

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER PERMIT

NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED UNTIL AN AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION AUTHORIZATION HAS BEEN ISSUED

PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/OR IF SITE IS ALTERED OR INTENDED USE CHANGED

OPERATIONS PERMIT

PERMIT # WRP-020733-2019

APPLICATION DATE: 06/20/2019

BLDG. PERMIT#: RBPR-019307-2019

PIN: 0771963098

RECORDED: Yes

TOWNSHIP: 18 - Swift Creek

JURISDICTION: Wake County

ZONING: R-40W

APPLICANT: Gary Morehouse

BUSINESS PHONE: (919) 859-0669

HOME PHONE:

MOBILE PHONE:

HD USE: 101A CONVENTIONAL ONE-FAMILY HOUSE

EXISTING USE:

SITE ADDRESS: 2109 GARDENBROOK DR

SUBDIVISION: SANCTUARY @ YATES MILL PH 1

LOT: 41

ACRES: 0.69

DIRECTIONS: Theys Road to Pine Drive; turn onto Gardenbrook, lot on left

Systems defined as either type III-b, III-g with a pump, IV, V or VI, in accordance with the North Carolina administrative code 15A NCAC 18a .1961, table V as adopted by reference in the "Regulations Governing Wastewater Treatment Dispersal Systems in Wake County", requires Wake County Environmental Services to conduct periodic inspections of the system type pursuant to 15A NCAC 18a. 1961 (j). Fees for these inspections will be charged as per the approved Fee Schedule. In addition, all systems are to be operated and maintained as specified in 15A NCAC 18A .1961. This permit is based in part on information provided by the homeowner and/or his/her representative in the application submitted for this permit. The Environmental Health Specialist is not responsible for false or misleading information contained in the application. The environmental health specialist is also not responsible for concealed conditions on the property or for statements in this report that may have resulted from false or misleading statements provided to him/her in the application. Neither Wake County nor the Environmental Health Specialist warrants that the septic tank system will continue to function satisfactorily in the future or that the water supply will remain potable.

OPERATION PERMIT VALID FOR: No Expiration

INSTALLED BY: MEDLIN, DENNIS E - 1232 - IV

PROPRIETARY SYSTEM: EZ1203HG - EZFlow EZ 1203H Geo **PRETREATMENT SYSTEM:**

SYSTEM TYPE INSTALLED: III B

OPERATION PERMIT: STATUS: Issued

ISSUED BY: Kristi Marks

ISSUED DATE: 03/16/2020

SEPTIC TANK: Mitchell Concrete - STB-381 - 1250 gallons

DATE OF MANUFACTURE: 12/13/2019 **FILTER:** Polylok - PL-68

GREASE TRAP:

DATE OF MANUFACTURE: **FILTER:**

DOSING PUMP TANK: Mitchell - PT-364 - 1200 gal - 25.6 gal/in

DATE OF MANUFACTURE: 11/19/2019 **FILTER:**

CC1: 999,822

ETM1: 30

CC2:

ETM2:

RECIRCULATION TANK:

DATE OF MANUFACTURE:

CC1:

ETM1:

CC2:

ETM2:

SEPTIC TANK ELEVATION: 10.00

GREASE TRAP ELEVATION:

DOSING PUMP TANK ELEVATION: 10.66

RECIRCULATION TANK ELEVATION:

DISTRIBUTION DEVICE ELEVATION: 2

INSTALLED TRENCH DEPTH	INSTALLED AGGREGATE DEPTH	INSTALLED TRENCH LENGTH	INSTALLED TRENCH BOTTOM ELEVATION
22	12	55	4.41
22	12	120	5.41
22	12	120	7.41
22	12	105	8.41

ACTUAL PRESSURE HEAD: 2

ACTUAL FLOW RATE: 39

ACTUAL DOSE VOLUME: 242

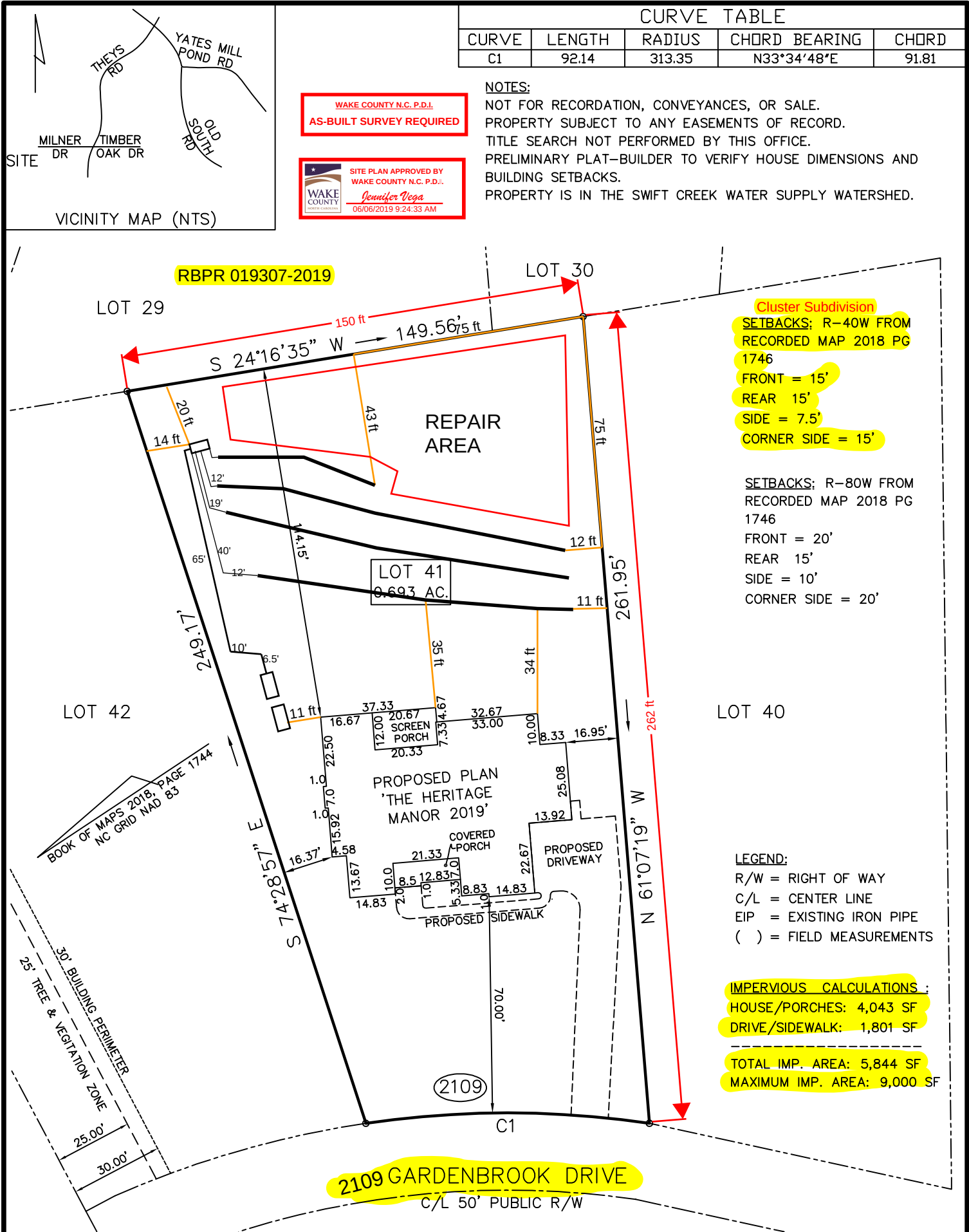
SPECIFIC OPERATION REQUIREMENTS:

4 bedroom SFD, 480 gal/day system.

ISSUED BY:

Kristina Marks

DATE: 03/16/2020



THIS PROPERTY IS NOT LOCATED IN AN AREA DESIGNATED AS HAVING SPECIAL FLOOD HAZARDS ACCORDING TO FLOOD INSURANCE RATE MAP #3720073300 J . EFFECTIVE DATE: MAY 2, 2006.

LOT 41 BLOCK SECTION
SUBDIVISION SANCTUARY @ YATES MILL - PHASE 1

RECORDED IN BOOK OF MAPS 2018 PAGE 1743-46 WAKE COUNTY REGISTRY

PLOT PLAN
SAW/MW
2019086

I, SONYA A. WARD, HEREBY CERTIFY THAT THIS MAP IS CORRECT, THAT THE BUILDINGS LIE WHOLLY ON THE LOT, AND THAT THERE ARE NO ENCROACHMENTS OF OTHER BUILDINGS ON THE SAID LOT, EXCEPT AS SHOWN ON SURVEY.

SURVEY FOR: POYTHRESS HOMES, INC
SWIFT CREEK TOWNSHIP WAKE COUNTY NC
SCALE: 1"=40'
DATE: 04/25/19
BOOK #:
WARD SURVEYING SERVICES, PLLC
LAND SURVEYING & PLANNING
APEX, N.C. (919) 367-7858



Environmental Services

TEL 919 856 7400
FAX 919 856 7407

Water Quality Division
336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602

2/18/2020

REQUIREMENTS TO COMPLETE YOUR PRESSURE MANIFOLD SYSTEM

NAME: AWT
ADDRESS: 501 N. Salem Street, Apex NC 27502
Re: Pressure Manifold Wastewater Dispersal System
SEPTIC PERMIT: WRP-020733-2019
PIN: 0771 96 3098
Building Permit: RBPR-019307-2019
Property Description: SANCTUARY @ YATES MILL PH 1 Lot 41, 0.69 Ac

Dear Sir/Madam:

Enclosed is your approved pressure manifold installation plan and the "Pressure Manifold Sewage Disposal System Maintenance Information Sheet".

To complete your permit:

System Installation - A contractor **CERTIFIED** by the State of North Carolina to at least a **LEVEL II** certification, and **REGISTERED** in Wake County, must be used to install your system.

A copy of the "Pressure Manifold Sewage Disposal System Maintenance Information Sheet" and a copy of the "Wake County Well and Septic System Owner's Guide", which contain information essential to the long-term performance of this wastewater disposal system, must be forwarded to the owner or user of the system, if other than yourself.

ANY PROPOSED MODIFICATION TO THE APPROVED PLANS MUST BE COORDINATED WITH YOUR SYSTEM DESIGNER

Please call (919) 868-4985 or email at Jie.Liu@wakegov.com if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Jie Liu".

Jie Liu, P.E., REHS
Environmental Health Manager - Engineer

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER PERMIT

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INTENDED USE CHANGED***

CONSTRUCTION AUTHORIZATION PERMIT**PERMIT # WRP-020733-2019****APPLICATION DATE:** 06/20/2019**BLDG. PERMIT#:** RBPR-019307-2019**PIN:** 0771963098**RECORDED:** Yes**TOWNSHIP:** 18 - Swift Creek**JURISDICTION:** Wake County**ZONING:** R-40W**APPLICANT:** Gary Morehouse**BUSINESS PHONE:** (919) 859-0669**HOME PHONE:****MOBILE PHONE:****HD USE:** 101A CONVENTIONAL ONE-FAMILY HOUSE**EXISTING USE:****SITE ADDRESS:** 2109 GARDENBROOK DR**SUBDIVISION:** SANCTUARY @ YATES MILL PH 1**LOT:** 41**ACRES:** 0.69**DIRECTIONS:** Theys Road to Pine Drive; turn onto Gardenbrook, lot on left

Contractors shall install system on contour. See attached SITE PLAN for wastewater system design and well location. No underground utilities, water lines or sprinklers systems may be located in the original system, or permit areas. A septic tank filter with two risers for access is required. The wastewater system shall not be covered or placed into use until inspected by the Wake County Department of Environmental Services and Operations Permit issued. An Accepted Status System may be used in place of conventional system, if it can be placed in the permitted/authorized trench footprint (except reduction in line length and/or number as allowed for in approval) and the installation in accordance with the accepted system approval, without unauthorized product alteration. If permit required use of an Accepted Status System, substitution with another accepted status system may be made, as long as no changes are necessary in the location of each nitrifications line (including any increase in line length), trench depth or effluent distribution method. If changes are necessary, prior approval by this office is required before system installation. Maximum depth of line is calculated using the downhill side of the trench and includes slope correction.

CONSTRUCTION AUTHORIZATION PERMIT VALID FOR: Five Years**CONSTRUCTION AUTHORIZATION PERMIT: CA STATUS:** Issued**BY:** Jie Liu**DATE:** 02/18/2020**CA VALID FOR:** Five Years**DESIGN FLOW:** 480 GALLONS**BASEMENT:** No**BASEMENT FIXTURES:****SEPTIC TANK:** 1200 GALLONS**SEPTIC TANK FILTER:** Yes**DOSING PUMP TANK:** 1200 GALLONS**DOSING PUMP TANK FILTER:****GREASE TRAP:****GREASE TRAP FILTER:****RECIRCULATION PUMP TANK:****RECIRCULATION PUMP TANK FILTER:****PROPOSED SYSTEM:****EXISTING SYSTEM:****DRAINFIELD SQ. FT:** 1,200**AGGREGATE DEPTH:** 12**MAX. TRENCH DEPTH:** 22 INCHES**DISTRIBUTION DEVICE:** PM - Pressure Manifold**TRENCH #:** 4**TRENCH LENGTH:****TRENCH WIDTH:** 36 INCHES**TOTAL TRENCH LENGTH:** 400 FEET

55,120,120,105 FEET

CENTER SPACING: 9 FEET**MINIMUM SOIL COVER:** 6 INCHES

PRETREATMENT:
SUBFIELDS #:
PUMP TDH: 17.2 FEET

APPROVAL #:
PUMP DESIGN FLOW: 40.58
ZONE VALVE:

ASDMS REQUIRED: No
P.E. SIGN OFF/ASBUILT REQUIRED: No

LINE OF CREDIT REQUIRED: No

OPERATOR REQUIRED: No

TRIPARTY AGREEMENT REQUIRED: No

SPECIFIC CONSTRUCTION AUTHORIZATION REQUIREMENTS:

ACCEPTED STATUS SYSTEM REDUCTION HAS BEEN TAKEN FOR THE DESIGN OF THE INITIAL AND REPAIR SYSTEM FOR THIS 4 BEDROOM DWELLING. INITIAL SYSTEM IS A PRESSURE MANIFOLD SYSTEM PUMPING TO 4 UNEQUAL DRAINLINES WITH 18" TRENCH BOTTOM. REPAIR SYSTEM IS A PRESSURE MANIFOLD SYSTEM PUMPING TO 4 UNEQUAL DRAINLINES WITH 18" TRENCH BOTTOM. 1200 GALLON SEPTIC TANK AND 1200 GALLON PUMP TANKS ARE PROPOSED. FOUNDATION DRAIN ALLOWED. WHEN INSTALLING SYSTEM, MAINTAIN ALL REQUIRED SETBACKS. DO NOT DISTURB OR REMOVE ANY SOIL IN INITIAL OR REPAIR AREAS. MUST MAINTAIN REQUIRED EMERGENCY STORAGE IN THE PUMP TANK. A NEMA 4X CONTROL PANEL WITH TWO BREAKERS, TWO POWER SUPPLIES, ELAPSED TIME METER AND CYCLE COUNTER ARE REQUIRED. IF FLAGS ARE MISSING, CALL DESIGNER TO RE-FLAG.

THIS SYSTEM IS DESIGNED BY A CONSULTANT AND MUST BE INSTALLED PER THE APPROVED DESIGN, PLAN AND SPECIFICATIONS. ANY DEVIATION MUST BE APPROVED BY THE DESIGNER AND WAKE COUNTY ENVIRONMENTAL SERVICES PRIOR TO SYSTEM INSTALLATION. PLEASE CONTACT ENVIRONMENTAL SERVICES IF ANY QUESTIONS OR PROBLEMS ARISE PRIOR TO INSTALLATION.

Issued By:



Date: 02/18/2020

*** CA PART A - C ***

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/Pages/default.aspx>. This site contains much useful information and a number of links.

BSM 7/18/18



Environmental Services

TEL 919 856 7400
FAX 919 743 4772

Water Quality Division
336 Fayetteville Street • Raleigh, NC 27602
www.wakegov.com

PRESSURE MANIFOLD SYSTEMS

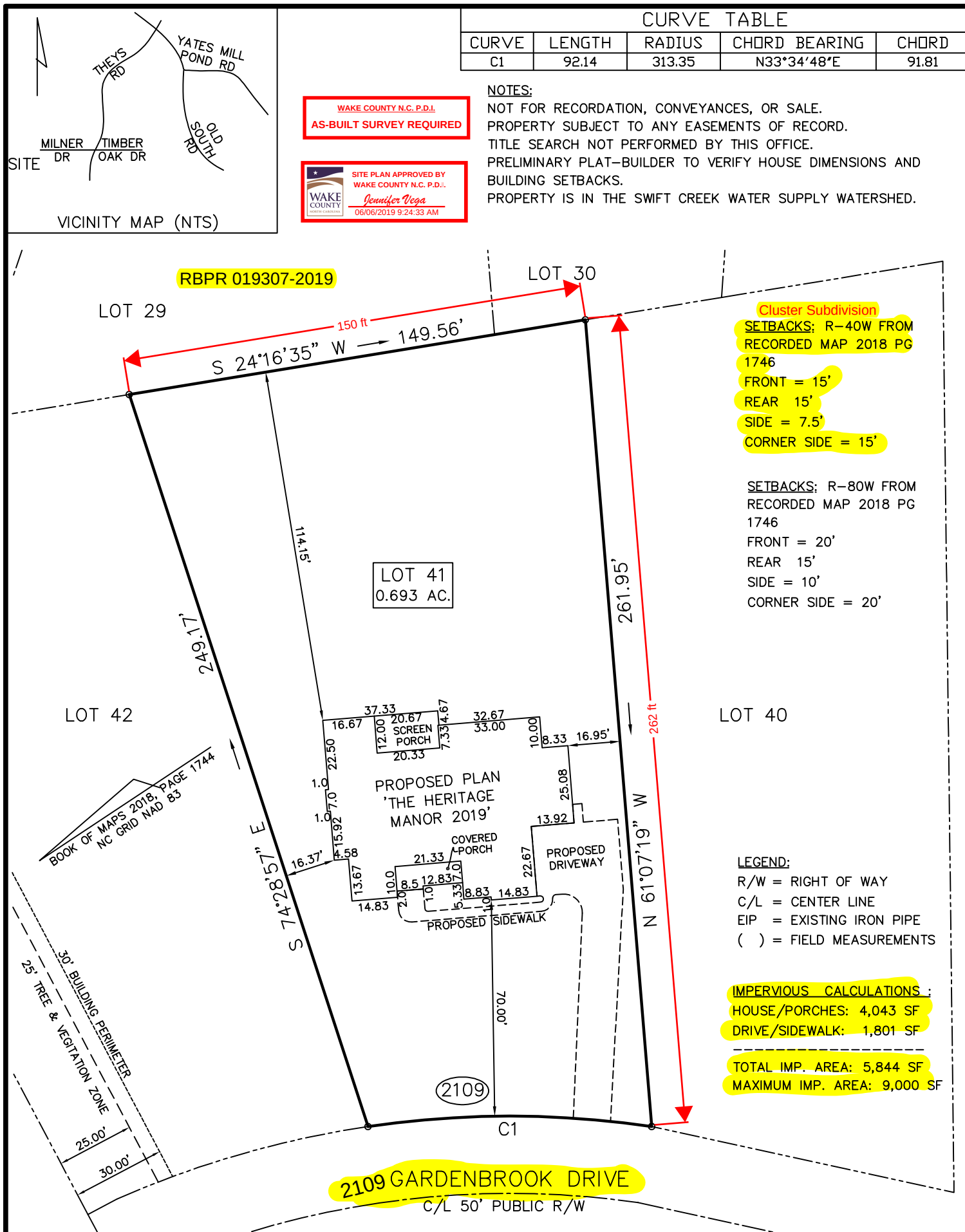
A Pressure Manifold System is one of several types of septic systems approved for use in Wake County. The Pressure Manifold System, while somewhat more expensive to install, is a flexible and high-quality method of wastewater disposal. A pump doses a pressure distribution manifold that disperses the effluent evenly to each trench. Dosed systems are more common for larger flows. The manifold can be constructed with different size taps to accommodate different trench lengths. This allows for better utilization of the area on the lot. The pressure manifold can include valves or plugs that permit more control over trench loading or trench resting.

Experience and study have shown that pressure manifold systems require routine maintenance in order to function properly. Items 1, 4 and 6 are also recommended for conventional septic systems. The maintenance schedule frequency is as follows:

<u>System Component</u>	<u>Frequency</u>	<u>Maintenance</u>
1. Septic Tank	6-12 months 1-3 years	Check riser condition (must be accessible from ground surface), excess in/exfiltration, entry of water at riser, and solids accumulation. Check and clean septic tank filter. Pump septage when 1/3 to 1/4 of the liquid capacity of the tank is occupied by solids.
2. Pump or Dosing Tank	6-12 months	Check riser conditions (must be accessible from ground surface), excess in/exfiltration, entry of water at riser, and solids accumulation. Pump sludge accumulation as required and when septic tank is pumped. Check pump(s), controls, floats, electrical connections, and alarm for proper operation. Wash (hose) sludge accumulation from pump housing.
3. Supply lines (Manifold)	6-12 months	Check for settling, pipe exposure and leakage.
4. Ground Absorption Field	1-4 weeks 6-12 months	Maintain vegetative cover (mow grass and remove weeds and brush). Check for settling, erosion and surfacing of effluent. Check site drainage, eliminate low or settled areas and divert surface or shallow groundwater movement around fields.
5. Pressure Manifold	6-12 months	Flush sludge from pressure manifold (any discharge sludge and effluent is to be treated with a chlorine solution). Check and reset pressure head.
6. General	At all times	Prohibit vehicular or equipment traffic on ground absorption field. Prohibit tillage (gardening) or other soil disturbance over ground absorption field. Practice water conservation to reduce wastewater load on system. Do not permit entry of grease and non-domestic waste to system. Use of a garbage disposal is <u>prohibited</u> . Addition of chemical or biological additives has <u>not</u> been demonstrated to be necessary to maintain proper system function. Prevention of root intervention on lateral lines and trenches may be necessary on certain sites. Surface and groundwater diversion structures must be maintained.

A certified operator may be required.

CA PART A



~~THIS PROPERTY IS NOT LOCATED IN AN AREA DESIGNATED AS HAVING SPECIAL FLOOD HAZARDS ACCORDING TO FLOOD INSURANCE RATE MAP #3720073300 J . EFFECTIVE DATE: MAY 2, 2006.~~

LOT 41 BLOCK _____ SECTION _____
SUBDIVISION SANCTUARY @ YATES MILL - PHASE 1

RECORDED IN BOOK OF MAPS 2018 PAGE 1743-46 WAKE COUNTY REGISTRY

PLOT PLAN

SAW/MW
2019086

~~I, SONYA A. WARD, HEREBY CERTIFY THAT THIS MAP IS CORRECT, THAT THE BUILDINGS LIE WHOLLY ON THE LOT, AND THAT THERE ARE NO ENCROACHMENTS OF OTHER BUILDINGS ON THE SAID LOT, EXCEPT AS SHOWN ON SURVEY.~~

SURVEY FOR:

POYTHRESS HOMES, INC

SWIFT CREEK TOWNSHIP

WAKE COUNTY

NC

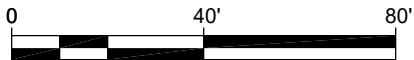
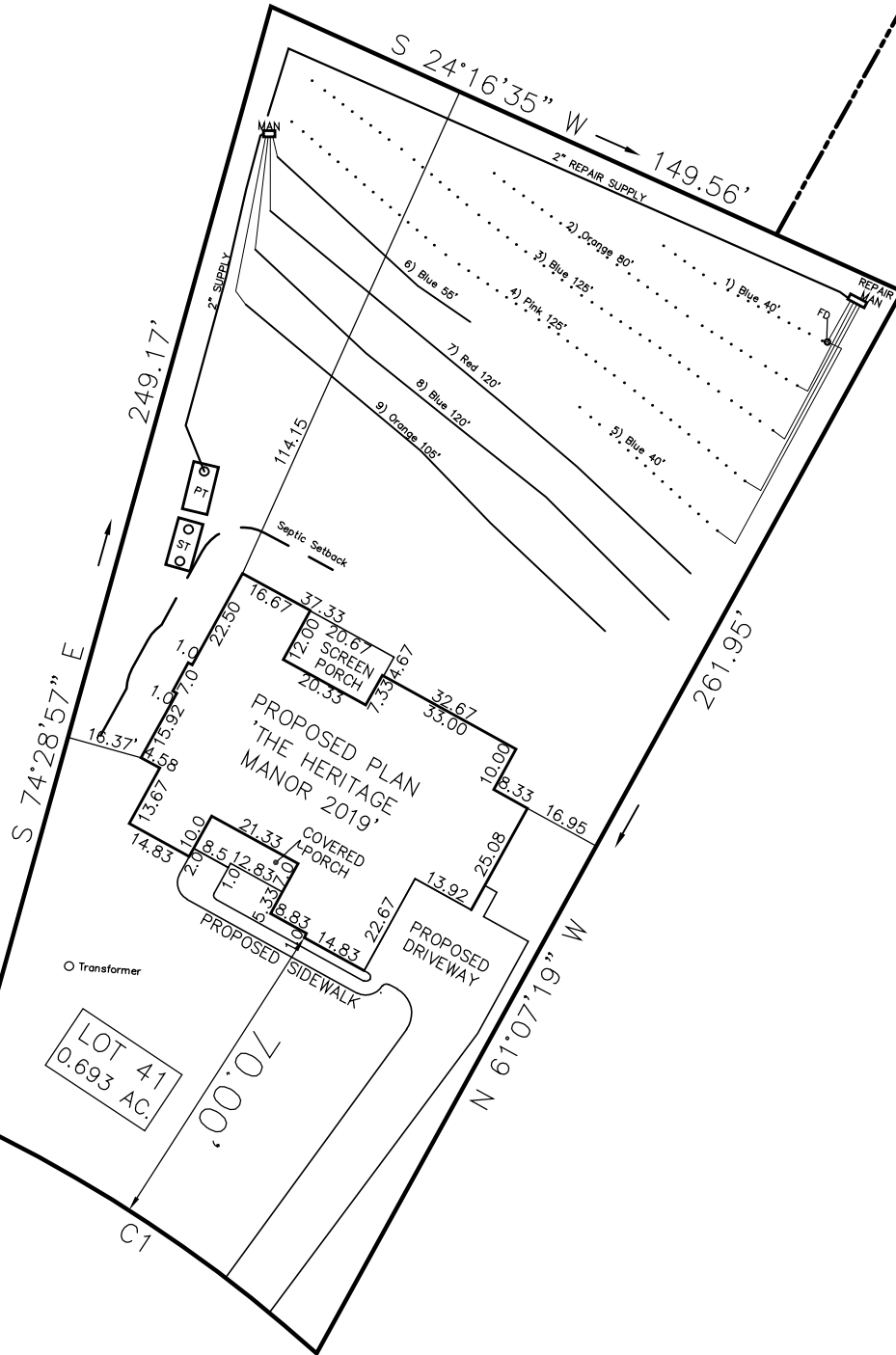
SCALE: 1"=40'

DATE: 04/25/19

BOOK #:

WARD SURVEYING SERVICES, PLLC
LAND SURVEYING & PLANNING
APEX, N.C. (919) 367-7858

CA PART B



SCALED FOR 8.5"x11" SHEET

SHEET TITLE

Property Layout

PROJECT CONTACT:

K. Morris 919-819-3033

DRAWN BY: K. Green

CREATED ON: 6/26/19

REVISED BY: G. Morehouse

REVISED ON: 2/10/2020

SHEET NAME:

W/W/ 1

Property Information

Poythress Homes
2109 Garden Brook Drive
Raleigh, NC 27606
Wake County
PIN: 0771963098

GENERAL NOTES

1) BOUNDARY INFORMATION TAKEN FROM PROPERTY SURVEY PERFORMED BY WARD SURVEYING SERVICES, PLLC

2) LOCATION OF SEPTIC COMPONENTS (EXISTING AND PROPOSED) TAKEN FROM ENGINEERS SURVEY.

3) DRAWING DOES NOT REPRESENT A SURVEY PRODUCT.

4) DRAWING SCALED FOR 8.5"x14" SHEET.



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

CA PART C



Engineers and Soil Scientists

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



**Department of Environmental Services
Wake County**

Approved by

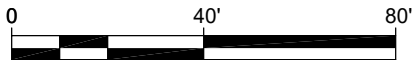
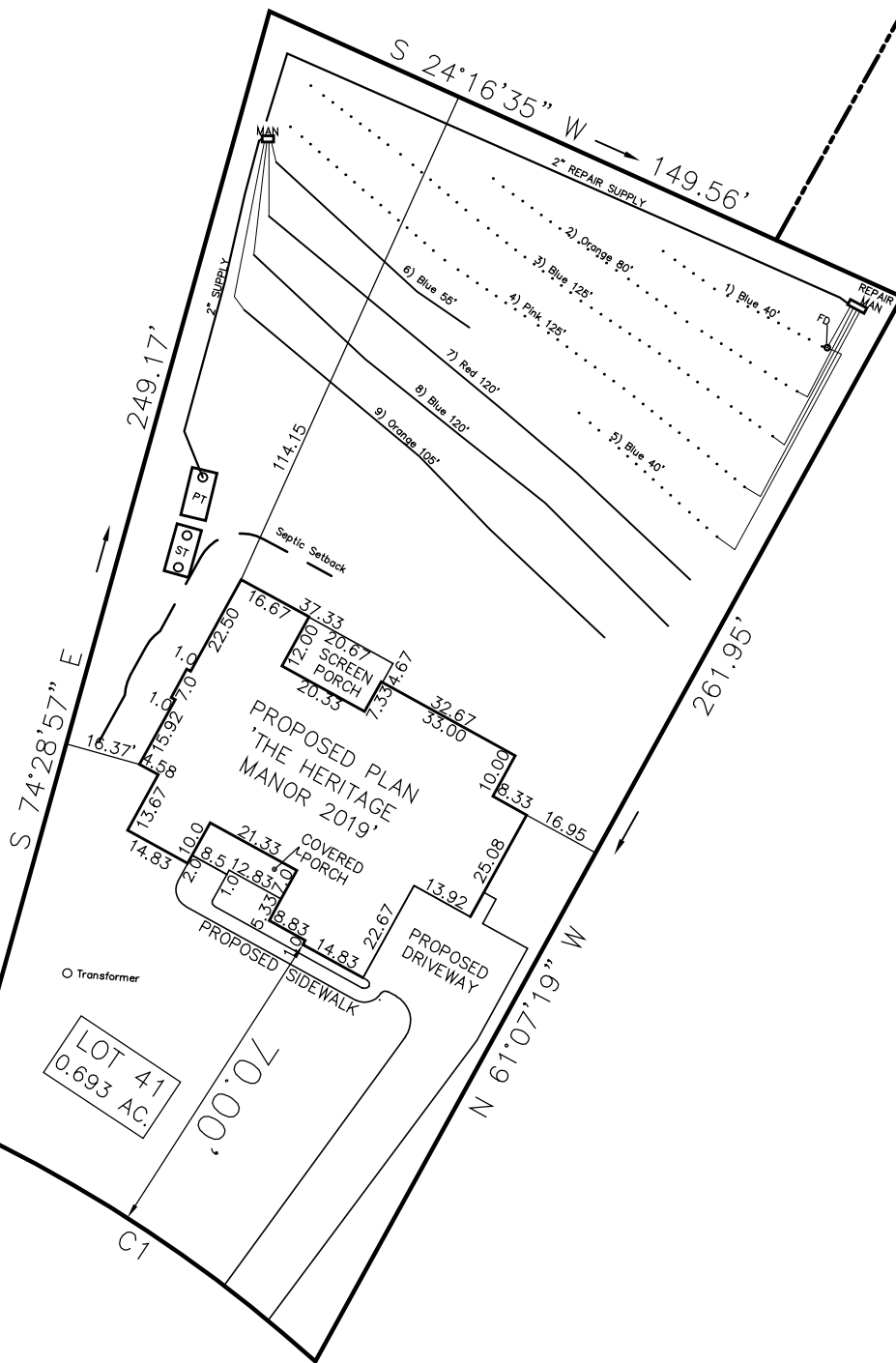
Tiedin
Date: 02/18/2020

Review of this document has been made only for conformance with the design concept of the project and approval shall not relieve the designer and/or contractor from responsibility for any errors therein or for furnishing the materials, and equipment of proper dimension, size, quantity, quality and all performance characteristics to meet the requirements and intent of the contract documents.

Project Manager Kathy Morris, REHS (919)819-3033

REVISED 2/10/2020
By Gary Morehouse

New construction		Date: 6/27/2019 County: Wake	
Name:	Poythress Homes 224 Tower View Court Cary NC 27513	P.I.N. #:	0771-96-3098
Phone:	Steve Poythress (919)422-0862	Property address:	2109 Gardenbrook
		Subdiv:	Sanctuary
		Lot#:	41
		Water supply:	community
DESIGN PARAMETERS		TANKAGE	
LTAR	0.3 gal/sq.ft/day	LOCKABLE RISERS RECOMMENDED	
# BEDROOMS	4	SEPTIC TANK	1200 gallons, min.
BASEMENT	no	with filter	
REPAIR:	pman to accp - see repair tap chart	PUMP TANK	1200 gallons, min.
			21.07 gal/in
DIMENSIONS		TRENCHES	
SQ. FT	1600 conventional	WIDTH	36 inches
LINEAR FT	400 accepted, with 25% reduction	DEPTH	18 inches
	400 (actual)	TRENCH FILL	accepted media
TAP SIZE VARIES WITH TRENCH LENGTH.		STONE DEPTH	n/a inches
SEE TAP CHART.		STONE SIZE	n/a or larger
MANIFOLD & SUPPLY		PUMP CRITERIA	
DIAMETER	4 inches Sch. 80	ELEVATION HEAD	10.38 ft
LENGTH	42 inches (minimum)	DESIGN HEAD	2.00 ft
# OF TAPS	4	FRICTION & FITTINGS LOSS	4.82 ft
		TOTAL	17.20 ft
		FLOW RATE	40.58 gpm
SUPPLY LINE	80 feet	DOSING VOLUME	190 gallons
DIAMETER	2 inches 2.067	DRAWDOWN	9.0 inches
PUMP AND CONTROLS			
PUMP <u>Zoeller N152</u>		PANEL: Rhombus 1121W914H 8AC 10E 15A 17A	
<u>1 phase, 115 volts, 8.5 amps</u>		with event counter, elapsed time meter, NEMA 4X box,	
		separate alarm circuit	
other equipment that meets or exceeds the specifications may be substituted. Contact designer if questions.			
The plans & specs for this Onsite Sewage Treatment & Disposal System have been prepared according to criteria in North Carolina's rules and regulations covering onsite systems, to additional county standards (if applicable), and to generally-accepted design and engineering principles. LTAR's, trench dimensions, and wasteloads are determined or confirmed by the county Health Department (or other soil science professionals) and are included as conditions of the permit. AWT accepts no responsibility for changes in these plans & specs unless we specifically authorize such changes in advance. If changes in specifications or locations of components are needed, please contact us for assistance in making such alterations <i>before</i> the component is installed.			



SCALED FOR 8.5\"X11\" SHEET

SHEET TITLE

Property Layout

PROJECT CONTACT:

K. Morris 919-819-3033

DRAWN BY: K. Green
CREATED ON: 6/26/19

REVISED BY: G. Morehouse
REVISED ON: 2/10/2020

SHEET NAME:

W/W/ 1

Property Information

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2109 Garden Brook Drive
Raleigh, NC 27606
Wake County
PIN: 0771963098

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

This summary of materials includes major components of the system, and is meant to assist the installer in preparing an estimate. It does not include consumable supplies (glue, etc.), exact numbers of fittings, or materials incidental to standard installation. It does not include any specified drainage - curtain drains, etc.

<u>septic tank</u>	1200	gallon	such as Shoaf STB-389
<u>effluent filter</u>	one	Polylok PL-68 or approved equal	
<u>pump tank</u>	1200	gallon	such as Shoaf PT-306
<u>safety net</u>	1		in PT Sim/Tech STF-24
<u>pump*</u>	one	Zoeller N152	
<u>panel</u>	simplex	Rhombus	1121W914H 8AC 10E 15A 17A
<u>floats</u>	three	with panel	mounted on float tree
<u>check valve</u>	one	2" diameter	1 in PT
<u>globe valve</u>	one	2" diameter	1 in PT
<u>gate valve</u>	one	2" diameter	1 at manifold
<u>threaded unions</u>	one	2" diameter	1 in PT
<u>supply line</u>	80	feet	2" Sch. 40 LENGTH IS APPROXIMATE
<u>manifolds</u>	42	inch (minimum 4" diam.	Sch. 80, in approved vault with cleanout and separate head-check fitting
<u>taps</u>	<u>1/2" Sch 40:</u>	<u>3/4" Sch 40:</u>	<u>2</u> <u>1" Sch 40:</u>
<u>4</u>	<u>1/2" Sch 80:</u>	<u>1</u> <u>3/4" Sch 80:</u>	<u>1</u> <u>1" Sch 80:</u>
<u>flow dividers</u>	none		
<u>y's</u>	none		
<u>inspection ports</u>	4	If installed outside manifold vault, install as tee, riser, and cap in each feeder pipe	
<u>feeder pipes</u>	as needed	3" Sch. 40	
<u>trenches</u>	400	feet,	polystyrene aggregate or chambers
<u>fittings</u>	couplings, tees, elbows, etc. as needed to connect components cleanouts, valve boxes, etc, as needed to provide access and protection to components		

System Curve Data	gpm	friction loss	TDH
	20	1.30	13.68
	30	2.76	15.13
	40	4.69	17.07
	50	7.09	19.47



WRP-20733

TAP CHART - INITIAL

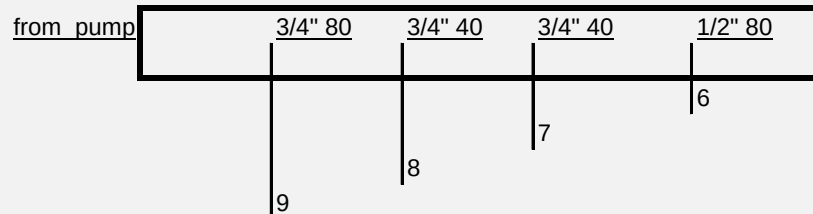
Lot 41 2109 Gardenbrook

Bench Mark		is = 102.9	set at	eip, left rear corner	Design Head: 2.00				
line	color	Elevation	available	used	tap size	flow/tap	gal/day	trench area	LINE LTAR
6	blue	100.6	55	55	1/2" 80	5.48	64.82	165	0.393
7	red	99.9	120	120	3/4" 40	12.50	147.86	360	0.411
8	blue	99.1	120	120	3/4" 40	12.50	147.86	360	0.411
9	orange	98.2	110	105	3/4" 80	10.10	119.47	315	0.379
		total	feet=	400	gal/min =	40.58	<u>LTAR =</u>		0.300
					antisiphon	0.00	<u>ltar + 5%=</u>		0.315
ELEVATIONS:		pump tank	95.1			40.58 GPM	INNOV. LTAR		0.400
		pump off	90.7	see PT diagram			(ltar + 5%)		0.420
		manifold	101.1						
		other		(such as highest point on supply line, if between pump tank and field)					

% PIPE VOLUME	72.93%	DESIGN FLOW	480	gpd
DOSE VOLUME	190	gal	PUMP RUN TIME	11.83
DOSE PUMP TIME	4.67	min/dose*	PUMP TANK GAL/IN	21.07
DRAWDOWN	9.00	in	ELEVATION HEAD	10.38
SUPPLY LINE LENGTH	80	ft	PUMPING UP HILL?	y
SUPPLY LINE VELOCITY	3.88			

A fitting for setting/adjusting pressure head in the manifold is required, other than the manifold cleanout

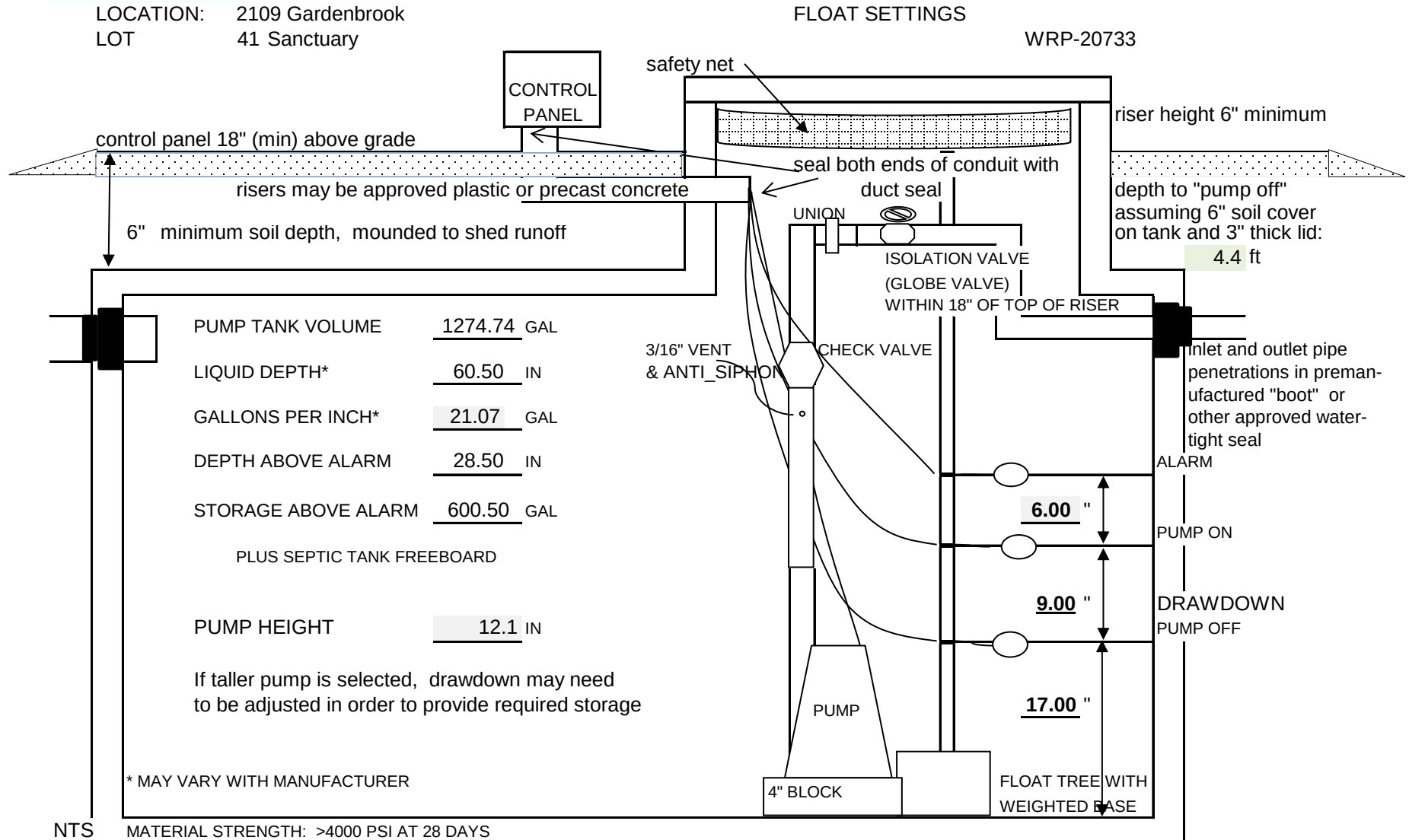
Schematic is not to scale. Place flow dividers and/or tees OUTSIDE the manifold vault.



specify pump whose manufacturer supports run time of less than 5 min

LOCATION: 2109 Gardenbrook
LOT 41 Sanctuary

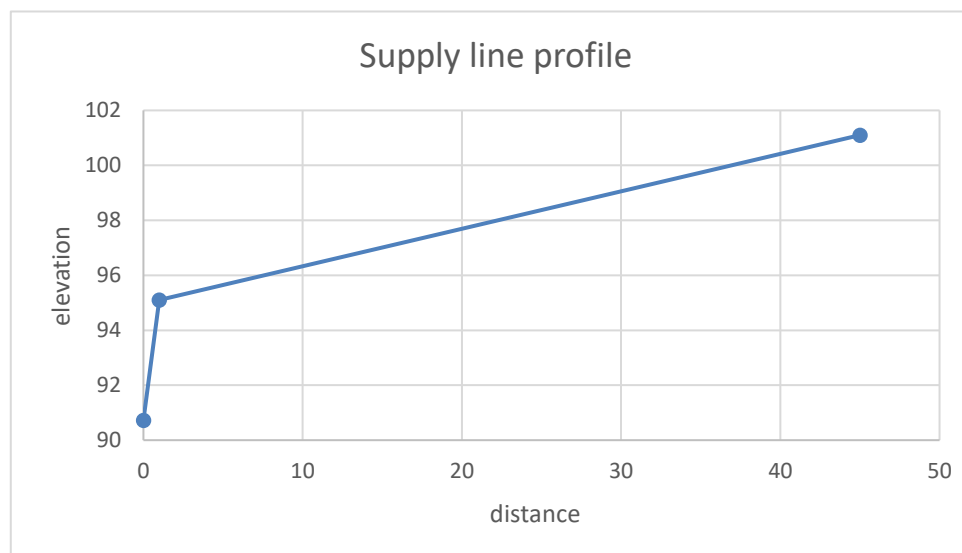
Pump tank vertical dimensions taken from Shoaf PT 306



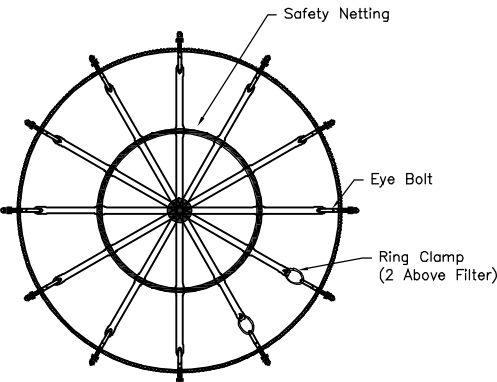
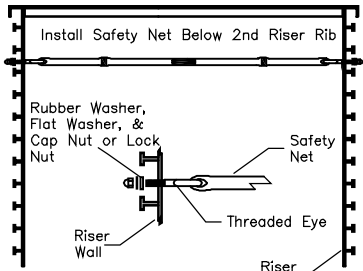


Permit WRP-20733
Location 2109 Gardenbrook

dist	elev	
0	90.725	pump off
1	95.1	supply line leaving tank
45	101.1	manifold



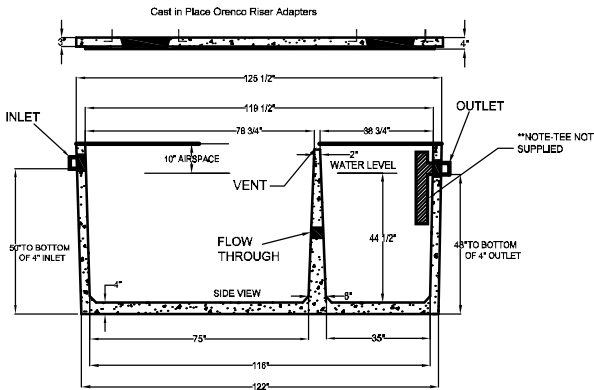
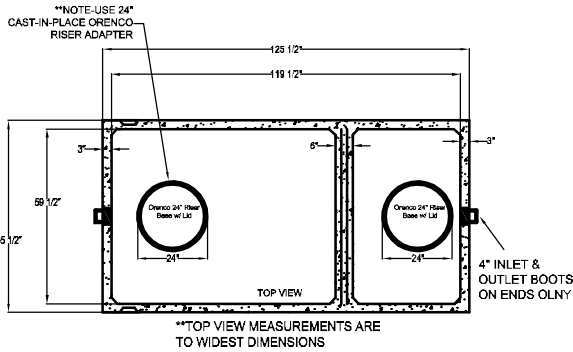
Install Safety Net In Each Access Riser that does not contain an Inner Lid



NOTE: Install 4 Ring Clamps if 8" (or greater) Filter is Used

NTS

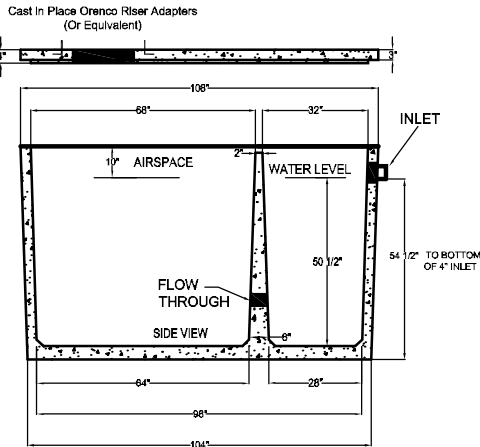
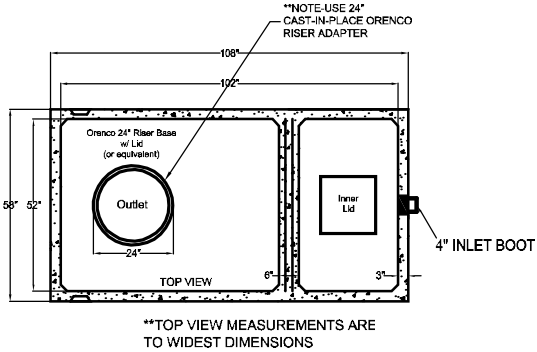
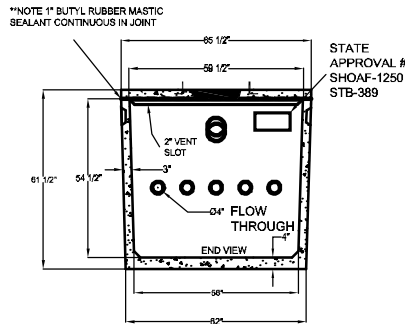
Safety Net
NTS SOURCE: Agri-Waste Technology, Inc.



NTS

Septic Tank (or equivalent 1,200-gallon tank)
NTS SOURCE: Shoaf Precast Septic, Inc.

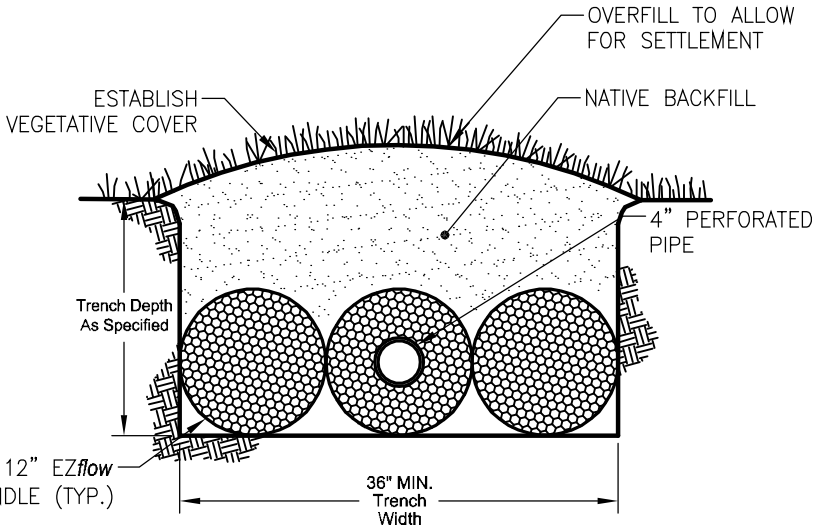
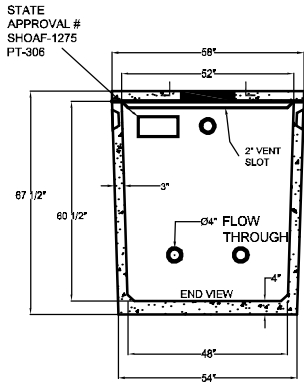
SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826
WWW.SHOAFPRECAST.COM
SHOAF-1,250 SEPTIC TANK
STB-389
LIQUID CAPACITY-1,252 GALLONS/10" AIRSPACE
TANK HEIGHT-61 1/2"
BOTTOM OF TANK TO CENTER OF INLET-62"
BOTTOM OF TANK TO CENTER OF OUTLET-50"
LENGTH TO WIDTH RATIO-2 TO 1
SIZE OF INLET & OUTLET-4" PIPE
TYPE OF INLET & OUTLET-POLYLOCK OR EQUAL (MEETS ASTM C-923)
CONCRETE PSI-4000; TANK WEIGHT- 11,000 LBS.
REINFORCEMENT PER STATE CODE
SCALE - N.T.S.



NTS

Pump Tank (or equivalent 1,200-gallon tank)
NTS SOURCE: Shoaf Precast Septic, Inc.

SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826
WWW.SHOAFPRECAST.COM
SHOAF-1,275 PUMP TANK
PT-306 NON TRAFFIC
LIQUID CAPACITY-1,287 GALLONS INCLUDING 10" AIRSPACE
GALLONS PER INCH-21.07 (AVERAGE)
TANK HEIGHT-67 1/2"
BOTTOM OF TANK TO CENTER OF INLET-56 1/2"
BOTTOM OF TANK TO CENTER OF OUTLET-59"
LENGTH TO WIDTH RATIO-2 TO 1
SIZE OF INLET & OUTLET-4" PIPE
TYPE OF INLET & OUTLET-POLYLOCK OR EQUAL (MEETS ASTM C-923)
CONCRETE PSI-4000; TANK WEIGHT- 10,500 LBS.
REINFORCEMENT PER STATE CODE
SCALE - N.T.S.



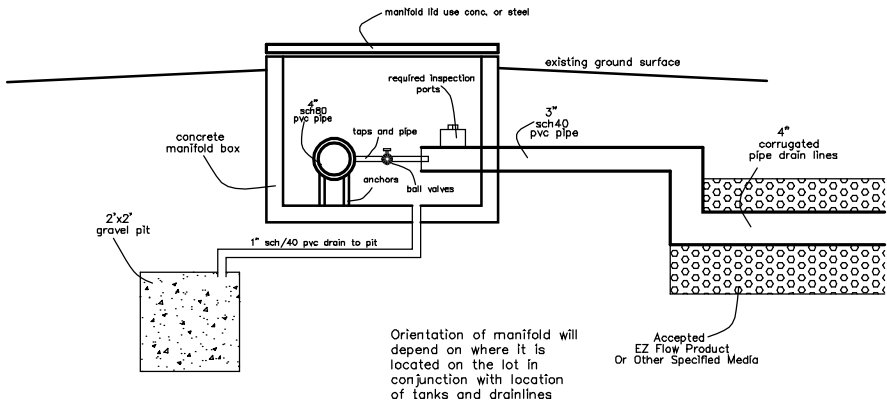
EZflow 1203H - GEO

- NOTES:
1. Bundles must be covered with earth backfill free of sticks, stones, or other debris.
 2. Earth Backfill should be mounded above the Natural Ground Surface to allow for settlement.
 3. Perforated corrugated plastic pipe shall meet requirements of ASTM D 2729.
 4. Pipe shall be level, 0.00% slope.
 5. End cap shall be provided at end of all corrugated plastic lines.
 6. Trench bottom shall be level (side to side and end to end).

NTS

Conventional Trench Detail
NTS SOURCE: Agri-Waste Technology, Inc.

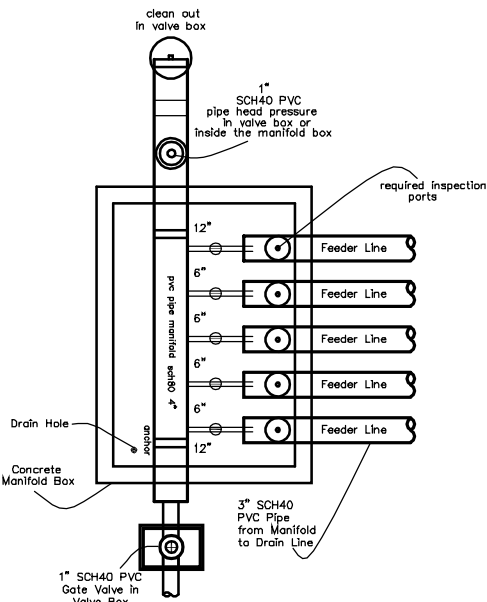
*SEE TAP SHEET FOR ACTUAL NUMBER OF TAPS



Orientation of manifold will depend on where it is located on the lot in conjunction with location of tanks and drainlines

NTS

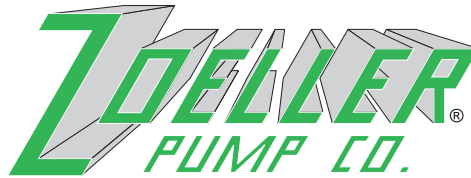
Manifold Detail - FOR ILLUSTRATION ONLY
NTS SOURCE: Agri-Waste Technology, Inc.



REV.	ISSUED DATE	DESCRIPTION
SHEET TITLE		
System Detail #1		
DRAWN BY:	CREATED ON:	
K. Chapman	4/16/18	
REVISED BY:	REVISED ON:	
RELEASED BY:	RELEASED ON:	
DRAWING NUMBER		
SD-1		

"QUALITY PUMPS SINCE 1939"

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.



SECTION: 3.20.014

FM1919

0504

Supersedes

0403

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
(502) 778-2731 • 1 (800) 928-PUMP • FAX (502) 774-3624

visit our web site:
www.zoeller.com

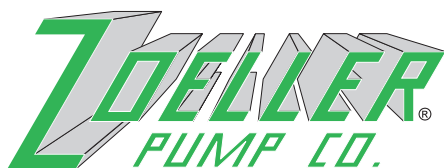
ZOELLER ON-SITE WASTEWATER PRODUCTS

INTRODUCING ZOELLER ON-SITE "DOSE-MATE" PUMPS

COMPARE THESE FEATURES

- Durable cast iron construction.
- Model 151 comes standard with a glass-filled polypropylene base.
- Corrosion resistant powder coated epoxy finish.
- Stainless steel lifting handle.
- Assembled with stainless steel bolts.
- Non-clogging engineered thermoplastic vortex impeller design.
- Model 151 - 1/3 HP passes 1/2" spherical solids.
- Model 152 - .4 HP passes 3/4" spherical solids.
- Model 153 - 1/2 HP passes 3/4" spherical solids.
- Motor - 60 Hz, 3450 RPM, oil-filled, hermetically sealed, automatic reset thermal overload protected.
- Carbon/Ceramic seals.
- Upper sleeve bearing and lower ball bearing running in bath of oil.
- 20 ft. UL Listed power cord with molded 3-wire plug.
- 1 1/2" NPT vertical discharge.
- BN and BE standard models include a 20 ft. variable level float switch.
- Operates at temperatures to 130°F (54°C) in effluent applications.
- All models include a 1 1/2" x 2" PVC adapter fitting.

Note: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.



Manufacturers of . . .



"QUALITY PUMPS SINCE 1939"

151/152/153 EFFLUENT SERIES

(For Pump Prefix Identification see News & Views 0052)

"DOSE-MATE"

FOR SEPTIC TANK - LOW PRESSURE PIPE (LPP)
AND ENHANCED FLOW STEP SYSTEMS

**EFFLUENT
SUBMERSIBLE**

1 1/2" NPT DISCHARGE



C US
Tested to UL Standard UL778
and Certified to CSA
Standard CSA22.2 No. 108



**Model N152/N153
High Head
Effluent**

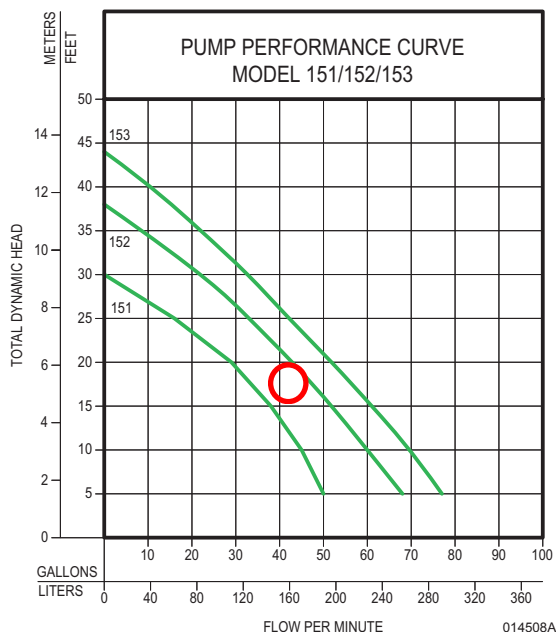
MODELS AVAILABLE

- N151/N152/N153 & E151/E152/E153 nonautomatic
- BN151/BN152/BN153 & BE151/BE152/BE153 packaged with Piggyback Variable Level Float Switch
- 1/3, .4 & 1/2 HP, 1Ph 115V or 230V



**POWDER
COATED
TOUGH™**

**Model BN152/BN153
High Head
Effluent**



**TOTAL DYNAMIC HEAD/FLOW
PER MINUTE
EFFLUENT AND DEWATERING**

MODEL		151		152		153	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	50	189	69	261	77	291
10	3.0	45	170	61	231	70	265
15	4.6	38	144	53	201	61	231
20	6.1	29	110	44	167	52	197
25	7.6	16	61	34	129	42	159
30	9.1	--	--	23	87	33	125
35	10.7	--	--	--	--	22	85
40	12.2	--	--	--	--	11	42
Shut-off Head:		30 ft. (9.1m)		38 ft. (11.6m)		44 ft. (13.4m)	

014508B

CONSULT FACTORY FOR SPECIAL APPLICATIONS

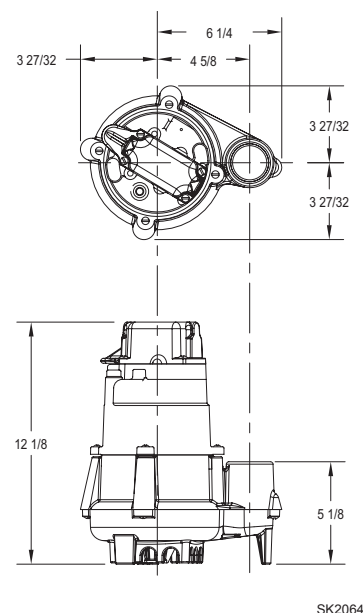
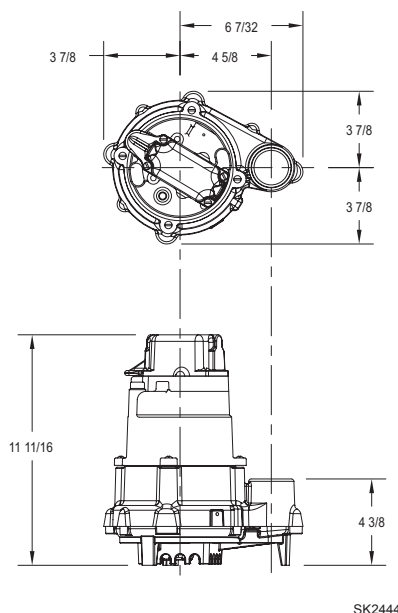
- Timed dosing panels available.
- Electrical alternators, for duplex systems, are available and supplied with an alarm.
- Variable level control switches are available for controlling single phase systems.
- Double piggyback variable level float switches are available for variable level long and short cycle controls.
- Sealed Qwik-Box available for outdoor installations. See FM1420.
- Over 130°F. (54°C.) special quotation required.

151/152/153 Series

151/152/153 MODELS					Control Selection	
Model	Volts-Ph	Mode	Amps		Simplex	Duplex
N151	115	1	Non	6.0	1	2 or 3
BN151	115	1	Auto	6.0	Included	2 or 3
E151	230	1	Non	3.2	1	2 or 3
BE151	230	1	Auto	3.2	Included	2 or 3
N152	115	1	Non	8.5	1	2 or 3
BN152	115	1	Auto	8.5	Included	2 or 3
E152	230	1	Non	4.3	1	2 or 3
BE152	230	1	Auto	4.3	Included	2 or 3
N153	115	1	Non	10.5	1	2 or 3
BN153	115	1	Auto	10.5	Included	2 or 3
E153	230	1	Non	5.3	1	2 or 3
BE153	30	1	Auto	5.3	Included	2 or 3

CAUTION

All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electric Code (NEC) and the Occupational Safety and Health Act (OSHA).



SELECTION GUIDE

1. Single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
2. See FM0712 for correct model of Electrical Alternator E-Pak.
3. Variable level control switch 10-0225 used as a control activator, specify duplex (3) or (4) float system.

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is engineered into the design of every Zoeller pump.



<http://www.zoeller.com>

ZOELLER
PUMP CO.

MAIL TO: P.O. BOX 16347
Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road
Louisville, KY 40211-1961
(502) 778-2731 • 1 (800) 928-PUMP
FAX (502) 774-3624

Manufacturers of..

"QUALITY PUMPS SINCE 1939"

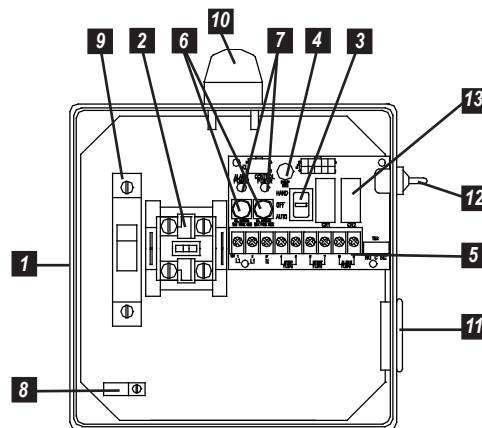
MODEL 112 Control Panel

Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.

PANEL COMPONENTS

1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use).
* Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Ground Lug**
9. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.



Model Shown 1121W914X



STANDARD ALARM PACKAGE

10. **Red Alarm Beacon** provides 360° visual check of alarm condition.
Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
11. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating).
Note: NEMA 1 style utilizes an internally mounted buzzer in lieu of horn.
12. **Exterior Alarm Test/Normal/Silence Switch** allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition has been cleared.
13. **Horn Silence Relay** (mounted on circuit board).

NOTE: other options available.

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' SJE SignalMaster® control switches
- Complete with step-by-step installation instructions
- Five-year limited warranty

OPTIONAL FEATURE

- **34" (86.36cm) Panel Mounting Post** (Factory Installed). Includes Simplex Installation Kit (Enclosure upsized to 10" x 8" x 6" (25.4 x 20.32 x 15.24 cm). Max. Enclosure size 14" x 12" x 6" (35.56 x 30.48 x 15.24 cm)

**SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.
SEE PRICE BOOK FOR LIST PRICE.**

**SJE
Rhombus**

PO Box 1708, Detroit Lakes, MN 56502

1-888-DIAL-SJE • 1-218-847-1317

1-218-847-4617 Fax

email: customer.service@sjerhombus.com

www.sjerhombus.com

112

1

W

9

1

4

H

8AC 10E 15A 17 A

MODEL 112**ALARM PACKAGE**

0 = select options or no alarm package

1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING

I = Indoor, NEMA 1 (metal)

W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE

1 = magnetic motor contactor 120/208/240V

9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS

0 = 0-7 FLA

1 = 7-15 FLA

2 = 15-20 FLA

3 = 20-30 FLA (Enclosure Upsize required)

PUMP DISCONNECTS

0 = no pump disconnect

4 = circuit breaker 120V (select STARTING DEVICE option 9 above)

120/208/240V (select STARTING DEVICE option 1 above)

FLOAT SWITCH APPLICATION

H or L = pump down or pump up (select 17 option)

X = no floats

WITH alarm package

WITHOUT alarm package

OPTIONS *Listed below*

ENCLOSURE UPSIZE - If you selected 3 or more of the ★ options, or one ★★ option, a one-time enclosure upsize fee would apply.

- | CODE | DESCRIPTION |
|--|--|
| ☐ 1A | Red beacon only / no audio
(must select 1E if floats included) |
| ☐ 1C | Horn only / no visual
(must select 1E if floats included) |
| ☐ 1E | Alarm float |
| ☐ 3A | Alarm flasher |
| ☒ ★ 3B | Manual alarm reset |
| ☐ ★★ 4A | Redundant off
(select option 4D if floats included) |
| ☐ ★★ 4B | Red redundant off indicator & alarm
(must select 4A also) |
| ☐ 4D | Redundant off float
(select 4A option) (select 17 option) |
| ☐ ★ 5A | Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads) |
| ☐ ★★ 5E | Seal failure circuit & red indicator (2 wire) |
| ☐ 6A | Auxiliary alarm contact, form C |
| ☐ ★ 8A | Elapsed time meter |
| ☐ ★ 8C | Event (cycle) counter |
| ☐ ★★ 9_A | Pump overload
specify amperage after number 9 followed by letter "A".
Example: 912A = 12 amp pump. |
| ☒ ★★ | 0-25 FLA |
| ☒ ★★ | 25-30 FLA |
| ☐ 10E | Lockable latch - NEMA 4X |
| ☐ 10E | Lockable latch - NEMA 1 |
| ☐ ★ 10F | Lightning arrester (select pump circuit breaker) |
| ☐ ★ 10K | Anti-condensation heater |
| ☐ 10P | Panel Mounting Post (Factory Installed. Includes Simplex Install. Kit)
(Encl. upsized to 10x8x6. Max 14x12x6) |

- | CODE | DESCRIPTION |
|--|---|
| ☐ 11C | NEMA 1 alarm panel (must select option 6A) |
| ☐ 11D | NEMA 4X alarm panel (must select option 6A) |
| ☒ ★★ 14B | Main disconnect (rotary style, mounted through door, non-fused) |
| ☒ ★★ | 0-20 FLA |
| ☒ ★★ | 20-30 FLA |
| ☐ 15A | Control / alarm circuit breaker |
| ☐ 16A | 10' cord in lieu of 20' (per float) |
| ☐ 16B | 15' cord in lieu of 20' (per float) |
| ☐ 16C | 30' cord in lieu of 20' (per float) |
| ☐ 16D | 40' cord in lieu of 20' (per float) |
| ☐ 17A | SJE SignalMaster® / mounting strap ● (per float) |
| ☐ 17B | SJE SignalMaster® / externally weighted ● (per float) |
| ☐ 17C | Sensor Float® / internally weighted ▲ (per float) |
| ☐ 17D | Sensor Float® / externally weighted ▲ (per float) |
| ☐ 17E | Sensor Float® Mini / pipe clamp ▲ (per float) |
| ☐ 17F | Sensor Float® Mini / externally weighted ▲ (per float) |
| ☐ 17J | Sensor Float® / pipe clamp ▲ (per float) |
| ☐ 19T | TOA (Test/Off/Automatic) switch and pump run light through door mounted |
| ☐ 19U | HOA (Hand/Off/Automatic) switch and pump run light through door mounted |
| ☐ 19X | Door mounted pump run indicator |
| ☐ 21A | SJE PumpMaster® in lieu of on/off switches ● |
| ☐ 21B | SJE PumpMaster® Plus in lieu of on/off switches ● |
| ☐ 21C | Super Single® in lieu of on/off switches ▲ |
| ☐ 21D | Double Float® in lieu of on/off switches ▲ |
- Mechanically-activated ▲ Mercury-activated

If additional features are required, call the factory for a quote on an Engineered Custom control panel.**SAMPLE****MODEL**

112

1

W

9

1

4

H

3A 8A 17A

Alarm Package

Enclosure Rating

Starting Device

Pump Full Load Amps

Pump Disconnect

Float Switch Application

Options: Flasher, Elapsed Time Meter,

SJE SignalMaster® / pipe clamp

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.

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.

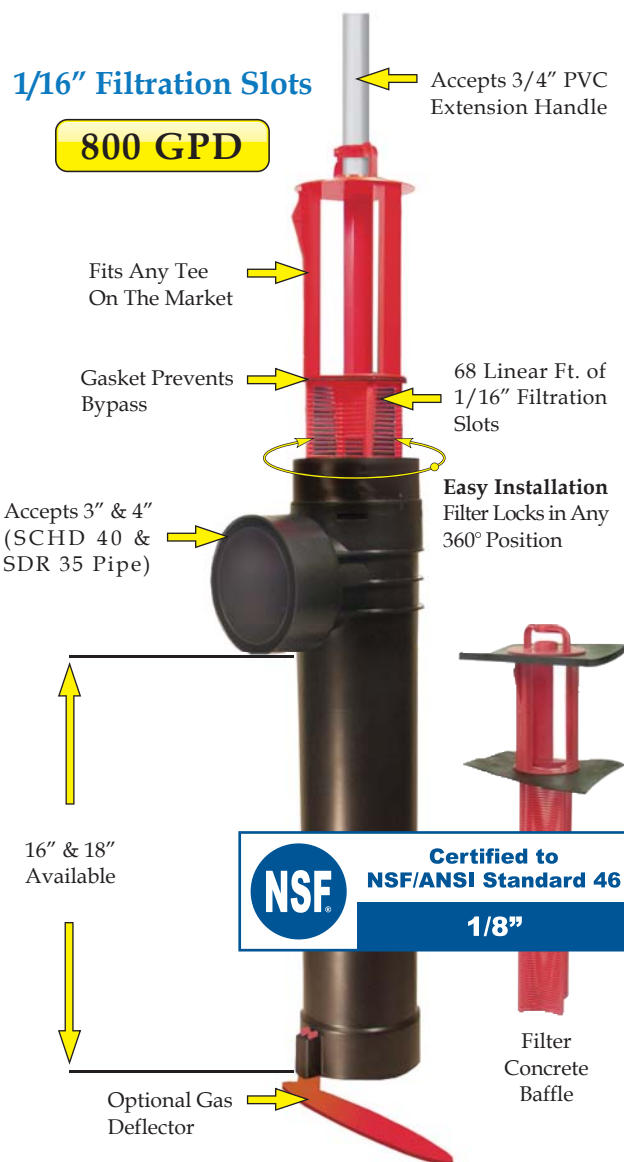
PL-68 Maintenance:

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 & LokTM



Extend & LokTM
Easily installs
into existing tanks.



Spacer Bushing
4" SCHD 40
to SDR 35

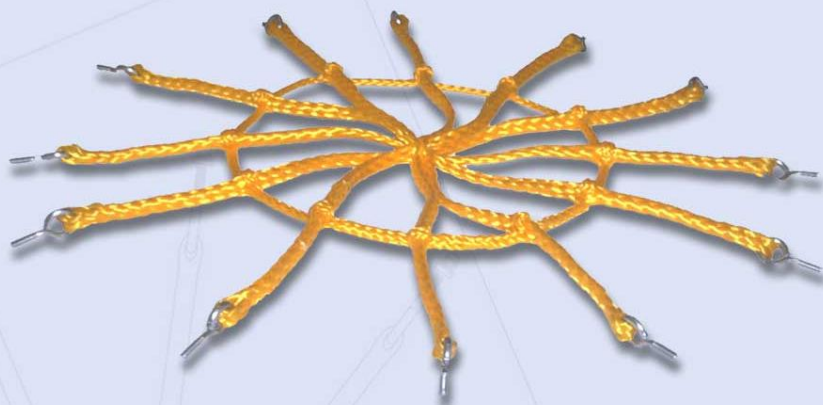


Spacer Bushing
4" SCHD 40
to 110mm Pipe



2" Extender

Install in any riser without an Inner Lid

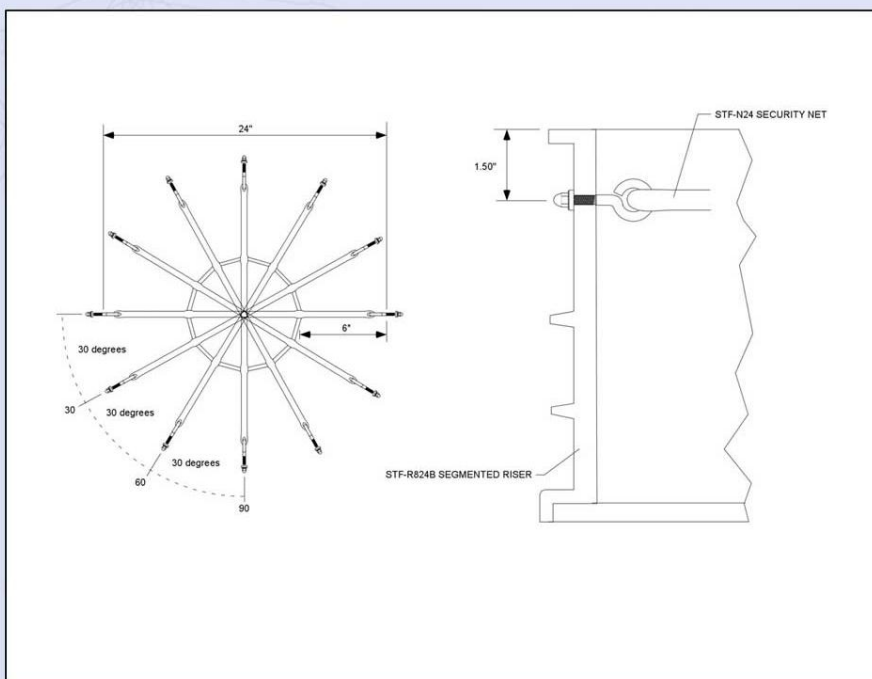


FEATURES

- ❖ Use as a security measure to keep persons, especially children, from accidental entry while systems are being serviced or any other instance where a cover is removed
- ❖ Available to fit 18", 24", and 30" diameter risers
- ❖ Open areas in web are large enough to allow tanks to be pumped without having to remove the security net
- ❖ Installs easily in our segmented riser and others

Order part No. STF-N18
STF-N24
STF-N30

CAD detail drawing available in DXF format



RELATED PRODUCTS

STF-CI24 page 5
STF-APC24G page 6
STF-APC24B page 6
STF-R824B page 9
STF-AR24 page 9
STF-APC24GI-075 page 14
STF-APC24BI-075 page 14
STF-APC24GI-100 page 14
STF-APC24BI-100 page 14
STF-APL24G page 14
STF-APL24B page 14

U.S. Patent Pending



WRP-20733

TAP CHART - REPAIR

Lot 41 2109 Gardenbrook

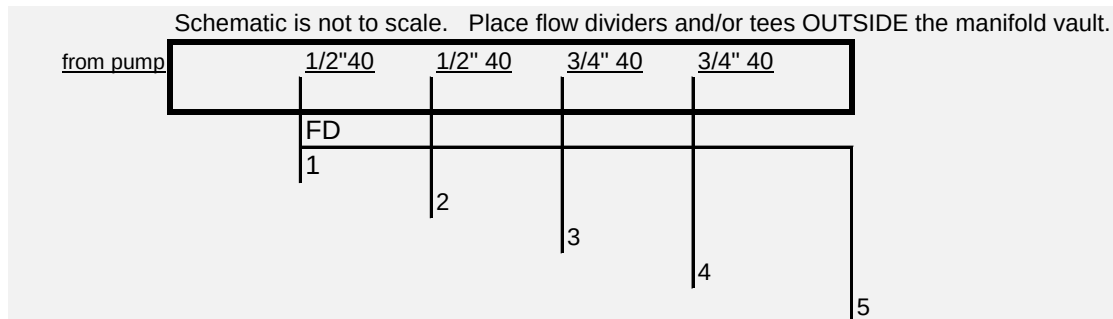
Bench Mark		is = 102.9	set at		eip, left rear corner			Design Head:	2.00	
line	color	Elevation	available	used	tap size	flow/tap	gal/day	trench area	LINE LTAR	
1	blue	102.80	43	40	1/2" 40 FD	3.56	43.60	120	0.363	
2	orange	102.40	85	80	1/2" 40	7.11	87.08	240	0.363	
3	blue	101.90	128	125	3/4" 40	12.48	152.86	375	0.408	
4	pink	101.20	126	125	3/4" 40	12.48	152.86	375	0.408	
5	blue	100.60	63	40	Line 1	3.56	43.60	120	0.363	

total feet= 410 gal/min = 39.19 LTAR = 0.300
 antisiphon 0.00 LTAR + 5% = 0.315

ELEVATIONS: pump tank 95.1
 pump off 90.7 see PT diagram INNOV. LTAR 0.400
 manifold 103.3 (ltar + 5%) 0.420
 other (such as highest point on supply line, if between pump tank and field)

% PIPE VOLUME 71.16% DESIGN FLOW 480 gpd
 DOSE VOLUME 190 gal PUMP RUN TIME 12.25 min/day
 DOSE PUMP TIME 4.84 min/dose* PUMP TANK GAL/IN 21.07 gal/inch
 DRAWDOWN 9.00 in ELEVATION HEAD 12.58 feet
 SUPPLY LINE LENGTH 230 ft PUMPING UP HILL? y
 SUPPLY LINE VELOCITY 3.74 ft/sec

A fitting for setting/adjusting pressure head in the manifold is required, other than the manifold cleanout



WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER PERMIT

NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED UNTIL AN
AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION AUTHORIZATION HAS BEEN ISSUED

***PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/OR IF SITE IS ALTERED OR
INTENDED USE CHANGED***

IMPROVEMENT PERMIT

PERMIT #: WRP-020733-2019

APPLICATION DATE: 06/20/2019

BLDG. PERMIT #: RBPR-019307-2019

PIN: 0771963098

RECORDED: Yes

TOWNSHIP: 18 - Swift Creek

JURISDICTION: Wake County

ZONING: R-40W

APPLICANT: Kathy USE THIS ONE Morris
501 N. Salem ST

BUSINESS PHONE: (919) 859-0669

HOME PHONE:

MOBILE PHONE: (919) 819-3033

HD USE: 101A CONVENTIONAL ONE-FAMILY HOUSE

EXISTING USE:

SITE ADDRESS: 2109 GARDENBROOK DR

SUBDIVISION: SANCTUARY @ YATES MILL PH 1 **LOT:** 41

ACRES: 0.69

DIRECTIONS: Theys Road to Pine Drive; turn onto Gardenbrook, lot on left

Permit is subject to revocation if the Site Plan or Plat changes or the intended use changes.

*Maximum depth of line is calculated using the downhill side of the trench and includes slope correction.

IP VALID FOR: Five Years AS PER GS 130A-335 (f)

DESIGNED BY: AWT

SYSTEM LAYOUT: Private Sector

SITE CLASSIFICATION: Provisionally Suitable

IP STATUS: Issued

BY: Caroline Suggs

DATE: 06/27/2019

NUMBER OF BEDROOMS: 4

OR TOTAL NUMBER OF OCCUPANTS: 8

PERMITTED DESIGN FLOW: 480 GPD

BASEMENT: No

BASEMENT PLUMBING: No

WASTEWATER STRENGTH: Domestic

SYSTEM TYPE: III B

LTAR: 0.300

EXISTING SYSTEM UTILIZED:

PRETREATMENT STRENGTH REQUIRED:

EASEMENT FOR WW SYSTEM ASSOCIATED WITH PARCEL:

MAXIMUM TRENCH DEPTH: 22 INCHES

PUMP REQUIRED: Yes

SPECIFIC SYSTEM REQUIREMENTS: -4 BEDROOM SFD

-480 GPD

-0.3 LTAR

-22" MAX TRENCH DEPTH

-25% REDUCTION ALLOWED WITH ACCEPTED STATUS PRODUCT

-PRESSURE MANIFOLD INITIAL-SEE CONSULTANT DESIGN

-PRESSURE MANIFOLD REPAIR-SEE CONSULTANT DESIGN

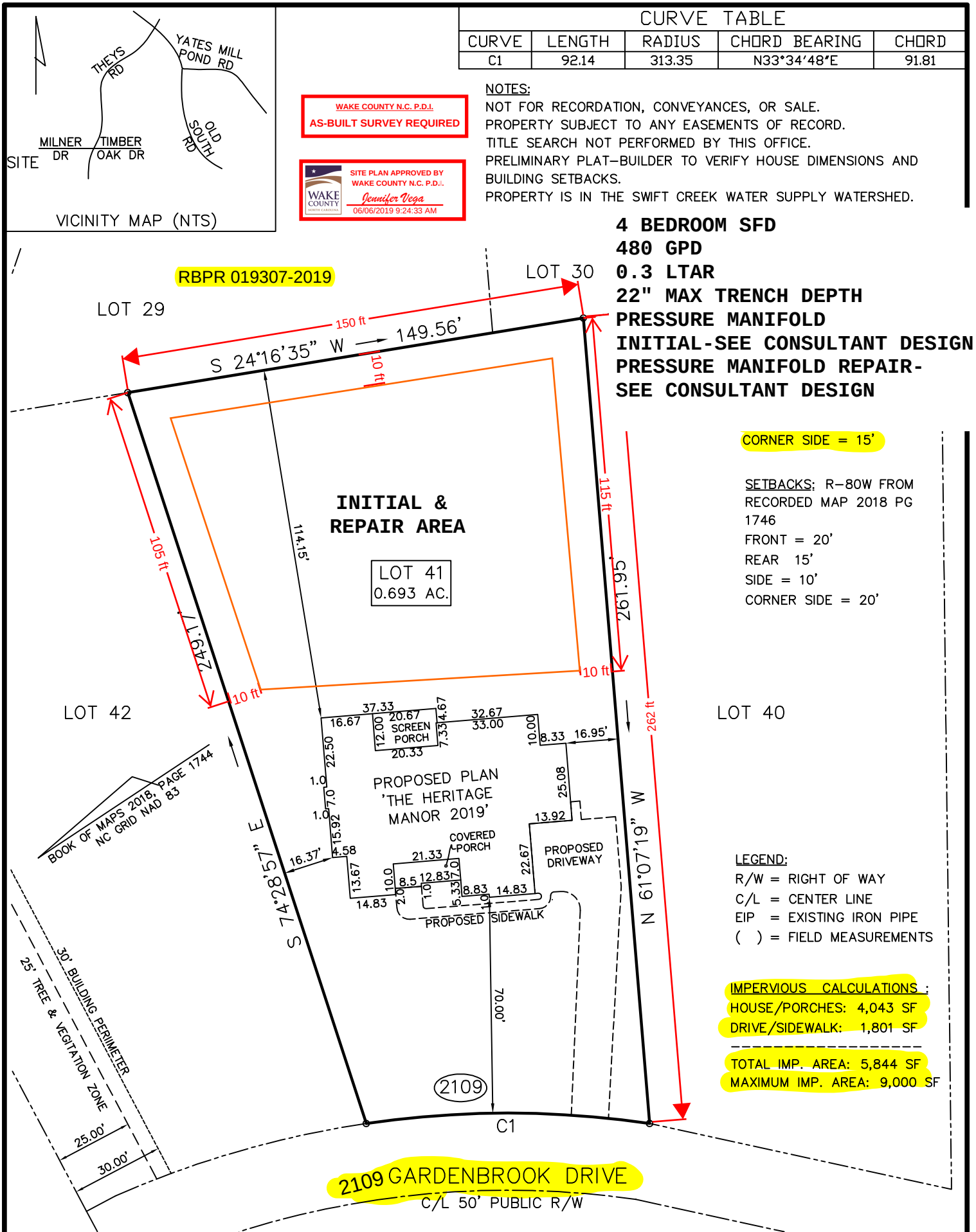
-DO NOT CUT, GRADE, INSTALL UTILITIES, OR OTHERWISE ALTER DESIGNATED SYSTEM AREA

ISSUED BY:

Caroline Suggs RTHS

DATE: 06/27/2019

IP SITE PLAN



~~THIS PROPERTY IS NOT LOCATED IN AN AREA DESIGNATED AS HAVING SPECIAL FLOOD HAZARDS ACCORDING TO FLOOD INSURANCE RATE MAP #3720073300 J . EFFECTIVE DATE: MAY 2, 2006.~~

LOT 41 BLOCK _____ SECTION _____
SUBDIVISION SANCTUARY @ YATES MILL - PHASE 1

RECORDED IN BOOK OF MAPS 2018 PAGE 1743-46 WAKE COUNTY REGISTRY

PLOT PLAN

SAW/MW
2019086

~~I, SONYA A. WARD, HEREBY CERTIFY THAT THIS MAP IS CORRECT, THAT THE BUILDINGS LIE WHOLLY ON THE LOT, AND THAT THERE ARE NO ENCROACHMENTS OF OTHER BUILDINGS ON THE SAID LOT, EXCEPT AS SHOWN ON SURVEY.~~

SURVEY FOR:

POYTHRESS HOMES, INC

SWIFT CREEK TOWNSHIP

WAKE COUNTY

NC

SCALE: 1" = 40'

DATE: 04/25/19

BOOK #:

WARD SURVEYING SERVICES, PLLC
LAND SURVEYING & PLANNING
APEX, N.C. (919) 367-7858

LAND SURVEYING & PLANNING

APEX, N.C. (919) 367-7858