

Bureau of Environmental Health
 8930 Stanford Boulevard, Columbia, MD 21045
 Main: 410-313-2640 | Fax: 410-313-2648
 TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
 Facebook: www.facebook.com/hocohealth

Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 8-9-19 **ONSITE SEWAGE DISPOSAL SYSTEM** P 5805184
 APPROVAL DATE: 8/21/19 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 1386 Driver Road
 SUBDIVISION: _____ LOT: 7A TAX ID: _____
 CONTRACTOR: FARM AND HOME EMAIL: _____
 CONTRACTOR ADDRESS: _____ PHONE: _____

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Collin & Kimberly Ferguson EMAIL: _____
 OWNER ADDRESS: 731. S Curley St, Baltimore, Maryland 21224 PHONE: 443-742-1392

BAT UNIT MODEL: Norweco TNTLP 500 PUMP SIZE: _____ PUMP TANK CAPACITY: _____

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 1/8/19 DATE RECORDED: 1/8/19

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 4 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>82.5</u>	INLET DEPTH: <u>2.5</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>N/A</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>2.5</u>

LOCATION: PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.

NOTES: 1 x 83' TRENCH

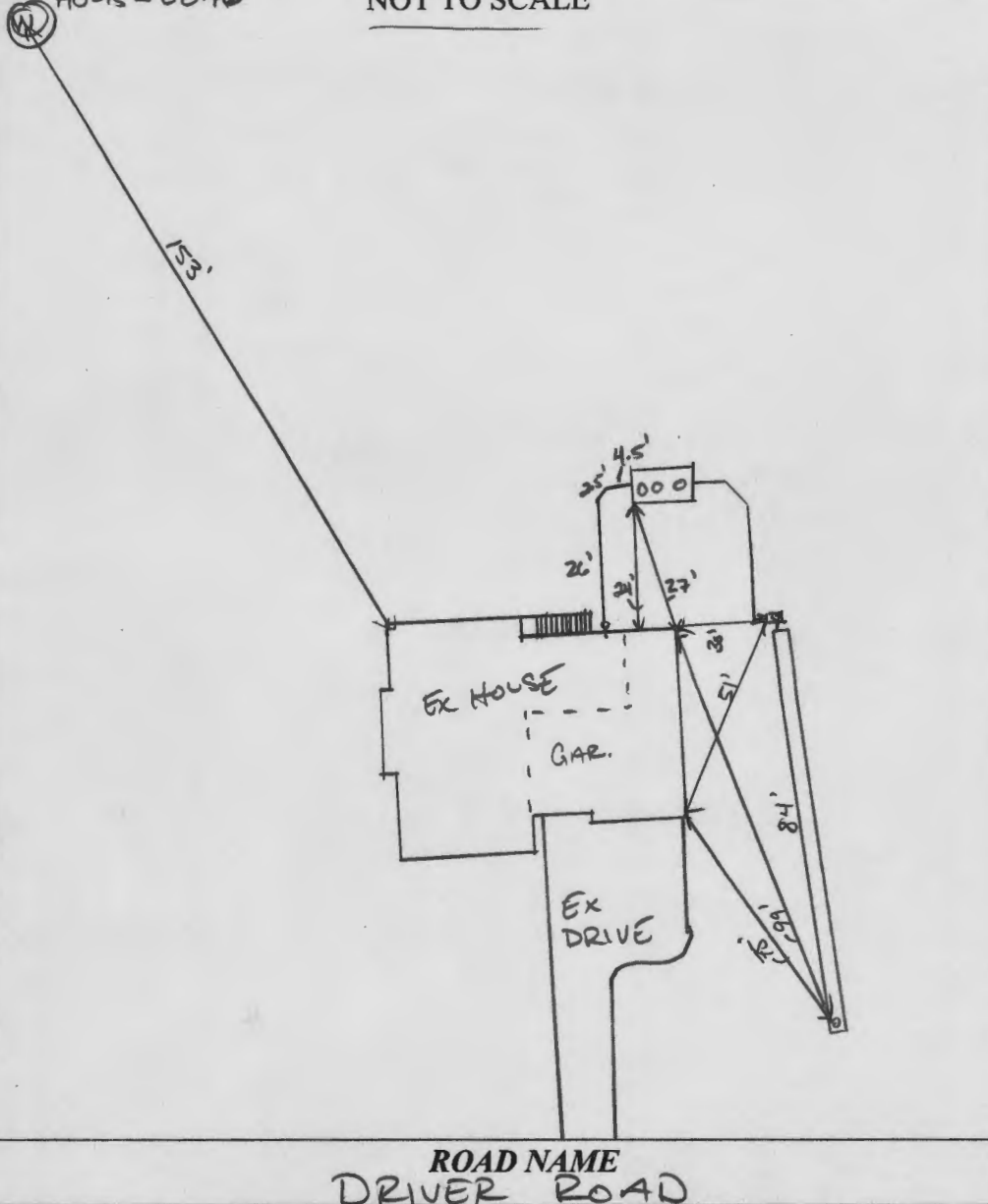
ISSUED BY: Hank Oswald ISSUE DATE: 5-9-19 EXPIRATION DATE: 5-9-20

- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
- NOTE: WATERTIGHT SEPTIC TANKS REQUIRED
- NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM
 ELECTRICAL PERMIT ISSUED E 190013
- NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.
 PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.
 CALL 410-313-1771 TO SCHEDULE INSPECTIONS.**

HO-15-0046

NOT TO SCALE



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3	2.5	8
NUMBER OF TRENCHES 1		
TOTAL LENGTH 84 F		
ABSORPTION AREA 252 SF		
DISTRIBUTION BOX LEVEL N/A		
DISTRIBUTION BOX BAFFLE YES		
DISTRIBUTION BOX PORT YES		

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL YES

MANUFACTURER BACK RIVER

CAPACITY INTL 500 GAL

SEAM LOC TOP

TANK LID DEPTH 13'

BAFFLES BAT

BAFFLE FILTER BAT

MANHOLE LOC FRONT/MID/BACK

6" PORT LOC BAT

WATERTIGHT TEST -

SLOTTED BAT

DATE ON LID 03/26/2019

PUMP/SEPTIC TANK LEVEL

MANUFACTURER _____

CAPACITY _____ GAL

SEAM LOC _____

TANK LID DEPTH _____

BAFFLES _____

BAFFLE FILTER _____

MANHOLE LOC _____

6" PORT LOC _____

WATERTIGHT TEST _____

SLOTTED _____

DATE ON LID _____

BAT - NORWELCO

PRE-CONSTRUCTION:

5/31/2019 TANK AND SDA STAKED. 1 TRENCH LAID OUT ALONG TOP BORDER OF SDA. MINOR 4" CONTOUR DIFFERENCE OK. TO CONSTRUCT WITH LASER LEVEL. SDA WAS DRIVEN ON W/ CONSTRUCTION EQUIPMENT DURING HOUSE CONSTRUCTION CAUSING WATER TO POOL AT GRADE. BE IT KNOWN @.

INSTALLATION: 6/7/2019 SHC AND TANK INSTALLED. PLUMBER DRILLED HOLE IN FOUNDATION HIGHER THAN INLET AND PATCHED. @ 6/12/2019 TRENCH COMPLETED. SEWER LINE INSTALLED FROM D BOX TO TRENCH. OK TO BACKFILL. REINSP P/A. @ 8/21/19 Start-up w/rt. mud from BAT manufacturer.

FINAL INSPECTOR

K. [Signature]

DATE OF APPROVAL

8/21/19

FLOOD INSURANCE NOTE: By graphics plotting only, this property is in ZONE "X" of the Flood Insurance Rate Map, Community Panel No. 24027C0060 D effective date of 11/06/2013. Exact designations can only be determined by an Elevation Certificate. Based on the above information, this property IS NOT in a Special Flood Hazard Area.

LOT 2
"BOYER PROPERTY"
PLAT No. 5113

LOT 1, SECTION 2
"DRIVER PROPERTY"
PLAT No. 3335

LOT 7A
245,100 S.F. OR 5.6267 AC.
W.A.R. 18396/166

PATTIE OVERBY WEBB
9252/507

GENERAL NOTES

The plat is a benefit to the consumer only insofar as it is required by the lender or a title insurance company or its agent in connection with contemplated transfer, financing or refinancing.

The plat is not to be relied upon for the establishment or location of fences, garages, buildings, or other existing or future improvements.

The plat does not provide for the accurate identification of property lines, but such identification may not be required for the transfer of title or securing financing or refinancing.

(ACCURACY OF SETBACKS: 1'±)

Michael V. Moskunas
Professional Land Surveyor #21175
License Expires: 6/25/2019

FOUNDATION DRAWING

#1386 DRIVER ROAD

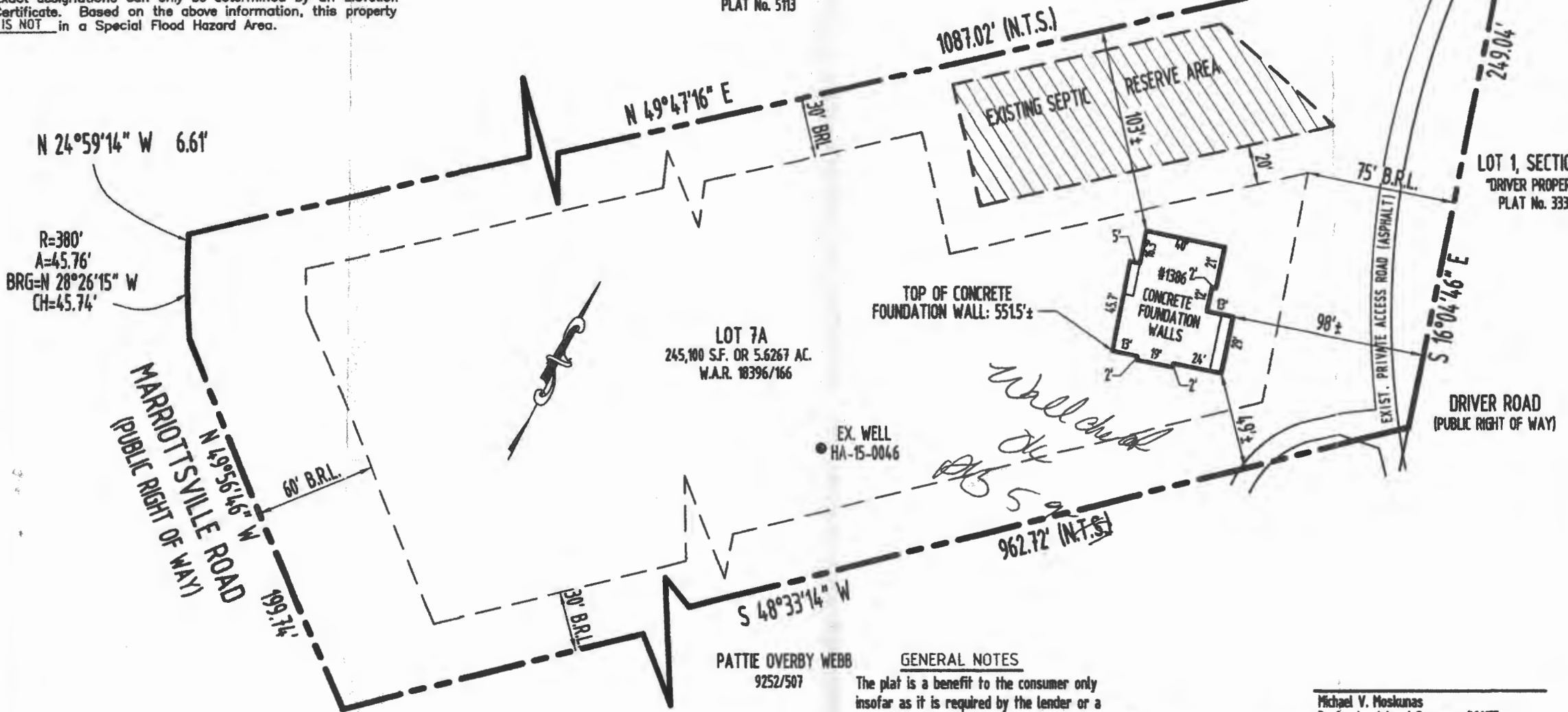
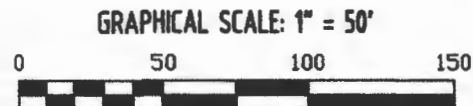
LOT 7A TAX ACCT.#298825
TAX MAP: 10 - GRID: 10 - PARCEL: 128
DEED REFERENCE: W.A.R. 18396/166
3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

Scale: 1" = 50'	Date: 01/21/2019	JOB #10683
Drawn: M.V.M.	Checked: B.L.M.	SURVEY'D: M.V.M.



200 E. JOPPA RD
SUITE 101
TOWSON, MD 21286

T: (410)828-9080
F: (410)828-9066



1586 Driver Rd Marriottsville
MD 21104

Clerk of the Circuit Court for
Howard County
Land Records/Licensing

The Thomas Dorsey Building
9250 Bendix Road
Columbia, MD 21045
410-313-5850

=====
LR - Agreement Recording Fee
1x 20.00 20.00

Name: Ferguson
Ref: 106

=====
LR - Agreement Surcharge
1x 40.00 40.00

=====
SubTotal: 60.00
Total: 60.00

=====
REV-Cash 60.00

01/08/2019 14:25
#11495633/1246/109

CC13-DS

~ Thank you for visiting us today ~

Maura J. Rossman, M.D., Health Officer

**OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM**

THIS AGREEMENT is made this 08th day of ~~December~~ ^{JANUARY} 2018, among Collin Ferguson
and Kim Ferguson, hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
1386 Driver Rd, in the 03 Election District of Howard
County, Maryland, and the deed and subdivision plat of the property is recorded among the Land
Records of Howard County, Maryland, Tax Map # 0010, Block # 0010, Parcel # 0128, Deed
Reference # 18396/00166 and Tax Account # 298825 ("the Property").

WHEREAS, The Property is suitable for the installation of a conventional on-site sewage
disposal system with an advanced pre-treatment system, utilizing best available technology to
perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07,
effective November 24, 2016. The pre-treatment device being installed is
Norweco TNTLP-900 GPD

NOW, THEREFORE, the parties hereto agree as follows:

- A. Owner hereby grants to the County the right to enter upon the Property at any reasonable time with prior notice for access to the system to make periodic inspections and the Owner agrees to provide any information and data in Owner's possession reasonably requested and needed by the County.
- B. Owner acknowledges and agrees that neither the County nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.
- C. The Owner will devote reasonable care and effort to the operation and maintenance of the system in perpetuity or until a public sewer connection is made so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.
- D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County with a private entity to operate and maintain on a regularly scheduled basis an approved advanced pre-treatment system. The owner shall supply a copy of the contract to the County when it is renewed or altered.
- E. This agreement shall run with the land and upon Owner's taking title to the Property shall bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as long as

the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Property that the system shall require maintenance or other attention. Upon taking title to the Property, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

G. This agreement may be voided at any time at the discretion of the County.

H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed this agreement on the date indicated above.

Bev Rufen 1/8/2019
Howard County Health Department

[Signature] 12/31/18
Owner #1 Signature Date

Collin Ferguson
Owner #1 Print Name

[Signature] 12/31/18
Owner #2 Signature Date

Kim Ferguson
Owner #2 Print Name

Buyer #1 Signature Date

Buyer #2 Signature Date

Buyer #1 Print Name

Buyer #2 Print Name



BACK RIVER PRE-CAST, LLC
 PO BOX 329
 GLYNDON, MD 21071
 PH# 410-833-3394

NORWECO CERTIFICATION

PROPERTY OWNER: COLLIN FERGUSON	INSTALLATION COMPANY: FARM & HOME
ADDRESS: 1386 DRIVER RD	CERTIFIED INSTALLER: BILL INGRAM
CITY, ZIPCODE & COUNTY: MARRIOTTSVILLE, 21104, HOWARD	PERMIT#
SIZE OF SYSTEM INSTALLED:	DATE INSTALLED: 06-06-19
600 GPD CONCRETE	START-UP DATE: 07-06-19
NUMBER OF BEDROOMS:	DATE OF FINAL INSPECTION:
TYPE OF INSTALLATION: NEW CONSTRUCTION	DATE OF ELECTRICAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	TANK LEVEL: YES
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 24"	BURIAL DEPTH OF TANK: 18"
SYSTEM WIRED ON A 15-AMP DEDICATED CIRCUIT WITH STD. BREAKER: YES	RISERS 4" - 6" ABOVE GRADE: YES
LENGTH(S) OF UF WIRE PAST LAST AERATION RTISER(S): 36"	VENTED LID(S) ON AERATION CHAMBER(S): YES
FEMALE PLUG(S) WIRED TO UF WIRE: YES	ANY GROUND SETTLING AROUND TANK: NO
CONDUIT(S) ENTERING AERATION RISER MADE WITH A WATERTIGHT CONNECTION: YES	
ISTHE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

ON 2ND PAGE MAKE A ROUGH SKETCH OF THE HOUSE ,WHERE THE SYSTEM IS LOCATED, WHERE THE CONTROL PANEL IS
 LOCATED , WHERE THE FRONT OF THE IS AND DIRECTIONS TO THE PROPERTY.

DIRECTIONS CAN START A FEW STREETS AWAY

EXAMPLE: RT. X LEFT ONTO XX STREET RIGHT ONTO PRIVATE DRIVEWAY 5TH HOUSE OF THE LEFT.

I certify that the Norweco Singlair TNT Wastewater Treatment System was installed according to the
 manufacture's specifications.

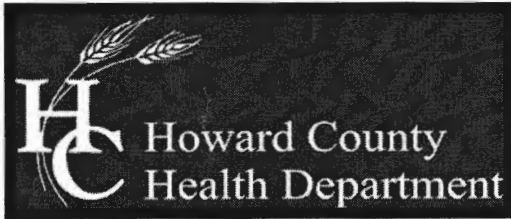
Matthew Geckle

July 6, 2019

Signature of BRP Representative

Vice-President

Date



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

Main: 410-313-2640 | Fax: 410-313-2648

TDD 410-313-2323 | Toll Free 1-866-313-6300

www.hchealth.org

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

Maura J. Rossman, M.D., Health Officer

SEWAGE DISPOSAL SYSTEM SPECIFICATIONS WORKSHEET

Address: Driver Rd

Subdivision: Hunter Prop Lot: _____

Initial system: Application rate: 0.8 Effective area beginning depth: 2.5' Bottom maximum depth: 8

1st Replacement: Application rate: 0.8 Effective area beginning depth: 2.5' Bottom maximum depth: 8

2nd Replacement: Application rate: 0.8 Effective area beginning depth: 2.5' Bottom maximum depth: 8

Design Flow = 150 gallons per day per bedroom

Design flow + application rate = square footage of drainfield required

Linear length of trench required = drainfield square footage x sidewall reduction percentage + trench width

Sidewall reduction credit formula:

$$\frac{W + 2}{W + 1 + 2D} \times 100 = \text{Percent of length of standard trench where } W = \text{trench width and } D = \text{depth between effective area beginning depth and trench bottom.}$$

Standard design requirements:

- All trenches must be equal length unless low pressure dosed
- All trenches must be on contour
- Minimum trench spacing: 10' for all trenches utilizing sidewall reduction credit. Additional spacing may be necessary for any trench using over 3.5' of effective sidewall. In those cases, the spacing formula is 2D + W up to a maximum spacing of 18'.
- Minimum trench spacing for trenches with no sidewall credit (bottom area only) is 6' for a 2' wide trench and 9' for a 3' wide trench (spacing is measured edge to edge)
- Maximum trench length is 100'
- Maximum pipe depth is 4'

Additional requirements:

Approved: [Signature] Date: 2/13/15

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, January 08, 2019 8:42 AM
To: 'MIKE RAZAVI'; JeffWood
Cc: Collin Ferguson
Subject: RE: Driver Road

Hello All:

I received the revised septic plan yesterday and I reviewed it this morning. I can approve the building permit once we have a building permit site plan that is to scale and matches the perc cert/BAT Plan. The site plan must be submitted to the permits office with a copy labeled for Health Department.

I also want to mention that the septic plan is only designed for a 4 bedroom residence. I mention this because the unfinished basement shows potential for a 5th bedroom depending on how it's finished in the future. You may want to revise the septic plan now for a 5 bedroom residence or make you may make up-grades to the system later on but it will require a revised septic plan and septic upgrades prior to building permit approval for the basement.

Should you have any questions, please don't hesitate to ask.

Thanks,

hank

From: MIKE RAZAVI [<mailto:mike@raztecengineers.com>]
Sent: Wednesday, December 19, 2018 11:49 AM
To: JeffWood; Oswald, Hank
Cc: Collin Ferguson
Subject: Re: Driver Road

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Gentlemen

Revised Septic Design Plan is attached . Profile for sewer to tank and BAT has been added. Plan is now 2 sheets.

Thanks
Mike Razavi, PE
(301) 775-4394

RAZTEC ASSOCIATES, INC

Civil Engineers

Land Planners

From: JeffWood
Sent: Tuesday, December 18, 2018 8:12 AM
To: Mike Razavi
Subject: Fwd: Driver Road

Did you see this response from hank

Sent from my iPhone

Begin forwarded message:

From: "Oswald, Hank" <hoswald@howardcountymd.gov>
Date: December 18, 2018 at 7:37:51 AM EST
To: Jeff Wood <jeffwood@woodbros.net>
Subject: RE: Driver Road

Hi Jeff

Yes, 82.5 feet is correct for a 4 BR house. As I mentioned, the unfinished basement shows potential for a 5th bedroom. You may want to size the system for 5 bedrooms. You will need to show the trench layout on the plan starting at the top of the SDA. You also need a septic and trench profile with elevations.

Thanks,

Hank

From: Jeff Wood [<mailto:jeffwood@woodbros.net>]
Sent: Monday, December 17, 2018 3:28 PM
To: Oswald, Hank
Subject: FW: Driver Road

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hank,

Attached is the new BAT design for 1386 Driver Rd permit # B18003791

Can you verify that there will be only 82.5' of trench in the initial septic construction?

Thanks

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell
410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

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From: MIKE RAZAVI [<mailto:mike@raztecengineers.com>]
Sent: Monday, December 17, 2018 1:24 PM
To: Collin Ferguson <cfergu22@yahoo.com>; hoswald@howardcountymd.gov
Cc: jeffwood@woodbros.net
Subject: Driver Road

Hello All

Revised Septic Plan showing BAT system is attached for you use.

Thanks

Mike Razavi, PE
(301) 775-4394

***R*AZTEC ASSOCIATES, INC**

Civil Engineers

Land Planners

Maura J. Rossman, M.D., Health Officer

MEMORANDUM

TO: Raztec Associates
341 West Patrick Street
Frederick, MD 21701

FROM: Hank Oswald, L.E.H.S.
Well & Septic Program

RE: BAT Plan
1386 Driver Road, Lot 7A

Date: January 4, 2019

The following comments refer to the BAT Plan for 1386 Driver Road:

- 1.) The well box location does not match the signed Perc Cert Plan. For example, the well box on the perc cert is 10 feet from lot line on one side of it.
- 2.) Add note: The well tag # HO-15-0046 has been field located and accurately shown.
- 3.) Change wording from "Top of Trench Depth" to "Trench Invert Elevation" in chart.
- 4.) Eliminate any legend symbol not used on plan. For example, "Existing Water Line".
- 5.) Show a minimum of 2 inches of gravel above the trench invert in septic profile and geotextile filter fabric above the gravel. There should be no filter below the trench invert.

Oswald, Hank

From: Oswald, Hank
Sent: Friday, January 04, 2019 2:01 PM
To: MIKE RAZAVI (mike@raztecengineers.com)
Cc: JEFFWOOD@WOODBROS.NET
Subject: BAT Memo _1386 Driver Road
Attachments: BAT_Memo_1386 Driver Road.pdf

Hello Mr. Razavi:

Attached, please find comments pertaining to the BAT Plan received/reviewed today for 1386 Driver Road. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov

CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

Oswald, Hank

From: Oswald, Hank
Sent: Friday, December 28, 2018 8:05 AM
To: 'Jeff Wood'
Subject: RE: Driver Road Septic Plan
Attachments: BAT Site Plan Requirements_Updated 5.31.17.pdf

12/31/18 - Jeff Wood
came to office to discuss
comments. Also noted
the following:
. Add well radius around
well box.
. match OSDS to PC (ie well box)
. Need original S & M agreement.

Hi Jeff:

As I may have mentioned, I don't normally review plans on line but before you print, add/change the following:

- 1.) Add a note that the existing well tag # has been field located by NAME of Engineer or Surveyor on DATE.
- 2.) Add well tag # to first page of plan next to existing well.
- 3.) Add legend symbol for existing well
- 4.) Add legend symbol for Sewage Disposal Area (SDA)
- 5.) Show calculations for all 3 systems
- 6.) Show how all 3 systems (i.e. trenches) fit within the approved SDA. Please utilize the SDA as efficiently as possible starting at the very top with the first trench.
- 7.) Add a trench side profile for first system.
- 8.) Raise tank as high as possible while maintaining 2% fall and 6 inches cover and raise the distribution box and trench inverts as high as possible while maintaining 2% fall and 18 inch invert depth.

I can't guarantee you that this will be all of the revisions but send in 3 copies for review. I am here until 11:30 today & Monday, closed on Tuesday and resume regular schedule on Wed of next week.

Thanks,

Hank

From: Jeff Wood [<mailto:jeffwood@woodbros.net>]
Sent: Friday, December 28, 2018 7:27 AM
To: Oswald, Hank
Subject: FW: Driver Road Septic Plan

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hank,

Attached are the septic design and site plan for 1386 Driver Rd

I am having copies made and would like to drop the paper copies off at your office today. Can you tell me a best time to stop by to hand the copies to you at the office.

Thanks for your guidance throughout this phase of permit application.

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell

410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

Follow us on Facebook!

From: MIKE RAZAVI [<mailto:mike@raztecengineers.com>]
Sent: Thursday, December 27, 2018 4:02 PM
To: Jeff Wood <jeffwood@woodbros.net>; Collin Ferguson <cfergu22@yahoo.com>
Subject: re: Driver Road Septic Plan

Gentlemen

Here is the PDF of the revised septic plan showing the new Norweco BAT system.

Mike Razavi, PE
(301) 775-4394

RAZTEC ASSOCIATES, INC

Civil Engineers

Land Planners

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, December 18, 2018 7:38 AM
To: 'Jeff Wood'
Subject: RE: Driver Road

Hi Jeff

Yes, 82.5 feet is correct for a 4 BR house. As I mentioned, the unfinished basement shows potential for a 5th bedroom. You may want to size the system for 5 bedrooms. You will need to show the trench layout on the plan starting at the top of the SDA. You also need a septic and trench profile with elevations.

Thanks,

Hank

From: Jeff Wood [<mailto:jeffwood@woodbros.net>]
Sent: Monday, December 17, 2018 3:28 PM
To: Oswald, Hank
Subject: FW: Driver Road

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Hank,
Attached is the new BAT design for 1386 Driver Rd permit # B18003791
Can you verify that there will be only 82.5' of trench in the initial septic construction?

Thanks

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell
410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

[Follow us on Facebook!](#)

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Sent: Monday, December 17, 2018 1:24 PM
To: Collin Ferguson <cfergu22@yahoo.com>; hoswald@howardcountymd.gov
Cc: jeffwood@woodbros.net
Subject: Driver Road

Hello All

Revised Septic Plan showing BAT system is attached for you use.

Thanks

Mike Razavi, PE
(301) 775-4394

RAZTEC ASSOCIATES, INC

Civil Engineers

Land Planners

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, November 27, 2018 2:38 PM
To: 'Jeff Wood'
Subject: RE: B18003791_1386 Driver Road

Hi Jeff:

The house shows 4 bedrooms not including the loft since it's showing a cased 4 foot wide opening w/o door. All we need at this point is a BAT Plan in order to approve the building permit. I should warn you that if the homeowners want to finish the basement in the future, there is potential for at least one bedroom which will warrant possible upgrades to the septic system prior to BP approval. You may want to consider sizing the system for at least 5 bedrooms.

Thanks,

Hank

From: Jeff Wood [<mailto:jeffwood@woodbros.net>]
Sent: Tuesday, November 27, 2018 11:51 AM
To: Oswald, Hank
Subject: FW: B18003791_1386 Driver Road

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hank,
I wanted to check back with you about the septic design for 1386 Driver rd. Can you call me when you have a chance or let me know the best time to call you.

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell
410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

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From: Jeff Wood [<mailto:jeffwood@woodbros.net>]
Sent: Tuesday, November 20, 2018 7:54 AM
To: 'hoswald@howardcountymd.gov' <hoswald@howardcountymd.gov>
Subject: FW: B18003791_1386 Driver Road

Hank,
Thanks for your septic system review of the residence at 1386 Driver Rd. In reference to your questions about the floor plan as designed:
The loft currently has a 4' cased opening without a door for privacy or a closet in the space.
The basement plan shows a rough-in for a 3 piece bath but no further plans for finishing are included in my contract for building the house.
I will call you on Monday 11/26 when you are back in the office.

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell
410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

[Follow us on Facebook!](#)

From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Monday, November 19, 2018 1:57 PM
To: JEFFWOOD@WOODBROS.NET
Subject: B18003791_1386 Driver Road

Hello Mr. Wood:

This office is in receipt of building permit application and site grading plan for 1386 Driver Road. In order to complete the review process, the Health Department will need an approved BAT Septic Plan for a 5 bedroom residence (which includes the loft on the 2nd floor unless the room has a 4 foot cased opening without a door or half wall. Is the basement going to be finished because the floor plan shows a full bathroom with the potential for more bedrooms?

Please forward the BAT Septic Plan at your earliest convenience. I've attached a copy of the septic specs and water sample result letter for your records. Should you have any questions, please don't hesitate to ask.

Thanks,

Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov

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Oswald, Hank

From: Jeff Wood <jeffwood@woodbros.net>
Sent: Tuesday, November 20, 2018 7:54 AM
To: Oswald, Hank
Subject: FW: B18003791_1386 Driver Road

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hank,
Thanks for your septic system review of the residence at 1386 Driver Rd. In reference to your questions about the floor plan as designed:
The loft currently has a 4' cased opening without a door for privacy or a closet in the space.
The basement plan shows a rough-in for a 3 piece bath but no further plans for finishing are included in my contract for building the house.
I will call you on Monday 11/26 when you are back in the office.

Jeff

Jeff Wood
Wood Bros. Inc.
2200 Elliottschance Court
White Hall, MD 21161
410-627-8321 phone/cell
410-329-6228 fax
jeffwood@woodbros.net
www.woodbros.net

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Sent: Monday, November 19, 2018 1:57 PM
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RAZTEC ASSOCIATES, INC

Civil Engineers

Land Planners

TRANSMITTAL

Date: January 7, 2019

ADDRESS: Howard County – Well and Septic Division

ATTENTION: **Hank Oswald**

Delivery: Hand Delivered by Jeff Woods

RE: Driver Road

Enclosed please find the following:

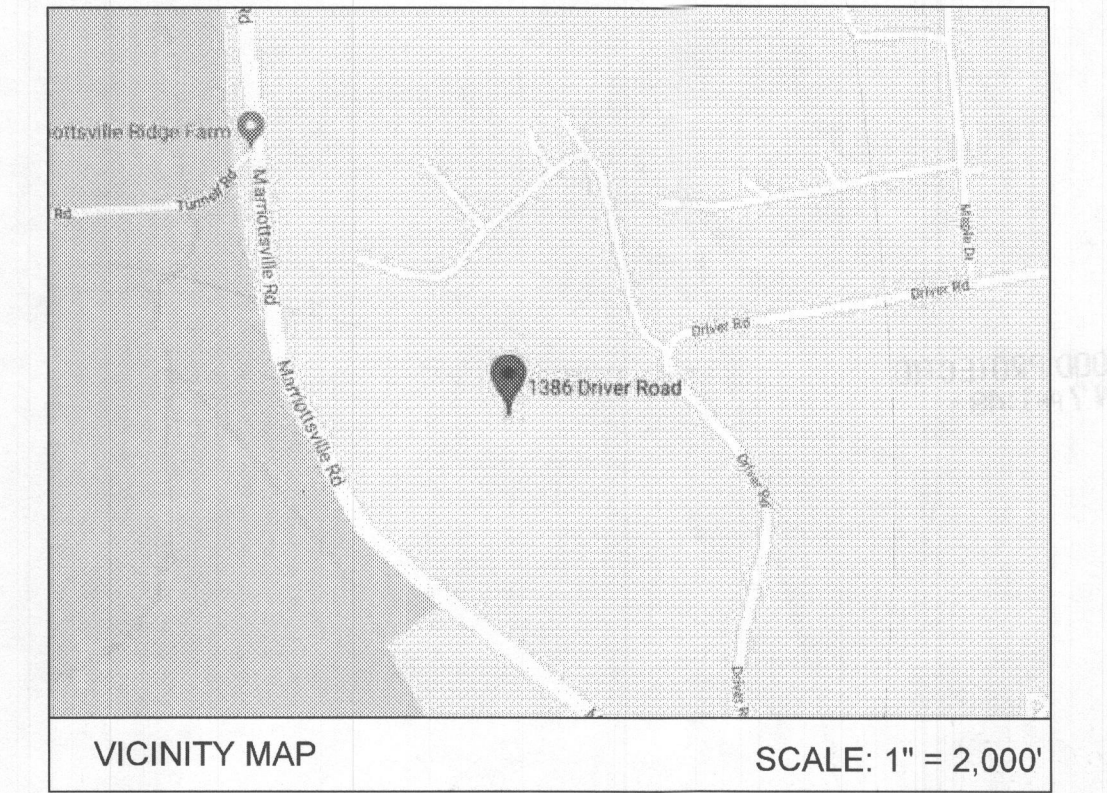
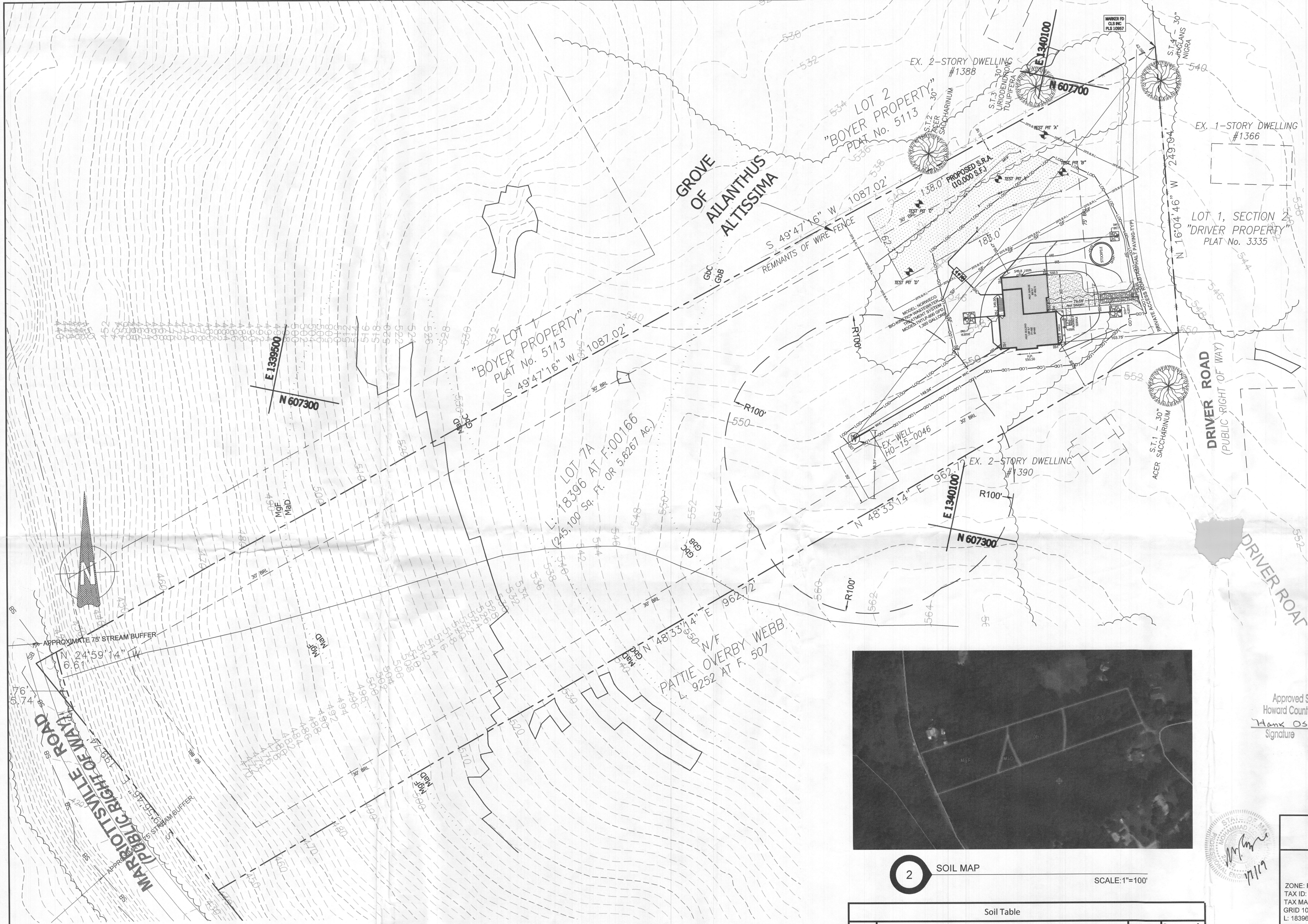
2 copies of Septic Plan

We have revised our plan per your latest comments as follows;

- 1. The location of the well box has been revised to match the Perc Certification Plan.**
- 2. Well tag note has been added.**
- 3. The Top of the Trench depth has been revised in the cahrt.**
- 4. Unused items in the legend have been removed.**
- 5. 2" filter and geo-textile filter fabric has been added and noted on the profile of the septic trench.**

Please call should you have any questions or require any further information, please call me at 301-775-4394.

Thank You
Mike Razavi, P.E



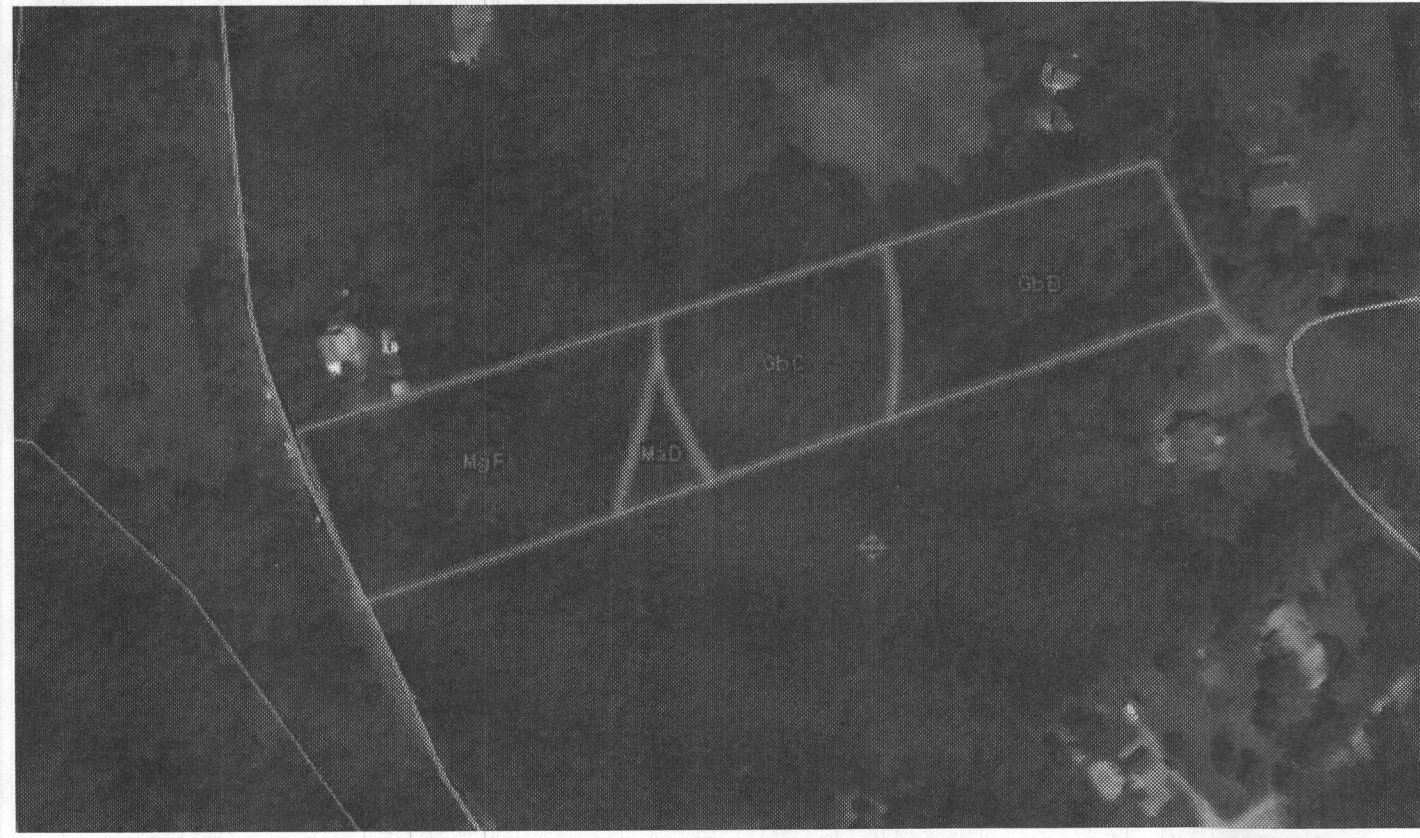
NOTE
 NO GRADING OR PLACEMENT OF DIRT/ EARTH OR EQUIPMENT IS ALLOWED WITHIN THE SEPTIC AREA.

Note:
 The well tag # HO-15-0046 has been field located and accurately shown.

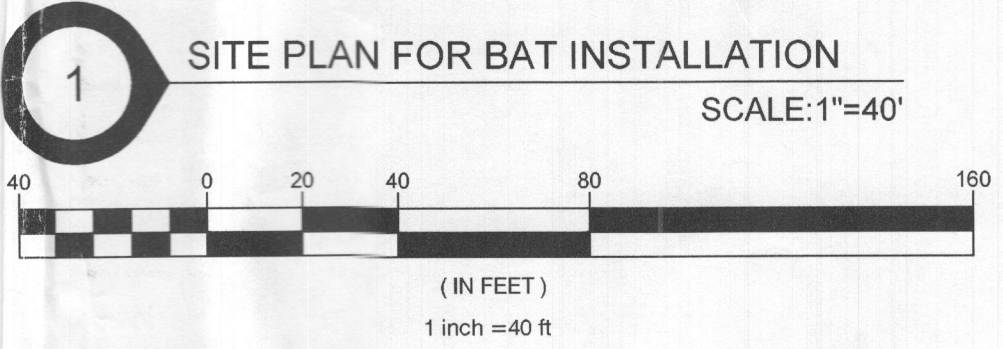
PROPOSED FEATURE	SYMBOL
LIMIT OF DISTURBANCE	— L00 —
PROPOSED BUILDING	
PROPOSED PAVEMENT	
PROPOSED CONTOUR	— 100 —
PROPOSED SPOT ELEVATION	+250
PROPOSED GRAVEL DRYWELL	
PROPOSED DOWNSPOUT LOCATION	DS1
PROPOSED 6" PVC PIPE	6" PVC
PROPOSED 6" PERFORATED PIPE	6" PVC
PROPOSED SILT FENCE	— SF —
PROP. WATER HOUSE CONNECTION	— WHC —
STABILIZED CONSTRUCTION ENTRANCE	

SITE PLAN LEGEND	
EXISTING FEATURE	SYMBOL
SUBJECT SITE BOUNDARY	—
ADJOINING PROPERTY BOUNDARY	—
BUILDING RESTRICTION LINE	— 7.8% —
EXISTING CONTOURS (MINOR)	— 101 —
EXISTING CONTOURS (INDEX)	— 100 —
EXISTING FENCE	— X —
EXISTING TREE LINE	
EXISTING WATER WELL	(W)
EXISTING TREE TO BE REMOVED	

Approved Septic System Plan
 Howard County Health Department
 Hans Oswald 1/17/19
 Signature Date



Soil Table			
Map Unit	Map Unit Name	Rating	Percent of AOI
GbB	Gladstone loam, 3 to 8 percent slopes	A	32.2%
GbC	Gladstone loam, 8 to 15 percent slopes	A	25.2%
MaD	Manor loam, 15 to 25 percent slopes	B	4.2%
MgF	Manor-Bannertown sandy loams, 25 to 65 percent slopes, rocky	B	38.4%
Totals for Area of Interest			100.00%



1 SITE PLAN FOR BAT INSTALLATION
 SCALE: 1"=40'

REV#	DATE	(REVIEW AGENCY) COMMENTS ADDRESSED
1		

SITE PLAN FOR BAT INSTALLATION

1386 DRIVER RD MARRIOTTSVILLE LOT 7A

SITUATED AT:
 1386 DRIVER ROAD,
 HOWARD CO., MD

OWNER/ APPLICANT INFO
 COLIN FERGUSON
 KIMBERLY FERGUSON
 731 S CURLEY ST
 BALTIMORE MD 21224
 PHONE: (443) 742-1392

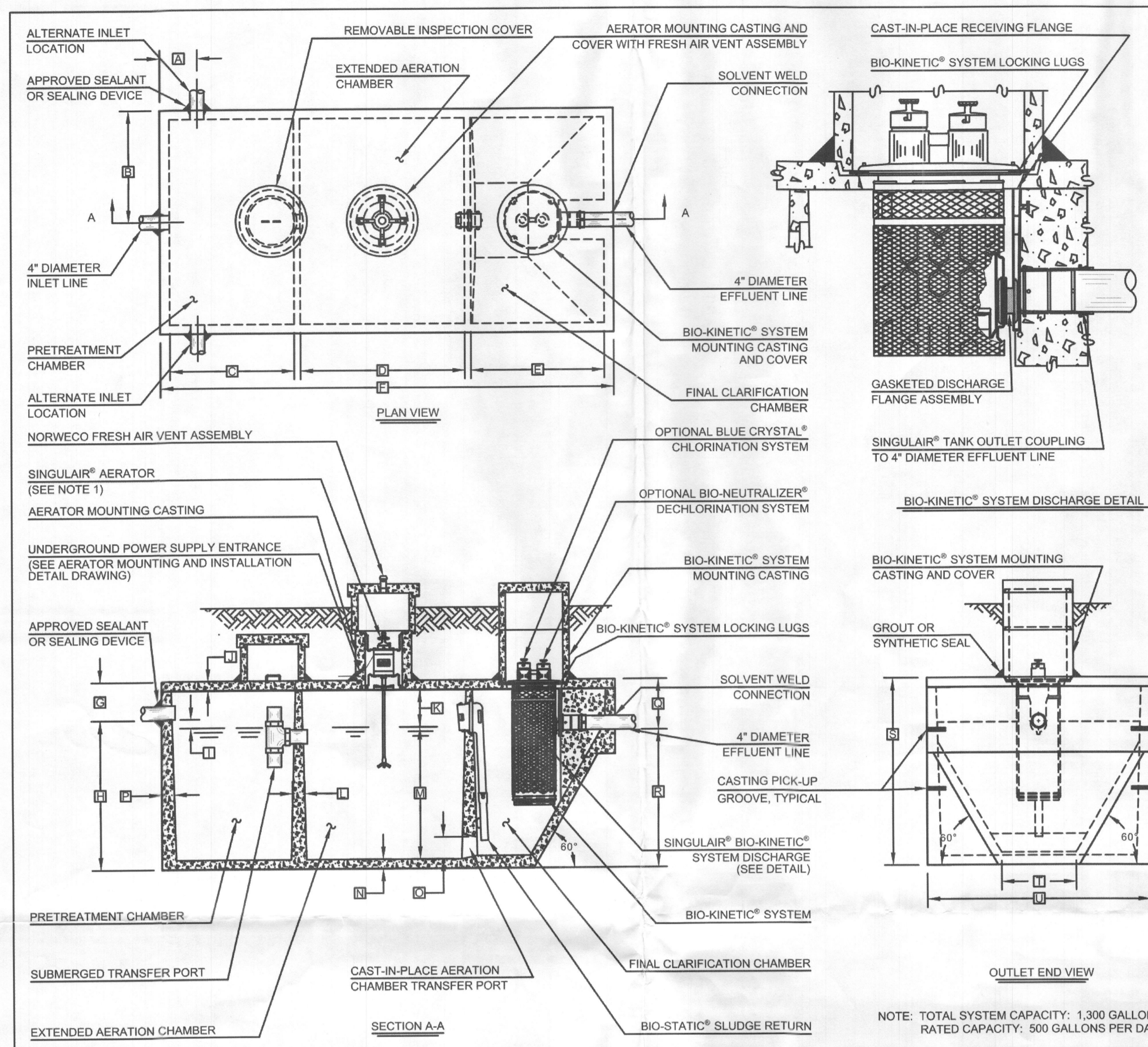
THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SEAL

RAZTEC ASSOCIATES, INC.
 civil engineers & planners
 341 West Patrick St. Frederick, Maryland 21701
 Tel (301) 775-4394
 email: raztecengr@comcast.net

PROFESSIONALS' REVIEW STATEMENT:
 I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER: 22742 EXPIRES: JUNE 15, 2020

DRAWN BY: SE	DATE	SCALE	SHEET NUMBER
CHECKED BY: MR	1/17/2019	1"=40'	1 of 2



- GENERAL NOTES:**
- SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
 - FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
 - ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE.
 - TANK REINFORCED PER ACI STD. 318-05
 - REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
 - CONTACT THE LOCAL LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

PROJECT ENGINEER'S APPROVAL:
 I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

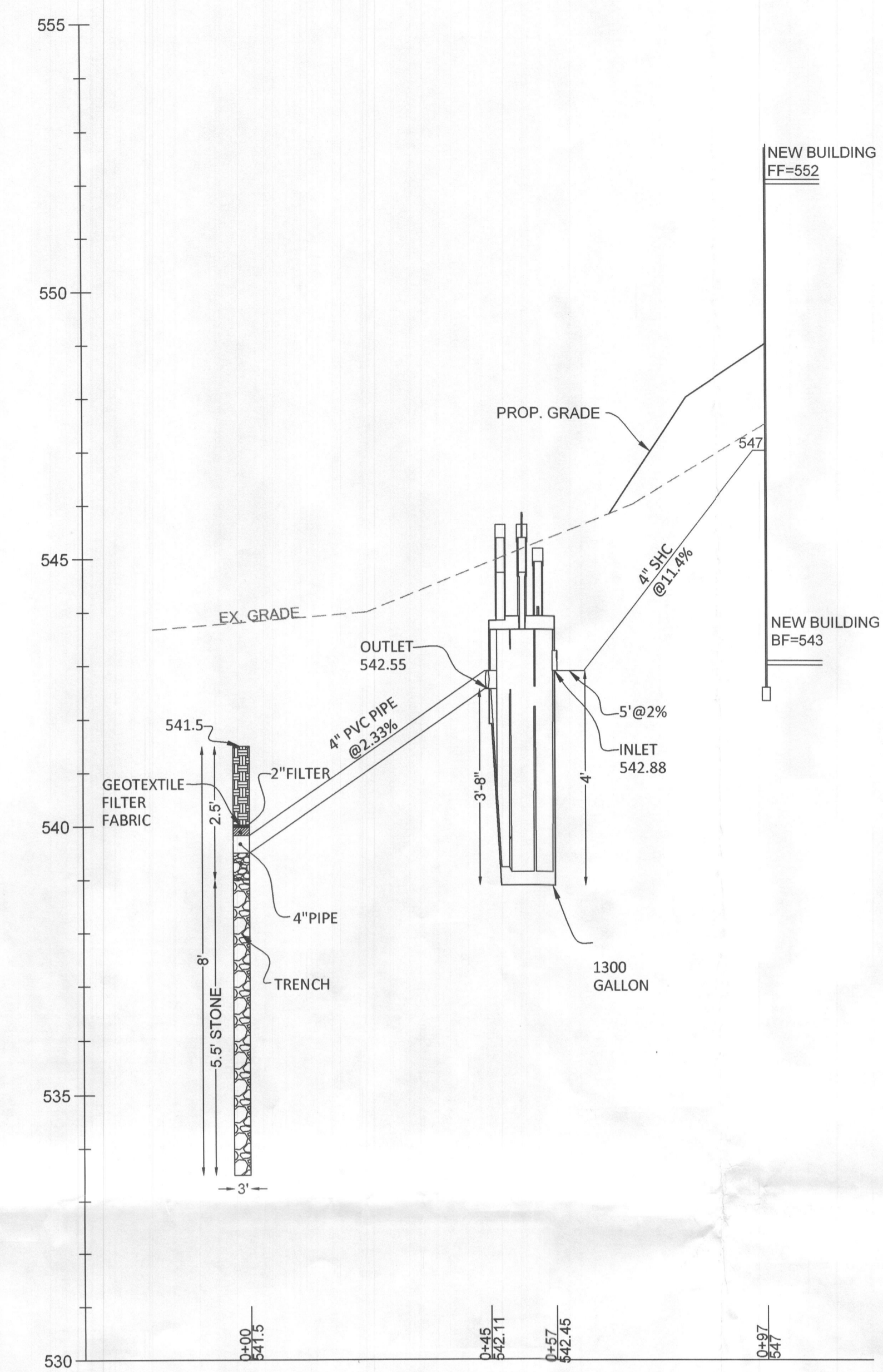
CONTRACTOR'S CERTIFICATION:
 I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

CRITICAL DIMENSIONS

A	1'-0"	U	0'-3"
B	3'-0"	V	0'-6"
C	3'-4"	W	0'-3"
D	4'-5"	X	1'-4"
E	3'-7"	Y	3'-8"
F	12'-2"	Z	5'-0"
G	1'-0"	AA	2'-0"
H	4'-0"	AB	6'-0"
I	0'-3"	AC	
J	0'-3"	AD	
K	1'-0"	AE	
L	0'-2"	AF	
M	3'-6"	AG	

U.S. AND FOREIGN PATENTS PENDING
norweco
 LOW-PROFILE SINGULAIR® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM MODEL 7N1LP-500 GPD
 3-28-07 B
 JIM
 10-16-06
 NTS
 PC-5-7/91

NOTE: TOTAL SYSTEM CAPACITY: 1,300 GALLONS
 RATED CAPACITY: 500 GALLONS PER DAY



PROPOSED SEWER HOUSE CONNECTION
 V SCALE: 1" = 2'
 H SCALE: 1" = 20'

SEPTIC DESIGN CHART

	SURFACE ELEV.	BEGIN. DEPTH (FT)	Trench Invert Elevation	Invert in at Tank	Invert out at Tank
INITIAL SYSTEM	544	2.5	541.5	542.88	542.55

PERCOLATION TEST RESULTS

Test Site	Date Test Performed	Depth	Strat	Break 1" Drop	Break 2" Drop	Time of 2nd Inch	P/F/H
A	10/08/09	12.9/4	11:41	11:43	11:46	3 min	PASS
B	10/08/09	14/4	11:09	11:16	11:26	10 min	PASS
C	10/08/09	15/4	12:28	12:38	12:49	11 min	PASS
D	10/08/09	14.6/4.8	12:22	12:36	12:50	15 min	PASS
E	10/08/09	12.9/4	11:57	11:59	12:01	2 min	PASS

BAT Site Plan Notes

- Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised site plan may be required.
- The maximum depth of the BAT per the manufacturer's specification is 3'.
- The blower may not be located more than N/A feet from the tank based on the manufacturer's specifications.
- The BAT system shall be maintained and operated for the life of the system.
- The BAT shall be operated by and maintained by a certified service provider.
- Within one month of installation, a person installing the BAT system shall report to the Maryland Department of the Environment (MDE) in a manner acceptable to MDE, the address and date of completion of the BAT installation and the type of BAT installed.
- Electrical work for the BAT installation must be performed by a licensed electrician.
- An Agreement and Easement must be completed and signed by all applicable parties, and recorded in Land Records of Howard County.
- The Health Department requires documentation for the start-up certification from the manufacturer prior to final approval of the installation.

Calculations For Septic Design

Application rate = 0.8
 Effective Area Beginning Depth = 2.5'
 Bottom Maximum Depth = 8'
 D (effective depth) = 8' - 2.5' = 5.5'
 Design Flow = 150 gallons x 4 Bedrooms = 600 Gallons
 Drainfield Area Required = Design Flow/Application Rate = 600 gallons/0.8 = 750 S.F.
 Sidewall Reduction = $(W+2/W+1+2D) \times 100\% = (3+2/3+1+2(5.5)) = 33.3\%$
 Where W = 3' (Trench Width)
 D = 5.5' (Effective Depth)
 Linear Length of Trench Required = 750 S.F. x 33% (sidewall reduction) / 3'(trench width) = 82.5 feet
 Two (2) Additional Trenches Required : 2 x 82.5 feet = 165 feet

REV#	DATE	
1		(REVIEW AGENCY) COMMENTS ADDRESSED

DETAILS AND NOTES

1386 DRIVER RD MARRIOTTSTVILLE LOT 7A

SITUATED AT:
 1386 DRIVER ROAD,
 HOWARD CO., MD

OWNER/APPLICANT INFO
 COLLIN FERGIJSON
 KIMBERLY FERGIJSON
 731 S. CURLEY ST.
 BALTIMORE MD 21224
 PHONE: (443) 742-1392
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

ZONE: R-C(CEO)
 TAX ID: 03-298825
 TAX MAP: 10
 GRID: 10 PARCEL 128
 L: 18396 F:00166

RAZTEC ASSOCIATES, INC.
 civil engineers & planners
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SEAL
 STATE OF MARYLAND
 COLLIN FERGIJSON
 PROFESSIONAL ENGINEER
 11/17

DRAWN BY: SE	DATE	SCALE	SHEET NUMBER
CHECKED BY: MR	1/7/2019	-	2 of 2