

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: 1/10/19

ONSITE SEWAGE DISPOSAL SYSTEM

P 504720

APPROVAL DATE: 02/17/2019

PERMIT: CONSTRUCTION

A _____

PROPERTY ADDRESS: 13492 Allnutt Lane

SUBDIVISION: Dass Property

LOT: 21

TAX ID: 05-384796

CONTRACTOR: Fogle's Septic Clean Inc.

EMAIL: kurt@foglesinc.com

CONTRACTOR ADDRESS: 580 Obrecht Road, Sykesville, MD 21784

PHONE: 410-795-5670

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Robert Dass

EMAIL: _____

OWNER ADDRESS: 13496 Allnutt Lane, Highland, MD 21771

PHONE: _____

BAT UNIT MODEL: Hoot 600 BNR

PUMP SIZE: _____

PUMP TANK CAPACITY: _____

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 2/28/19

DATE RECORDED: 2/28/19

DISTRIBUTION SYSTEM: GRAVITY

PRESSURE DOSED

BEDROOMS: 4

APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>70</u>	INLET DEPTH: <u>3</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4</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:	Install 2 trenches of 35' in length. Electrical permit to be received by contractor at time of layout. <u>1.5" PVC - 1120 Sch 40 PR 330 PSI @ 73°F ASTM D 1785</u>	

ISSUED BY: Hank Oswald

ISSUE DATE: 3/5/19

EXPIRATION DATE: 3/5/20

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 19001108

NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.

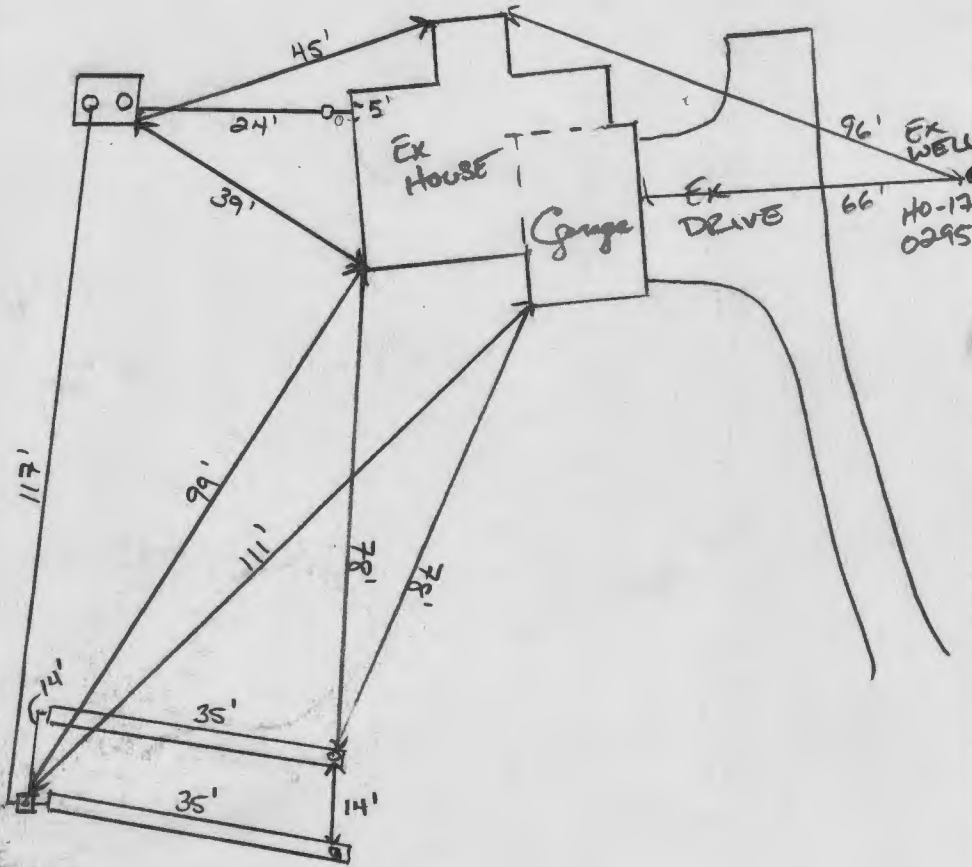
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

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.

NOT TO SCALE



ROAD NAME
ALLNUTT LANE

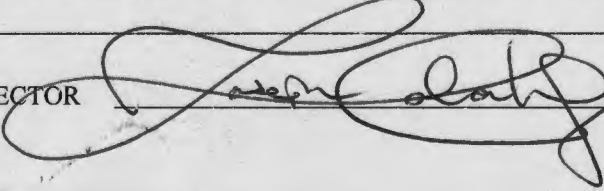
TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	3'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		70'
ABSORPTION AREA		210 f ²
DISTRIBUTION BOX LEVEL		N/A
DISTRIBUTION BOX BAFFLE		90° TURN DOWN
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA	
SEPTIC TANK 1 LEVEL	YES
MANUFACTURER	MAYER BROS
CAPACITY	6000 BRK GAL
SEAM LOC	TOP
TANK LID DEPTH	2.4 - 2.5 (1.0)
BAFFLES	INLET/MID
BAFFLE FILTER	-
MANHOLE LOC	FRONT/BACK
6" PORT LOC	INLET
WATERTIGHT TEST	
SLOTTED	HOOT SPEC
DATE ON LID	-

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	

PRE-CONSTRUCTION: 03/26/2019 TANK, SDA AND TRENCHES WERE STAKED BY SURVEYOR. CONTOUR OF TRENCHES CONFIRMED. OK TO START. (P)

INSTALLATION: 03/26/2019 TRENCHES COMPLETE. D Box SET. PART OF F. MAIN INSTALLED. STANDING H₂O BY HOUSE CONNECTION. OK TO BACKFILL TRENCHES AND FORCE MAIN. REINSP. TANK + SHC (P) 03/27/2019 TANK AND SHC INSTALLED. SEWER LINE TO TANK BEDDED IN #57 STONE. OK TO BACKFILL. REINSP (P) PUMP/ALARM/START UP. (P) 07/17/2019 PUMP AND ALARM ON SEPERATE BREAKERS. ALARM WORKS. PUMP WORKS. (P)

FINAL INSPECTOR  DATE OF APPROVAL 07/17/2019

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: Dass
Ref: 7

LR - Agreement Surcharge
1x 40.00 40.00

SubTotal: 60.00
Total: 60.00

CRD-Credit 60.00
Credit Card Confirmation : 08773D

02/28/2019 12:13 CC13-DS
#11721725/1246/109
~ Thank you for visiting us today ~

NO REFUND WITHOUT COURT ORDER

CUSTOMER COPY



MAYER BROS., INC.

Precast Concrete Products

6264 Race Rd. Elkridge, MD 21075

Letter of Satisfaction Hoot System Installation

Address of Property: 14696 Allnut Lane
Highland, MD. 20777

Date of Final Inspection: 7/17/19

Installer: Eagles

Hoot Technician/Inspector: Mike Sample

I hereby certify that the Hoot system installed at the property listed above has been installed according to proper Hoot installation practices. I have also verified the startup of the system and it is in proper working order.

Sincerely,

W. Michael Dyer

Name of Inspector
Mayer Bros., Inc.

PH: 410-796-1434

WBE

FX: 410-796-1438

www.mayerbrosprecast.com

Gross Interceptors, Gross Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,
Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Slabs, Curb Heads, Curb Ramps,
Custom Precast Products



Bureau of Environmental Health
8930 Stanford Blvd | Columbia, MD 21045
410.313.2640 - Voice/Relay
410.313.2648 - Fax
1.866.313.6300 - Toll Free

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 28th day of FEBRUARY, 2019, among ROBERT DASS, 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 13492 Allnut Lane Hilland MD, in the 4 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 # 34, Block # , Parcel # 375, Deed Reference # 5332 and Tax Account # 1405384796 ("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 BAT TANK HOOT H600BVR.

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.

Bert Ruffin 2/28/2019
Howard County Health Department

Roberts 2/26/19
Owner #1 Signature Date

Robert DASS
Owner #1 Print Name

Owner#2 Signature Date

Owner #2 Print Name

Buyer #1 Signature Date

Buyer #2 Signature Date

Buyer #1 Print Name

Buyer #2 Print Name

Bricker, Robert

From: Bricker, Robert
Sent: Wednesday, February 27, 2019 10:45 AM
To: 'rdass@msn.com'
Cc: 'RaphaelHomesMD@gmail.com'; Andy Porter (civildesign@comcast.net)
Subject: conditions for release of septic system installation permit
Attachments: OM agreement_revision 2 22 16.pdf

Dear Mr Das,

I am writing to you today to reiterate the requirements for release of the septic system permit associated with construction of a single-family home at 13492 Allnutt Lane. Primarily, I am directing this communication to you because one of the requirements is that an Operation and Maintenance Agreement must be completed then signed by the property owner and presented at the Health Department for signature by the Director, Bureau of Environmental Health (the Bureau) before being submitted for recording at Land Records. A notice regarding this requirement is included in Note 14 on the Percolation Certification Plan (Lot 21, Allnutt Farms Estates; signed 8/17/2016).

Three other requirements are (1) A BAT Plan must be submitted at the Bureau and approved, (2) a Foundation Location Survey must be submitted at the Bureau and approved, and (2) an electrical ('E') permit must be active. A BAT Plan, believed to be approvable, has been submitted. A Foundation Location Survey has not been submitted, though it is often presented by the septic system contractor when they are applying for the installation permit. An electrical permit is not active at this time.

Regarding the Operation and Maintenance Agreement:

- Download and Complete the Operation and Maintenance Agreement form,
- Sign the form as owner,
- Submit the form at the Bureau desk for signature by our Bureau Director,
- Take signed form to Land Records and submit it for recording, and
- Submit a copy of the receipt from Land Records to the Bureau (If submitting the receipt copy by email, you may send it to my email.)

ROBERT BRICKER, REHS/R.S., L.E.H.S.
ENVIRONMENTAL SANITARIAN II
BUREAU OF ENVIRONMENTAL HEALTH, WELL AND SEPTIC PROGRAM
8930 STANFORD BLVD., COLUMBIA, MD 21045

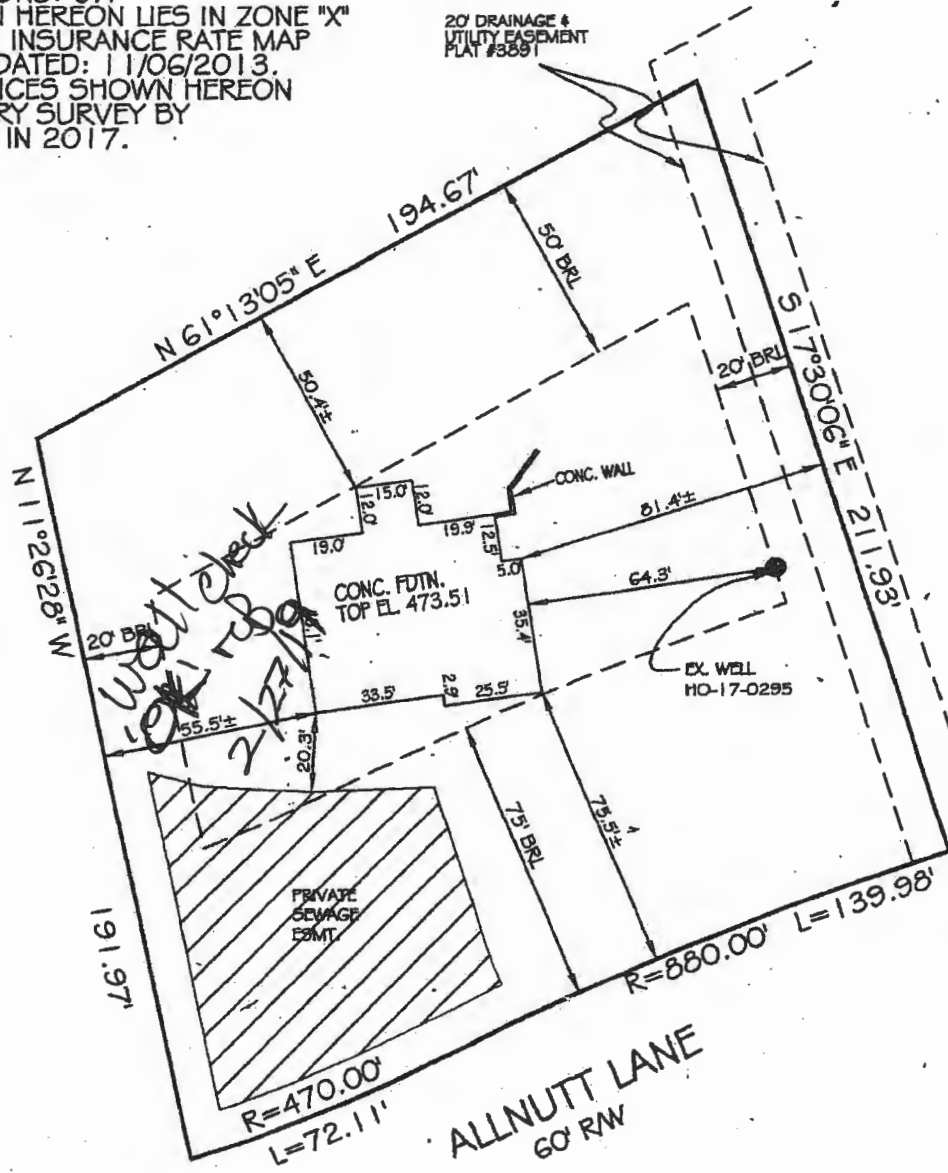
Phone: Desk, 410-313-2691; Program, 410-313-1771; Bureau, 410-313-1774
Fax: 410-313-2648

E-mail: rbricker@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.

1. ACCURACY OF BUILDING MEASUREMENTS: 0.1'
2. ACCURACY OF SETBACK DIMENSIONS: 1'
SETBACKS SHOWN ARE FROM FOUNDATION TO PROPERTY LINE.
3. ACCURACY OF ELEVATIONS: 0.1'
4. THE PROPERTY SHOWN HEREON LIES IN ZONE "X" AS SHOWN ON FLOOD INSURANCE RATE MAP NO. 24027C0130D DATED: 11/06/2013.
5. BEARINGS AND DISTANCES SHOWN HEREON ARE FROM A BOUNDARY SURVEY BY SHANABERGER & LANE IN 2017.



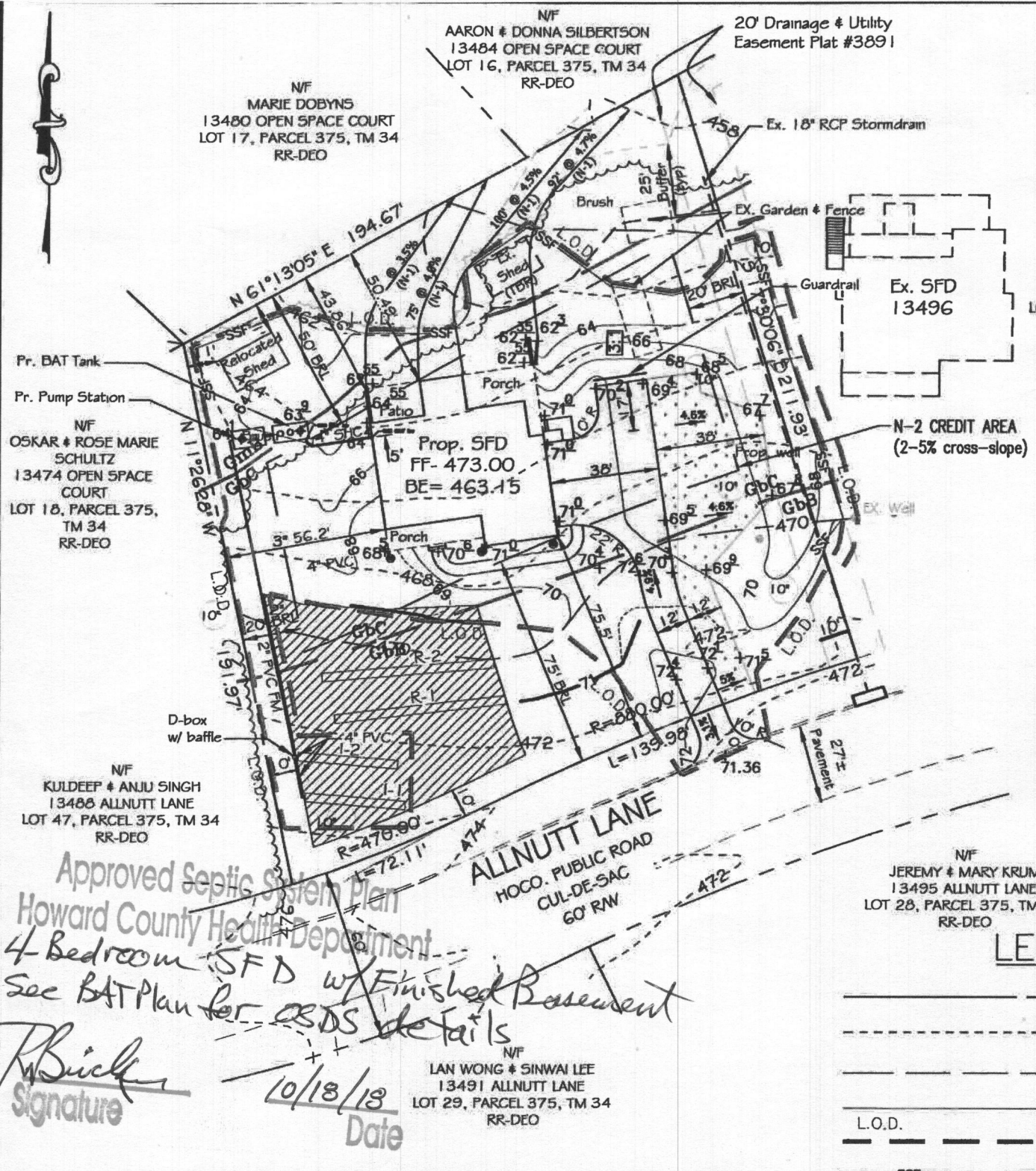
THE INFORMATION SHOWN HAS BEEN ESTABLISHED BY CURRENT ACCEPTABLE SURVEY PROCEDURES AND FROM AVAILABLE RECORD INFORMATION. THIS DRAWING IS NOT TO BE USED FOR THE ESTABLISHMENT OF PROPERTY LINES, LOCATION OF FENCES, GARAGES BUILDINGS, OR OTHER FUTURE IMPROVEMENTS. IT WAS PREPARED UNDER MY DIRECT SUPERVISION AND REVIEW IN ACCORDANCE WITH SEC. 29, 13.06.07 OF THE ANNOTATED CODE OF MD.

G. Scott Shanaberger
 G. SCOTT SHANABERGER
 PROFESSIONAL L.S. 10849
 LICENSE EXPIRATION DATE 4/2/2020
SHANABERGER & LANE
 8726 TOWN AND COUNTRY BLVD., SUITE 201
 ELLICOTT CITY, MD. 21043
 (410)461-9563 FAX: (410)461-9693



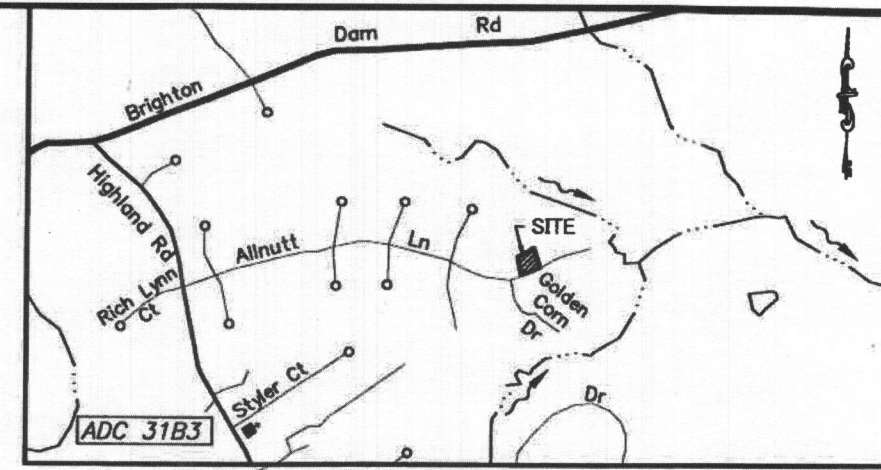
FOUNDATION LOCATION DRAWING
 LOT 21 ALLNUTT FARMS ESTATES
 13492 ALLNUTT LN.
 PLAT #4622
 TAX MAP 34 GRID 15 PARCEL 375
 5TH ELECTION DISTRICT HOWARD COUNTY, MD.
 SCALE: 1"=50' DATE: 11/28/2018

②

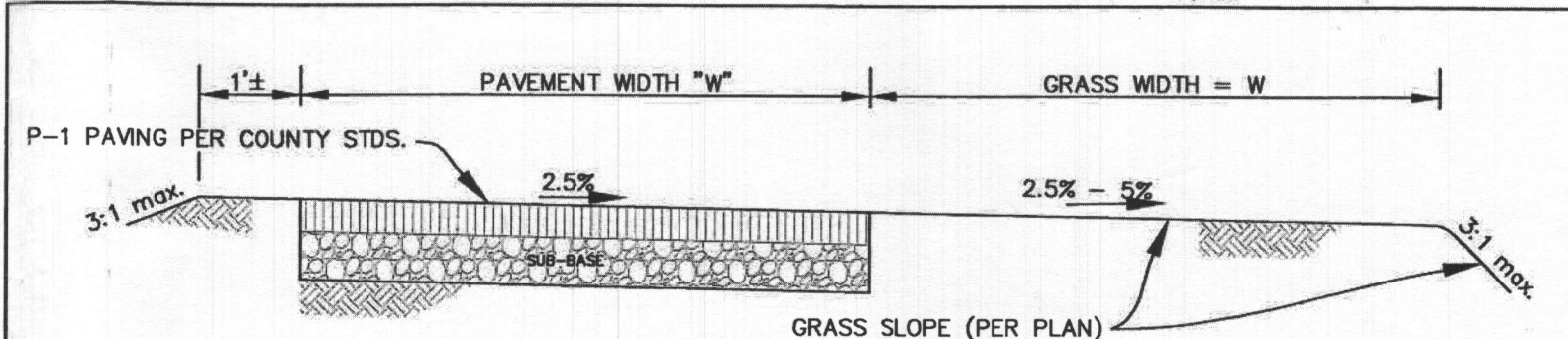


Approved Septic System Plan
 Howard County Health Department
 4 Bedroom SFD w/ Finished Basement
 See BAT Plan for OSDS details
R. Buckler
 Signature
 10/18/18
 Date

- NOTES:**
1. House Type: Custom House for R. Dass.
 2. Topo source: Field run (Shanaberger & Lane, based on F-78-081)
 3. Driveway pavement: HoCo. Standard P-1 Paving.
 4. See 24"x36" plan for information not shown here.

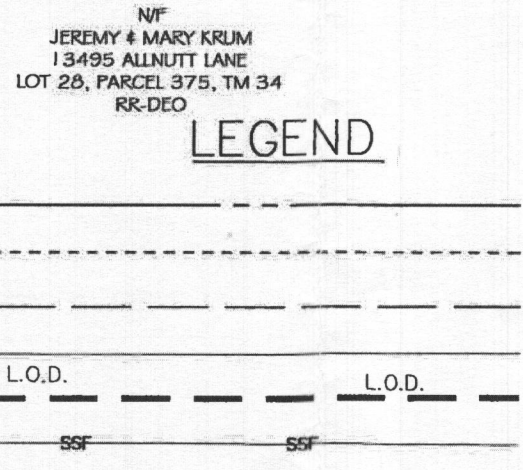


VICINITY MAP
 1" = 2,000'



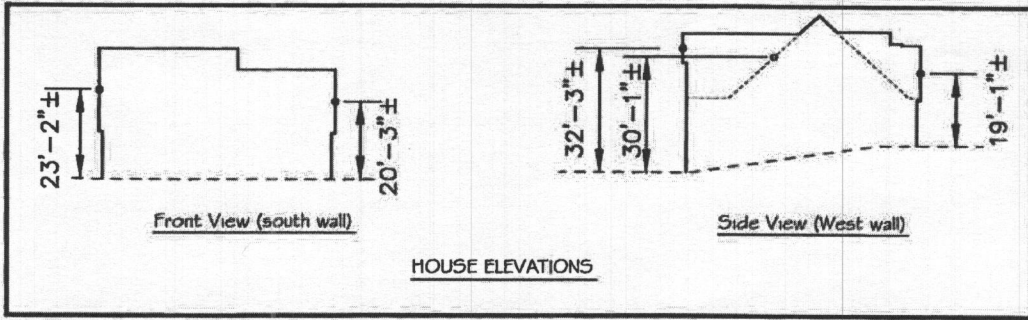
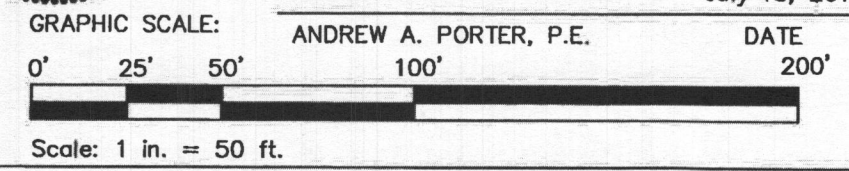
GRASS STRIP TYPICAL SECTION
 ADJACENT TO RESIDENTIAL DRIVEWAY
 NTS

NOTE: THE REQUIRED GRASS STRIP PROVIDES NON-ROOFTOP DISCONNECTION (N-2) STORMWATER CREDIT FOR THE IMPERVIOUS DRIVEWAY. CONSTRUCTION TRAFFIC SHOULD AVOID THIS AREA AS MUCH AS REASONABLE. NO IMPROVEMENTS WILL BE PERMITTED IN THIS AREA WITHOUT PRIOR COUNTY APPROVAL.



Andrew A. Porter
 Andrew A. Porter, P.E.

July 18, 2018



HOUSE ELEVATIONS

<p>BUILDER Raphael Homes, Inc. 110 Painters Mill Road, Suite 205 Owings Mills, Maryland 21117 410.581.9822 raphaelhomesmd@gmail.com</p>	<p>OWNER Robert and Sharon Dass 13496 Allnut Lane Highland, Maryland 20777 410.884.0970 rdass@msn.com</p>
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PLOT PLAN
DASS PROPERTY
LOT 21
 13492 ALLNUT LANE
 HIGHLAND, MARYLAND 20777
 TAX MAP NO: 34 PARCEL 375 GRID NO.: 15
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MD



N/F
AARON & DONNA SILBERTSON
13404 OPEN SPACE COURT
LOT 16, PARCEL 375, TM 34
RR-DEO

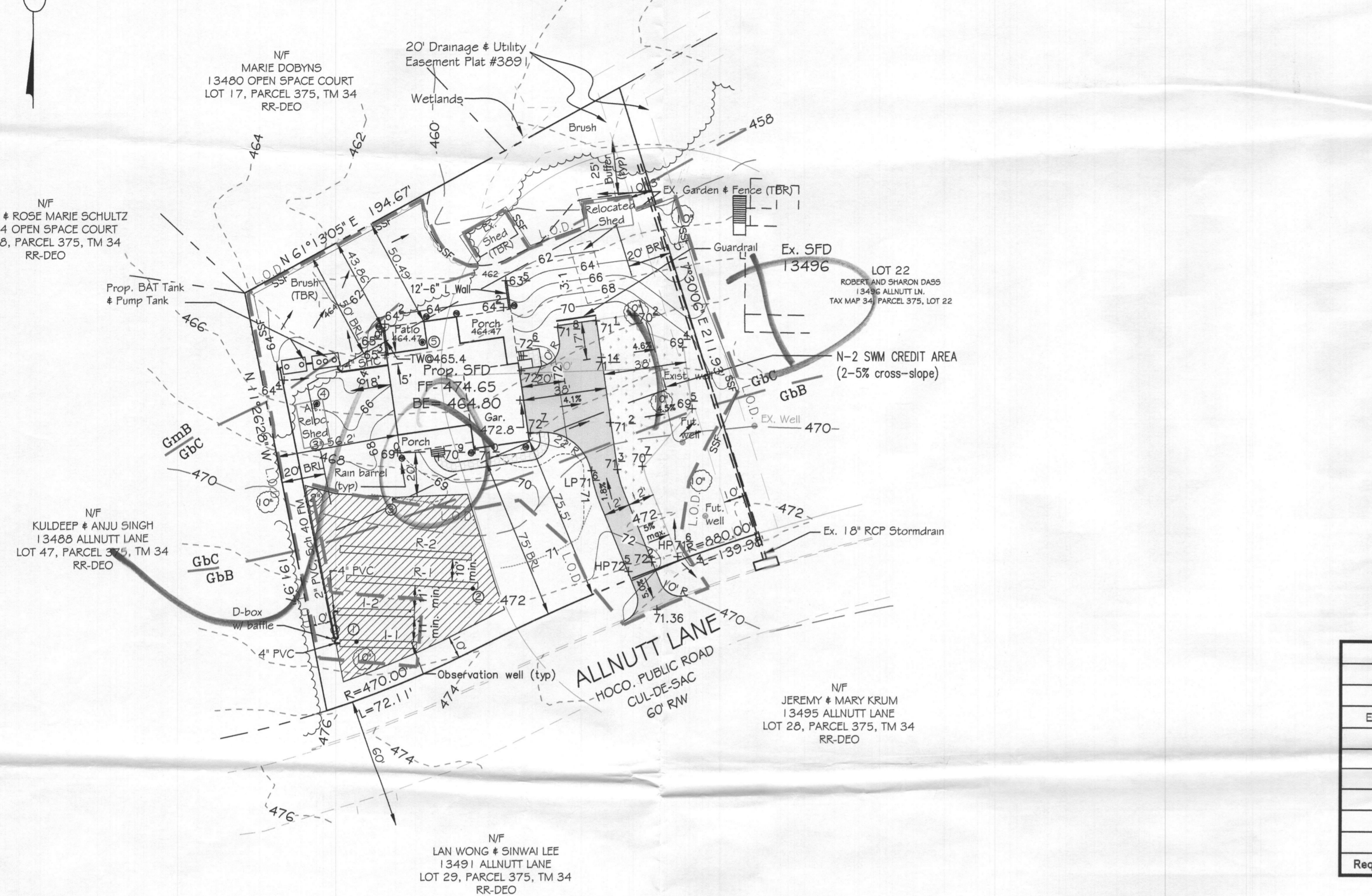
N/F
MARIE DOBYNS
13460 OPEN SPACE COURT
LOT 17, PARCEL 375, TM 34
RR-DEO

N/F
OSKAR & ROSE MARIE SCHULTZ
13474 OPEN SPACE COURT
LOT 18, PARCEL 375, TM 34
RR-DEO

N/F
KULDEEP & ANJU SINGH
13408 ALLNUTT LANE
LOT 47, PARCEL 375, TM 34
RR-DEO

N/F
LAN WONG & SINWAI LEE
13491 ALLNUTT LANE
LOT 29, PARCEL 375, TM 34
RR-DEO

N/F
JEREMY & MARY KRUM
13495 ALLNUTT LANE
LOT 28, PARCEL 375, TM 34
RR-DEO



PLAN
SCALE: 1" = 40'

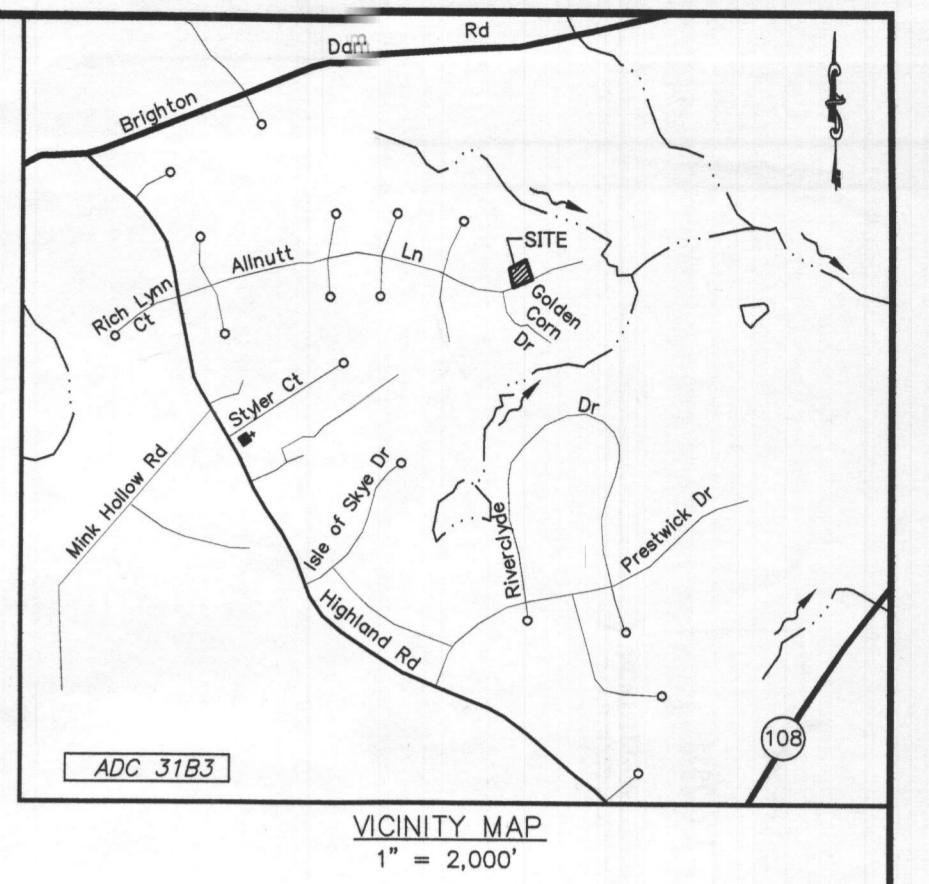
LEGEND

- Property Line
- Ex. 2' Contour
- Ex. 10' Contour
- Proposed Contour
- LOD
- Super Silt Fence
- Existing Treeline
- Proposed Treeline
- Edge of Ex. Paving
- Soils Divide
- N-2 Credit area
- Impervious Area
- Drainage Flow Path
- Test Pit Pass
- Test Pit Fail
- Prop. Elev., Ex. Elev.
- Proposed or reserve well

SOILS TABLE

SYMBOL	NAME	HSG	Kw
GbB	Gladstone loam 3-8% slopes	A	0.20
GbC	Gladstone loam 8-15% slopes	A	0.20
GmB	Glenville silt loam 3-8% slopes	C/D	0.37

Source: Web Soil Survey HOWARD SCD MAP NUMBER = 23
The benchmark used for the on-site topography on this plan: Iron pipe found near point 514, elevation 473.52 per road and storm drain as-built of F-78-081. Contact Shanaberger & Lane (Ellicott City) to verify control points for the OSDS design on this plan.



- GENERAL NOTES**
- All construction shall meet the latest edition of the Howard County standards and specifications or as shown on these plans. The contractor shall consult the engineer should there be any discrepancies.
 - The benchmark used for topographic survey on this plan: Iron pipe found near point 514, elevation 473.52 per road and storm drain as-built of F-78-081. Contact Shanaberger & Lane (Ellicott City) to verify control points for the OSDS design.
 - The utility locations are approximate. Contractor shall test pit all known existing utilities to verify, size, shape, location, and type prior to performing construction. Any utility damaged due to construction must be repaired immediately at the contractor's expense.
 - Should the contractor discover discrepancies between the plans and field conditions, the engineer is to be notified immediately to resolve the situation. If the contractor makes field corrections or adjustments without notifying the engineer, then the contractor assumes all responsibility for those changes.
 - The contractor shall notify Miss Utility 1-800-257-7777 and the Howard County Department of Inspection Licenses & Permits three (3) working days before beginning construction.
 - Civil Design Services, LC is not responsible for the contractor's utilization of men, materials, equipment, or safety measures in the performance of any work for this project. The contractor assumes all responsibility for performing the work correctly and in conformance with code/specification requirements.
 - The property boundary and topo survey was prepared by Shanaberger & Lane (Ellicott City) in February, 2017 and May, 2018, and is based on the horizontal and vertical datum from F-78-081. Topography shown outside of the subject property was also supplied by Shanaberger & Lane and is in Howard County GIS topo. CDS is not responsible for the boundary and topographic information.
 - Any changes to a private SDA will require a revised Percolation Certification Plan.
 - This area designates a private sewage area as required by the Maryland State Department of the Environment for individual sewage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These areas shall become null and void upon connection to a public sewerage system. The Howard County health officer shall have the authority to grant adjustments to the private sewage area. recordation of a modified sewage area shall not be necessary.
 - The subject property has a limitation of five (5) bedrooms unless an exhibit presented by a certified professional demonstrates that the private sewage disposal area, including the area where a system of innovative design may be installed, will accommodate the wastewater discharge for a residence having more than 5 bedrooms. NOTE: The design as currently shown is for 4 of the maximum 5 bedrooms.

DASS PROPERTY SDA TRENCH DATA

Trench ID	Length (ft)	Ground Elevation	4" Perf. Pipe Invert	Trench Invert (max depth)
I-1	35	473.35	470.35	465.35
I-2	35	472.50	469.50	464.50
R-1	60	471.50	468.50	466.00
R-2	60	470.70	467.70	465.20

INITIAL SYSTEM

Number of Bedrooms	4
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	4 ft
Trench Maximum Depth	8 ft
Design Flow	600 gpd
Drainage Field Area	500 sf
Sidewall Reduction Credit	41.87%
Trench Width	3 ft
Effective Area Depth	4 ft
Required Length Each (2 Trenches)	35 ft

RESERVE SYSTEM

Number of Bedrooms	4
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	4 ft
Trench Maximum Depth	5.5 ft
Design Flow	gpd
Drainage Field Area	500 sf
Sidewall Reduction Credit	71.43%
Trench Width	3 ft
Effective Area Depth	1.5 ft
Required Length Each (2 Trenches)	80 ft

- BAT 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 or BAT plan may be required.
 - The existing well shown on this plan (well tag # HO-17-0295) has been field located and is accurately shown.
 - The maximum depth (slab top to ground) of the BAT and pump tanks is 3 feet.
 - 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 (1) 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 MD licensed electrician.
 - An Agreement and Easement must be completed and signed by all applicable parties, and recorded in Land Records of Howard County prior to release of the septic system installation permit.
 - The Health Department requires documentation for the start-up certification from the manufacturer prior to final approval of the installation.
 - The BAT system to be a Norweco Low Profile Singular Bio-Kinetic® Wastewater Treatment Plant System, Model TNTLP-500 gpd. Norweco supplier contact: Mr. Matt Geckle, Back River Pre-Cast, LLC, 410.833.3394.
 - Pump to be a Norweco, model HB 105 submersible pump.
 - Drill one 1/2" hole in discharge side of pump pipe so FM can drain back to pump tank.
 - The D-box shall have a splash block.
 - Maintain 2% minimum slope on gravity sewer pipe.
 - Set pump floats to achieve elevations as shown in the Pump Tank Volume Table on sheet 2.
 - D box shall be reinforced concrete.
 - From the effluent pump, the BAT installer shall place an inverted "U" in the 3/4" discharge pipe to extend into the d/s manhole riser. A union shall be installed in the top of the "U" and made accessible from the west side pump station manhole rim (see detail sht 2). The "U" and union shall be secured near the riser/manhole wall. Position so maintenance personnel can disconnect the union and remove the pump for service. Secure the "U" to the riser wall with a corrosion-resistant bracket.
 - The Force Main (FM) shall be well-secured to the D-box to withstand pumping resultant forces and watertight.

Approved Septic System Plan
Howard County Health Department
NORWECO TNTLP-500 with Babylon
1500-gal. single-chamber Pump Tank
& NORWECO 0.5 hp pump or equivalent
R. Bricker 10/18/2018
Signature Date
B 1800 2744

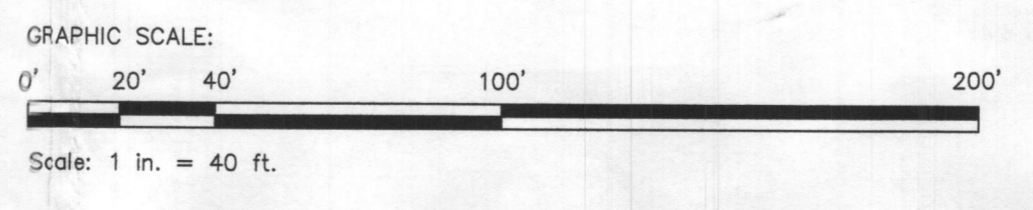
CIVIL DESIGN SERVICES, LC
6123 Holly Ridge Court, Columbia, Maryland 21044
240.755.0380 phone/fax
civildesign@comcast.net



I hereby certify that I prepared this plan and the seal signifies that I am a duly licensed professional engineer under the laws of the State of MD, License No. 15,838 w/expiration December 17, 2019.

Andrew A. Porter
October 17, 2018
ANDREW A. PORTER, P.E. DATE

OWNER/DEVELOPER
Robert and Sharon Dass
13495 Allnutt Lane
Highland, Maryland 20777
410.884.0970
rdass@msn.com



APPROVED SEPTIC SYSTEM PLAN
HOWARD COUNTY HEALTH DEPARTMENT
NORWECO model TNTLP-500gpd. Babylon PUMP TANK (Model 1500TS) and
NORWECO PUMP MODEL HB 105.

Robert Bricker 10/18/2018
Signature Date

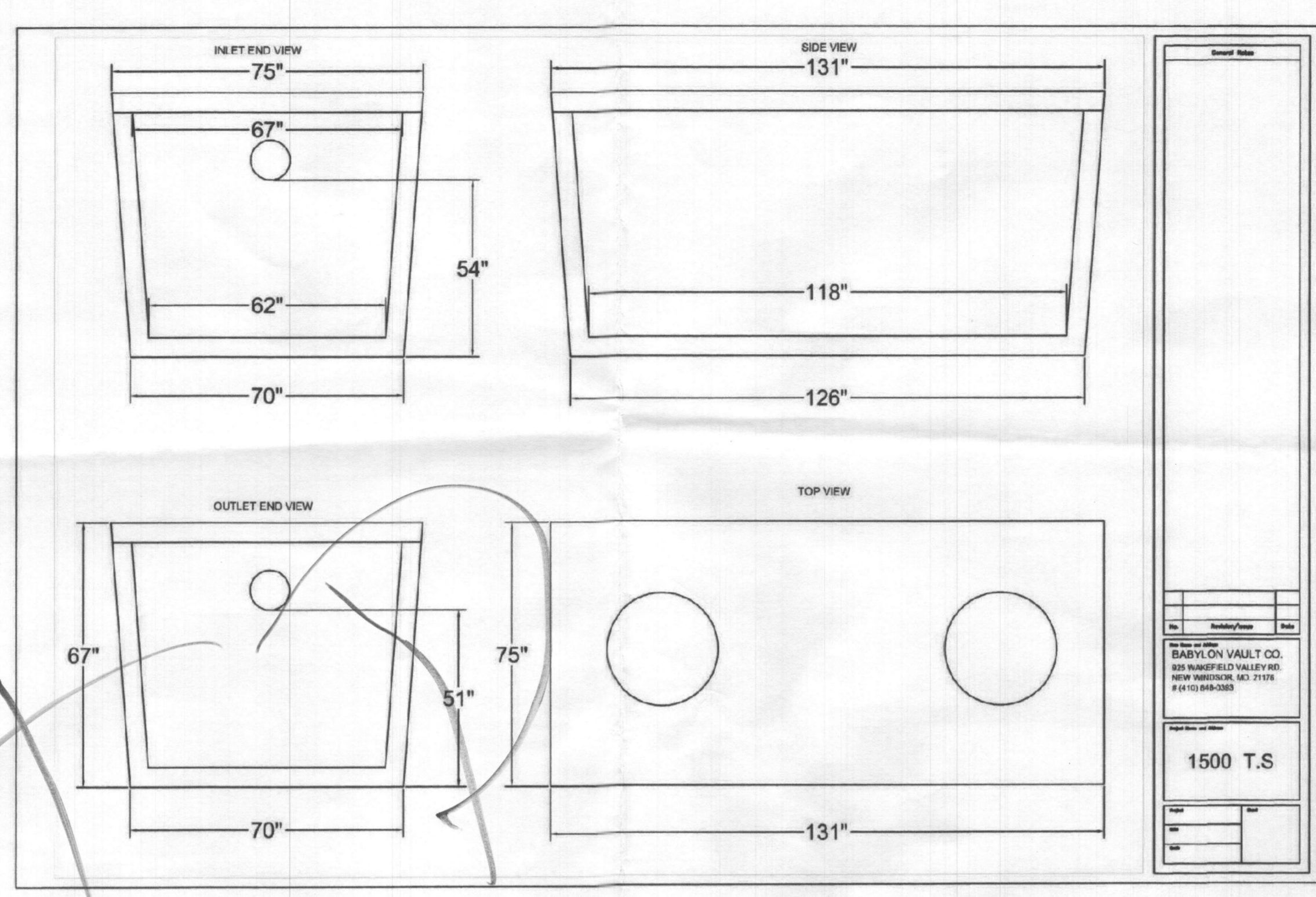
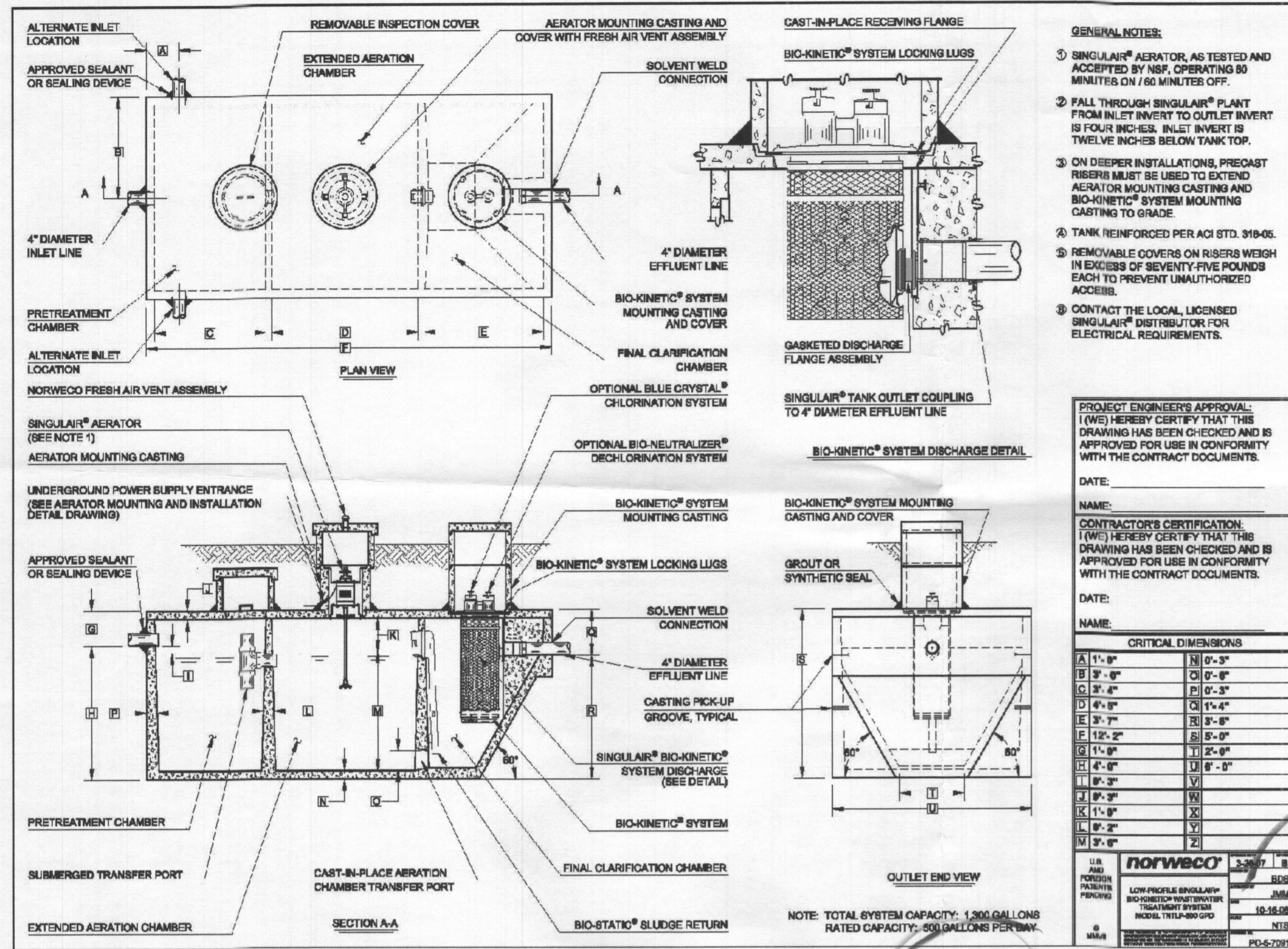
PROJECT	SECTION	LOT NO.			
Dass Property (L.5332/F. 344)	4	21			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
4822	15	RR-DEO	34	5th	605103

SITE PLAN FOR BAT/OSDS INSTALLATION

DASS PROPERTY
ALLNUTT FARMS ESTATES
PLAT 4622, LOT 21
13492 ALLNUTT LANE
HIGHLAND, MARYLAND 20777
TAX MAP NO: 34 PARCEL 375 GRID NO.: 15
Tax ID 14-05-384796
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

October 17, 2018

SHT 1 OF 2

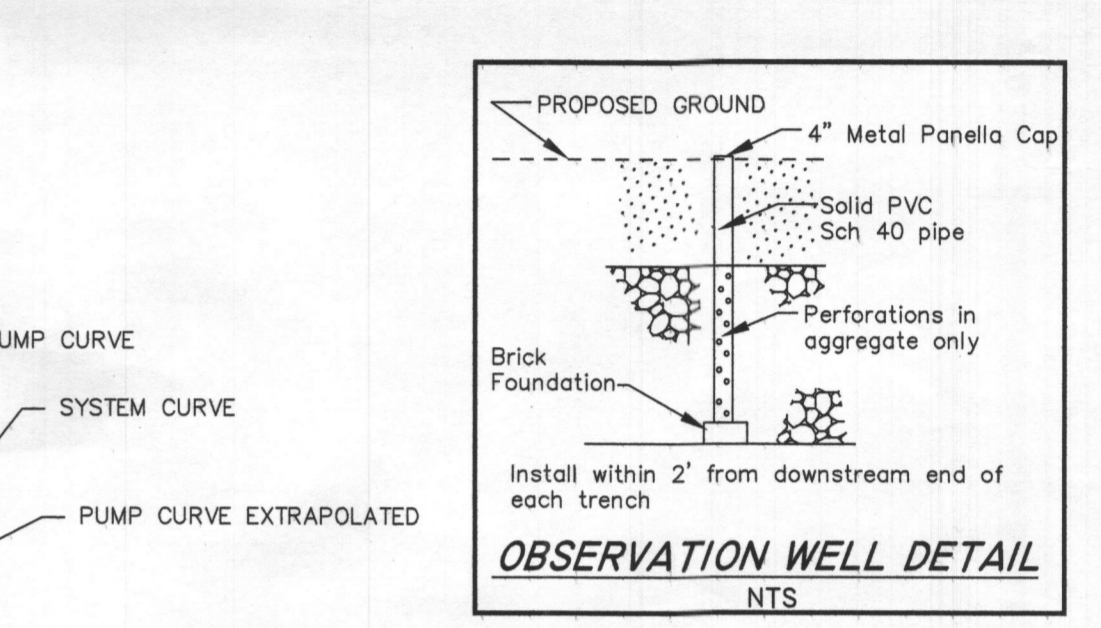
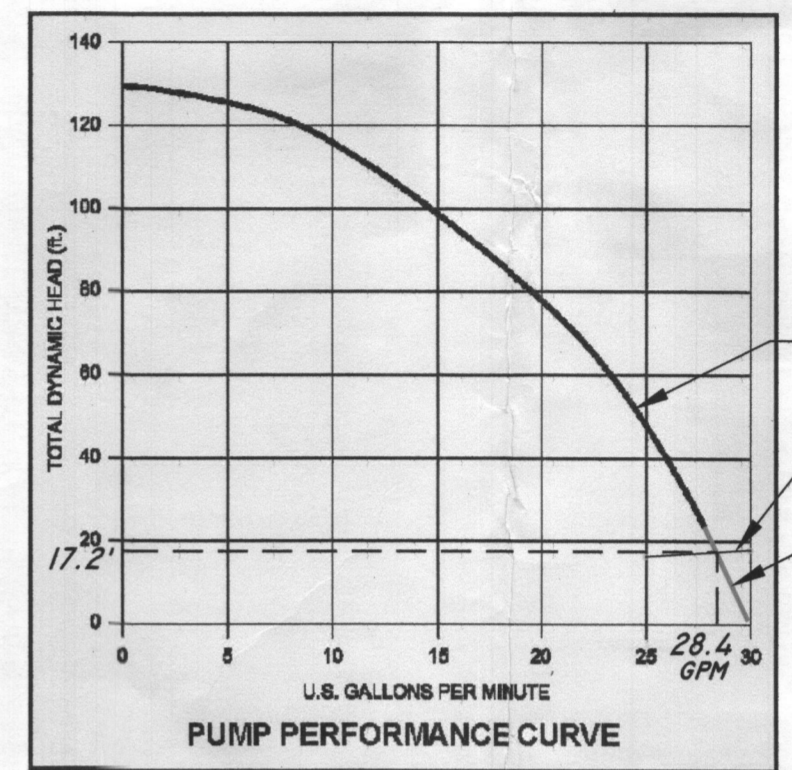


PUMP TANK VOLUME*

Dass Property

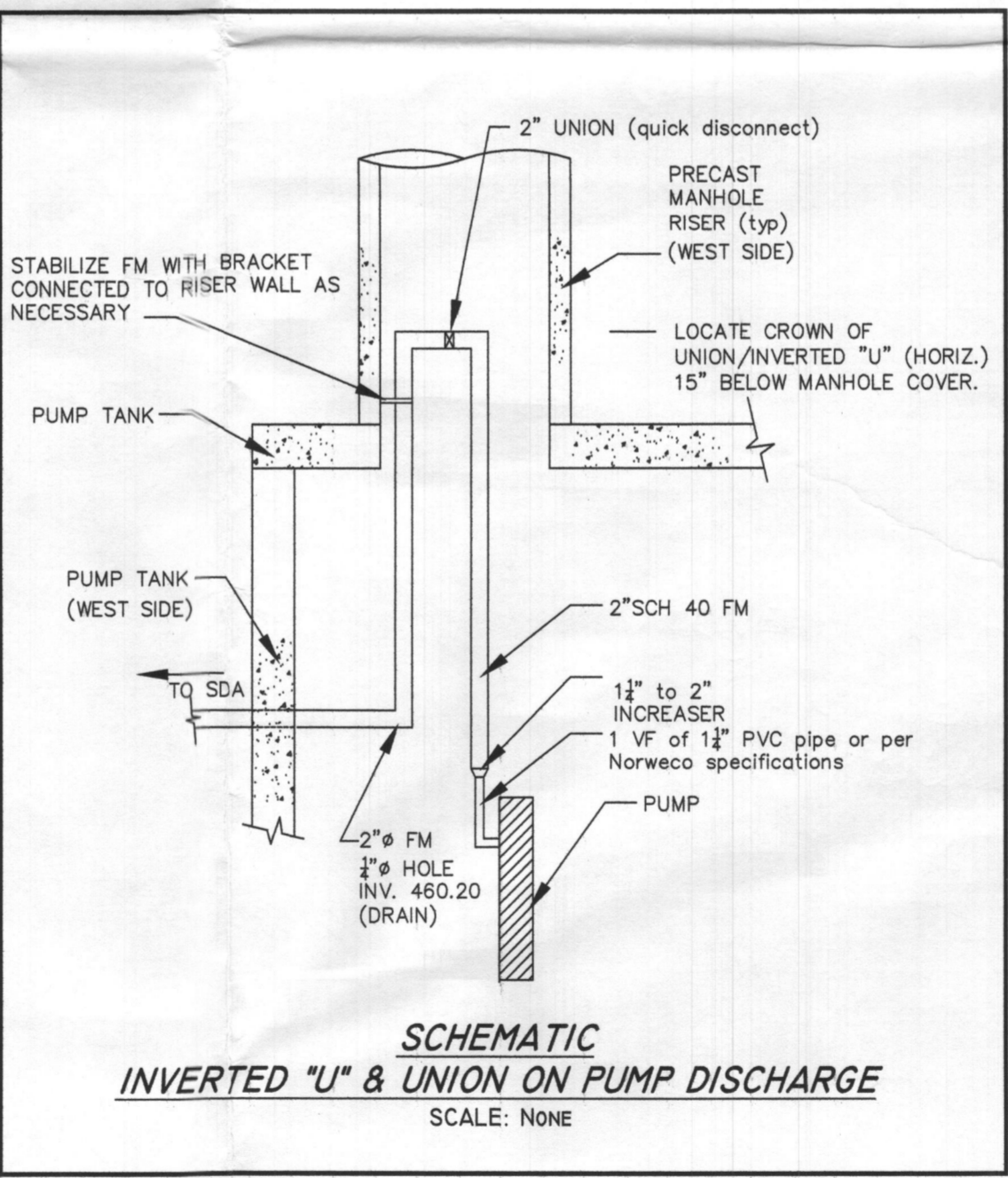
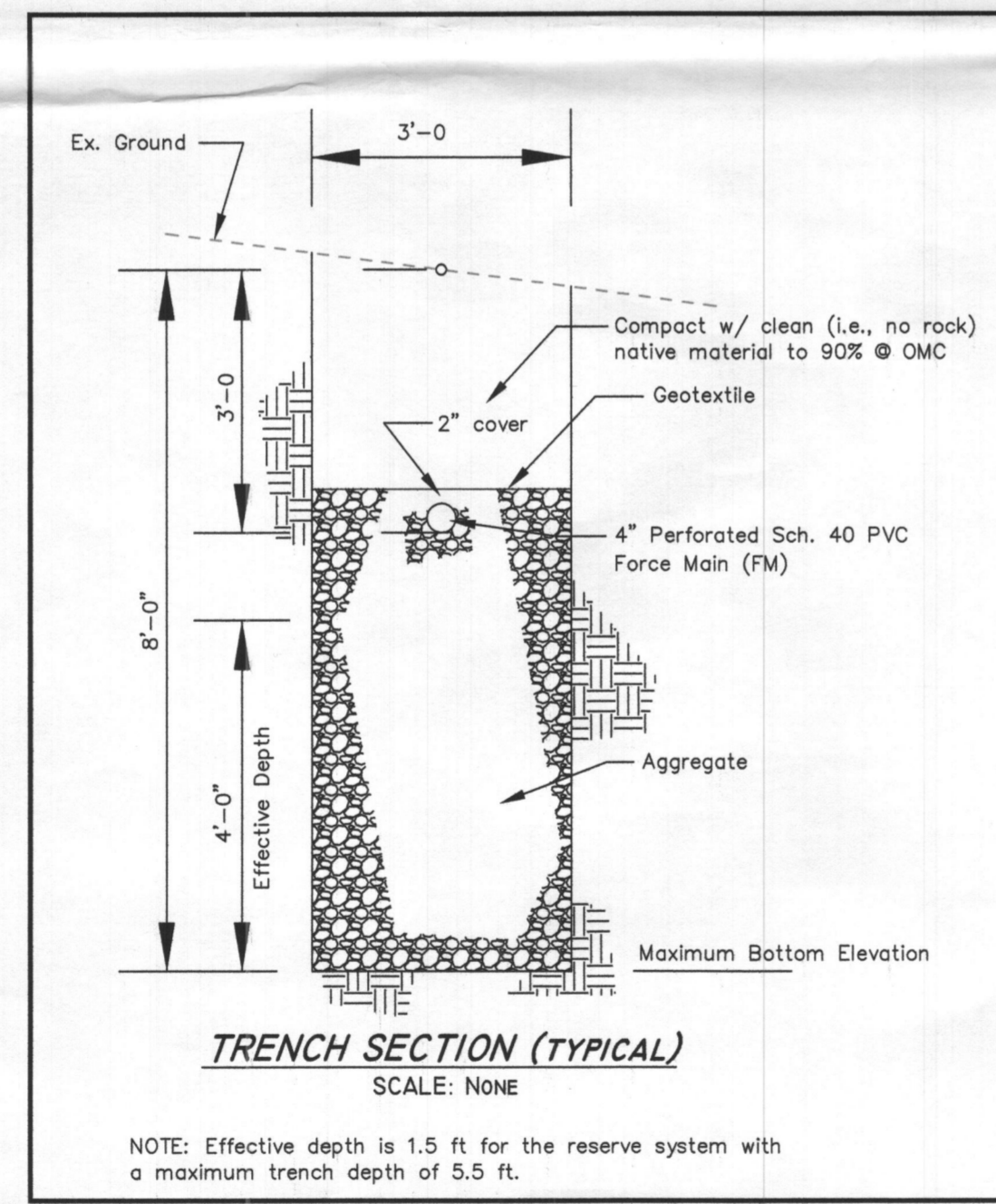
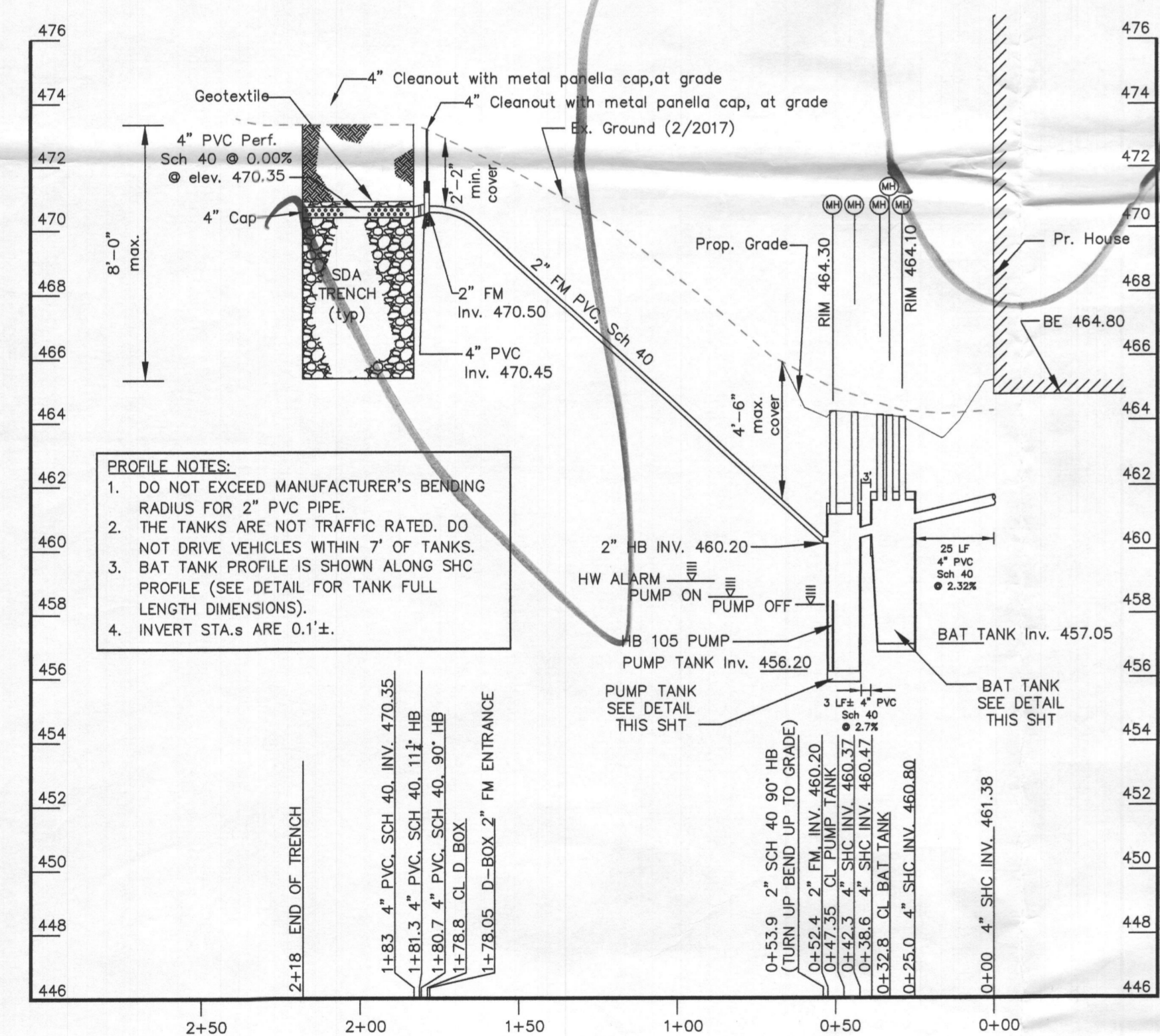
Elevation	Depth (ft)	Incremental Depth (inches)	Volume (cf)	Volume (gals)	Incremental Volume (gals)	NOTES
456.20	0.00	0	0.0	0.0	0.0	Tank Empty
458.28	2.08	25	108.6	812.7	812.7	Pump off
458.53	2.33	3	122.1	913.0	100.3	Pump on
459.03	2.83	6	149.1	1115.5	202.5	HW Alarm
460.37	4.17	16	222.9	1867.4	551.8	@ 4" inlet invert

* Babylon Tank Model 1500 T.S.



Approved Septic System Plan
 Howard County Health Department
 NORWECO INTLP-500 with Babylon 1500 gal. single-chamber Pump Tank & NORWECO 0.5 hp Pump or equivalent

Signature: R. Bricker
 Date: 10/18/2018



TOTAL DYNAMIC HEAD (TDH) TABLE

Discharge (gpm)	Size (in)	Minor Loss (ft)	Pipe Friction Loss (ft)	Elev. Difference (ft)	TDH (ft)
25	1.25	1.69	0.13	0.00	1.82
25	2	0.31	1.88	12.30	14.29
System TDH @ 25 gpm =					16.11
30	1.25	2.44	0.18	0.00	2.62
30	2	0.44	2.35	12.30	15.09
System TDH @ 30 gpm =					17.71

- Notes:**
- Δ Elev = 470.58 - 458.28 = 12.30 ft.
 - Pipe Lengths: 1.25' - 1 ft.; 2" - 128 ft.
 - 1.25" minor losses: 1/4 VB, 1.25" to 2" increaser, K = 2.55
 - 2" minor losses: 4 - 1/4 VBs, union, K = 3.04
 - Pipe friction loss per Hazen-Williams equation: $h = 0.2083(100/C)^{1.49} q^{1.852}/d^{4.8655}$ (h = loss (ft) /100', q = discharge (gpm), d = pipe diameter (inches), C = coefficient = 150)
 - Minor Losses: $ΣK(v^2/2g)$.

FORCE MAIN PIPE & FITTING SCHEDULE

Item	Unit	Quantity
1.25" SCH 40 PVC PIPE	LF	1
1.25" - 90° VB, PVC, SCH 80	EA	1
1.25" to 2" increaser	EA	1
2" SCH 40 PVC PIPE	LF	128
2" - 90° VB, SCH 80	EA	4
2" UNION	EA	1

MODEL HB105 EFFLUENT PUMP

Designed specifically for pumping filtered effluent in high pressure applications, the Norweco Model HB105, 1/2 hp, 115 volt, single phase submersible pump delivers 10 GPM at 100 TDH.

FEATURES

- UL & CSA listed
- 10' jacketed power cord
- Stainless steel construction
- Built-in overload protection
- 1 1/2" NPT discharge
- Continuous duty motor
- Built-in surge protection
- Hermetically sealed windings
- VERSATILE and efficient
- Capacities to 28 GPM
- Heads to 125'
- Screened bottom intake

SPECIFICATIONS

The pump shall be a Norweco Model HB105 high head submersible pump, designed to pump filtered effluent and be capable of passing 1/2" spherical solids. The 1 1/2" single phase, 60 cycle pump shall be UL and CSA listed and capable of running any short duration without damage to the motor or pump and...

DISTRIBUTED LOCALLY BY:

norweco

230 REPUBLIC STREET
 NORWALK, CT 06854-1106
 TELEPHONE: (410) 447-1100
 FAX: (410) 447-4440
 www.norweco.com

NOTES & DETAILS FOR BAT/OSDS INSTALLATION

DASS PROPERTY ALLNUTT FARMS ESTATES PLAT 4622, Lot 21

13492 ALLNUTT LANE
 HIGHLAND, MARYLAND 20777

TAX MAP NO: 34 PARCEL 375 GRID NO.: 15
 Tax ID 14-05-384796
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

October 17, 2018

SHT 2 OF 2

CIVIL DESIGN SERVICES, LC

6123 Holly Ridge Court, Columbia, Maryland 21044
 240.755.0380 phone/fax
 civil.design@comcast.net

I hereby certify that I prepared this plan and the seal signifies that I am a duly licensed professional engineer under the laws of the State of MD, License No. 15,838 w/expiration December 17, 2019.

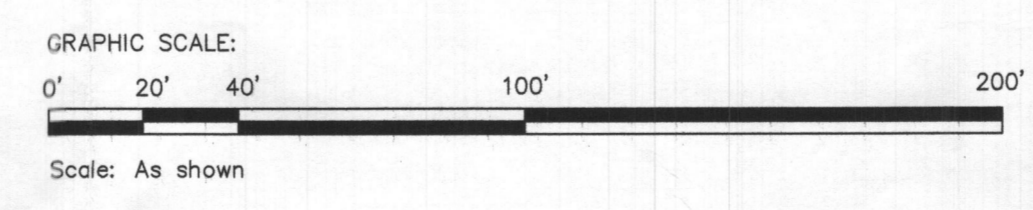
Andrew C. Porter
 October 17, 2018

ANDREW A. PORTER, P.E. DATE

NO. REVISION DATE

NO.	REVISION	DATE

OWNER/DEVELOPER
 Robert and Sharon Dass
 13496 Allnutt Lane
 Highland, Maryland 20777
 410.884.0970
 rdass@mgn.com



APPROVED SEPTIC SYSTEM PLAN
 HOWARD COUNTY HEALTH DEPARTMENT
 NORWECO Model # INTLP-500, Babylon PUMP TANK (Model 1500TS) and
 NORWECO PUMP MODEL HB 105.

Signature: R. Bricker
 Date: 10/18/2018

PROJECT	Dass Property (L.5332/F. 344)	SECTION	4	LOT NO.	21
PLAT	4622	BLOCK NO.	15	ZONE	RR-DEO
TAX/ZONE	34	ELEC. DIST.	5th	CENSUS TR.	605103



N/F
AARON & DONNA SILBERTSON
13464 OPEN SPACE COURT
LOT 16, PARCEL 375, TM 34
RR-DEO

N/F
MARIE DOBYNS
13480 OPEN SPACE COURT
LOT 17, PARCEL 375, TM 34
RR-DEO

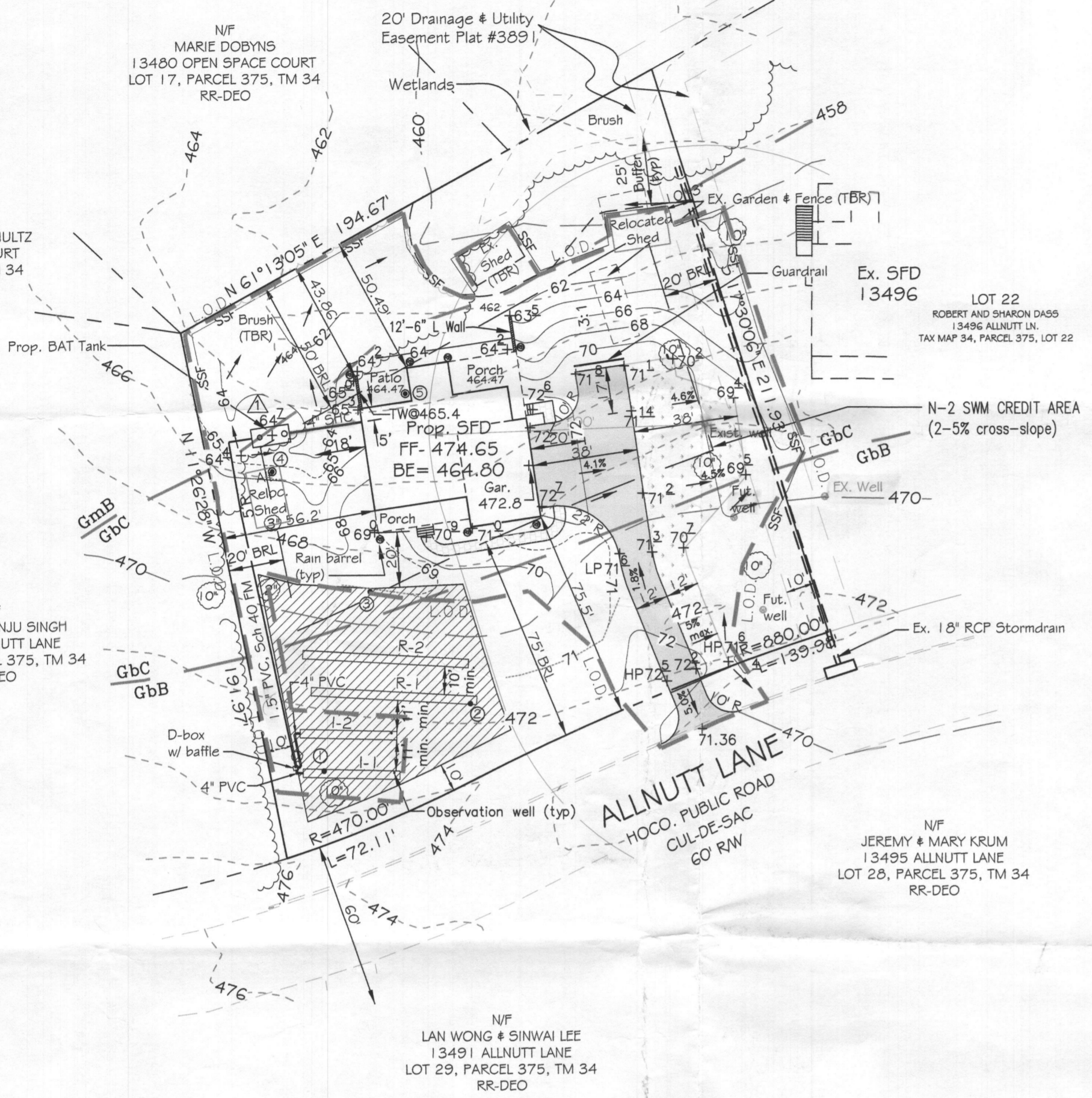
N/F
OSKAR & ROSE MARIE SCHULTZ
13474 OPEN SPACE COURT
LOT 18, PARCEL 375, TM 34
RR-DEO

N/F
KULDEEP & ANJU SINGH
13480 ALLNUTT LANE
LOT 47, PARCEL 375, TM 34
RR-DEO

N/F
LAN WONG & SINHAI LEE
13491 ALLNUTT LANE
LOT 29, PARCEL 375, TM 34
RR-DEO

N/F
JEREMY & MARY KRUM
13495 ALLNUTT LANE
LOT 28, PARCEL 375, TM 34
RR-DEO

LOT 22
ROBERT AND SHARON DASS
13496 ALLNUTT LN
TAX MAP 34, PARCEL 375, LOT 22



PLAN
SCALE: 1" = 40'

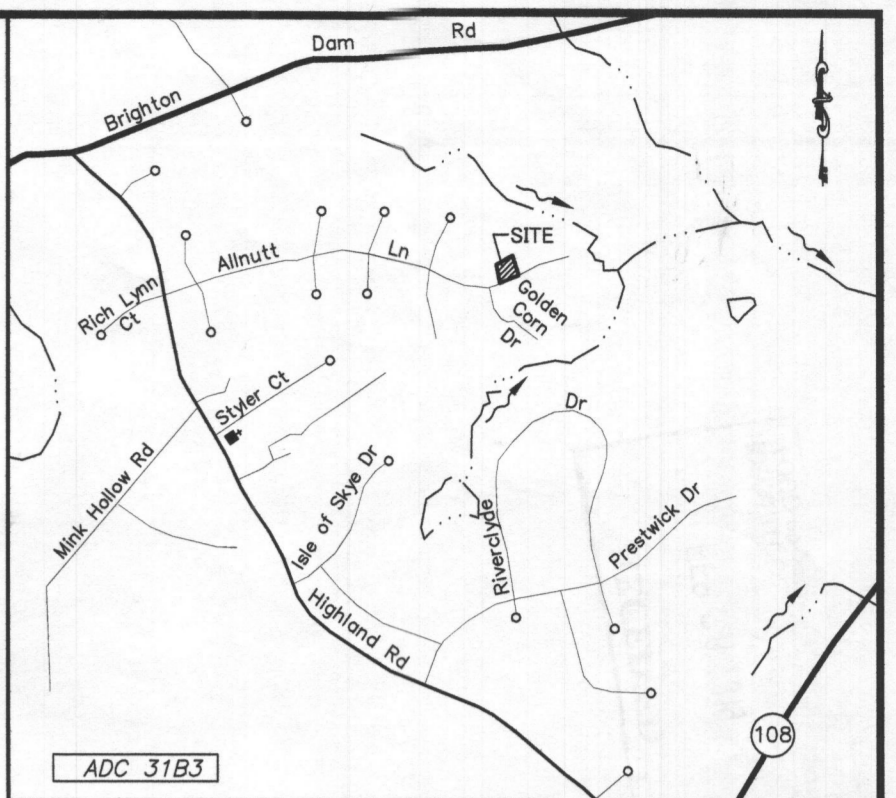
LEGEND

- Property Line
- Ex. 2' Contour
- Ex. 10' Contour
- Proposed Contour
- LOD
- Super Silt Fence
- Existing Treeline
- Proposed Treeline
- Edge of Ex. Paving
- Soils Divide
- N-2 Credit area
- Impervious Area
- Drainage Flow Path
- Test Pit Pass
- Test Pit Fail
- Prop. Elev., Ex. Elev.
- Proposed or reserve well

SOILS TABLE			
SYMBOL	NAME	HSG	Kw
GbB	Gladstone loam 3-8% slopes	A	0.20
GbC	Gladstone loam 8-15% slopes	A	0.20
GmB	Glenville silt loam 3-8% slopes	C/D	0.37

Source: Web Soil Survey HOWARD SCD MAP NUMBER = 23

The benchmark used for the on-site topography on this plan: Iron pipe found near point 514, elevation 473.52 per road and storm drain as-built of F-78-081. Contact Shanaberger & Lane (Ellicott City) to verify control points for the OSDS design on this plan.



VICINITY MAP
1" = 2,000'

GENERAL NOTES

- All construction shall meet the latest edition of the Howard County standards and specifications or as shown on these plans. The contractor shall consult the engineer should there be any discrepancies.
- The benchmark used for topographic survey on this plan: Iron pipe found near point 514, elevation 473.52 per road and storm drain as-built of F-78-081. Contact Shanaberger & Lane (Ellicott City) to verify control points for the OSDS design.
- The utility locations are approximate. Contractor shall test pit all known existing utilities to verify, size, shape, location, and type prior to performing construction. Any utility damaged due to construction must be repaired immediately at the contractor's expense.
- Should the contractor discover discrepancies between the plans and field conditions, the engineer is to be notified immediately to resolve the situation. If the contractor makes field corrections or adjustments without notifying the engineer, then the contractor assumes all responsibility for those changes.
- The contractor shall notify Miss Utility 1-800-257-7777 and the Howard County Department of Inspection Licenses & Permits three (3) working days before beginning construction.
- Civil Design Services, LC is not responsible for the contractor's utilization of men, materials, equipment, or safety measures in the performance of any work for this project. The contractor assumes all responsibility for performing the work correctly and in conformance with code/specification requirements.
- The property boundary and topo survey was prepared by Shanaberger & Lane (Ellicott City) in February, 2017 and May, 2018, and is based on the horizontal and vertical datum from F-78-081. Topography shown outside of the subject property was also supplied by Shanaberger & Lane and is from Howard County GIS topo. CDS is not responsible for the boundary and topographic information.
- Any changes to a private SDA will require a revised Percolation Certification Plan.
- This area designates a private sewage area as required by the Maryland State Department of the Environment for individual sewage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These areas shall become null and void upon connection to a public sewerage system. The Howard County health officer shall have the authority to grant adjustments to the private sewage area. recordation of a modified sewage area shall not be necessary.
- The subject property has a limitation of five (5) bedrooms unless an exhibit presented by a certified professional demonstrates that the private sewage disposal area, including the area where a system of innovative design may be installed, will accommodate the wastewater discharge for a residence having more than 5 bedrooms. NOTE: The design as currently shown is for 4 of the maximum 5 bedrooms.

BAT 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 or BAT plan may be required.
- The existing well shown on this plan (well tag # HO-17-0295) has been field-located and is accurately shown.
- The maximum depth (top of slab top to ground) of the BAT and pump tanks is 3 feet.
- 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 (1) 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 MD licensed electrician.
- An Agreement and Easement must be completed and signed by all applicable parties, and recorded in Land Records of Howard County prior to release of the septic system installation permit.
- The Health Department requires documentation for the start-up certification from the manufacturer prior to final approval of the installation.
- The BAT system shall be manufactured by HOOT, Model H-600 BNR, 600 gpd. Hoot supplier contact: Ms. Nancy Mayer Mayer Bros., Inc., Elkridge, MD, 410.796.1434.
- The D-box must have a splash block.
- Maintain 2% minimum slope on gravity sewer pipe.
- D-box shall be reinforced concrete.
- The Force Main (FM) shall be well-secured to the D-box to withstand pumping resultant forces and watertight.
- The BAT pump shall be a 1/2 HP, model 20AE0511 as manufactured by Goulds Water Technology.

DASS PROPERTY SDA Trench Data

Trench ID	Length (ft)	Ground Elevation	4" Perf. Pipe Invert	Trench Invert (max depth)
I-1	35	473.35	470.35	465.35
I-2	35	472.50	469.50	464.50
R-1	60	471.50	468.50	466.00
R-2	60	470.70	467.70	465.20

INITIAL SYSTEM

Number of Bedrooms	4
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	4 ft
Trench Maximum Depth	8 ft
Design Flow	600 gpd
Drainage Field Area	500 sf
Sidewall Reduction Credit	41.67%
Trench Width	3 ft
Effective Area Depth	4 ft
Required Length Each (2 Trenches)	35 ft

RESERVE SYSTEM

Number of Bedrooms	4
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	4 ft
Trench Maximum Depth	5.5 ft
Design Flow	gpd
Drainage Field Area	500 sf
Sidewall Reduction Credit	71.43%
Trench Width	3 ft
Effective Area Depth	1.5 ft
Required Length Each (2 Trenches)	80 ft

Approved Septic System Plan
Howard County Health Department
HOOT (H-600 BNR), Pump
to D-Box, gravity drain field
Signature: [Signature] Date: 2/27/2019
B/18002744

CIVIL DESIGN SERVICES, LC

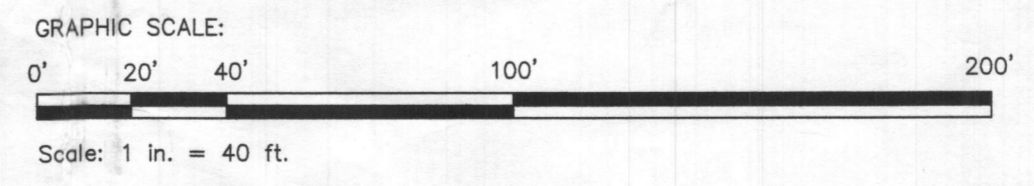
6123 Holly Ridge Court, Columbia, Maryland 21044
240.755.0380 phone/fax
civildesign@comcast.net

I hereby certify that I prepared this plan and the seal signifies that I am a duly licensed professional engineer under the laws of the State of MD, License No. 15,838 w/expiration December 17, 2019.



Andrew A. Porter
February 25, 2019
ANDREW A. PORTER, P.E. DATE

OWNER/DEVELOPER
Robert and Sharon Dass
13496 Allnutts Lane
Highland, Maryland 20777
410.884.0970
rdass@msn.com



THIS PLAN IS FOR THE CONSTRUCTION OF THE OSDS SYSTEM AND SITE GRADING WITHIN 20 LF OF BAT TANK ONLY.

APPROVED SEPTIC SYSTEM PLAN
HOWARD COUNTY HEALTH DEPARTMENT
HOOT Tank Model # H-600 BNR w/ Goulds Water Technology, 1/2 HP Pump
(Model 20AE0511).

Robert Bricker 2/27/2019 Date

PROJECT	SECTION	LOT NO.			
Dass Property (L5332/F. 344)	4	21			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
4622	15	RR-DEO	34	5th	605103

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PLAT 4622, LOT 21
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February 25, 2019

SHT 1 OF 2