KOONTZ BRYANT
JOHNSON WILLIAMS

AOSE/PE Report For:
Repair Permit

Location of Property: Adjacent to 8204 Theodore Lane, Stony Creek, VA
Tax Map# 83-A-13; 2.97 Acres

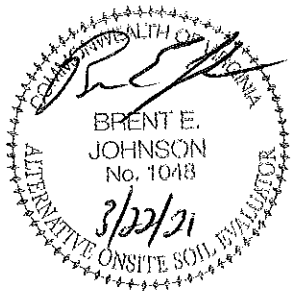
Applicant or Client Address:
Mr. Jason Dancy
14255 Pole Run Road
Disputanta, VA 23842

Prepared by AOSE
Brent E. Johnson, AOSE #1048

Date of Report: March 19, 2021
Revision Date:

Health Dept. ID No. _____

Contents/Index of this Report:



Certification Statement:

I hereby certify that the evaluations and/or designs contained herein were conducted in accordance with the Sewage Handling and Disposal Regulations (12 VAC5-610), the Private Well Regulations (12 VAC5-615), and other applicable policies of the Virginia Department of Health. Furthermore, I certify that my evaluation and/or design contained herein complies with all applicable laws, regulations, and policies implemented by the Virginia Department of Health.
This design has been completed by the licensed AOSE under the engineering exemption contained in Section 54.1-402.A.11 of the Code of Virginia.

I recommend a construction permit be approved.

AOSE: Brent E. Johnson, AOSE #1048 Date: 3/19/2021

11901 Old Stage Road, Chester, VA 23836 ▪ (O) 804-541-1436 ▪ (F) 804-541-1437 ▪ kbjvgroup.com

Commonwealth of Virginia

Application for: ☑ Sewage System ☐ Water Supply

VDH Use only
Health Department ID# _____
Due Date _____

Owner Jason Dancy — Phone 804-400-5672

Mailing Address 14255 Pole Run Road — Phone _____

Disputanta, VA 23842 — Fax _____

Agent Brent E. Johnson; Koontz Bryant Johnson Williams — Phone 804-541-1436

Mailing Address 7511 Whitepine Road — Phone _____

N. Chesterfield, VA 23837 — Fax _____

Site Address Theodore Lane

Stony Creek, VA — Email bjohnson@kbjwgroup.com

Directions to Property: _____

Subdivision _____ Section _____ Block _____ Lot _____

Tax Map 83-A-13 Other Property Identification _____ Dimension/Acreage of Property 2.97 Acres

Sewage System

Type of Approval: Applicants for new construction are advised to apply for a certification letter to determine if land is suitable for a sewage system and to apply for a construction permit (valid for 18 months) **only when ready to build.**

◯ Certification Letter ◉ Construction Permit ◯ Voluntary Upgrade ◯ Repair Permit ◯ Minor Modification

Proposed Use:

Single Family Home (**Number of Bedrooms** 1) Multi-Family Dwelling (**Total Number of Bedrooms** ____)

Other (describe) 1 bedroom treehouse

Basement? ◯ Yes ◉ No Walk-out Basement? ◯ Yes ◉ No Fixtures in Basement ◯ Yes ◉ No

Conditional permit desired? ◯ Yes ◉ No If yes, which conditions do you want?

☐ Reduced water flow ☐ Limited Occupancy ☐ Intermittent or seasonal use ☐ Temporary use not to exceed 1 year

Do you wish to apply for a betterment loan eligibility letter? ◯ Yes ◉ No *There is a $50 fee for determination of eligibility.

Water Supply

Will the water supply be ◯ Public or ◉ Private? Is the water supply ◉ Existing or ◯ Proposed?

If proposed, is this a replacement well? ◯ Yes ◉ No If yes, will the old well be abandoned? ◯ Yes ◉ No

Will any buildings within 50' of the proposed well be termite treated? ◯ Yes ◉ No

Well Type (e.g. domestic use, agricultural, irrigation, etc.) Existing

All Applicants

Is this property intended to serve as your (owners) principal place of residence? ◯ Yes ◉ No

All applications must be accompanied by private sector evaluations and designs, unless a petition for VDH services is approved. Is a Petition for Service form attached? ◯ Yes ◉ No

In order for VDH to process your application for a sewage system you must attached a plat of the property and a site sketch. For water supplies, a plat of the property is recommended and a site sketch is required. The site sketch should show your property lines, actual and/or proposed buildings and the desired location of your well and/or sewage system. When the site evaluation is conducted the property lines, building location and the proposed well and sewage sites must be clearly marked and the property sufficiently visible to see the topography. I give permission to the Virginia Department of Health to enter onto the property described during normal business hours for the purpose of processing this application and to perform quality assurance checks of evaluations and designs certified by a private sector Onsite Soil Evaluator or Professional Engineer as necessary until the sewage disposal system and/or private water supply has been constructed and approved.

_____ _____

Signature of Owner/ Agent Date

This form contains personal information subject to disclosure under the Freedom of Information Act. Revised 7/1/2019

KOONTZ BRYANT JOHNSON WILLIAMS

Soil Evaluation Form

General Information

Date of Evaluation: 2/24/2021 — Sussex County Health Dept.
Applicant: Jason Dancy — Telephone: 804-400-5672
Address: 14255 Pole Run Road, Disputanta, VA 23842
Owner: Same — Address: Same
Location: Adjacent to 8204 Theodore Lane, Stony Creek, VA
Subdivision: N/A — Tax Map# 83-A-13 — Acres: 2.97

Soil Summary Information

1. Position in Landscape Satisfactory: Yes		Describe: Sideslope	
2. Slope across drainfield area: 2-4%			
3. Depth to rock/impervious strata	Max:	Min: 44"+	None:
4. Depth to seasonal water table	No:	Yes:	Range: 36"+
5. Free water present	No: X	Yes:	Depth:
6. Soil percolation rate estimated		Texture Group: IIa/IIb Estimated Rate: 45 mpi @ 18" deep	
7. Percolation test performed	Yes: No: X	Number of test holes: Depth of test holes: Average perc rate:	

Name and title of evaluator: Brent E. Johnson, AOSE #1048

Signature of Evaluator: _____

System Description

X Site Approved: Drainfield trench bottoms to be placed at 18" depth at site designated on permit/sketch.

___ Site Disapproved:

__ Position in landscape subject to flooding or periodic saturation
__ Insufficient depth of suitable soil above hard rock
__ Insufficient depth of suitable soil above seasonal water table
__ Insufficient area of acceptable soil required for drainfield, and/or reserve area
__ Proposed system too close to well.
__ Other (specify)

COMMONWEALTH OF VIRGINIA
BRENT E. JOHNSON
No. 1048
3/22/21
ALTERNATIVE ONSITE SOIL EVALUATOR

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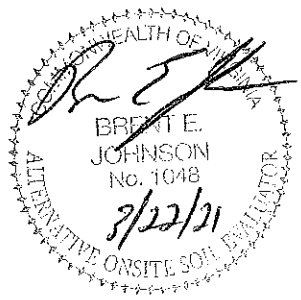
KOONTZ BRYANT JOHNSON WILLIAMS

Date of Evaluation: 2/24/2021 — Theodore Lane, Stony Creek, VA

Soil Profile Description

Hole #	Horizon	Depth (in.)	Description of color, texture etc.	Texture Group
BH-1	A	0-2	10YR 5/3 brown; sandy loam; friable	IIa
	E	2-8	10YR 6/4 light yellowish brown; sandy loam; friable	IIa
	Bt1	8-30	7.5YR 5/6 strong brown; sandy clay loam; weak sub angular blocky structure	IIb
	Bt2	30-44	10YR 5/8 yellowish brown with 7.5YR 6/8 reddish yellow (parent mottles); sandy clay loam; auger refusal due to rocks @ 44"	IIb
BH-2	A	0-3	10YR 5/3 brown; sandy loam; friable	IIa
	E	3-24	10YR 5/4 yellowish brown; sandy loam; friable	IIa
	Bt	24-36	10YR 5/8 yellowish brown with 10YR 8/1 white (feldspar); sandy loam with mica; saprolitel; friable	IIa
BH-3	A	0-3	10YR 4/3 brown; sandy loam; friable	IIa
	E	3-16	10YR 5/4 yellowish brown; sandy loam with gravels	IIa
	Bt1	16-39	7.5YR 5/6 strong brown; sandy clay loam with gravels	IIb
	Bt2	39-48	7.5YR 6/8 reddish yellow with 10YR 8/1 white (feldspar); sandy clay loam with gravels and mica; weak sub angular blocky structure	IIb



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KOONTZ BRYANT JOHNSON WILLIAMS

Drainfield Design Calculations:

Tax Map# 83-A-13 Date: 3/19/2021
Applicant: Jason Dancy
Location: Theodore Lane, Sussex County, VA

Primary Design Criteria: Type II – Conventional with trench dispersal

Use: Residential	Bedrooms: One
Daily Flow:	150 GPD
Estimated Percolation Rate:	45 mpi
System Type (Gravity/Pump):	Gravity
Reserve Area Required:	100%

Primary Area Calculations:

Length of area required:	55 feet
Length of area available:	55 feet
Width of area required:	21 feet
Width of area available:	21 feet
Total square footage required:	344 ft^2 (400 ft^2 minimum)
Total square footage available:	495 ft^2

Three (3) Trenches at 55' Long x 3' Wide installed at 18" below grade with 9' centers.

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JOHNSON WILLIAMS

Reserve Design Criteria: Type II – Conventional with trench dispersal

Use: Residential	Bedrooms: One
Daily Flow:	150 GPD
Estimated Percolation Rate:	45 mpi
System Type (Gravity/Pump):	Gravity
Reserve Area Required:	100%

Reserve Area Calculations:

Length of area required:	55 feet
Length of area available:	55 feet
Width of area required:	21 feet
Width of area available:	21 feet
Total square footage required:	344 ft^2 (400 ft^2 minimum)
Total square footage available:	495 ft^2

Three (3) Trenches at 55' Long x 3' Wide installed at 18" below grade with 9' centers.

Note: By accepting this report, the customer acknowledges that soil descriptions are an inexact science and septic systems are prone to failure from several different sources beyond our control and that liability does not necessarily follow such failure. The customer also acknowledges by acceptance of this report that the maximum liability of Koontz Bryant Johnson Williams is the amount of payment for our services.

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JOHNSON WILLIAMS

Onsite Sewage Disposal
System Construction Specifications

Owner: Jason Dancy Phone: 804-400-5672
Address: 14255 Pole Run Road, Disputanta, VA 23842
Location: Theodore Lane, Stony Creek, VA Tax Map# 83-A-13

Design Notes: PRIMARY SYSTEM

Water Supply: Existing Private Well

Building Sewer: 4" I.D. SCH 40 PVC or Equivalent
Slope: 1.25" per 10' (minimum) cleanouts at 50' to 60' intervals

Septic Tank: 1250 gallon precast concrete baffle wall tank

Pump Tank: 419 gallon integral pump tank with baffle wall tank

Pump Required: Zoeller Model #98 or equivalent

Conveyance Method: 2" SCH 40 PVC Force Main

Splash Box: Precast Concrete with 4 ports minimum

Distribution Box: Precast Concrete with 6 ports minimum

Header Lines: 4" I.D. corrugated or smooth bore 1500# crush or equivalent; Lines Shall extend 2' into trench; Slope: 2" per 100' (minimum)

Percolation Lines: 4" Perforated plastic 1000lb per foot bearing load or equivalent
Slope: 2" to 4" per 100'

Number of Laterals: 3 **Depth of Laterals:** 18" Below Grade

Center to Center Spacing: 9 feet

Lateral Length: 55' **Lateral Width:** 36"

Absorption Media: 13" gravel

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Pump Calculations:

Static Head:	Elevation from top of pump to ground level at pump station		= 4'
	Elevation from pump station to stilling basin:		= 9'
		Static Head	**= 13'**
Friction Head:	Length of force main		= 50'
	Length of pipe from pump to ground at pump station		= 4'
	Fittings used: 90 elbow = 9.0 x 4	= 36.0'	
	Check valve = 17.0 x 1	= 17.0'	
	Gate valve = 1.4 x 1	= 1.4'	
	Quick Disconnect = 2.0 x 1	= 2.0'	
	Added equivalent length of pipe due to joints		= 56.4'
	Total equivalent length of pipe		= 110.4'
	@ 36 gal/min and 2" ID PVC40		
	Friction loss/100 feet of pipe		= 3.8'
	Total equiv. length of pipe		= 1.104
		Friction Head	**= 9.5'**

Total Dynamic Head:

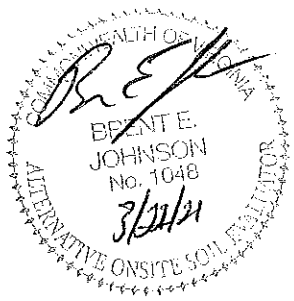
Static Head =	13'
Friction Head =	4.2'
Total Dynamic Head =	**17.2'**

Pump Selection: Pump must discharge 36 gal/min @ 17.2' TDH
Zoeller Pump Model #98 or equivalent

Float Spacing Calculations:

165' of 4" ID pipe filled to 60% capacity
0.65 gal/ft x 165 ft = 107 gallons x 0.6 = 64.3 gallons per pump cycle
Pump tank volume per inch = 21.64 gallons/inch
64.3 gal/8.7 gallons per inch = 7.4"

Floats:	Off float =	2" above TOP OF PUMP
	On Float =	7.4" above OFF float
	Alarm Float =	3" above ON float



Tank sizing and emergency storage:
Tank sizing and emergency storage:
¼ daily flow required for emergency storage = 37.5 gallons
37.5 gallons divided by 8.7 gallons per inch = 4.3"
Block and pump = 17"
Inches between top of pump and off = 2"
Inches between off and on =4.3"
Inches between on and alarm = 3"
Total height from bottom of tank to alarm = 26.3"
Remaining room for storage = 21.7" x 8.7" = 188.8 gallons

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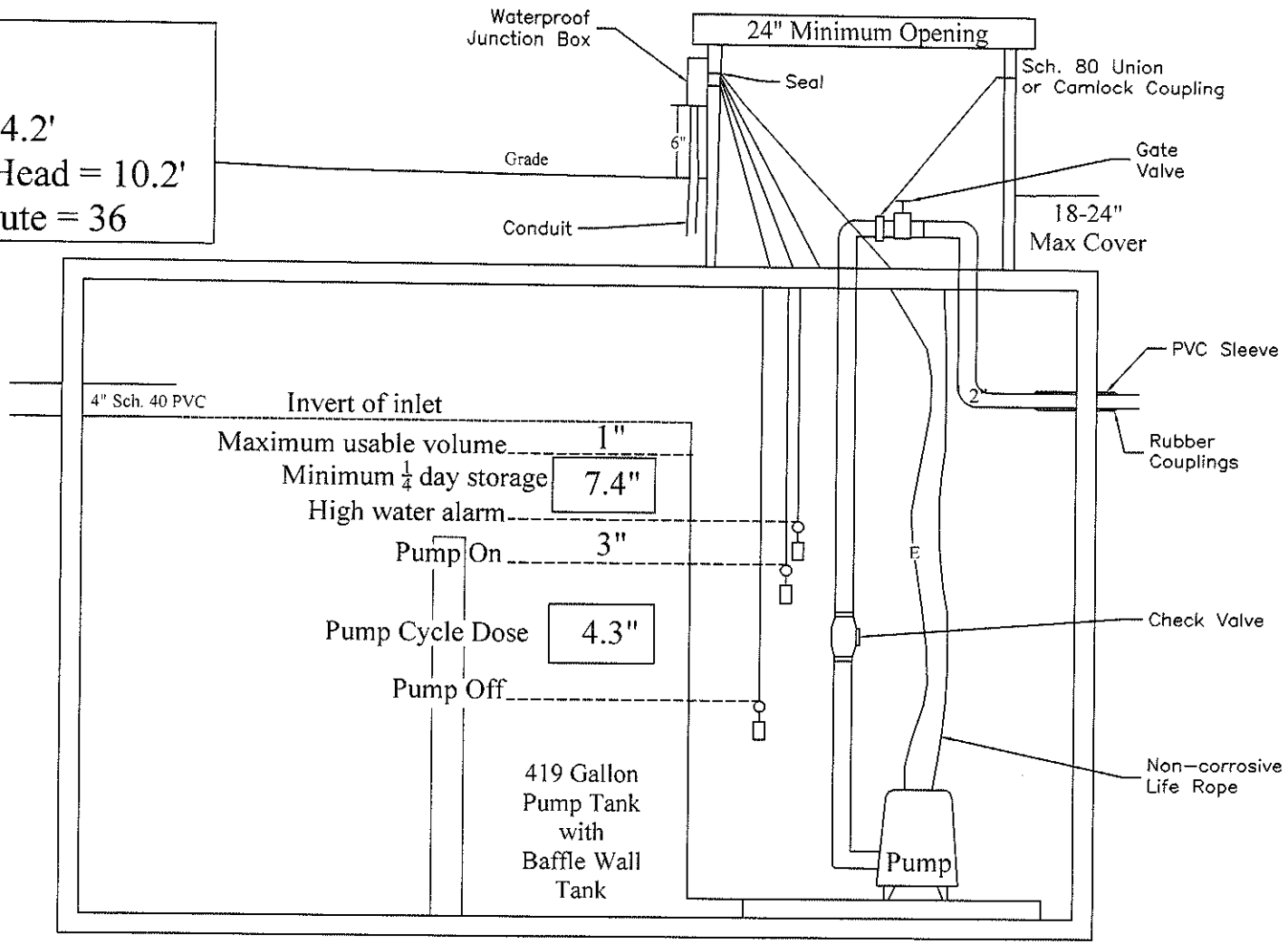
Pump Calcs:

Static Head = 6'
Friction Head = 4.2'
Total Dynamic Head = 10.2'
Gallons Per Minute = 36



Pump Tank Diagram
Theodore Lane, Stony Creek, VA

Date: 3/19/21

Scale: NTS

KOONTZ BRYANT JOHNSON WILLIAMS

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Chester, VA 23836

NOTES:

1. Integral pump tank within baffle wall tank with Zoeller Model # 98 or equivalent
2. Minimum Emergency Storage = 37.5 gal.
3. Tank Unit Volume - 8.7 gallons per inch

"Quality Pumps Since 1939"

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

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

SECTION: 2.20.035
FM0973
0310
Supersedes
1108

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COMPARE THESE FEATURES

- Non-clogging engineered plastic vortex impeller design.
- Corrosion resistant powder coated epoxy finish.
- Durable cast construction. Cast switch case, motor, pump housing and base. No sheet metal parts to rust or corrode.
- Castings - All cast iron class 25-30 25000# tensile strength.
- Stainless steel screws, guard, handle, arm and seal assembly.
- Float operated submersible (NEMA 6) 2-pole mechanical switch.
- Motor - Permanent split capacitor, 60 Hz, 1725 RPM, oil-filled, hermetically sealed, automatic reset thermal overload protection.
- Bearings - Upper & lower oil fed cast iron.
- Carbon and ceramic shaft seal.
- Entire unit pressure tested after assembly.
- Watertight neoprene "□" ring between motor and pump housing.
- Maximum temperature for effluent or dewatering 130°F - 54°C.
- Passes ½ inch spherical solids.
- No screens to clog.
- Standard cord length 15 ft. (UL Listed).
- 1½" NPT Discharge (1½" X 2" PVC Adapter included with BN & BE Models).
- On point - 9½"
- Off point - 3"
- Major width - 10 ⅛"
- Height - 12"

SIMPLEX AND DUPLEX SYSTEMS AVAILABLE

PACKAGED SYSTEMS AVAILABLE

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.

98 Cast Iron Series

"FLOW-MATE"

(FOR PUMP PREFIX IDENTIFICATION SEE NEWS & VIEWS 0052)

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

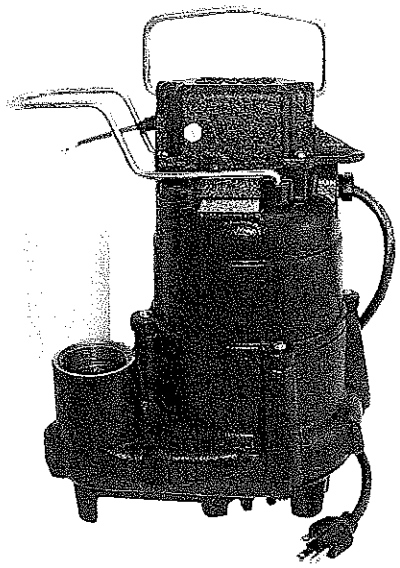
EFFLUENT

OR DEWATERING PUMP
SUBMERSIBLE
1½" NPT DISCHARGE

Tested to UL Standard UL778 and Certified to CSA Standard C22.2 No. 108

MODELS AVAILABLE

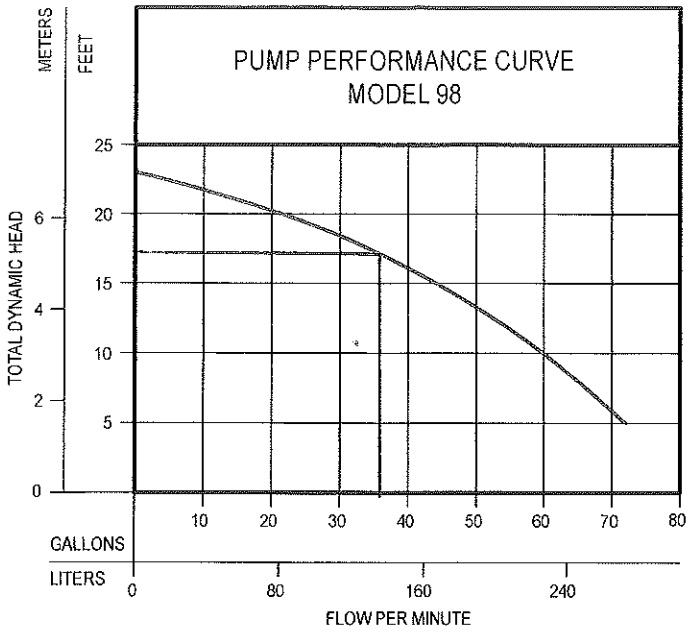
- Automatic or Nonautomatic
- ½ HP, 1 Ph., 115V or 230V
- Available with Piggyback Variable Level Float Switch.



MODEL 98

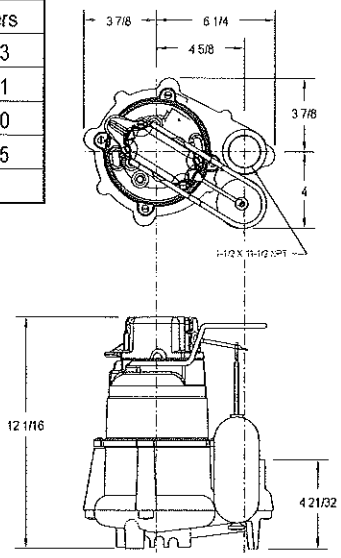
POWDER COATED TOUGH™

MODEL BN98



MODEL		98	
Feet	Meters	Gal.	Liters
5	1.5	72	273
10	3.0	61	231
15	4.6	45	170
20	7.1	25	95
Shut-off Head:		23 ft.(7.0m)	

009971



SK1102

CONSULT FACTORY FOR SPECIAL APPLICATIONS

- Electrical alternators, for duplex systems, are available and supplied with an alarm
- Mechanical alternators, for duplex systems, are available with or without alarm switches
- Variable level float switches are available for controlling single and three phase systems
- Double piggyback variable level float switches are available for variable level long cycle controls
- Refer to FM1922 and FM0806 for temperatures above 130°F

98 Series				Control Selection	
Model	Volts-Ph	Mode	Amps	Simplex	Duplex
M98	115 1	Auto	9.4	1	4
N98	115 1	Non	9.4	2 or 3	4
D98	230 1	Auto	4.7	1	4
E98	230 1	Non	4.7	2 or 3	4

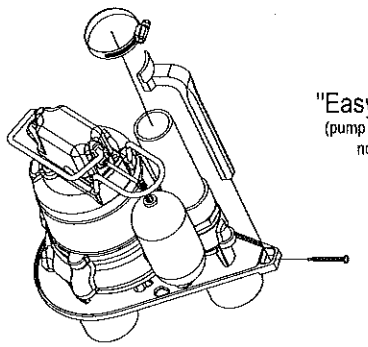
SELECTION GUIDE

1. Integral float operated mechanical switch, no external control required.
2. For automatic use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
3. See FM1228 for correct model of simplex control panel.
4. See FM0712 for correct model of duplex control panel or FM1663 for a residential alternator system.

For information on additional Zoeller products refer to catalog on Piggyback Variable Level Switches, FM0477; Electrical Alternator, FM0486; Mechanical Alternator, FM0495; Sump/ Sewage Basins, FM0487; Single Phase Simplex Pump Control, FM1596; Alarm Systems, FM0732.

⚠ 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 Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).



"Easy assembly"
(pump & discharge pipe not included.)

OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris.
- Replaces rocks or bricks under the pump.
- Made of durable, noncorrosive ABS.
- Raises pump 2" off bottom of basin.
- Provides the ability to raise intake by adding sections of 1½" or 2" PVC piping.
- Attaches securely to pump.
- Accommodates sump, dewatering and effluent applications.

NOTE: Make sure float is free from obstruction.

RESERVE POWERED DESIGN

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

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MAIL TO: P.O. BOX 16347
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Louisville, KY 40211-1961
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Manufacturers of..

"Quality Pumps Since 1939"

KOONTZ BRYANT
JOHNSON WILLIAMS

IMPORTANT NOTES FOR PROPERTY OWNER, BUILDING CONTRACTOR, CLEARING CONTRACTOR, WELL INSTALLER AND DRAINFIELD INSTALLER:

Drainfield Installer:

Inspection requests must be called in a minimum of 48 hours prior to the time and date of inspection. The drainfield installer is responsible for payment to Koontz Bryant Johnson Williams LLC of the inspection fee of **$400.00** at the time of the inspection. This inspection fee applies to all inspections needed until the drainfield is deemed satisfactory and the completion statement can be issued to the local health department. The completion statement will not be issued until the inspection fee is paid in full. The drainfield installer is required to have an "As Built" drawing prepared at the time of inspection.

Clearing contractor please note:

Care must be used during the clearing of the drainfield area. Work shall be performed in the drainfield area only during dry weather and soil conditions. The reserve area does not need to be cleared at this time. Hand clear the drainfield only. During the clearing of the drainfield, do not rut or compact the soil. Do not allow construction traffic to travel over the drainfield. Do not alter the topography of the drainfield area in any manner. Damage or changes to the drainfield area may lead to the permit being Null and Void.

Building Contractor:

This permit is void if any detrimental changes occur to the area evaluated for the drainfield and reserve areas. This permit is also void if the house location interferes with the proposed well or drainfield/reserve locations. Do not allow underground utilities to be buried within 10' of the drainfield or reserve areas.

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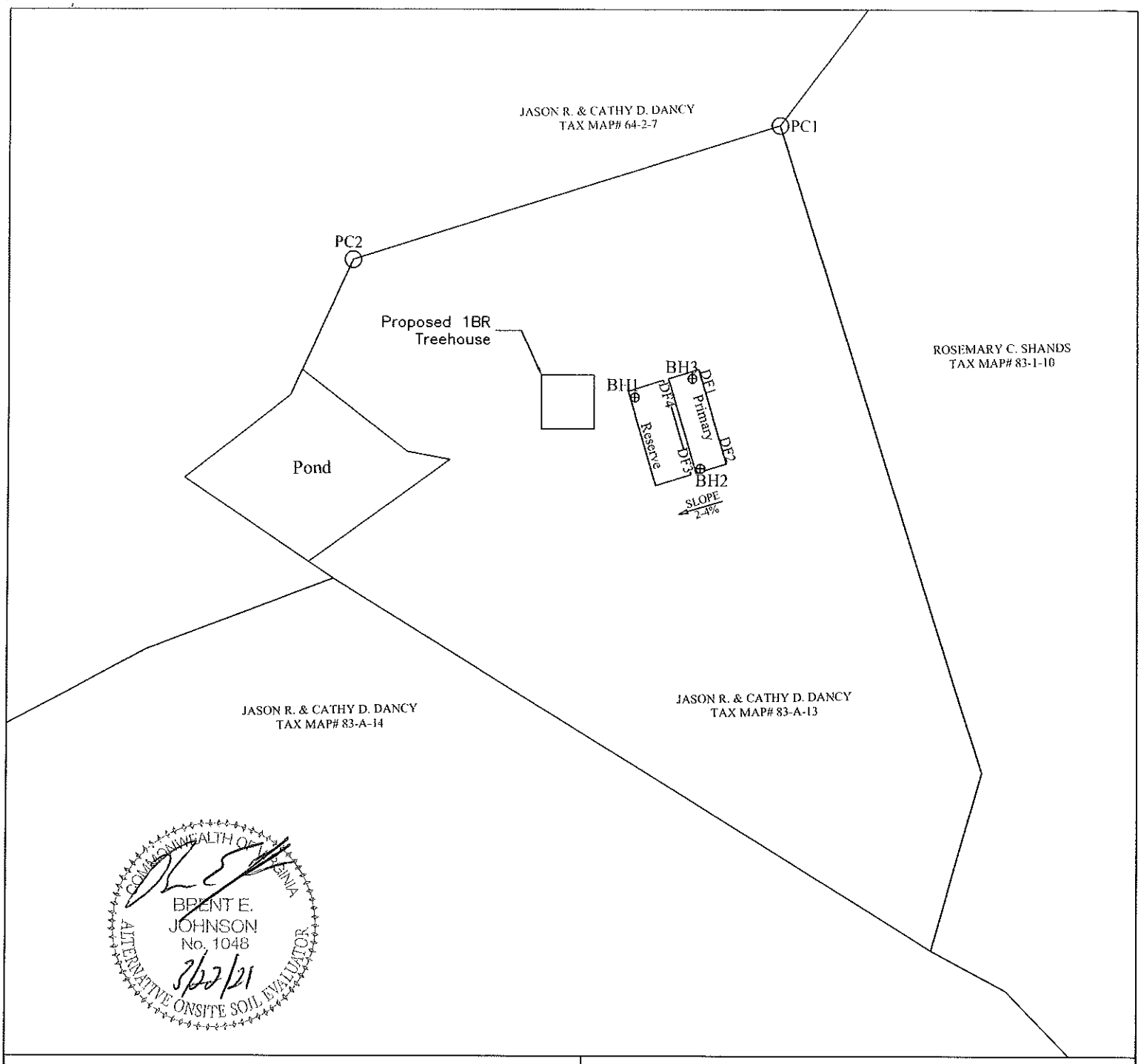


COMMONWEALTH OF VIRGINIA
BRENT E. JOHNSON
No. 1048
3/22/21
ALTERNATIVE ONSITE SOIL EVALUATOR

NOTES:
This site sketch includes existing and/or proposed property lines, primary and reserve drainfield locations, building location, driveway, well, and soil evaluation borings. A sanitary survey of all property within 200' of the septic and well components has been completed. Any pertinent features found are illustrated on this sketch.

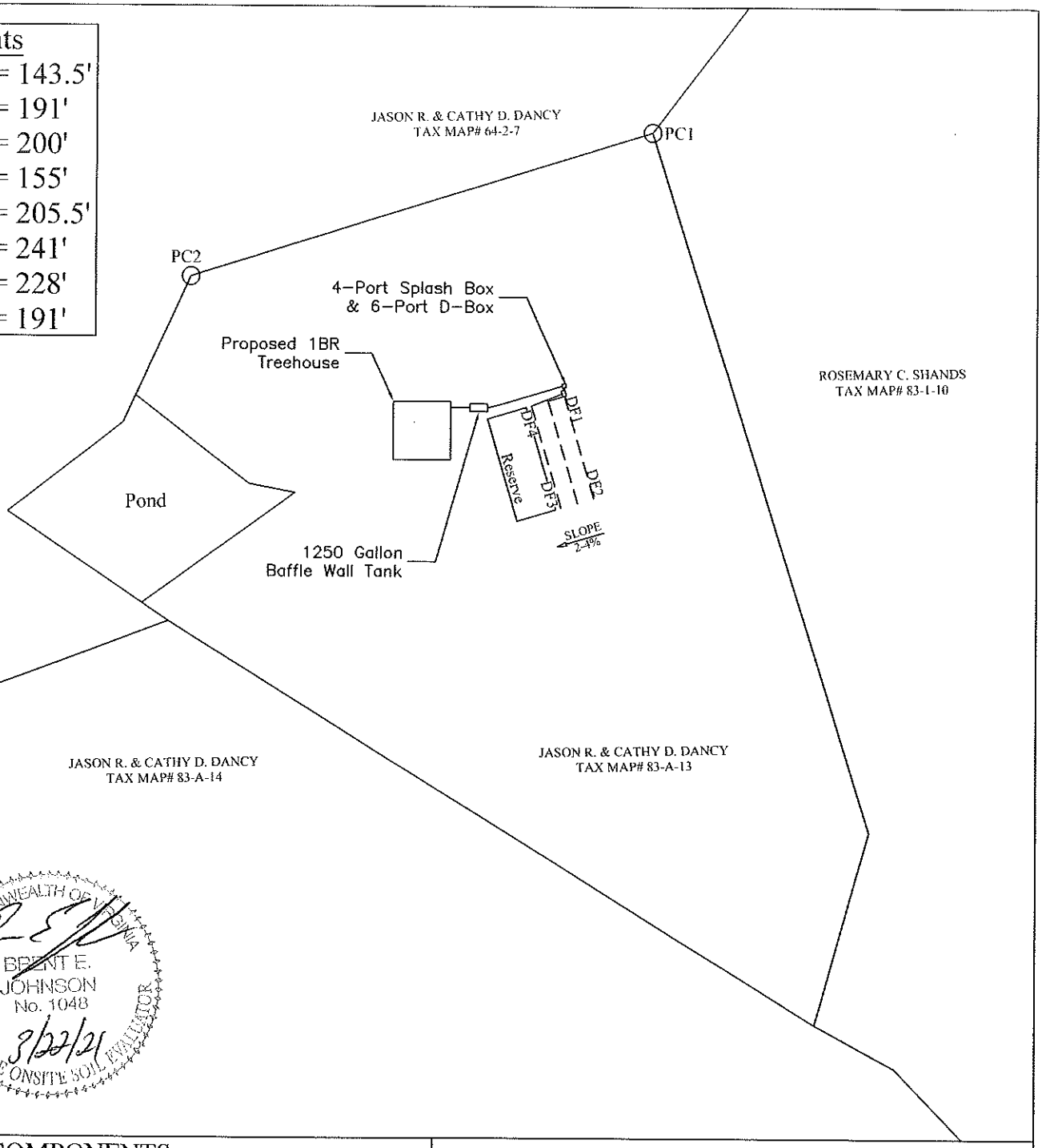
Site Sketch
Theodore Lane (TM#83-A-13)
Stony Creek, VA

Date:
3/19/2021

Scale:
1"=80'

KOONTZ BRYANT JOHNSON WILLIAMS
11901 Old Stage Road
Chester, VA 23836

Measurements
PC1 > DF1 = 143.5'
PC1 > DF2 = 191'
PC1 > DF3 = 200'
PC1 > DF4 = 155'
PC2 > DF1 = 205.5'
PC2 > DF2 = 241'
PC2 > DF3 = 228'
PC2 > DF4 = 191'



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3/22/21

DRAINFIELD COMPONENTS:
(1) 1250 Gallon Precast Baffle Wall Tank
(1) Zoeller Model #98 or equivalent
(1) 4-Port Precast Splitter Box
(1) 6-Port Precast Distribution Box
(3) 55'L x 3'W laterals installed at a depth of 18" below grade on contour with laterals 9' on center.

NOTES:
1. No installation during periods of wet weather.

Construction Drawing
Theodore Lane (TM#83-A-13)
Stony Creek, VA

Date:
3/19/2021

Scale:
1"=80'

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