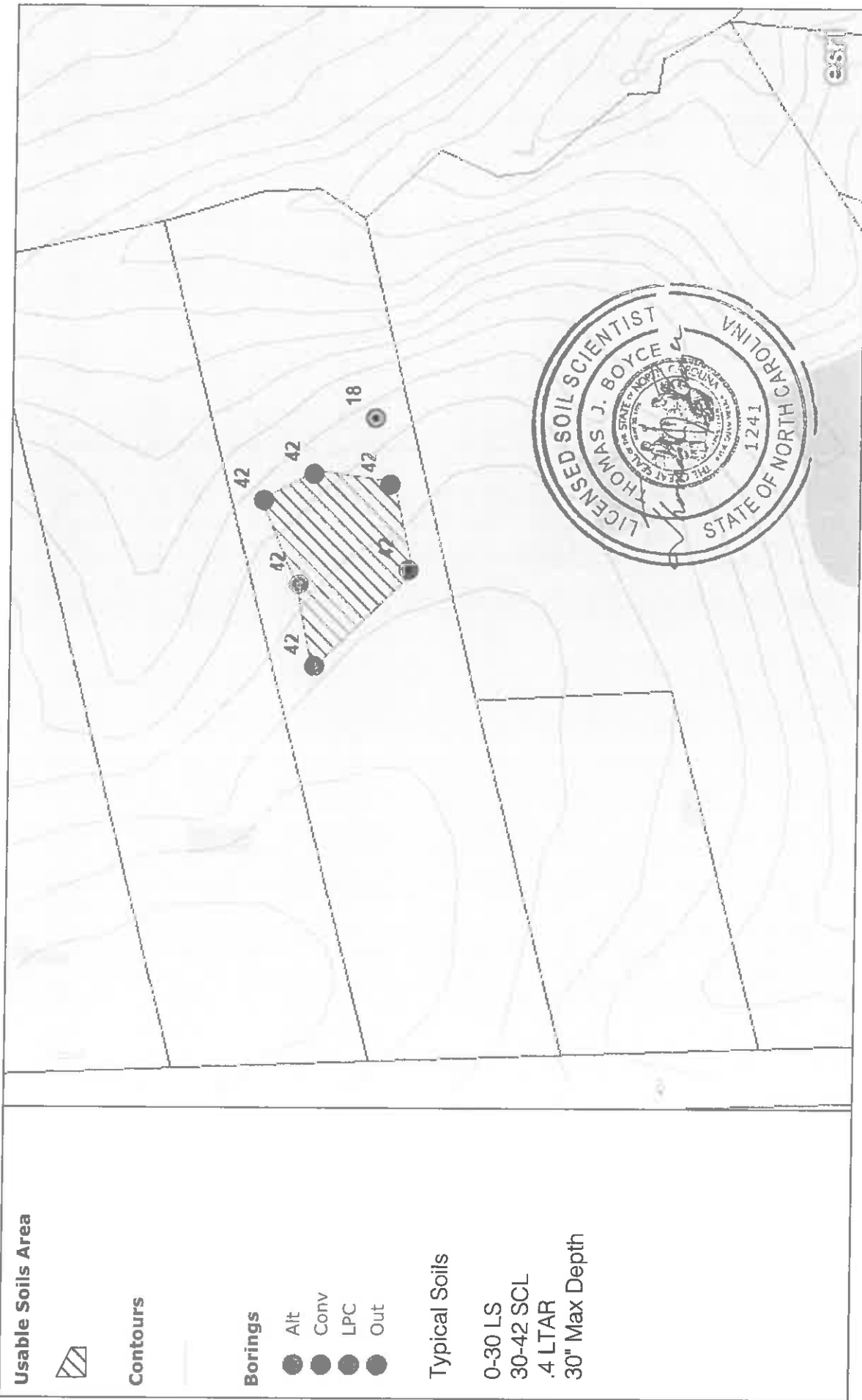
Soils Evaluation

**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
Morrisville, North Carolina 27560**

**Phone: (919) 467-1239
Fax: (919) 319-6510**

Soil Evaluation - NW Harnett Fire Station 3-Fuquay-Varina



Usable Soils Area



Contours

Borings

- Alt
- Conv
- LPC
- Out

Typical Soils

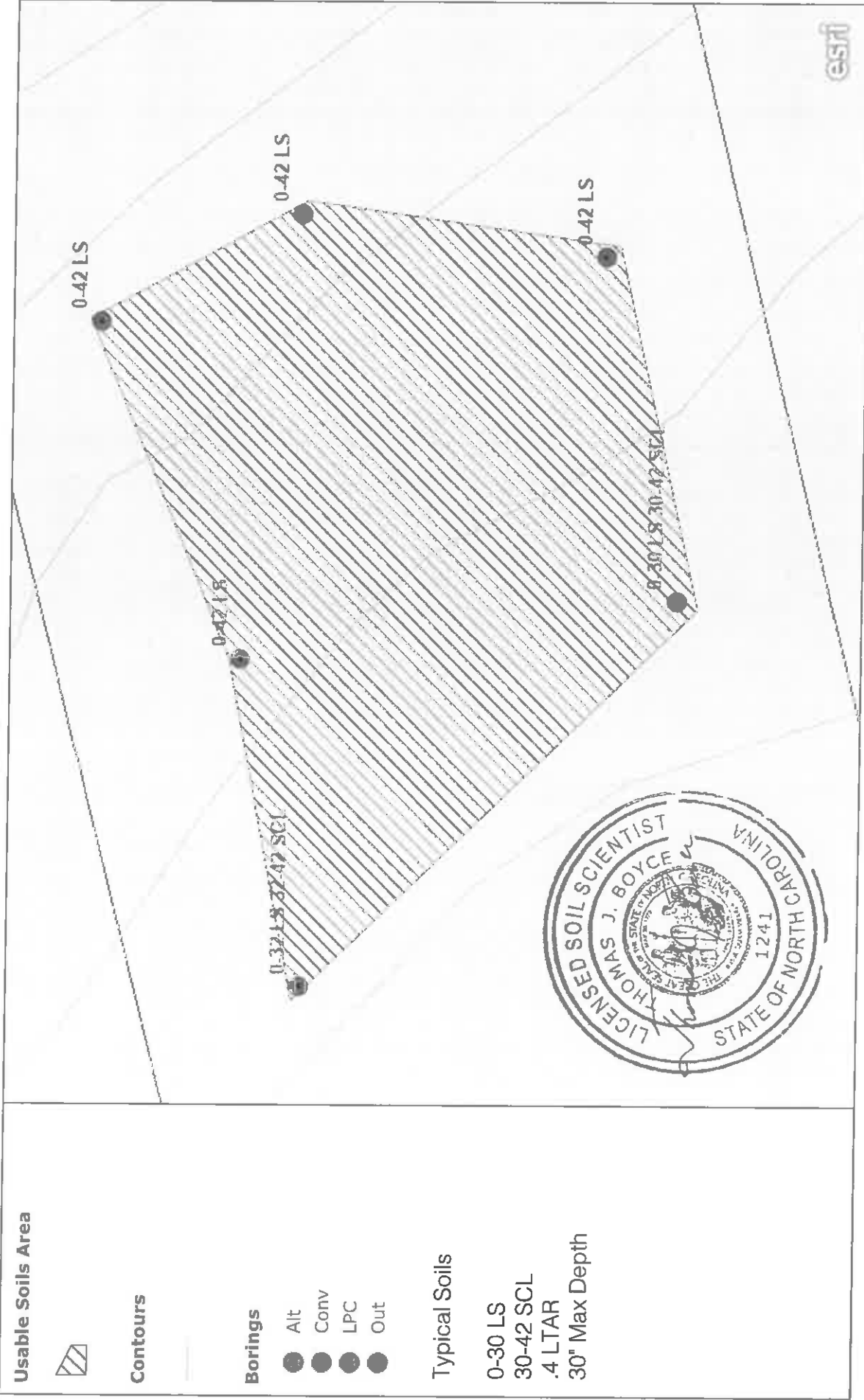
- 0-30 LS
- 30-42 SCL
- .4 LTAR
- 30" Max Depth

All ratings and determinations were done in accordance with "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC .1900". This report does not guarantee or represent approval or issuance of permits by the local health department. This report only represents my opinion as a licensed soil scientist.

200ft



Soil Evaluation - NW Harnett Fire Station 3-Fuquay-Varina



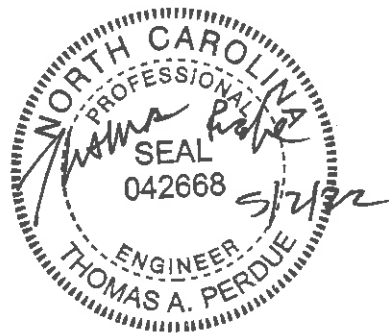
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**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

Project Specifications



**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
Morrisville, North Carolina 27560**

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Project Specifications

Excavation and Backfilling

1. Excavated materials acceptable as backfill shall be stockpiled in a location approved by the Owner. The materials shall be located away from the edge of any excavations. Excavated materials shall not be stored where existing trees are located.
2. All open excavations shall be barricaded when construction in the area has stopped. Night barricading should include posted warning lights.
3. Protect existing structures, utilities, sidewalks, pavement, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations. Protect root systems from damage or dry-out to the greatest extent possible.
4. Soil materials shall be free of boulders, roots, sod, organic matter, and frozen material.
5. Bedding materials for pre-cast concrete structure installation shall be #57 washed stone to the dimensions and depth shown on the construction drawings.
6. All excavation is unclassified and includes excavation to subgrade elevations indicated on the construction drawings regardless of character of materials and obstruction encountered. In the event that rock is encountered, the Contractor shall remove it at no additional cost to the owner.
7. Stability of excavations shall be maintained by sloping of the sides and shall comply with local codes, ordinances, and requirements of agencies having jurisdiction. Where space restrictions prevent sloping of the sides, shoring and bracing of the walls shall be employed in full compliance with OSHA requirements. In the case of pipe installations, sheeting shall remain in place until backfilling progresses to a stage where no damage to the pipe will result from removal.
8. The Contractor shall attempt to prevent surface and subsurface water from flowing into excavations. The Contractor shall provide equipment, materials, and work necessary to dewater any accumulation of water in the excavation to prevent softening of the soils, undercutting of footings, and changes to the soils detrimental to the stability of the improvements.
9. Excavations for structures shall conform to dimensions and elevations shown on the construction drawings within a tolerance of plus or minus 0.10 feet and to the standards of ASTM C891-90.
10. Backfill shall be installed to excavated spaces in 8-inch lifts and tamped by hand or pneumatically around pipe or structures. Tamping shall be performed evenly on both sides

of pipe and around sides of structures to a depth such that damage to the pipe or structures is avoided as a result of subsequent methods of compaction. Extreme care shall be exercised in backfilling operations to avoid displacement of pipe and structures either horizontally or vertically. Backfill consolidation by ponding water is not permitted. Compaction of each layer of backfill and the top 6 inches of subgrade shall achieve a 90 percent maximum dry density as measured by AASHTO method T-99.

11. Remove all waste materials including unacceptable excavated material, trash, and debris and legally dispose of it off Owner's property. Where settling is measurable or observable at excavated areas during project warranty period, the Contractor shall remove surface finish, add backfill material, compact, and replace surface treatment to a quality and appearance matching adjacent areas of previous work.

Septic Tank Installation and Testing

1. Septic tanks shall conform to criteria in 15A NCAC 18A .1952-.1954. The septic tank should be installed on a 6-inch minimum layer of No. 57 washed stone aggregate.
2. Place bell ends of pre-cast sections or the groove end of the concrete facing down. In preparation for making joints, all surfaces of the portion of the section to be jointed and the factory-made jointing materials shall be clean and dry. Each joint, seam, and pipe penetration inside and outside of joints shall receive liberal applications of non-shrink grout as well as liberal amounts of bitumastic waterproof sealant.
3. Lifting holes and other penetrations of the pre-cast structure wall shall be sealed with nonshrinking grout. Pipe connections shall be made so that the pipe does not project beyond the inside wall of the structure. Grout connections as necessary to make smooth and uniform surfaces on the inside of the structure.
4. Before placing any tank into operation, remove any dropped grout, sand or other imperfections and obstructions from the interior of the structure. Specifically, the inside walls of the tank shall be smooth and uniform. Smooth-finish inverts so that wastewater flow is confined and directed through the inlet and outlet pipes with easy transition.
5. Tanks shall be backfilled in accordance with the applicable specifications herein before described.
6. All pipe penetrations shall be through Press-Seal Cast-A-Seal 402 rubber connectors or approved equal.
7. All joints (mid-seam, top-seam) shall be sealed using Concrete Sealants butyl sealant #CS-102 meeting ASTM C-990.
8. All service access openings will be a minimum of 24 inches. All access openings shall be fitted with E-Z Set riser assemblies.

9. A 24-hour static water test, in accordance with ASTM standards, shall be performed on all precast tanks in order to insure they are water tight.
 - a. The testing shall be performed in the presence of the engineer or his representative.
 - b. Each tank shall be filled with water and the initial water level shall be measured.
 - c. At the end of the 24-hour period, the level of the water shall be measured again.
 - d. The engineer shall pass the tank if the water level did not drop more than 0.5 inches or if the total volume of the displaced water is less than 1 percent of the total effective liquid capacity of the tank.
 - e. Tanks may also be leak-tested by applying a vacuum of 5-inches of Hg with riser assemblies in place.
 - f. Each failed tank shall be tested again. In the event that the tank does not pass the second test, the Contractor shall remove and replace the tank at no additional cost to the owner.
10. Septic Tank shall meet the following additional criteria:
 - a. Minimum liquid depth of 36 inches.
 - b. Minimum airspace of 9 inches.
 - c. Length shall be at least twice as long as the width.
 - d. Septic tank shall be constructed with a baffle wall dividing the tank interior 2/3rd to 1/3rd. The baffle wall shall be constructed to permit passage of effluent through a slot or holes located between 45 and 55 percent of the interior depth.
11. Septic tank shall be fitted with either a POLYLOK PL-68 or SIM/TECK STF-110 effluent filter or engineer approved equal that extends down to 50 percent of the liquid depth of the tank.
12. Septic model shall be as shown on the construction drawings or approved equal by engineer.

Piping Installation and Testing

1. Piping shall be PVC and of type and size as shown on the construction drawings. Piping shall be installed with a minimum of three (3) feet of cover unless shown otherwise on the construction drawings.
2. Piping shall be installed to be able to meet a pressure test whereby the pressure remains constant for a minimum of two hours, and the allowable leakage is not more than 10 gpd/inch of pipe diameter/mile.
3. Any line installed under a driveway shall be sleeved in Class 52 Ductile Iron Pipe or encased in concrete and extend a minimum of 5 feet on either side and as shown on the construction drawings.
4. Forcemains installed under streams shall be sleeved in Class 52 Ductile Iron Pipe as shown on the construction drawings.

Distribution Box

1. Distribution box shall be watertight, not subject to excessive corrosion, and of adequate design as approved by the local health department.
2. Distribution box shall be separated from the septic tank and nitrification lines by a minimum of two feet of undisturbed or compacted soil and shall be placed level on a solid foundation of soil or concrete to prevent differential settlement of the device. The installer shall demonstrate that the distribution devices perform as designed.
3. If necessary, installer may employ the use of speed levels to achieve even distribution of flow.
4. Distribution box shall be installed per manufacturer's recommendations unless shown otherwise on the construction drawings.

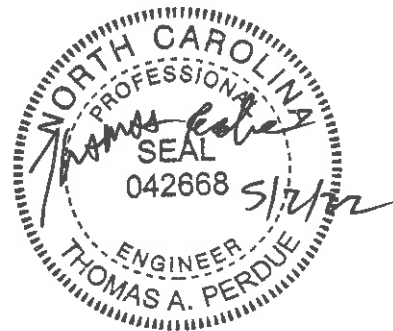
EZflow Trench Lines

5. The trench lines shall be the EZflow drain lines (1203H – GEO type).
6. The EZflow trench lines shall be installed per manufacturer's recommendations unless shown otherwise on the construction drawings.

**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

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Design Calculations



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Septic Tank (2,100 ST 388)

*** ALL ORANGE CELLS MUST BE FILLED ***

Values for f, Ka, and e can be found in Tables 1, 2, and 3 in the accompanying document.

Disclaimer: Use of this calculator does not guarantee the proper function or performance of any product manufactured in accordance with the data herein. It is the user's responsibility to ensure their product is designed and manufactured to resist all forces applied.

Basic Dimensions		
Lid Thickness (L)	0.33	(feet)
Lid Hole Diameter (H1)	24.00	(inches)
Lid Hole Diameter (H2) - If tank has only one hole, leave blank.	24.00	(inches)
Lid Hole Diameter (H3) - If tank has only one hole, leave blank.		(inches)
Length of Tank (A)	13.17	(feet)
Width of Tank (B)	6.33	(feet)
Height of Tank Excluding Lid (C) - This value includes the base thickness but excludes the lid thickness.	5.17	(feet)
Depth of Bury (Y) - This measurement extends from the ground level to the top of the lid.	1.50	(feet)
Wall Thickness (T)	0.25	(feet)
Base Thickness (E)	0.33	(feet)
Distance to Groundwater (GW)	0.00	(feet)

Customizations To Add Ballast		
Add Concrete Inside the Tank:		
Initial Inside Height of Tank - This measurement is the value of C - E.	4.83	(feet)
Add concrete inside the tank to make thicker base? If yes, how much? (U) If no, enter a value of 0. Please note: The value entered must be less than the inside height of the tank.	0.00	(feet)
Increase Thickness of the Base:		
Initial Base Thickness - This measurement is the value of E.	0.33	(feet)
Add concrete below the base of the tank to make thicker base? If yes, how much? (F) If no, enter a value of 0.	0.00	(feet)
Create Lip:		
Extend the base horizontally to create a lip? - The lip will be the thickness of E plus F, below, and it will extend this horizontal distance, P, from all four tank walls. If yes, how much? (P) If no, enter a value of 0.	0.00	(feet)

Summary of Final Measurements after Ballast Customizations		
Final Base Thickness - This measurement is the sum of E and F.	0.33	(feet)
Lip Thickness - This measurement is the sum of E and F.	0.33	(feet)
Total Height of the Tank from the Top of the Lid to the Bottom of the Base - This measurement is the sum of L, C, and F. This is equivalent to the sum of L, C - E, E, and F.	5.50	(feet)
Final Inside Height of Tank - This measurement is the value of C - E - U.	4.83	(feet)
Final Volume of Tank	357.13	(cf)
Final Volume of Tank	2671.52	(gallons)

Unit Weights		
Unit Weight of Water	62.40	(lb/cf)
Unit Weight of Dry Soil	110.00	(lb/cf)
Unit Weight of Submerged Soil	47.60	(lb/cf)
Unit Weight of Saturated Soil	120.00	(lb/cf)
Unit Weight of Concrete	145.00	(lb/cf)

Changes in Total Concrete Weight Due to Customizations		
Weight of extra concrete inside tank used to create thicker base (Weight of extra concrete due to U)	0	(lb)
Weight of extra concrete on bottom of tank used to create thicker base (Weight of extra concrete due to F)	0	(lb)
Weight of extra concrete due to lip (Weight of extra concrete due to P)	0	(lb)
Weight of concrete removed due to lid hole	301	(lb)

Soil and Concrete Weights		
Weight of Soil on Lid	5954	(lb)
Weight of Soil on Lip	0	(lb)
Weight of Lid Alone	3690	(lb)
Weight of Empty Tank - This value is the sum of weights of the body of the tank, the tank lid, the lip (P, if applicable), the thickened base (F, if applicable), and the extra concrete inside tank (U, if applicable), minus the weight of the concrete removed due to the hole in the lid.	14378	(lb)

Water in Tank		
Water Level in Tank - Please note: The value entered must be less than the final inside height of the tank.	0.00	(feet)
Weight of Water in Tank	0	(lb)

Weight of System Components		
Total Weight of Soil on Tank	5954	(lb)
Total Weight of Concrete	14378	(lb)
Total Weight (Tank, Water in Tank, and Soil)	20332	(lb)

Sliding Resistance		
Specific Gravity of Soil, SG	2.75	
Friction Factor (Found in Table 1), f	0.30	
Void Ratio (Found in Table 3), e	0.85	
Ratio of Lateral to Vertical Earth Pressure (Found in Table 2), Ka	0.33	
Sliding Resistance	22368	(lb)

Uplift Force		
Uplift Force	28601.72	(lb)
Safety Factor	1.30	
Uplift Force with Safety Factor	37182.24	(lb)

Additional Ballast Required		
	NONE	(lb)

MacConnell & Associates, P.C.

Project: US Hwy. 401 N
Project Number: A21303.00
Location: Harnett County, North Carolina
Subject: Tank Sizing Calculations
Date: May 2, 2022

Notes:
Input
Calculated

Assumptions And Calculations:

1. Treatment flow is based on unadjusted flow.
2. Irrigation flow is based on reduced flow

Number of Bedrooms:	7.0 Employees	Given
Average Daily Flow per Bedroom:	120 GPD	
Unadjusted Design Flow:	940.0 GPD	
Flow Reduction (House Fixtures):	0 %	15A NCAC 18A .1949
Adjusted Flow:	940.0 GPD	

SEPTIC TANK SIZING

Minimum Septic Tank Volume Required:	1,600 Gallons	per 15A NCAC 18A .1952
Septic Tank Volume Provided:	2,100 Gallons	

Septic Tank storage and effective volume calculations:

Septic Tank Total Void Volume = L * W * D:

Tank length:	12.4 foot
Tank Width:	5.8 foot
Tank Depth:	4.8 foot
Total Void Volume:	2,618.6 Gallons

Septic Tank Effective Volume = L * W * Lowest Invert To Tank Bottom:

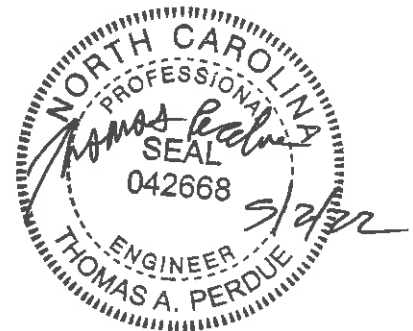
Tank length:	12.4 foot
Tank Width:	5.8 foot
Lowest Invert:	4.2 foot
Effective Volume:	2,257.4 Gallons

Septic Tank Storage/Detention:	2.40 Days	Effective Volume / ADF
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**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

Equipment

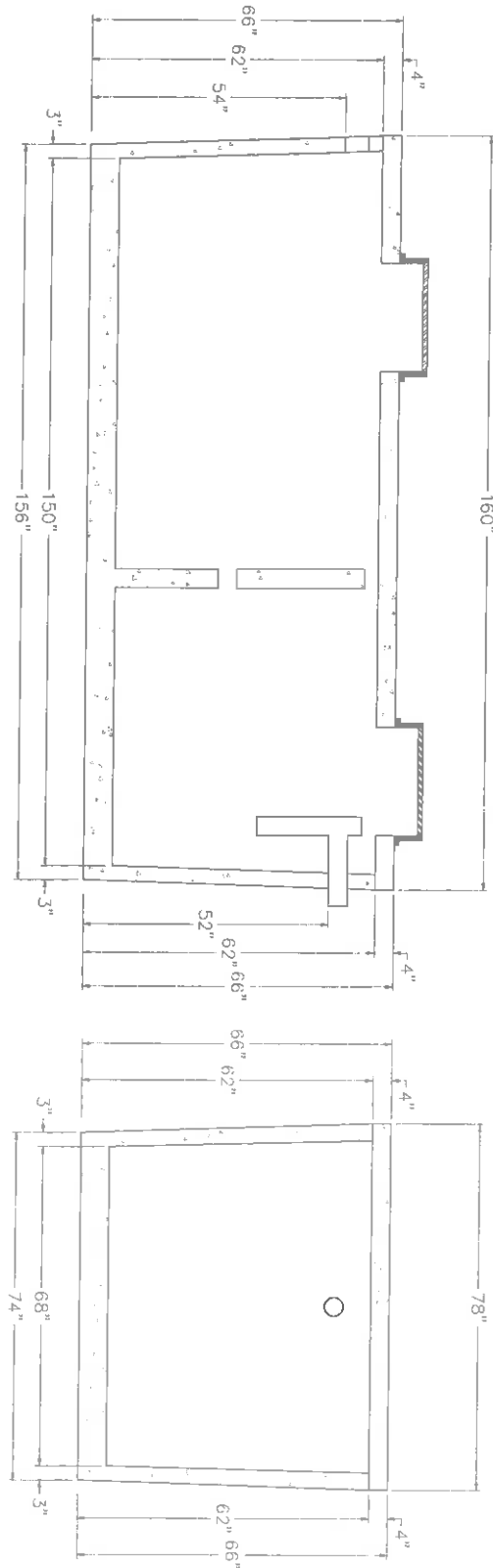


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2,100 ST 388

NTS

NON TRAFFIC BEARING

DAVID BRANTLEY & SONS

37 Pine Ridge Rd.
 Zebulon, NC 27597
 Office 252-478-3721
 Fax 919-573-0443
 installer@gmail.com

PREPARED FOR : David Brantley & Sons
 37 Pine Ridge Rd.
 Zebulon, NC 27597

DATE : April 11, 2014

CONTACT:
 CORY BRANTLEY

REVISION NO.

Original Submitted

Revision 1

Revision 2

Revision 3

Master Set

DATE

April 11, 2014

BRANTLEY TANK MODEL

2,100 ST 388

SHEET NUMBER

1 of 1



Submittal Specification

A flexible pipe-to-structure connector shall be employed in the connection of the sanitary sewer pipe to precast structures. The connector shall be CAST-A-SEAL® 402/402F as manufactured by Press-Seal Corporation, Fort Wayne, Indiana, or approved equal. The connector shall be the sole element relied on to assure a flexible, watertight seal of the pipe to the precast structure. The connector shall consist of a rubber gasket and an external take-up clamp.

The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet or exceed the physical property requirements of ASTM C 923.

The external take-up clamp shall be constructed of Series 300 non-magnetic stainless steel and shall utilize no welds in its construction. The clamp shall be installed by torquing the adjusting screw using a

torque-setting wrench available from the connector manufacturer.

Selection of the proper size connector for the structure and pipe requirement, and installation thereof, shall be in strict conformance with the recommendations of the connector manufacturer. Any dead end pipe stubs installed in connectors shall be restrained from movement per ASTM C 923.

The finished connection shall provide sealing to 13 psi (minimum) and shall accommodate deflection of the pipe to 7 degrees (minimum) without loss of seal.

Vacuum testing shall be conducted in strict conformance with ASTM C 1244 prior to backfill. Other testing shall be conducted in strict conformance with the requirements of the connector manufacturer.

CAST-A-SEAL 402	PIPE SIZE	PIPE O.D RANGE	WALL THICKNESS*	APPLICATION
452.0250	1.25" - 2" (31 - 51 mm)	1.5" - 2.75" (38 - 70 mm)	2.5" - 6" (64 - 150 mm)	STANDARD
452.0450	3" (100 mm)	4.2" - 8.7" (107 - 119 mm)	2.5" - 6" (64 - 150 mm)	STANDARD
452.0402F1	4" (100 mm)	4.2" - 4.7" (107 - 119 mm)	2.5" - 4.0" (64 - 102 mm)	Closed Face
452.0650	6" (150 mm)	6.2" - 6.7" (157 - 170 mm)	2.5" - 6" (64 - 150 mm)	STANDARD
CAS ADAPTER	3" (75 mm)	3.2" - 3.6" (81 - 91 mm)	---	Use with 4" CAST-A-SEAL

PRODUCT PERFORMANCE

CAST-A-SEAL 402/402F meets and/or exceeds all requirements of ASTM C 923, including physical properties of materials and performance testing, including:

- 13 psi minimum in straight alignment
- 10 psi at minimum 7° angle
- 10 psi minimum under shear load of 150 lbs/in. pipe diameter

CAST-A-SEAL 402/402F meets and/or exceeds the requirements of the following Standards, Specifications, Codes, and Test Methods:

- ASTM C 923 *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals*
- ASTM C 1644 *Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes*
- ASTM C 1478 *Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes and Laterals*
- ASTM C 1244 *Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test*
- IAPMO/ANSI Z1000 *Standard for Prefabricated Septic Tanks*
- IAPMO/ANSI Z1001 *Standard for Prefabricated Gravity Grease Interceptors*
- NPCA *Best Practices Manual for Precast Concrete On-Site Wastewater Tanks*
- NOWRA *Model Code Framework*

TYPICAL TEST RESULTS for CAST-A-SEAL 402/402F (as in ASTM C 1644, C 923, and C 1478)

Test	ASTM Test Method	Test Requirements	Typical Result
CHEMICAL RESISTANCE; 1N SULFURIC ACID and 1N HYDROCHLORIC ACID	D 534, AT 22°C FOR 48 HRS	NO WEIGHT LOSS NO WEIGHT LOSS	NO WEIGHT LOSS NO WEIGHT LOSS
TENSILE STRENGTH	D 412	1200 PSI, MIN.	2100 PSI
ELONGATION AT BREAK	D 412	350%, MIN.	525%
HARDNESS	D 2240 (SHORE A DUROMETER)	±5 FROM THE MANUFACTURER'S SPECIFIED HARDNESS	<2
ACCELERATED OVEN-AGING	D 573, 70± 1°C FOR 7 DAYS	DECREASE OF 15%, MAX. OF ORIGINAL TENSILE STRENGTH, DECREASE OF 20%, MAX. OF ELONGATION	-13% TENSILE CHANGE, -14% ELONGATION CHANGE
COMPRESSION TEST	D 395, METHOD B, AT 70°C FOR 22 HRS	DECREASE OF 25%, MAX. OF ORIGINAL DEFLECTION	13%
WATER ABSORPTION	D 471 IMMERSE 0.75 BY 2-IN. SPECIMEN IN DISTILLED WATER AT 70°C FOR 48 hrs	INCREASE OF 10%, MAX. OR ORIGINAL BY WEIGHT	3.50%
OZONE RESISTANCE	D 1171	RATING 0	PASS
LOW-TEMP. BRITTLE POINT	D 746	NO FRACTURE AT -40°C	PASS
TEAR RESISTANCE	D 624, METHOD B	200 LBF/IN. (MIN.)	450 LBF/IN.

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Phone: 800-348-7325
Fax: (260) 436-1908

PRESS-SEAL CORPORATION
Protecting Our Planet's Clean Water Supply
ISO 9001:2008 Registered • ISO/IEC 17025 Accredited

Email: sales@press-seal.com
Web: www.press-seal.com

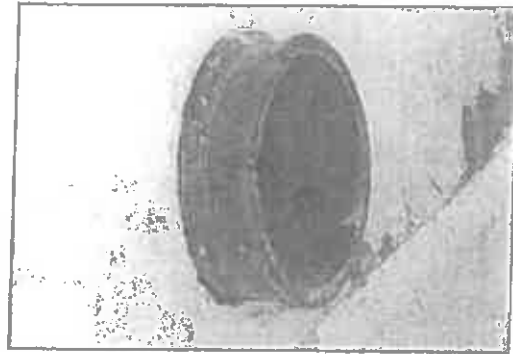


CAST-A-SEAL® 402/402F

CAST-IN BOOT-TYPE CONNECTOR
for 1-1/4" to 6" PVC Pipe
(32 mm - 150 mm)

What It Is

CAST-A-SEAL 402/402F is a watertight flexible connector that is cast into the structure when the concrete is poured. The connector is folded into the casting position and placed on the reusable heavy-duty solid plastic mandrel that is installed directly to the form. After the concrete is cured, the form is opened, removing the mandrel from the gasket, but leaving the **CAST-A-SEAL 402/402F** connector embedded in the concrete. The gasket is then simply unfolded at the jobsite and is tightened around the pipe using the supplied stainless steel take-up clamp.



How It Performs

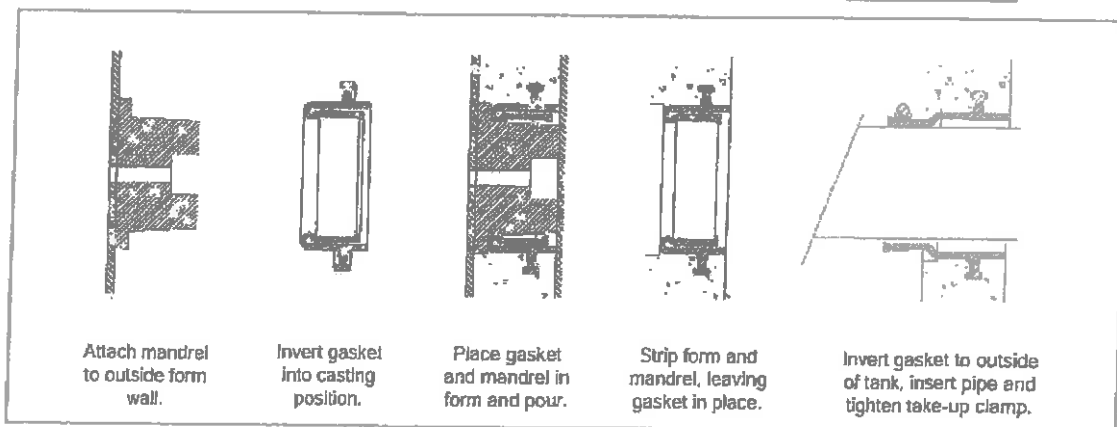
CAST-A-SEAL 402/402F meets or exceeds all requirements of the following Standards, Codes, Specifications and/or Test Methods:

- | | |
|--------------------|----------------------------|
| ASTM C 1227 | IAPMO Z1000 |
| ASTM C 1644 | IAPMO Z1001 |
| ASTM C 923 | NPCA Best Practices |
| ASTM C 1244 | NOWRA Model Code |
| ASTM C 1478 | |

Why It's Better

- Simple cast-in design provides flexible watertight connection.
- Eliminates infiltration and exfiltration.
- Improves on-site system performance and minimizes maintenance.
- Protects groundwater from unintended discharges.
- Use in on-site treatment structures, grease interceptors, manholes, wet wells, pump and lift stations, stormwater structures, or any application requiring a flexible watertight connector.

Scan (or click) Here To View More Info On This Product On The Web!



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EZset

by INFILTRATOR

EZset by Infiltrator risers and lids are made from glass reinforced polypropylene, providing superior strength and durability. They come in green or black and in 20", 24", and 30" diameters making them ideal for use with any concrete or plastic tank. The slip resistant lids are fastened using stainless steel screws and can be further secured by installing locking rings.

20" Riser System

- 20" x 6" Risers (Green or Black)
- 20" x 12" Risers (Green or Black)
- 20" Lids (Green or Black)



20" x 6" Riser



20" x 12" Riser



20" Lid



Adapter Flange

24" Riser System

- 24" x 6" Risers (Green or Black)
- 24" x 12" Risers (Green or Black)
- 24" x 18" Risers (Green or Black)
- 24" Lids (Green or Black)



24" x 6" Riser



24" x 12" Riser



24" x 18" Riser



24" Lid

30" Riser System

- 30" x 12" Risers (Green or Black)
- 30" Lids (Green or Black)



30" x 12" Riser



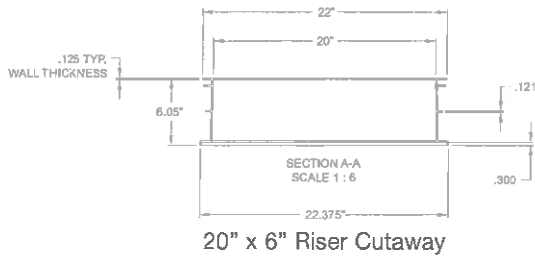
30" Lid

- Adhesive Sealant
- 20" Locking Rings
- 20" Safety Pans
- 24" Locking Rings
- 24" Safety Pans
- 24" Adapter Rings
- 30" Locking Rings

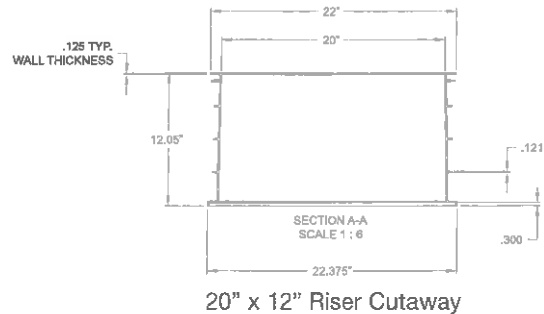


EZset
by INFILTRATOR

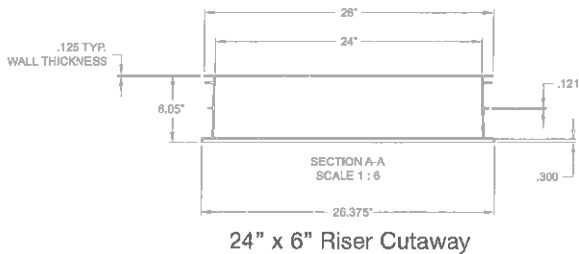
Riser Specifications



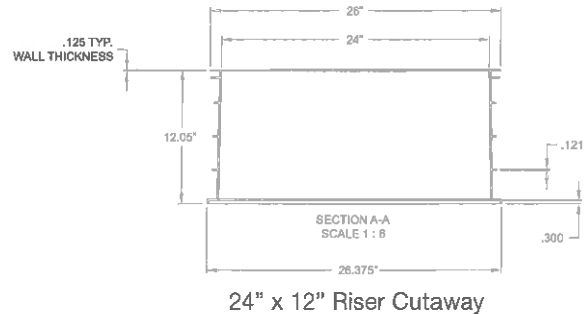
20" x 6" Riser Cutaway



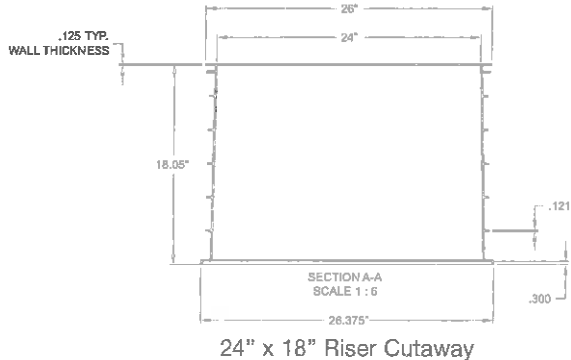
20" x 12" Riser Cutaway



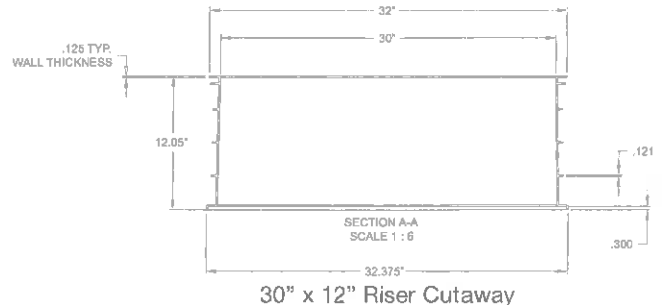
24" x 6" Riser Cutaway



24" x 12" Riser Cutaway



24" x 18" Riser Cutaway



30" x 12" Riser Cutaway

INFILTRATOR WATER TECHNOLOGIES, LLC ("Infiltrator")
EZset by Infiltrator LIMITED WARRANTY
ONE (1) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an EZset by Infiltrator riser and lid system and other accessories. An EZset system manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for one (1) year after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the EZset system.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the EZset system in accordance with instructions or applicable regulatory requirements or guidance, altering the EZset system contrary to the installation instructions and disposing of chemicals or other materials contrary to normal EZset system usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of an EZset system should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of an EZset system.



4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies, is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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SET01 0613ISI

Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436



Bristle Filter Instructions For STF-110 4" (Installation & Maintenance)

Instructions for installation in standard 4" outlet "Tee" of septic tank.

- Orient the filter so that the wire handle faces opposite the discharge outlet.
- Push filter into top of "Tee" until the 90 degree wire handle touches the top of the "Tee". The filter is now "installed", as shown in the picture to the right.
- The flexibility of the STF-110 bristle filter allows it to be used in just about any situation. If you need help with a custom installation please call Sim/Tech Filter toll free at 888-999-3290.



Installed Filter

Recommended maintenance schedule

For maximum protection, it is recommended that the filter be replaced annually. If not, it should be inspected at least once per year. The filter is capable of lasting three years under normal conditions. Such factors as garbage disposals, pets, laundry, etc. may cause the need for more frequent inspection or service.

Instructions for performing maintenance in standard 4" outlet "Tee" of septic tank.



STF-130
Maintenance
Sleeve

- Before removing filter, one of two options must be performed. These options need to be performed to prevent any outflow of unfiltered effluent from the tank while the filter is removed.

Option 1

Insert a STF-130 maintenance sleeve (sold separately) with the handle coupling on the same side of the "Tee" as the outlet hole. Push the sleeve into the "Tee" until the handle coupling hits the top of the "Tee". Do not remove the sleeve until a filter has been put back in the "Tee".

Option 2

Have the tank pumped down by a professional septic service company.

- After performing one of the options above, remove filter by pulling up on the filter handle.
- Place the used filter in the provided plastic bag for proper disposal.
- Install a new replacement filter as described in the installation instructions at the top of the page.
- If a maintenance sleeve was used (option 1), remove the sleeve from the outlet "Tee".



Maintenance
Sleeve partially
inserted into
"Tee"

U.S. Patent #
6,811,692

The STF-110 series Effluent Filters

STF-110
4" dia.

It's Superior
Superior to slotted, uniform designs.

It's Flexible
Flexible bristle design, is easily installed.

It's Versatile
Versatile - residential, commercial, and industrial applications.

STF-110-6W
6" dia.

It's Economical
Economical - a fraction of the cost of inferior designs.

It's Easy
Easy to service or replace.

It's The Best
The best passive effluent filtration for the most common debris.

STF-110-7R
7" dia.

It's Simple
Simple - the only choice in effluent filters.

STF-110-8B
8" dia.

SIM/TECH FILTER

simple solutions for technical problems
www.simtechfilter.com - 888-999-3290

STF-110 series Effluent Filers

STF-110-8B
STF-110-7R
STF-110-6W
STF-110

- **Superior filtration of the most common solids found in today's wastewater systems**
- **Versatile design has applications for residential, commercial and industrial systems and fit many different types of tees and housings**
- **Flexible bristle-design is simple to install and service, even in systems with limited access**
- **Self-locking bristles hold the filter firmly in place with no need for receivers or canisters and eliminate filter float-up**
- **Debris separation area naturally sorts solids according to size and mass for longer filter life**
- **Allows biological maturing necessary in wastewater treatment systems**
- **Durable enough to be serviced and economical enough to be replaced**
- **Economical solution for protecting and servicing all types of wastewater systems at a fraction of the cost of inferior designs**

Designed after our proven STF-110 effluent filter that currently protects residential septic systems all over the world, the latest additions to this series of filters were designed with more demanding residential, commercial and industrial systems with larger housings and pre-cast tanks with built in square baffles in mind.

We achieve superior filtration of the most common solids found in today's wastewater systems with our non-uniform bristle design. This design is much more efficient than uniform / slotted designs which can pass larger more harmful debris into the system.

The flexible self-locking bristles make it simple to install and service, even in systems with limited access. They also hold the filter firmly in place with no need for receivers or canisters and eliminate filter float-up.

The filters employs a debris separation space which naturally sorts solids according to size and mass. This makes the filter function more efficiently and greatly increases its life-span. It also allows for biological maturing which is necessary in all wastewater treatment systems.

The STF-110 series filters use triangular polypropylene bristles wound together with a 316 stainless-steel core. This makes them durable enough to be serviced and economical enough to be replaced. This provides an economical solution for protecting and servicing all types of wastewater systems at a fraction of the cost of inferior designs.

STF-130 changing sleeve is required to block effluent flow while servicing without the need to pump down the tank.

STF-110 in 4" sanitary Tee (cut-a-way view)

STF-110-7R in 4"-6" sanitary Tee (cut-a-way)

STF-110-7R in pre-cast septic tank with square baffle.

Solutions

We offer free CAD detail drawings in DXF format to cover our complete product line.

For the protection and performance of wastewater systems by

proudly made in the USA

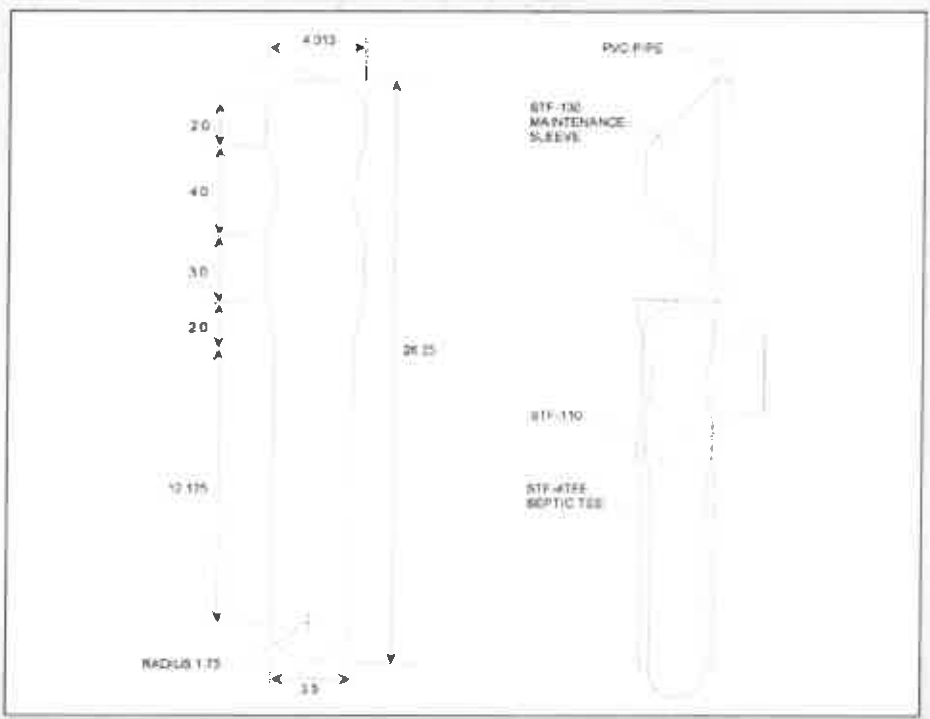
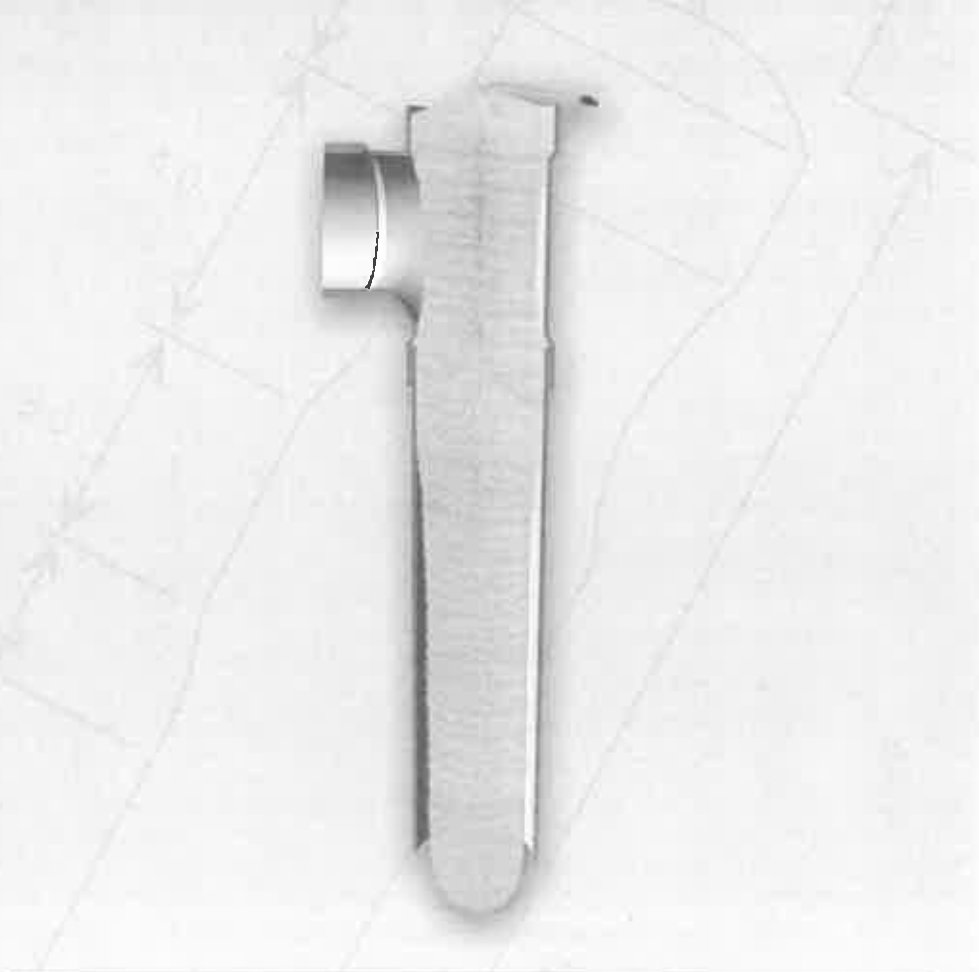
**SIM/TECH
FILTER**

www.gag-simtech.com
888-999-3290

US Patent # 6,811,692

FEATURES

- ❖ Easy, affordable solution for servicing septic tanks
- ❖ Designed with non-directional bristles for unrestricted flow of effluent
- ❖ Allows biological maturing and sloughing to maximize septic tank efficiency
- ❖ Provides well over 1/2 mile of filtration media with over 319 cu. in. of open area to eliminate clogging
- ❖ 2,215 sq. in. of filtering surface allow a flow rate of over 1200 GPD, filtering to 1/16" diameter
- ❖ Filtering surface is achieved with unique triangular bristle that more than doubles the filtering surface, with no uniform holes or slots to plug
- ❖ 90 degree handle for easy installation and removal
- ❖ Adapts to all types of 4" pipe
- ❖ Self-locking bristles hold the filter firmly in place, eliminating 'filter float up'
- ❖ Flexible design makes it easy to install in hard to reach places and makes replacing the filter a breeze
- ❖ Constructed of polypropylene bristles, wound together with a 316 S.S. core
- ❖ The filters designed shape creates a debris separation space which naturally sorts debris according to size and mass, ensures even filter usage for a long lifespan and maximizes circular flow



Order part No. STF-110
 STF-130

CAD detail drawing available in DXF format

RELATED PRODUCTS

- STF-110-6W page 4
- STF-110-7R page 4
- STF-110-8B page 4
- STF-130 page 14
- STF-4TEE page 14

U.S. Patent # 6, 811, 692



THIRD PARTY VERIFICATION
 GARY B. JOHNSON
 MICHIGAN # 32831
 WISCONSIN # E-25985
 MINNESOTA # 41217

SIM/TECH FILTER

**NEW STF-110 DISPOSABLE SEPTIC TANK FILTER
 THIRD PARTY VERIFICATION**

The Disposable Septic Tank Filter is constructed as a twisted-in-wire brush with 26" long brush body, 1/4" tip and 2 3/4" long handle end with 90 degree bend. Brush body will have a major diameter of 4.313" for a length of 9 1/2" starting 1/2" from the 90 degree handle bend, then will transition down to 3 1/2" diameter over the next 2 1/2" and held at 3 1/2" diameter for the next 14".

There will be a scallop cut into the O.D. in the major diameter beginning 2 1/2" from the top, transitioning down to 3 1/2" over the next 2", and then transitioning up to the major diameter over the next 2".

The stem will be 11-gauge stainless steel and the fill material will be .012 yellow polypropylene.

The filter has a total of 2,962 lineal feet of bristle equaling 35,544 lineal inches of bristle. By calculating the total length x the total perimeter of Sim/Tech's uniquely shaped bristle, it gives us a **filtering surface of 2,215 square inches.**

Volume of a 4"x26" Septic Tee	326.7 cubic inches
Volume of the STF-110 Filter	4.265 cubic inches
Volume as open for fluid	322.435 cubic inches





THIRD PARTY VERIFICATION OF FILTRATION ON THE STF-110 AND THREE OTHER GRAVITY SEPTIC TANK FILTERS

- Test was checking for filtering qualities with particulate that could be found in septic tank effluent
- This test used five types of particulate added to a clean tank
- The five types of particulate were hair, seeds, tissue paper, lint, and chain saw chips (see table A below)
- Test tank was riled manually every five minutes while performing tests to represent a large influx of water
- Water was introduced into the test tank at 210 gallons per hour
- Test was run to a 2" head height above outlet flow
- Recorded length of time to achieve a 2" head height (see table B below)
- Recorded what was caught in a 1500 micron sieve during the total run time (see table B below)
- Recorded what was caught in a 600 micron sieve below the 1500 micron sieve during total run time (see table B below)
- Recorded particulate caught while changing filters 15 minutes after ending test using manufacturers recommended instructions (see table B below)
- Recorded particulate removed with filters themselves (all filters were removed slowly) (see table B below)
- All particulate was recorded in grams using a OHAUS Scout II Scale (Serial #BJ380398) with capacity 400 times 0.1g (purchased scale 11/17/01)

TABLE A	Grams
Human hair	2
Horse hair	2
Dog hair	1
Cat hair	1
Tomato seeds	2
Pepper seeds	2
Cucumber seeds	2
Dill seeds	2
Charmin tissue paper	2
Scott tissue paper	2
Northern tissue paper	2
Lint	2
Chainsaw chips	4

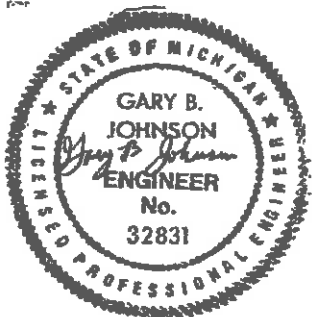


TABLE B	Sim/Tech	Tuff-Tite	Zabel	Zoeller
Time to achieve 2" head height	1 hr. 40 min.	7 min.	6 min.	* 2 hrs.
Particulate caught in 1500 micron sieve	0	0	0	0
Particulate caught in 600 micron sieve	0	0.2	0.3	1.2
Particulate caught while changing filter	0	0.3	0	0
Particulate contained within or on filter itself	15.0	6.3	2.2	2.3

*Ended test at 2 hours, total head height was at 1 3/4"

Note: All filters except Sim/Tech caught seeds in 1500 micron sieve but was not recordable in 1/10g scale

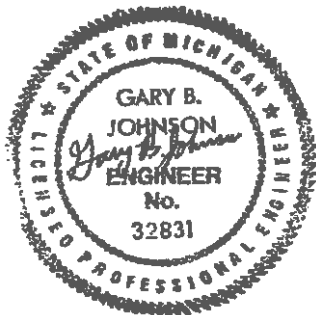


THIRD PARTY VERIFICATION OF FLOW RATES ON THE STF-110 AND THREE OTHER GRAVITY SEPTIC TANK FILTERS

- Test done with clean water and no particulate
- Filters placed in a standard outlet tee of S & D type with a 17" tailpiece to outlet level
- Test tank was a plastic 55 gallon drum
- There was an accurate method to measure head height above outlet level
- Test was done for a 1/2" and 1" head height above outlet level
- All filters tested using the above conditions

FILTER FLOW RATES

	Sim/Tech	Tuff-Tite	Zabel	Zoeller
1/2" head height above outlet flow	1, 800 GPD	1, 440 GPD	1, 195 GPD	900 GPD
1" head height above outlet flow	5, 040 GPD	4, 680 GPD	4, 858 GPD	1, 800 GPD



It is my opinion that the Sim/Tech filter will prove to be a superior septic tank filter because of its basic design; bristles to catch any "paper like" debris on the outside surface (guided there because of the bristle's bending at the ends under pressure of the flow). A dead zone near the center to collect small particles as they fall out of the flow. Plus the incalculable water paths through, and around, the filter fibers.

Gary B. Johnson P.E.
363 Silver Creek Rd
Petoskey, Mi 49770



PL-68 Filter and Tee

PL-68 is much more than just an effluent filter. The housing can also be used as an inlet baffle (tee) or an outlet baffle. The housing is designed to accept Polylok's snap in gas deflector to deflect gas bubbles away from the tee and to keep the solids in the tank.

Features:

- Offers 68 linear feet of 1/16" filter slots, which significantly extends time between cleaning.
- Accepts 3/4" PVC handle.
- Locks in any 360° position when used with PL-68 Tee.
- PL-68 Housing can be used as an inlet or outlet tee.
- Gasket prevents bypass.
- Gasket prevents bypass.

PL-68 Installation:

Ideal for residential waste flows up to 800 gallons per day (GPD). Easily installs in any new or existing 4" outlet tee.

1. Locate the outlet of the septic tank.
2. Remove the tank cover and pump tank if necessary.
3. Glue the filter housing to the outlet pipe, or use a Polylok Extend & Lok if not enough pipe exists.
4. Insert the PL-68 filter into tee.
5. Replace and secure the septic tank cover.

PL-68 Maintenance:

The PL-68 Effluent Filter will operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped, or at least every three years.

1. Do not use plumbing when filter is removed.
2. Pull PL-68 out of the tee.
3. Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
4. Insert filter back into tee/housing.

Related Products:

PL-68 Filter Concrete Baffle
 Extend & Lok™



Extend & Lok™
 Easily installs into existing tanks.



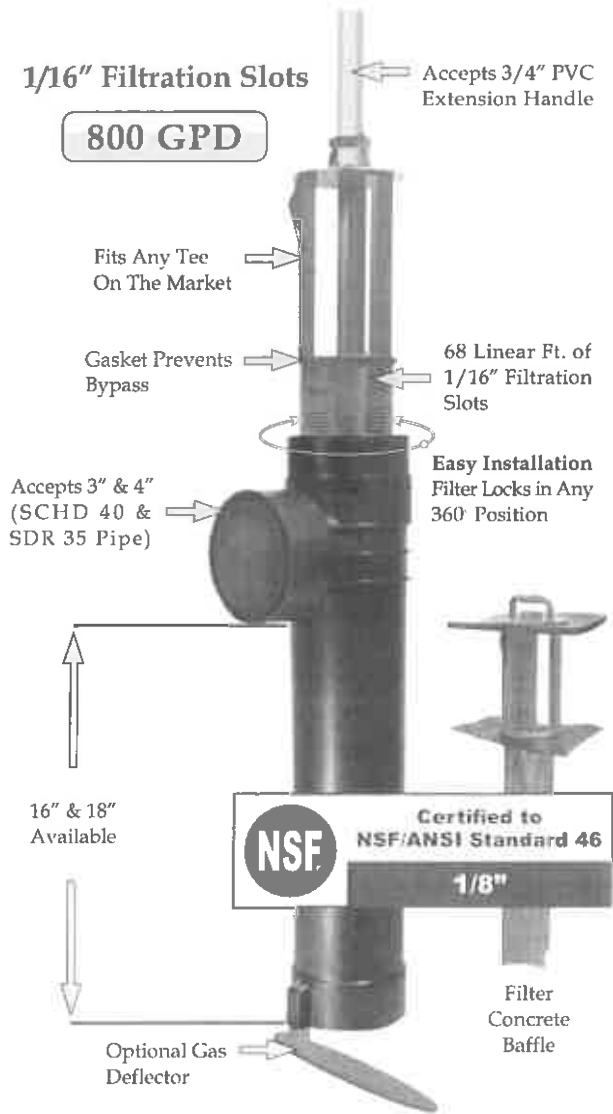
Spacer Bushing
 4" SCHD 40 to SDR 35

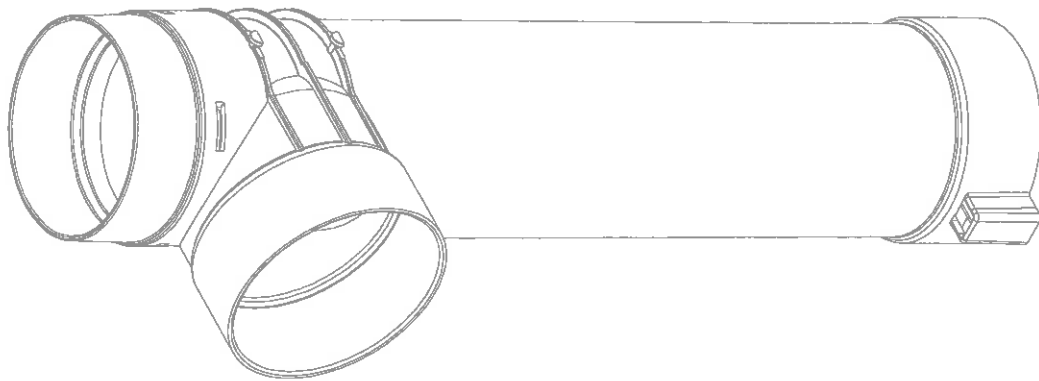


Spacer Bushing
 4" SCHD 40 to 110mm Pipe

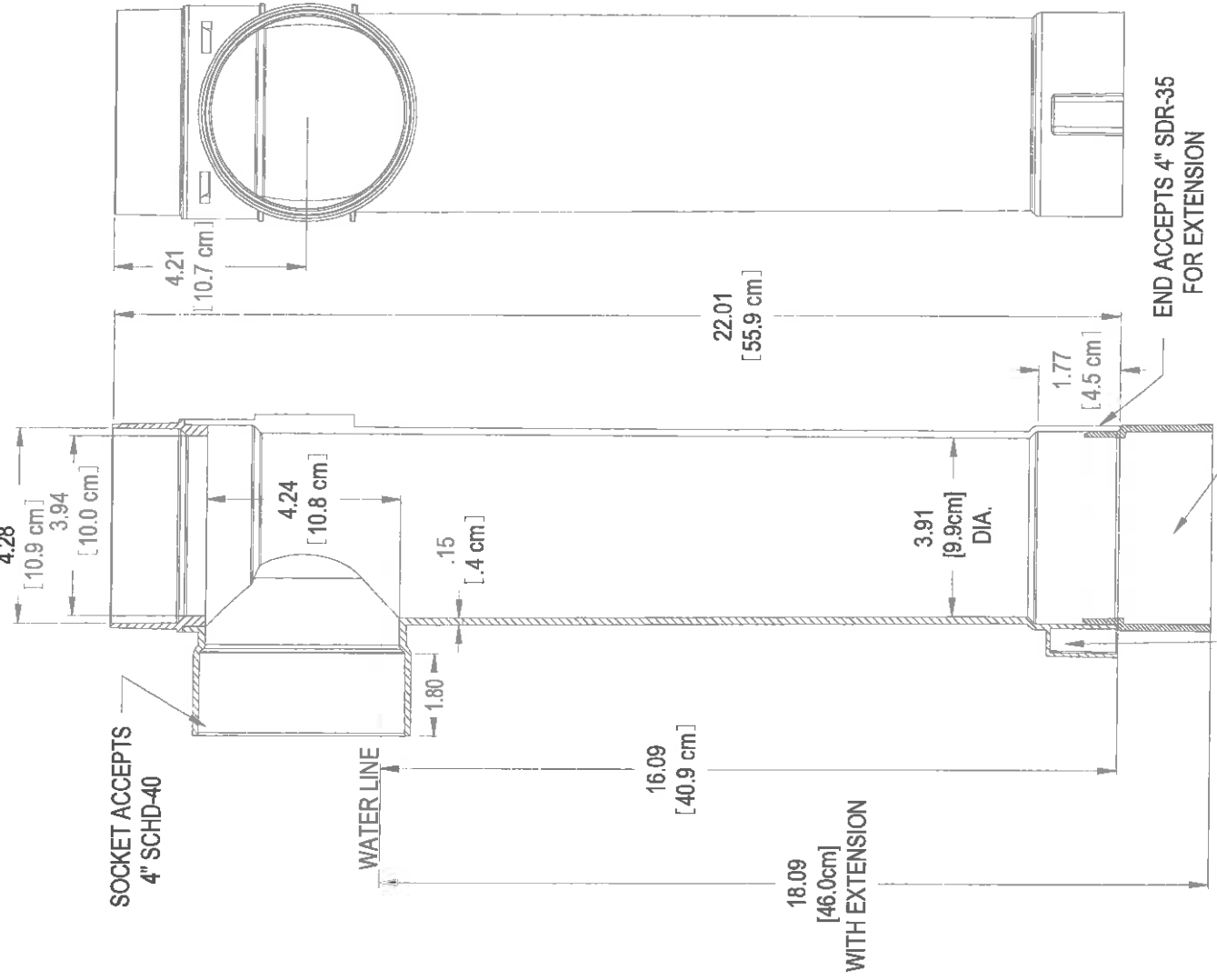
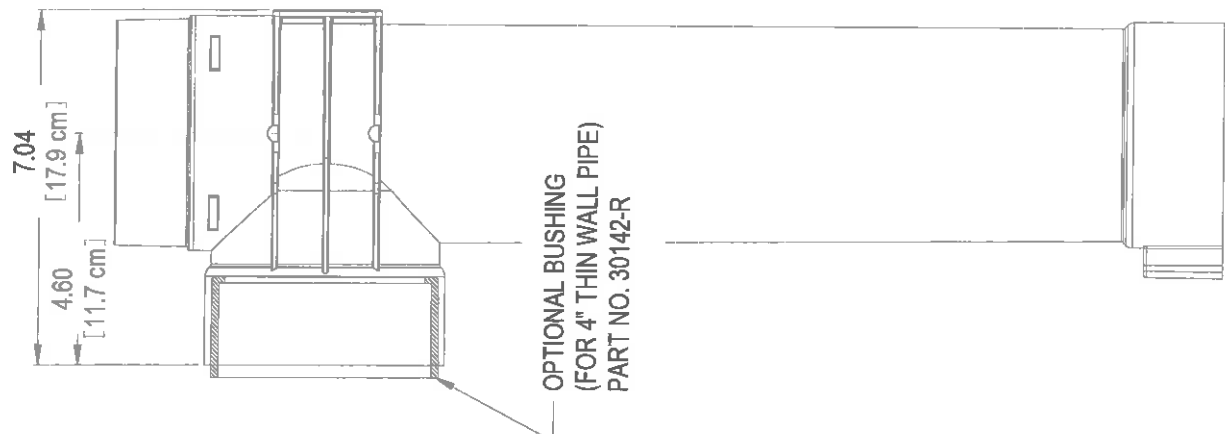


2" Extender



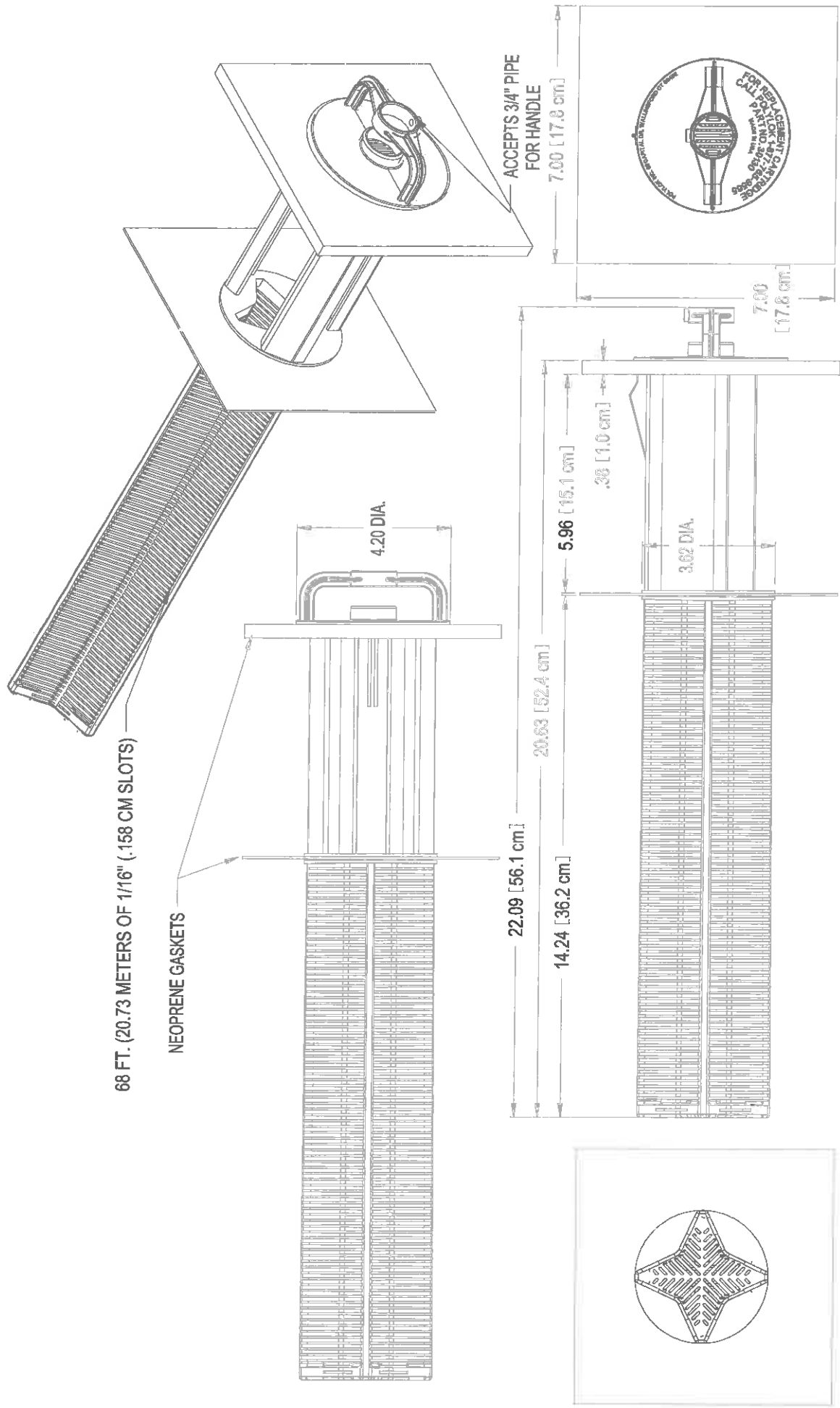


POLYLOK PL-68 HOUSING 4"
PART NO. 30142-68-4
MATERIAL - ABS
COLOR - BLACK

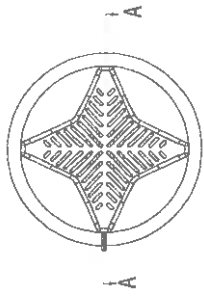


END ACCEPTS 4" SDR-35 FOR EXTENSION
OPTIONAL 2" EXTENSION PART NO. 30142-68X

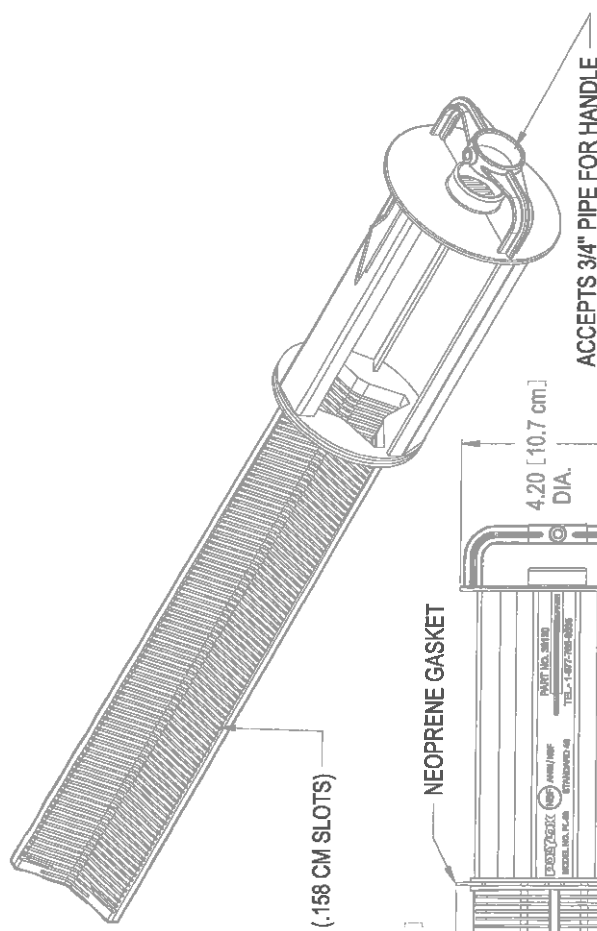
SECTION A-A
SOCKET ACCEPTS OPTIONAL GAS DEFLECTOR PART NO. 3025



PL-68 FILTER CARTRIDGE (FOR USE IN A CONCRETE BAFFLE)
 PART NO. - 30130-CB
 MATERIAL - POLYPROPYLENE



SECTION A-A



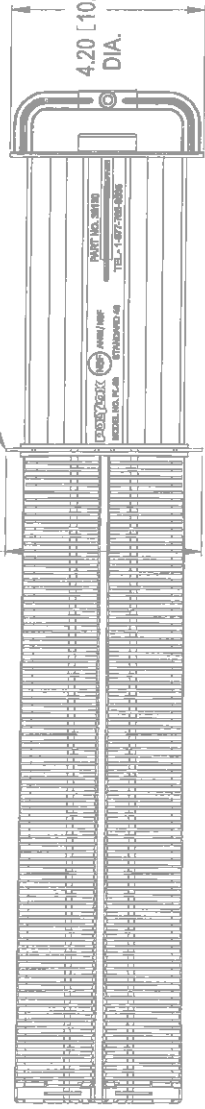
ACCEPTS 3/4" PIPE FOR HANDLE

68 FT. (20.73 METERS) OF 1/16" (.158 CM SLOTS)

4.25 [10.8 cm] DIA.

NEOPRENE GASKET

4.20 [10.7 cm] DIA.

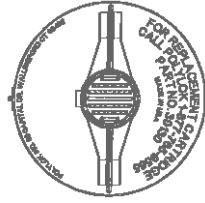
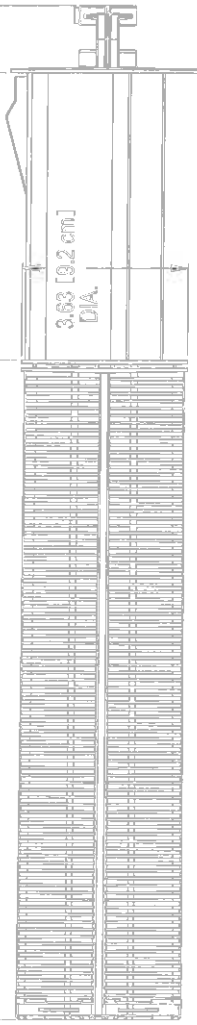


22.98 [56.1 cm]

20.63 [52.4 cm]

14.38 [36.5 cm]

3.63 [9.2 cm] DIA.



PL-68 FILTER CARTRIDGE
PART NO. - 30130
MATERIAL - POLYPROPYLENE
COLOR - RED
TOTAL FILTER AREA - 1.1 SQ. FT. (1021 SQ. CM)

SECTION A-A



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, April 06, 2016** at 12:15 a.m. Eastern Time. Please contact NSF International to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information: <http://info.nsf.org/Certified/Wastewater/Listings.asp?Standard=046&Company=79580&>

NSF/ANSI 46 Evaluation of Components and Devices Used in Wastewater Treatment Systems

Polylok Inc.
3 Fairfield Boulevard
Wallingford, CT 06492
United States
877-765-9565
203-265-6340

Facility : Cheshire, CT

Septic Tank Effluent Filters[1]

PL-122 PL-250 PL-525 PL-625 PL-68

[1] Performance tested using bead size 0.338 cm ± 0.005 cm (1/8" ± 0.002"). Meets the full requirements of NSF/ANSI 46-2010.

Facility : Evansville, IN

Septic Tank Effluent Filter Components[1]

A101-12x20 A101-12x28 A101-12x36 A101-8x18 A101-8x26
A101-8x32 A1801-4x18[4] A1801-4x22[4] [5] A301-12x20 A301-12x28
A301-12x36 A301-8x18 A301-8x26 A301-8x32

[1] Septic Tank Effluent Filter Components are exempt from bearing the NSF Component Mark and shall bear the NSF Unit Mark.

- [4] Filter cartridges Certified in ABS and PVC materials.
- [5] Failure sensing and signaling equipment of this product not evaluated by NSF.

Septic Tank Effluent Filters[2] [3]

A100-12x20	A100-12x20-VC	A100-12x20/BALL	A100-12x28-VC	A100-12x36-VC
A100-8x18-VC	A100-8x26-VC	A100-8x32-VC	A1800-4x18-30142-68	A1800-4x18-VT-B35
A1800-4x18-VT-B40	A1800-4x18-VTF-B35	A1800-4x18-VTF-B40	A1800-4x22-30142-68	A1800-4x22-VT-B35
A1800-4x22-VT-B40	A1800-4x22-VTF-B35	A1800-4x22-VTF-B40	A300-12x20	A300-12x20-VC
A300-12x20/BALL	A300-12x28-VC	A300-12x36-VC	A300-8x18-VC	A300-8x26-VC
A300-8x32-VC	A600-12x20	A600-12x20/BALL	A600-12x28-VC	A600-12x36-VC
A600-8x18-VC	A600-8x26-VC	A600-8x32-VC		

[2] Suffix VC denotes a filter cartridge with Versa-Case assembly.

[3] Performance tested using bead size 0.338 cm ± 0.005 cm (1/8" ± 0.002"). Meets the full requirements of NSF/ANSI 46-2010.

NOTE: All filters come Smartfilter ready.

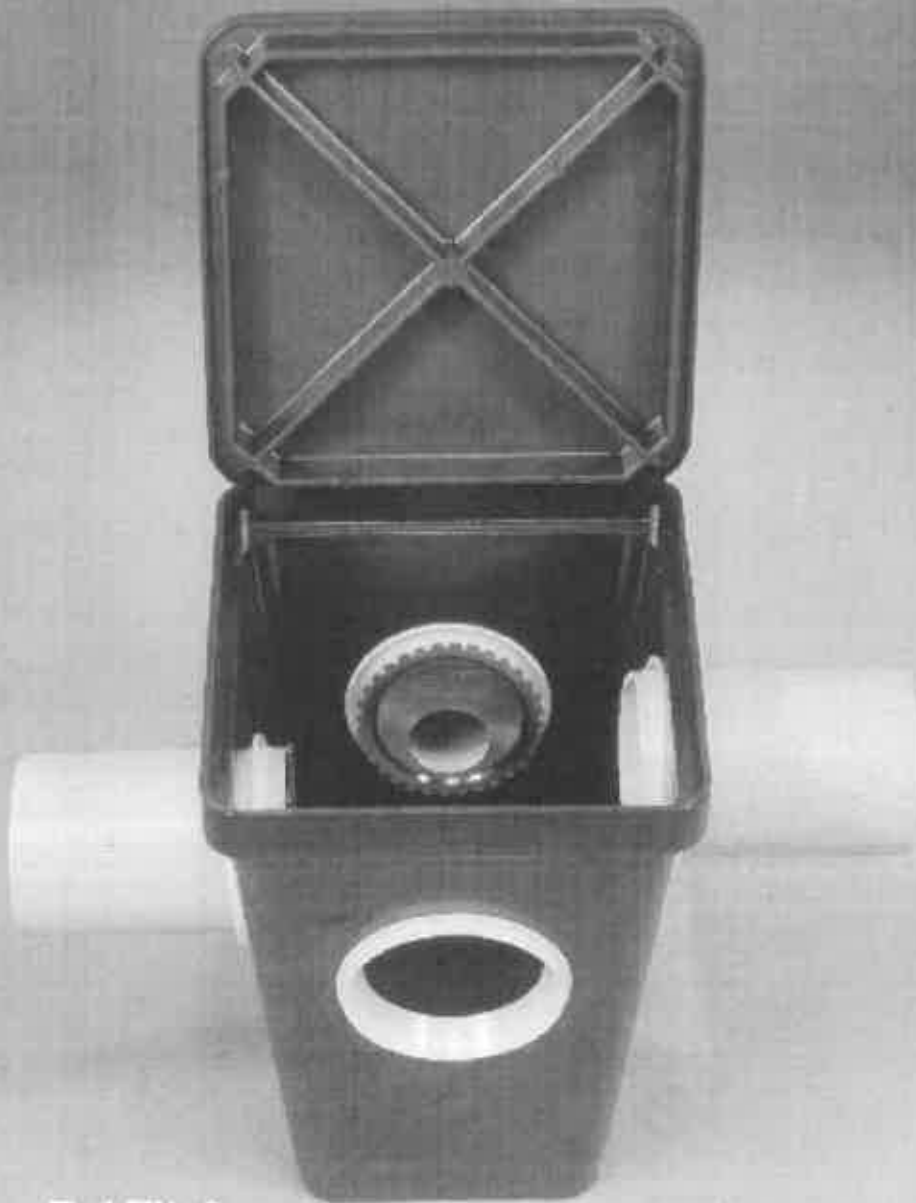
Number of matching Manufacturers is 1

Number of matching Products is 52

Processing time was 0 seconds

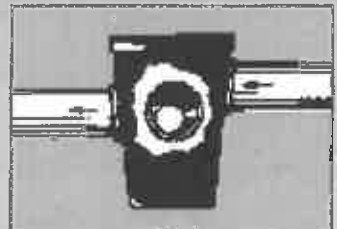


4-Hole Distribution Box



Tough Problem

Providing a simple, reliable, and permanent means for dividing septic tank effluent flow.



TUF-TITE Solution

A strong, stable, permanent, non-corrosive Tuf-Tite Distribution Box, with a Tuf-Tite Speed Leveler in each outlet.

Tuf-Tite® Distribution Box. THE TOUGH ONE!

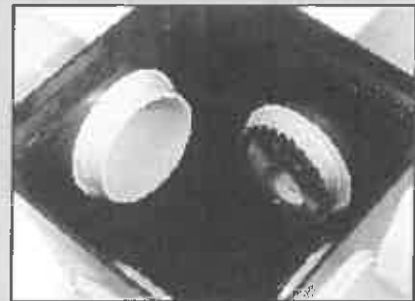
- Injection molded HDPE
- Non-corrosive
- Simple to install
- Easy to level

In a septic environment, no other material can match High Density Polyethylene in delivering a lifetime of trouble-free service. Tuf-Tite Distribution Boxes are injection molded, using only premium HDPE which contains no fillers or foam.



Snap-in pipe seals

They're patented. Simply insert your PVC pipe and push it through the flexible, polyethylene Tuf-Tite seal. Pipes fit watertight. Installation couldn't be easier.



They're permanent

Unlike cement-based pipe grout, Tuf-Tite seals will not crack or corrode in septic conditions. They stay pliable and watertight permanently.

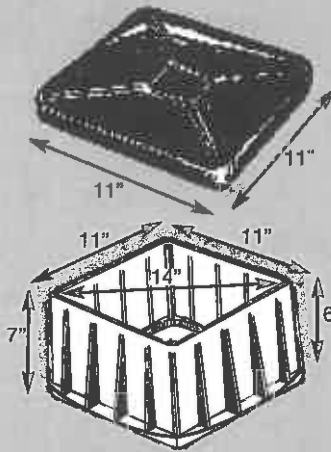
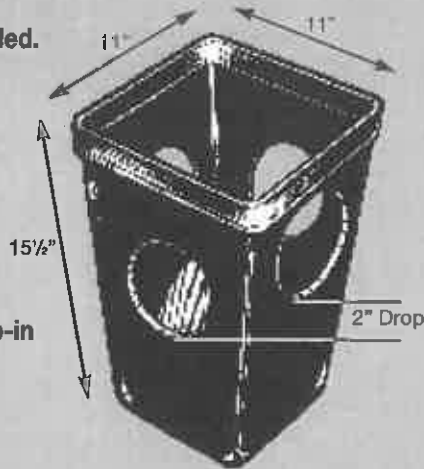


4-Hole Distribution Box 4HD2

■ Injection molded.
Exceptionally strong.

■ HDPE is non-corrosive in a septic environment.

■ Patented snap-in pipe seals simplify installation.



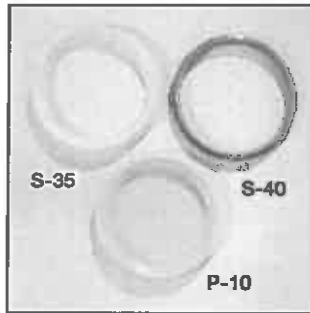
Interlocking Lid. Heavy-duty HDPE Lid is ribbed for added strength and rigidity. Slotted sides interlock on the Distribution Box to assure a tight fit.

The 4HD2 Distribution Box comes complete with a Regular Lid or an Inspection Port Lid, and 5 snap-in fittings of your choice.

Model B1 Riser. For series B1 Box. Stackable HDPE Risers extend to grade in 6" increments. Accept 11" x 11" lids and grates.

INSTALLATION IS JUST THIS SIMPLE

1. Position the Distribution Box on level virgin soil. **Do not place box on a concrete slab.**
2. Install the inlet pipe and outlet pipes. Be sure the bottoms of all pipes rest on virgin soil.
3. Level the Distribution Box and all pipes as needed.
4. Backfill the pipes to within two feet of the Distribution Box. Recheck the level of the box, then backfill up to the top lid ridge.
5. Install and adjust Tuf-Tite Speed Levelers.
6. Place lid on the Distribution Box and finish backfilling.



Choice of Fittings

S-35 Pipe Seal, for:

- Sewer and Drain
- SDR 35 ■ ASTM 3034
- Thin Wall ■ 1500 Lb. Crush

S-40 Pipe Seal, for:

- Schedule 40
- 4" Corrugated

P-10 Plug, for unused holes



Choice of Lids

Regular Lid. Molded of rugged HDPE.

Inspection Port Lid. For easy access and inspection. Models available to accept either 4" or 6" extension pipes.



Tuf-Tite Speed Levelers™

Control the flow of effluent from the Distribution Box. Simply insert a Speed Leveler into each outlet pipe. Rotate each Speed Leveler so the flow is distributed as desired. Available for 3" or 4" PVC pipe.



Drainage and Septic Products

Tuf-Tite® Corporation
1200 Flex Court
Lake Zurich, Illinois 60047



A full line of innovations for better septic systems



Speed Levelers™



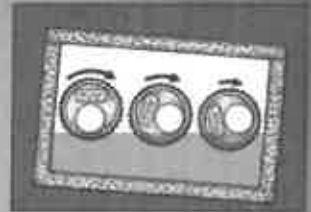
There Is No Faster, Easier, Better, Or More Economical Way To Equalize Distribution Box Flow

There's no need to dig up and re-level tilted distributions boxes. Or to struggle with makeshift pipe dams. Now, with Tuf-Tite Speed Levelers, you can do the job in a fraction of the time, for a fraction of the cost.



For all size and shape concrete distributions boxes, as well as polyethylene boxes from Tuf-Tite.

Tough Problem:
The distribution box is out of alignment. Effluent does not flow equally into the outlet pipes.



TUF-TITE Solution
insert Tuf-Tite Speed Levelers into the outlet pipes. Simply adjust each Leveler so the flow is equally distributed.



For 3" or 4" PVC pipes

Speed Levelers are precision engineered to fit commonly used Schedule 40 Thick-Wall, SDR 35 (3034), and 2729 Thin-Wall PVC pipes. Simply press the Levelers into the pipe ends. They fit water-tight. No tools are necessary.

Non-corrosive Polyethylene

Tuf-Tite Speed Levelers are molded of specially formulated polyethylene that is highly chemical resistant. They are actually more corrosion resistant than the PVC pipe in which they're used.



They're hand-adjustable

Easily rotate Speed Levelers by hand. The Flo-Hole can be positioned to admit effluent at the precise level you desire. The range of settings is infinitely variable. And Levelers can be reset easily, anytime.

Tested. Proved. Preferred

Test after test show that Tuf-Tite Speed Levelers significantly improve distribution in gravity-flow septic systems. There simply is no other way this can be accomplished as effectively, quickly, easily, or economically.



TUF-TITE

Speed Levelers™ SL-4

One size fits all 4" PVC pipe. Model SL-3, for 3" PVC pipe, also available.

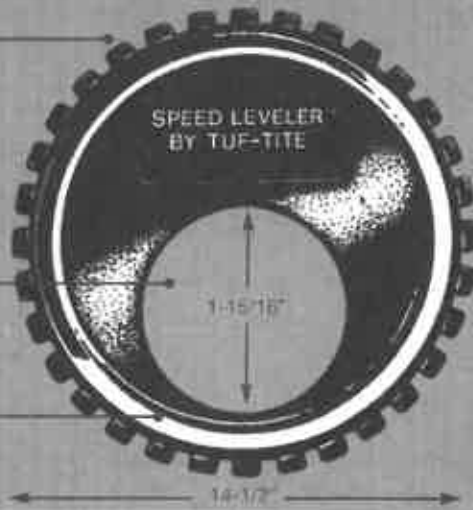
Model SL-4

Model SL-3

Notched gripper teeth for non-slip hand adjustments.

1-15/16" Flo-Hole. Allows free flow of effluent.

Inner Guide Ring. To set water elevation when aligning Levelers.



Reverse pliable wiper. Compresses for watertight fit in pipes.

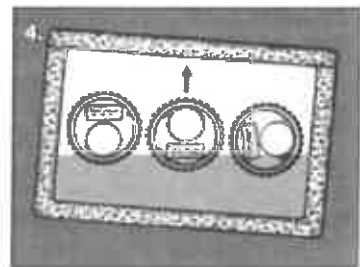
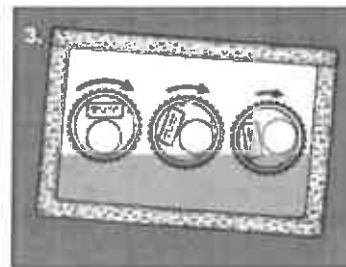
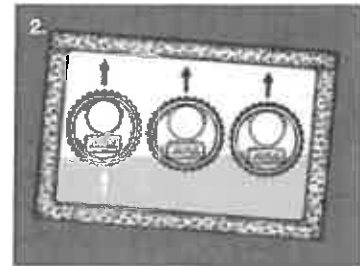
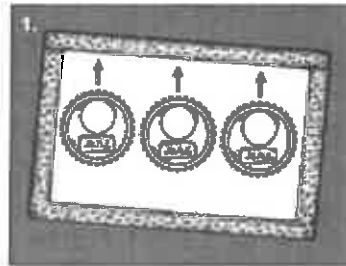
Tough corrosion-resistant polyethylene throughout.

Rigid face plate. Makes hand adjustments easier.



HOW TO SET SPEED LEVELERS

1. Insert a Speed Leveler into each outlet pipe inside the Distribution Box. Rotate each Leveler until the Flo-Hole is at the 12 o'clock position.
2. Start filling the Distribution Box with water. Stop when the water level touches the "Inner Guide Ring" of the highest Speed Leveler.
3. Rotate all the Speed Levelers until each of the Flo-Holes is aligned just above the water level. Slowly add more water to see if it enters all the Flo-Holes simultaneously. Make fine-tune adjustments if necessary.
4. You can alternate fields, or rest failed lines anytime. Simply rotate the Leveler on the appropriate pipe until the Flo-Hole is at the 12 o'clock position to stop the flow.



TUF-TITE

Drainage and Septic Products

Tuf-Tite® Corporation
500 Capital Drive
Lake Zurich, Illinois 60047

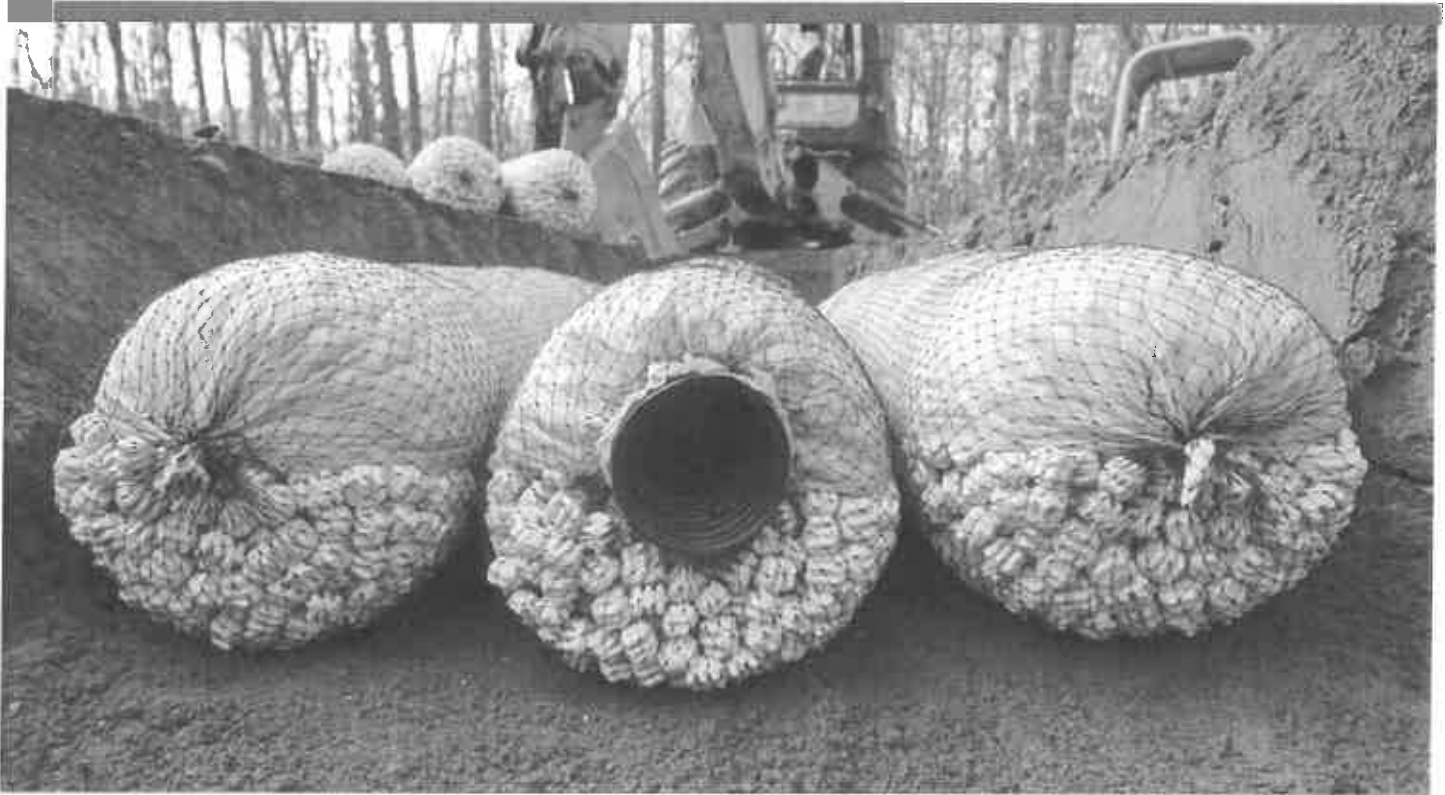


Water-tight
Lids and Risers
by Tuf-Tite®





GEOSYNTHETIC AGGREGATE TECHNOLOGY



EZflow by Infiltrator is an environmentally friendly replacement to traditional stone and pipe drainfields using an engineered geosynthetic aggregate modular design. The EZflow system is designed to improve infiltration performance by eliminating the fines associated with crushed stone, and reducing compaction and embedment associated with stone. Preassembled units include a 3" or 4" perforated pipe surrounded by aggregate and held in place with a durable high-strength netting. This product comes in easy-to-contour 5' and 10' lengths and in diameters of 7, 8, 9, 10, 12, 13, or 14 inches.

Lightweight expanded polystyrene construction offers structural integrity and resists compaction. Engineered flow-channels increase void space creating improved water flow and greater storage.



Compared with stone and pipe, benefits include:

- Always clean and free of fines
- Bundles are quick to install, saving costs on heavy machinery and labor
- Modular construction allows configurations to match trench dimensions for most system shapes and sizes
- Engineered for optimal storage and absorption efficiencies
- Ability to contour along sloped sites and around trees or landscaping
- Lightweight system is perfect for repairs and tight job sites
- Easily hand-carried into position reducing time and labor
- 5' or 10' lengths with simple snap, internal couplers
- Easier cleanup at the job site with the elimination of stone
- Manufactured from recycled materials rather than a mined natural resource
- A wide variety of diameters and configurations to meet any installation professional's needs
- Approved in many jurisdictions with an increased efficiency rating, reducing drainfield size
- Backed by the leader in the onsite wastewater industry



INFILTRATOR[®]
water technologies

Bundle System Configurations: Available in 7", 8", 9", 10", 12", 13" and 14" diameter bundles.



Single Bundle

0701P-GEO 1201P-GEO
0801P-GEO 1401P-GEO
1201P-GEO 1801P-GEO
1001P-GEO



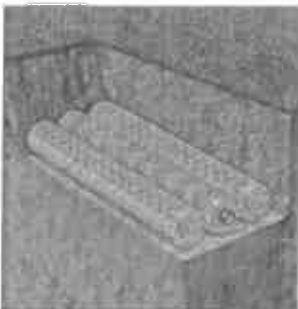
Triangular Bundle

1003T-GEO 1303T-GEO
1203T-GEO 1403T-GEO



Horizontal Bundles

0705H-GEO 1303H-GEO 1206H-GEO 1402H-GEO
0904H-GEO 1203H-GEO 1303H-GEO 1802H-GEO
1002H-GEO 1203H-GEO



Vertical Bundles

1002V-GEO 1006V-GEO 1203V-GEO 1206V-GEO
1003V-GEO 1202V-GEO 1204V-GEO 1402V-GEO
1004V-GEO



Notes:

1. Other systems include 10" and 12" bed systems. Bed size will dictate the number of bundles.
2. System dimensions are dependent upon bundle diameter and configuration.
3. LLP is for "Low Pressure Pipe" in which a pressurized distribution pipe is field installed within the corrugated pipe.
4. Internal pipe and couplings meet the requirements of ASTM F405.
5. Bundles are also available without geotextile between the netting and synthetic aggregate.

INFILTRATOR WATER TECHNOLOGIES STANDARD LIMITED WARRANTY

(a) The structural integrity of each EZflow by Infiltrator expanded polystyrene drainfield system and other accessories manufactured by EZflow by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by EZflow by Infiltrator to be covered by this Limited Warranty. EZflow by Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the EZflow system is manufactured by anyone other than EZflow by Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.



4 Business Park Road
P.O. Box 788
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

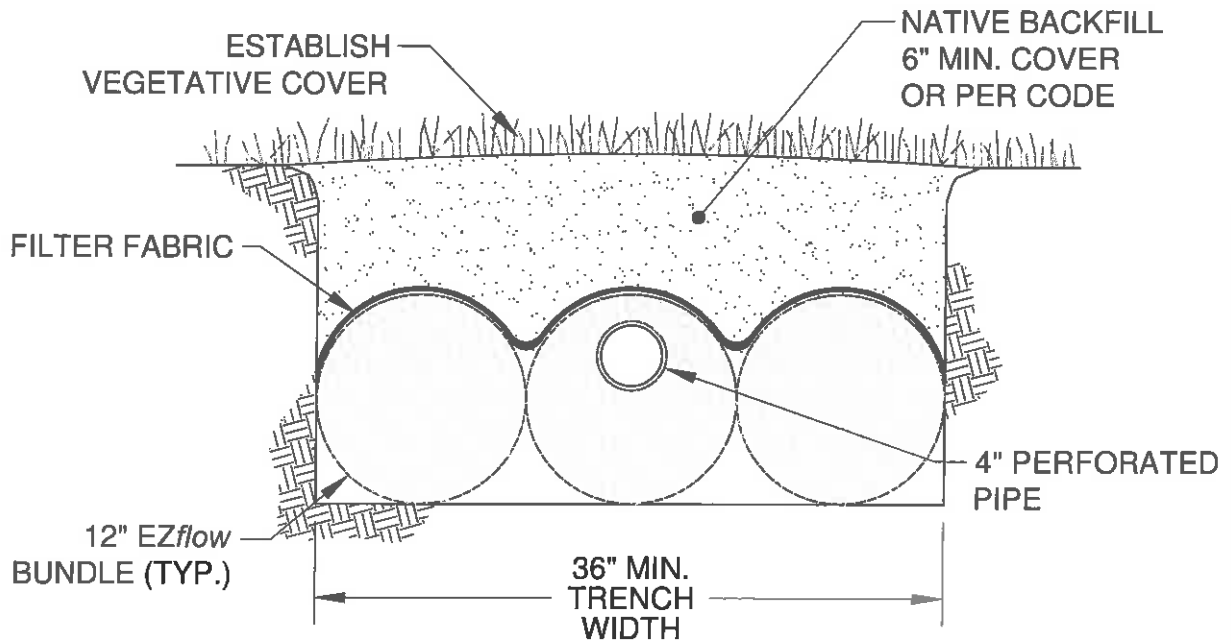
U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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EZ01 0315AG

Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

EZflow 1203H - GEO



NOTE:
 PRODUCT CONFIGURATION AND INSTALLATION
 DEPTH MUST COMPLY WITH APPLICABLE
 REGULATORY REQUIREMENTS.

		
INFILTRATOR SYSTEMS INC. 4 Business Park Rd. Old Saybrook, CT 06475 (800) 221-4436		
EZflow 1203H - GEO		
Drawn by: EMB	Date: 08/07/2013	
Scale: NOT TO SCALE	Checked by: DFH	Sheet: 1 of 1

**NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH**

ACCEPTED WASTEWATER SYSTEM APPROVAL
--

Accepted Wastewater System Approval Number: AWW-2005-02-R6

Issued To: EZflow, LP, a wholly owned subsidiary of Infiltrator Water Technologies, LLC
PO Box 768
Old Saybrook, CT 06475
800-221-4436; Fax: 860-577-7001
www.ezflowlp.com

Contact: David Lentz, P.E.

For: "EZflow by Infiltrator" Bundled Expanded Polystyrene Synthetic Aggregate Units
(EZ1203H and EZ1203H-GEO)

Approval Date:	April 2, 2005	Accepted Status Granted for Model EZ1203H
	February 6, 2008	Addition of EZ1203H-GEO and 5-foot units
	August 18, 2010	Addition of 3-foot and 7-foot units
	May 1, 2012	Clarification of Approval Language
	August 15, 2012	Addition of Sizing for LTARs Greater Than 1.0 gpd/sq ft
	February 20, 2015	Elimination of Particle Density Specification
	August 21, 2015	Add alternating dual-field systems, update trench levelness requirements, and change company name from Infiltrator Systems, Inc. to Infiltrator Water Technologies, LLC

In accordance with G.S. 130A-343(h) and 15A NCAC 18A .1969(h), a petition to the Commission for Public Health by EZflow, LP, a wholly owned subsidiary of Infiltrator Water Technologies, LLC (previously Ring Industrial Group of Oakland, TN), for modification of its approved accepted status for EZflow Drainfield Systems has been reviewed by the Department and approved by the Commission. The EZflow systems have been found to perform in a manner that is equal to or superior to a conventional wastewater system and to meet the standards of an accepted system when all of the conditions of this approval are met.

I. General

A. Scope of this Accepted Approval

1. Use, design, and installation requirements for the EZflow polystyrene aggregate drainfield systems.

B. The following polystyrene aggregate drainfield system models have been found to meet the standards of an accepted system:

- EZ1203H
- EZ1203H-GEO

II. System Description

- A. Minimum pretreatment by septic tank as required in 15A NCAC 18A .1952.
- B. EZflow expanded polystyrene aggregate particles (EPS) shall meet the following requirements:
 1. EPS shall consist of three dimensional rectangular shapes resembling capital E's placed back-to-back (also known as the "double E") with void channels and surface area protuberances.
 2. EPS shall range in size from 0.75 inches to 1.75 inches along any axis.
- C. The EZflow drainfield system units (also referred to as cylindrical units) shall meet the following general specifications:
 1. EPS shall be contained in cylindrical high strength netting.
 2. The physical and chemical properties of the netting shall be durable and resistive enough to retain the shape of the units and to withstand system installation, backfilling, corrosion, and loss of aggregate under intended use.
 3. Cylindrical units shall be 12-inches in diameter +/- ½ inch.
 4. Cylindrical units shall be manufactured in 3-, 5-, 7-, and 10-foot long sections, +/- 2 inches.
 5. The taper, or reduction in diameter, at each end of the cylindrical units shall not begin more than 3 inches from the point of enclosure, as measured along the linear axis of the unit.
 6. Cylindrical units shall be able to withstand an AASHTO H-10 axle load of 16,000 pounds when covered with 12 inches of compacted soil and a shallow cover axle load of 4,000 pounds when covered with 6 inches of compacted soil without collapsing, fracturing or breaking when installed in a trench equaling the product configuration width.
- D. The EZ1203H shall meet the following description and specifications:
 1. The product shall be comprised of three 12-inch-diameter units 3-, 5-, 7-, or 10-foot long placed side-by-side across the bottom of a 36-inch-wide trench.
 2. The outer units shall contain aggregate only, with the netting tied off at both ends to prevent the escape of aggregate.
 3. The central unit shall contain aggregate and a 4-inch-diameter perforated flexible plastic pipe as is typically used in nitrification lines.
 4. The pipe shall be certified as complying with ASTM F 405, Standard Specifications for Corrugated Polyethylene (PE) Tubing and Fittings, and shall be in accordance with 15A NCAC 18A .1955(f).
 5. The netting for the central unit shall be tied off at both ends of the pipe.
 6. The 4-inch pipe shall be offset from center towards the top of the unit whereby 5 to 6 inches of aggregate is located between the bottom of the pipe and the bottom of the unit, and 1 ¼- to 2 ½- inches of aggregate is located between the top of the pipe and the top of the unit.
 7. The pipe shall be connected by an internal coupling device to allow continuous connection from one section to the next.
 8. The end-to-end gap distance between pipe containing cylinders, as measured from the straps fixing the netting to the pipe or from the face edges of aggregate on adjoining cylinders, shall be no greater than 3 inches.
- E. The EZ1203H-GEO shall meet the same product specifications as the EZ1203H as described in paragraph D, above, with the addition of geotextile fabric pre-inserted between the netting and aggregate spanning 180 degrees +/- 15 degrees along the top of each cylinder. The geotextile shall have the minimum average value specifications described in Table I.

Table I - Minimum Geotextile Barrier Material Specifications for EZ1203H-GEO

Property	Value
Unit Weight	0.5 ounces per square yard
Tensile Strength	Cross Direction: 40 N/2.54cm +/- 20% Machine Direction: 50 N/2.54cm +/- 20%
Air Permeability	775 cubic feet per minute +/- 20%

III. Siting Criteria

The EZflow drainfield system shall be sited equivalently to rock aggregate and pipe in accordance with the following criteria:

- A. Sites which are classified Suitable or Provisionally Suitable for a conventional nitrification field system in accordance with 15A NCAC 18A .1948(a) and (b).
- B. Sites which have been reclassified as Provisionally Suitable in accordance with 15A NCAC 18A .1956(1), (2), (4), (5), and (6).
- C. Sites which meet the criteria for new or existing fill in accordance with 15A NCAC 18A .1957(b). The provisions of Rule .1957(b) are applicable whenever any portion of the aggregate cylinders in an EZflow nitrification trench system extends into fill material. There shall be no reduction in trench length compared to conventional gravel trench. This reference to "fill material" applies to the site fill and not the backfill placed between the trench and the cylinder sidewall.
- D. The required vertical separation shall be measured from the trench bottom.

IV. EZflow Drainfield System Sizing

- A. The maximum long-term acceptance rate (LTAR) shall be as follows:

Table II

Textural Group		LTAR (GPD/ft ²)	
		Natural	Saprolite
Soil/Group I (Sands)	Sand	0.8-1.0*	0.6-0.8
	Loamy Sand		0.5-0.7
Soil Group II (Coarse Loams)	Sandy Loam	0.6-0.8	0.4-0.6
	Loam		0.2-0.4
Soil Group III (Fine Loams)	Silt Loam	0.3-0.6	0.1-0.3
	Other Fine Loams		NA
Soil Group IV	Clays	0.1-0.4	NA

*When the LTAR exceeds 1.0 gpd/sq ft, the nitrification trench system shall be sized using the Equivalency Factors in Table IV.

- B. The LTAR shall be based on the most hydraulically limiting naturally occurring soil horizon within three feet of the ground surface or to a depth of one foot below the trench bottom whichever is deeper.

- C. For LTAR values equal to or less than 1.0, the minimum total trench bottom area (ft²) required shall be determined by dividing the design daily sewage flow by the applicable LTAR shown in Table II above. The minimum linear footage for EZflow drainfield systems shall be determined by dividing the total trench bottom area by the following equivalency factor:

Table III

EZflow Product Configuration	Excavated Trench Width	Equivalency Factor* (SF/LF)
EZ1203H	36 inches	4.0
EZ1203H-GEO	36 inches	4.0

*Reduction in nitrification trench length allowed by use of this Equivalency Factor, as compared to sizing requirements delineated in Rule .1955 for conventional systems, apply only to drainfields receiving effluent of domestic strength or better quality. The system may be used in an alternating dual field application pursuant to 15A NCAC 18A .1955(p) provided that the equivalency factor for sizing each of the two complete nitrification fields does not exceed 4.61 SF/LF. Any proposed use of the system for facilities producing higher strength wastewater shall be sized in adherence with conditions set forth in Rule .1969(m).

Example:

Three bedroom residence with a design daily sewage flow of 360 gallons on a sandy clay loam (Group III) soil

Total computed trench bottom area is:

$$360 \text{ gpd} / 0.5 \text{ gpd/square foot (LTAR)} = 720 \text{ ft}^2$$

The minimum required linear footage for the accepted EZflow drainfield system is:

$$720 \text{ ft}^2 / 4.0 \text{ ft} = 180 \text{ linear ft.}$$

Where 4.0 SF/LF is the equivalency factor for the accepted EZflow EZ1203H

- D. For LTAR values greater than 1.0, the minimum total trench bottom area (ft²) required shall be determined by dividing the design daily sewage flow by the applicable LTAR shown in Table II above. The minimum linear footage for EZflow drainfield systems shall be determined by dividing the total trench bottom area by the following equivalency factors:

Table IV

EZflow Product Configuration	Excavated Trench Width	Equivalency Factor (SF/LF)
EZ1203H	36 inches	3.0
EZ1203H-GEO	36 inches	3.0

- E. The EZflow drainfield system may be used in a bed system with the three cylindrical bundles placed in rows next to each other. The minimum area (without reduction or equivalency factor) for a bed system shall be determined as required in 15A NCAC 18A. 1955(d). The available space requirements of Rule .1945 shall be met, and this approved accepted system may be designated as the required replacement system.

V. Special Site Evaluation

A special site evaluation may be required based on the proposed ground absorption system. Refer to Rule .1970(p).

VI. Design Criteria

Refer to Siting Criteria (Section III) and Installation (Section VII) for design details.

VII. Installation

- A. The EZflow drainfield system shall be configured in accordance with Section II, above, installed in excavated trenches constructed with the following minimum center-to-center spacing, trench widths, and soil cover. Dimensional minimums are included for installation and inspection guidance.

Table IV

Product Configuration	Minimum Trench Spacing (ft on center)	Maximum Trench Width (in)	Minimum Soil Cover ¹ (in)	Minimum Trench Depth (in)	Minimum Pipe Depth Below Grade ² (in)
EZ1203H	9	36	6	18	12
EZ1203H-GEO	9	36	6	18	12

¹ On sloping lots, minimum required trench depths may be greater

² Measurements for pipe height are to the pipe invert or bottom of pipe

- B. A backfill barrier shall be placed over the EZ1203H cylinders to prevent the infiltration of backfill material into the trench void spaces. The backfill barrier shall be 60 pound weight untreated building paper provided by the manufacturer or alternate with equal or better performance characteristics. An alternate backfill barrier shall be approved in writing by the manufacturer on a case-by-case basis. The barrier shall not be placed along the trench sidewalls below the pipe invert elevation. The barrier shall be protected from becoming wet enough to tear until backfilling is completed. The EZ1203H-GEO units are prefabricated with a geotextile backfill barrier between the netting and aggregate. The EZ1203H-GEO units shall be oriented in the trench with the geotextile covering the top of the system. No additional backfill barrier material shall be required.
- C. Native soil removed from the trench excavation may be used as backfill. Backfill shall be free of trash or debris. Vehicular traffic and excavation equipment shall not travel over any uncovered drainfield. The latest version of the manufacturer's installation procedures shall be followed.
- D. EZflow trenches shall be installed level in all directions with a plus or minus one-half-inch tolerance from side-to-side and maximum fall in a single trench bottom not exceeding one-fourth inch in 10 feet end-to-end for any continuous contoured segment. Trenches shall follow the contour of the ground surface elevation (uniform depth). Trenches shall be constructed with all continuous adjoining 3-, 5-, 7- or 10-foot units placed end-to-end, with the central cylinder distribution pipe interconnected, without any dams, stepdowns or other water stops.
- E. The 10-foot-long units shall be used to make up the majority of the line length, with the 3-, 5-, and 7-foot units being used only at the distal end of the trench. A maximum of three 3-, 5-, or 7-foot units may be used in any one line length. Examples: A 65-foot trench would utilize six 10-foot units and one 5-foot unit. A 71-foot trench would utilize six 10-foot units, one 5-foot unit, and two 3-foot units.
- F. EZflow drainfield systems installed on sloping sites may use distribution devices or step downs as described in 15A NCAC 18A .1955(j) and (l) when it is necessary to change level nitrification line segments from upper to lower elevations.

- G. Manufacturer's installation instructions for the EZflow drainfield systems shall be followed, except as required herein or by 15A NCAC 18A .1900 et. seq.
- H. The system shall be installed by a contractor authorized in writing by EZflow LP or its designated representative for EZflow drainfield systems.

VIII. Operation, Maintenance, and Monitoring

The accepted EZflow drainfield system shall have a classification equivalent to a conventional trench system in accordance with Table V(a) of 15A NCAC 18A .1961(b).

IX. Responsibilities and Permitting

- A. The local health department shall permit these accepted system in an equivalent manner as a conventional system, when the requirements of 15A NCAC 18A .1900 et. Seq., laws, and conditions of this accepted system approval are met.
- B. When use of one or more of these accepted systems is requested in the application for a Construction Authorization, the local health department shall include a design for the designated accepted system(s) in accordance with the approved siting, sizing, and design criteria on the Construction Authorization.
- C. When a permit or authorization is issued for a conventional system, the permit or authorization shall contain a statement that indicates that an accepted system may also be used. These accepted systems may be installed without permit/authorization modification, prior approval of the health department, or separate sign-off, if the accepted system can be placed in the permitted/authorized trench footprint and the installation is in accordance with the accepted system approval, without unauthorized product alteration.
- D. When substitution with one of these accepted systems for a conventional system or another accepted system is made, permit modification, prior approval of the health department or separate owner sign-off is not required as long as no changes are necessary in the location of each nitrification line (except reduction in line length and/or number as allowed for in this approval), trench depth, or effluent distribution method.
- E. Notwithstanding paragraphs C and D above, when a substitution in system type compared to a previously permitted or authorized system type or types shall result in a change in the location of any nitrification line (including any increase in line length), trench depth, or effluent distribution method, prior approval by the local health department is required before system installation. The local health department shall modify the permit/authorization upon a finding that all provisions of this approval and all other applicable rules shall be met.
- F. The type of system installed shall be indicated on the Operation Permit, including designation of the manufacturer and model or unique code.

AWWS-2005-02-R6

August 21, 2015

Page 7 of 7

X. Repair of Systems

The provisions of 15A NCAC 18A .1961(l) shall govern the use of the EZflow drainfield systems for repairs to existing malfunctioning wastewater systems.

Approved By: _____ Date: _____

HOMEOWNER GUIDE FOR UTILIZATION AND MAINTENANCE OF ON-SITE WASTEWATER DISPOSAL SYSTEMS

What is an On-site Wastewater Disposal System?

There are a number of different types of on-site wastewater disposal systems each designed for a specific set of site conditions. However, there are several system components that are common to most systems. These include the following:

1. A septic tank - a concrete tank that is designed to receive wastewater from the house and to provide a degree of pretreatment for the waste, chiefly through removal of some of the solids in the waste. Note that these solids accumulate over time and necessitate periodic pumping of the septic tank. Currently septic tanks are equipped with two access risers (normally constructed of concrete), which are designed to be at least 6 inches above the ground surface to prevent surface and shallow groundwater from entering the septic tank and to provide access for maintenance. **Care must be taken not to damage or cover these risers so that water inflow / infiltration can be prevented and the tank can be accessed for maintenance.**
2. In some installations, a pump tank - a concrete tank, very similar to the septic tank, which contains a pump along with the associated controls / componentry. The pump tank and pump is designed to receive effluent from the septic tank, and pump the effluent to a disposal field located at a higher elevation and/or to a pressurized distribution network in the disposal field. **The pump tank also has an access riser which must be protected in a similar manner to that indicated for the septic tank.** Servicing of the pump tank components often necessitates the assistance of a professional such as a septic tank installer or Certified Subsurface System Operator. The latter is required for operation and maintenance of certain types of systems.
3. A disposal field - a series of subsurface trenches and lines that are designed to distribute the effluent into the soil and provide for the ultimate treatment and disposal of the effluent. There are numerous variations on the design of the disposal field, related chiefly to the type of system chosen, site constraints, etc. Dependent on the type of disposal system, you may have to maintain a contract with a Certified Subsurface System Operator for operation and maintenance of your wastewater disposal system.

Utilization of Your Wastewater Disposal System

In order to obtain the maximum efficiency and life expectancy from your system, the following simple procedures must be adhered to:

1. **Practice water conservation.** This can include many practical considerations such as not leaving the water running while you brush your teeth, not overfilling the tub, limiting time in the shower, not replacing low flow fixtures with those of higher flows, over rinsing dishes (allow the dishwasher to do its job), immediate repair of any leaking fixtures, running washing machines and dishwashers only when full, etc.

NOTE: Washing machines generate significant volumes of wastewater. As a result, laundry activities should be spread over the week as opposed to accumulating all of laundry until the weekend.

2. **Do not utilize your wastewater disposal system as a trash can by dumping nondegradables down your drains or toilet.** These include cigarette butts, sanitary products, grease, plastics, disposable diapers, etc. Avoid use of garbage disposals. Do not retrofit garbage disposals unless the system is specifically permitted for their use. Also, do not dump harmful chemicals down the drain. These include petroleum products, paint, paint thinner, pesticides, antifreeze, etc.

Maintenance of Your Wastewater Disposal System

Every wastewater disposal system requires maintenance in order to function properly. The specific maintenance required is related to the type of system. The following are general considerations that apply to all systems.

1. **Protect your wastewater disposal system components including the tanks, access risers, disposal field and associated components.** Do not drive or park on any portion of the system. The area over the disposal field should be left undisturbed with the grass cover being maintained as you would your lawn. Location of trees and shrubs on or in close proximity to the disposal field is not recommended since roots may clog or damage your drain lines. Additionally, great care must be exercised when considering the addition of any structure(s) to the site. The location of any appurtenances cannot encroach on the installation or repair areas for your system. It is not recommended that irrigation systems be located in proximity to the disposal system since their construction can cause system damage and/or result in additional hydraulic load on the disposal field.
2. **Protect the system from excess surface and shallow groundwater.** The land surface on and around the wastewater disposal system should be landscaped to shed rainfall and runoff and prevent ponding. Be sure that foundation drains, runoff from roofs and drives, etc. are diverted away from the disposal system.
3. **Regularly have the septic tank / pump tank pumped and cleaned by a permitted septage hauler.** Although the necessary frequency of pumping varies with the household and system, most tanks need **pumping at a frequency of 3-5 years** and at any time solids occupy one-fourth to one-third of the septic tank liquid depth.

Note that all septic tanks being currently installed incorporate an effluent filter within the outlet compartment of the septic tank. This filter is to be cleaned anytime the septic tank is pumped. If plumbing becomes sluggish, this filter should be checked. If filter service is found to be necessary, the tank is to be pumped, the filter cleaned and the filter reinstalled.

4. **Be alert to warning signs that your system may not be functioning properly.**
These include sewage surfacing over the disposal system, sewage backups / slow draining in the house, lush growth over the disposal system, sewage odors, etc.
5. **Do not make or allow repairs to your system unless all necessary permits are obtained from Wake County Department of Environmental Services.**
6. **Commercial additives for septic tank systems** - It has generally not been demonstrated that these additives enhance the function of septic systems or reduce the need for tank pumping and other necessary maintenance.
7. **Special maintenance considerations** - As already alluded to, some of the more complex wastewater disposal systems require that you retain / maintain the services of a Certified Wastewater System Operator in order to comply with Laws and Rules and maintain a valid operation permit for your system. In Wake County this maintenance requirement should be recorded with Register of Deeds if applicable.

Where Do I Obtain Information and Assistance?

If you are purchasing a new home, you should request a copy of your wastewater system permit from the builder / seller along with information regarding any special maintenance requirements. You may also obtain information and assistance from the **Wake County Department of Environmental Services**, 336 Fayetteville Street Mall, Raleigh, NC, Telephone (919) 856-7400. The County also maintains an Internet web site at <http://www.wakegov.com/environment>. This site contains much useful information and a number of links.

BSM 12/14/05

**Bobbitt Design Build, Inc.
NW Harnett Fire Station 3
Harnett County, North Carolina**

**Engineered Option Permit
Conventional Gravity System**

Operation and Maintenance Procedures



**MacConnell & Associates, P.C.
501 Cascade Pointe Lane, Suite 103
Cary, North Carolina 27513**

**P.O. Box 129
Morrisville, North Carolina 27560**

Phone: (919) 467-1239

Fax: (919) 319-6510

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Operation and Maintenance Procedures shall be as contained in the following Approvals:

Innovative Wastewater System No.: IWWS-2015-03-R2