

**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](http://www.hchealth.org)  
 Facebook: [www.facebook.com/hocohealth](https://www.facebook.com/hocohealth)

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

RECEIPT DATE: 1-10-22 **ONSITE SEWAGE DISPOSAL SYSTEM** P 570907

APPROVAL DATE: 5/2/22 **PERMIT: CONSTRUCTION** A \_\_\_\_\_

PROPERTY ADDRESS: 5636 Dosa Court, Clarksville, MD 21029

SUBDIVISION: The Woodlands LOT: 5 TAX ID: 05-601710

CONTRACTOR: HATFIELDS EQUIPMENT EMAIL: \_\_\_\_\_

CONTRACTOR ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:  MDE  MANUFACTURER: Norweco

PROPERTY OWNER: WBG ESM LLC EMAIL: MarinaMorris@Williamsburgllc.com

OWNER ADDRESS: 5485 Harpers Farm Road, Columbia, MD 21044 PHONE: (410) 997-3800

BAT UNIT MODEL: NORWECO TNT 500 PUMP SIZE: 0.75 Hp PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 3/14/21 DATE RECORDED: 3/31/21

DISTRIBUTION SYSTEM:  GRAVITY  PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>150</u>	INLET DEPTH: <u>2.0</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8.0</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>6.5</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: Install Cleanouts on SHC near foundation and at bend.

ISSUED BY: R. Bricker ISSUE DATE: 01/18/2022 EXPIRATION DATE: 01/18/2023

- 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 \_\_\_\_\_
- 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

SEE ATT.

ROAD NAME

**TRENCH/DRAINFIELD DATA**

WIDTH	INLET	BOTTOM
3'	2'	6'
NUMBER OF TRENCHES <u>3</u>		
TOTAL LENGTH <u>153 F</u>		
ABSORPTION AREA <u>459 SQ</u>		
DISTRIBUTION BOX LEVEL <u>LPD</u>		
DISTRIBUTION BOX BAFFLE <u>-</u>		
DISTRIBUTION BOX PORT <u>-</u>		

**SEPTIC TANK DATA**

SEPTIC TANK 1 LEVEL	<u>YES</u>
MANUFACTURER	<u>BACK RUBER</u>
CAPACITY	<u>TN1500</u> GAL
SEAM LOC	<u>TOP</u>
TANK LID DEPTH	<u>3'</u>
BAFFLES	<u>BAT</u>
BAFFLE FILTER	<u>BAT</u>
MANHOLE LOC	<u>FRONT/MID/BACK</u>
6" PORT LOC	<u>-</u>
WATERTIGHT TEST	<u>-</u>
SLOTTED	<u>BAT</u>
DATE ON LID	<u>12/28/2021</u>
<b>PUMP/SEPTIC TANK LEVEL</b>	<u>YES</u>
MANUFACTURER	<u>BABYLON</u>
CAPACITY	<u>1500</u> GAL
SEAM LOC	<u>TOP</u>
TANK LID DEPTH	<u>-</u>
BAFFLES	<u>-</u>
BAFFLE FILTER	<u>-</u>
MANHOLE LOC	<u>FRONT/BACK</u>
6" PORT LOC	<u>-</u>
WATERTIGHT TEST	<u>-</u>
SLOTTED	<u>-</u>
DATE ON LID	<u>12/27/2021</u>

**PRE-CONSTRUCTION:**

01/21/2022 CONFIRMED CONTOUR 3X50' TRS. CONTRACTOR HAS PLANS TO BE RETURNED TO FILE FOR SCAN. (P)

INSTALLATION: 01/27/2022 INSTALLED 3X51' TRS W/ LATERALS AND MANIFOLD. (P) 1/28/22 SL constructed and FM. (SD) 01/31/2022 INSTALLED TANKS; COMPLETED FORCE MAIN COMPLETED. PUMP INSTALLED. (P) 5/2/22 Pump obs. to function - sufficient amount of head pressure in each lateral. Alarm obs. to function. Alarm located on circuit box next to pump tank. Alarm and pump on different circuits (turned off pump circuit, alarm continued to function.) (SD)

FINAL INSPECTOR

Drew Thomas

DATE OF APPROVAL

5/2/22

~1:30

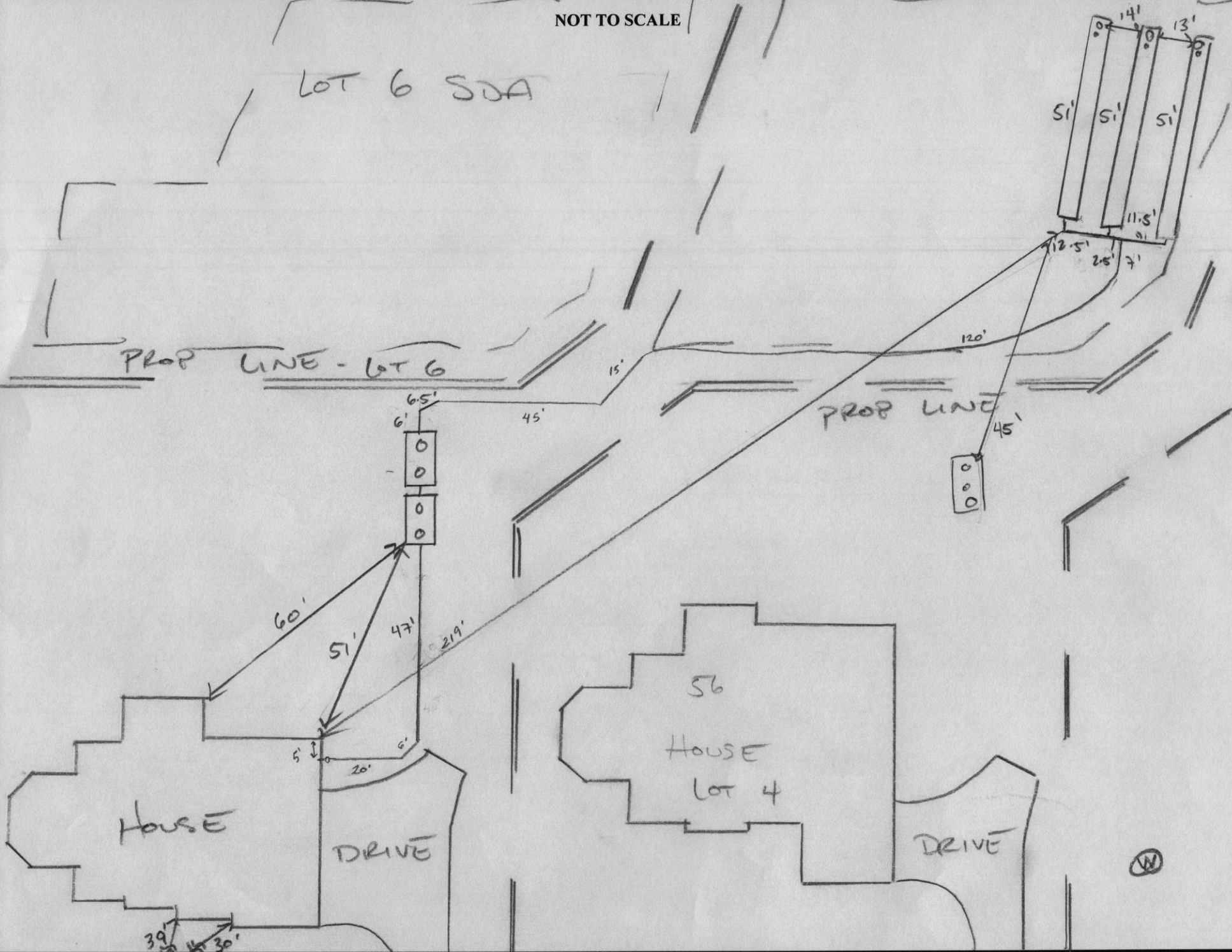
SDA

NOT TO SCALE

LOT 6 SDA

PROP LINE - LOT 6

PROP LINE



Ho-18-0003

5636 DOSA COURT - LOT 5



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

**NORWECO CERTIFICATION**

PROPERTY OWNER: WILLIAMSBURG GROUP, LLC	INSTALLATION COMPANY: HATFIELD'S
ADDRESS: 5636 DOSA CT.	CERTIFIED INSTALLER: TODD TRACEY
CITY, ZIPCODE & COUNTY: CLARKSVILLE, 21029, HOWARD	PERMIT#
SIZE OF SYSTEM INSTALLED:	DATE INSTALLED: 01-31-22
600 GPD CONCRETE	START-UP DATE: 05-04-22
NUMBER OF BEDROOMS:	DATE OF FINAL INSPECTION:
TYPE OF INSTALLATION: NEW	DATE OF ELECTRICAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	TANK LEVEL: YES
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 36"	BURIAL DEPTH OF TANK: 32"
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 RISER(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 2<sup>ND</sup> 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 5<sup>TH</sup> HOUSE OF THE LEFT.

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

Matthew Geckle

May 6,2022

Signature of BRP Representative

Vice-President

Date

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 14th day of March-2021, among Williamsburg Group L.L.C., 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 5636 DOSA CT, in the 05 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 # 0034, Block #         , Parcel # 0015, Deed Reference #          and Tax Account # 05-601710 ("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 Singlair TNTLP GPM 500 or 750

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

LR - Agreement 20.00  
 Recording Fee 20.00  
 Name: Williamsburg  
 Group 3  
 Ref: 131  
 CR - Agreement  
 Purchase 4.00  
 SubTotal 24.00  
 Total: 44.00  
 03/31/2021 11:11  
 1471134 050503  
 Howard G...  
 Columbia...  
 Register...



131

HOWARD COUNTY CIRCUIT COURT (Land Records) WAR 20395, p. 0036, MSA\_CE53\_20387. Date available 04/09/2021. Printed 11/15/2021.

20  
40  
20

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.

Michael J. Davis 3/19/2021  
Howard County Health Department

Charles Wilson 3/14/21  
Owner #1 Signature Date

Charles Wilson  
Owner #1 Print Name

Charles Wilson 3/14/21  
Buyer #1 Signature Date

Charles H. Wilson  
Buyer #1 Print Name

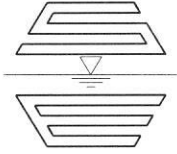
Valerie Wilson 3/14/21  
Owner #2 Signature Date

Valerie Wilson  
Owner #2 Print Name

Valerie Wilson 3/14/21  
Buyer #2 Signature Date

Valerie A. Wilson  
Buyer #2 Print Name

HOWARD COUNTY CIRCUIT COURT (Land Records) WAR 20395, p. 0037, MSA\_CE53\_20387. Date available 04/09/2021. Printed 11/15/2021.



16005 Frederick Road, 2<sup>nd</sup> Floor  
Woodbine, MD 21797  
Website: [www.sillengineering.com](http://www.sillengineering.com)

Office: 443-325-5076  
Fax: 410-696-2022  
Email: [info@sillengineering.com](mailto:info@sillengineering.com)  
Civil Engineering for Land Development

SILL ENGINEERING GROUP, LLC

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# The Woodlands

## Lot 5

### 5636 Dosa Court

## Low Pressure Dosing System Report

July 9, 2021

Prepared For:

**Williamsburg Group**  
5485 Harpers Farm Road  
Columbia, Md 21044



OK  
RB  
7/13/21

Professional Certification: I hereby 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 No. 32025,  
Expiration Date: June 20, 2023

Project #20-003

## Pressure Network Design

- Design Flow: 750 gpd
- Diameter of force main = 2.0"
- Diameter of manifold = 2.0"
- Diameter of lateral = 1.5"
- Material: Schedule 40 PVC

## Septic System Trench Design Specifications

### Initial System:

- Design Flow:
  - 5 Bedrooms at 150 gpd
  - 5 x 150 gpd = 750 gpd
- Application Rate: 1.2
  - Effective Area Beginning Depth: 6.5'
  - Bottom Maximum Depth: 8.0'
- Square Footage of Drain Field Required:
  - Design Flow (750 gpd) / Application Rate (1.2) = 625 sf
- Sidewall Reduction Credit:
  - Trench Width (W) = 3'
  - Trench Effective Depth (D) = 1.5'
  - $(W+2) / (W+1+2D) \times 100 = 71\%$
- Linear Length of Trench Required:
  - $$\frac{\text{Drain Field Square Footage (625)} \times \text{Sidewall Reduction Credit (0.71)}}{\text{Trench Width (3')}}$$
  - Liner Length of Trench Required = 147.92'
- Linear Length of Trench Provided = 150.0'
  - Three trenches at 50.0 lf each

## Pumping System Design

- Dose Calculations:
  - Design Flow: 750 gpd
  - Volume of 2.0" pipe: 17.4 gallons per 100'
  - Volume of 1.5" pipe: 10.6 gallons per 100'
  - Dose to be the larger of:
    - 1/6<sup>th</sup> the design flow:  $1/6 \times 750$  gallons = 125.0 gallons
  - OR
  - Volume of Force Main + Volume of Manifold + 5x Volume of the Laterals:
    - $33.11$  gallons +  $3.05$  gallons +  $15.9$  gallons x 5 = 115.66 gallons
  - Minimum Dose = 125 gallons + 33.11 gallons = 158.11 gallons
  - Use 160 gallons
  - Note: We have included the volume of the Force Main in the Dose amount.

- Pump Design:
  - Pump flow required: 39.65 gpm: Use 40 gpm (see Pressure Distribution table for initial system)
  - Dose amount: 160 gallons
  - Pump run time: 4.00 minutes
  - Static head (see profile for detail): 28.69'
- Pipe Lengths:
  - 2.0" Force Main: 190.3'
  - 2.0" Manifold: 17.5'
  - 1.5" Lateral: 50.0' trench
- Friction head calculation (Table 4.3):

Pipe	2.0" Force Main	2.0" Manifold	1.5" Lateral
1/4 Bend (90°)	3 @ 8.0' = 24.0	2 @ 8.0' = 16.0'	-
1/8 Bend (45°)	5 @ 4.0' = 20.0'	-	-
1/16 Bend (22.5°)	1 @ 2.0' = 2.0'	-	-
1/32 Bend (11.25°)	1 @ 1.0' = 1.0'	-	-
Gate Valve	-	-	-
Standard Tee	-	-	-
Run Tee	-	-	-
Cross	-	1 @ 10.0' = 10.0'	-
Reducer	-	3 - 1.5"x2.0" @ 1.0' = 3.0'	-
Couplings	15 @ 2.0' = 30.0'	-	5 @ 1.5' = 7.5'
Quick Connect/Disconnect	1 @ 4.5' = 4.5'	-	-
Total Equivalent Length of pipe	81.5'	29.0'	7.5'

- Flow at 2.0" pipe (force main) = 40 gpm
  - Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 2.88
  - Total equivalent length of 2.0" FM and appurtenances =  $191.1' + 81.5' = 272.6/100 = 2.73 \times 2.88 = 7.86'$
- Flow at 2.0" pipe (manifold) = 14 gpm
  - Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 0.39
  - Total equivalent length of 2.0" FM and appurtenances =  $17.5' + 29.0' = 46.5/100 = 0.465 \times 0.39 = 0.18'$
- Flow at 1.5" pipe (lateral) = 14 gpm
  - Friction loss per 100' (Table 4.4) of 1.5" schedule 40 plastic pipe: 1.33
  - Total equivalent length of 1.5" FM and appurtenances =  $50.0' + 7.5' = 57.5/100 = 0.575 \times 1.33 = 0.76'$
- Total Friction Head =  $7.86' + 0.18' + 0.76' = 8.80'$

The Woodlands, Lot 5  
5636 Dosa Court  
July 9, 2021

- Total Dynamic Head = Static head + Distal Head + Friction head + Lateral friction head safety factor =

$$28.69' + 2.5' + 8.80' + 1.5' = 41.49'$$

Use 42'

- Pump Chamber Design:

- For pump tank dimensions and detail, see plans.

- Cross sectional area of tank: 50.8056 cf per one vertical foot

- Pump chamber elevations:

  - Proposed grade at top of tank (at inlet): 445.00

  - Top of pump tank (interior): 444.67

  - Pump chamber invert in: 443.92

  - High Water Alarm: 442.75

  - Pump On: 442.25

  - Pump Off: 441.83

  - Bottom inside slab of tank: 439.75

- Pump Chamber volumes:

  - Invert In to High Water Alarm: 59.4426 cf or 444.6303 gallons

  - Pump On to Pump Off: 21.3384 cf or 159.6112 gallons

  - Excess volume above Pump On: 122.9496 cf or 919.6626 gallons

- Design based on:

  - Goulds WE07H series pump or equivalent

  - Babylon Vaults 1,500-gallon septic tank or equivalent

**PRESSURE DISTRIBUTION ON SLOPING SITES**

**The Woodlands, LOT 5 - Pressure System**

Lateral No.	Prop. Grd Elev. (ft)	Invert Elev. (ft)	Trench Bottom Elev. (ft)	Lateral Length (ft)	Head (ft)	Orifice Diameter (in)	Orifice Flow Rate (gpm)	Orifice Spacing (ft)	Number of Orifices	Trench Flow Rate (gpm)	
L1	471.00	469.0	463.00	50	2.0	5/16	1.63	6.3	8	13.04	ZONE 1
L2	468.80	466.8	460.80	50	4.2	1/4	1.51	5.6	9	13.59	
L3	466.60	464.6	458.60	50	6.4	1/4	1.86	7.1	7	13.02	

150

39.65  
Use 40 gpm

TOTALS

Trench I1  
Effective area beginning depth = 6.5  
Trench depth = 8

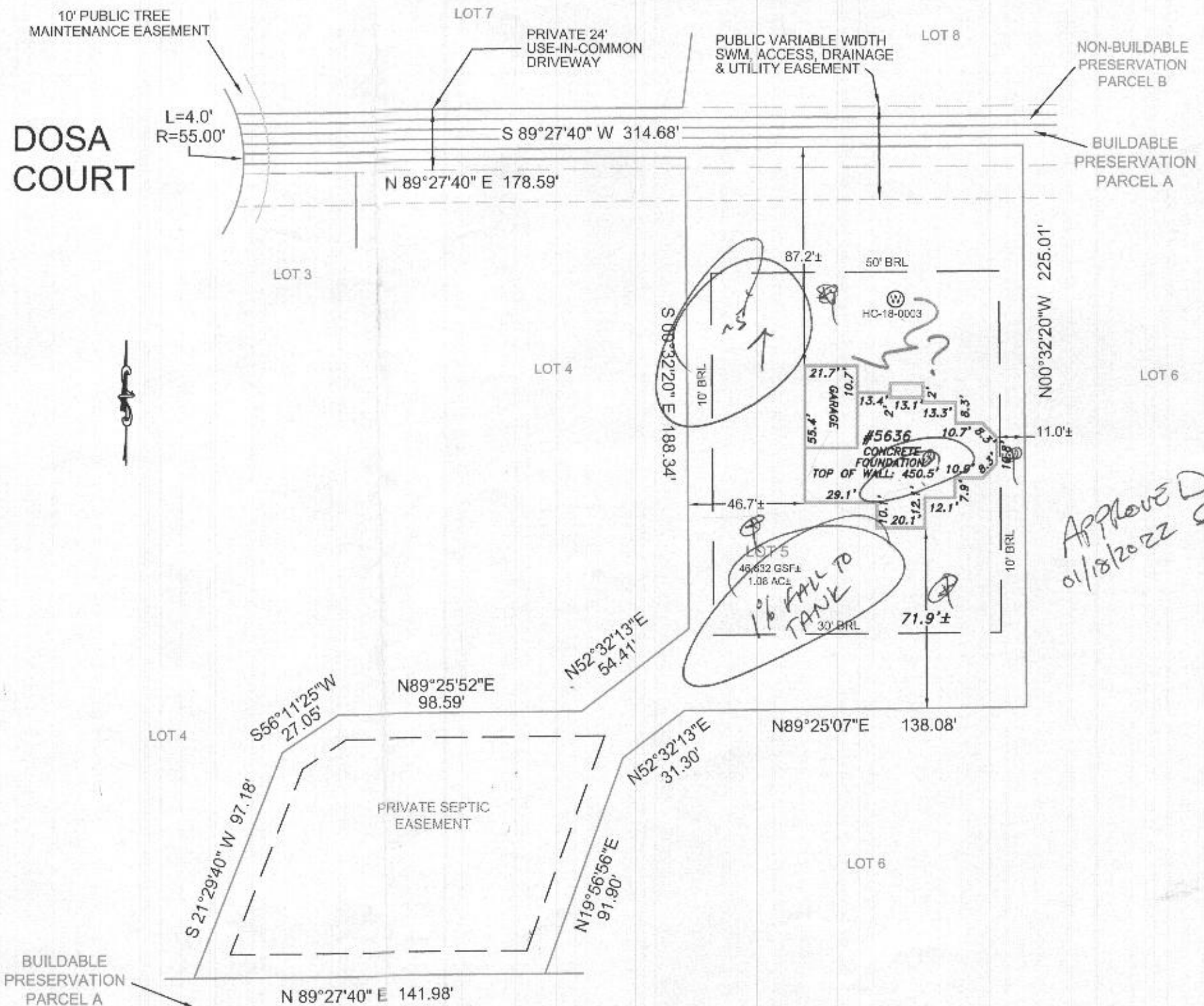
Trench I2  
Effective area beginning depth = 6.5  
Trench depth = 8

Trench I3  
Effective area beginning depth = 6.5  
Trench depth = 8

**GENERAL NOTES:**

- 1) The accuracy of the distances shown from any structure to any apparent property line is 1'±.
- 2) This drawing does not represent a Boundary Survey. Any property markers labeled hereon are not guaranteed by NTT Associates, Inc.
- 3) This plat is of benefit to a consumer only insofar as it is required by a lender, a title insurance company or its agent in connection with contemplated transfer, financing, or refinancing.
- 4) This plat does not provide for the accurate identification of property boundary lines, but such identification may not be required, for the transfer of title or securing financing or refinancing.
- 5) This plat is not to be relied upon for the establishment or location of fences, garages, buildings, or other existing or future improvements.
- 6) Unless noted on the drawing, no title report was provided. This drawing was prepared by examining the current title deed or record plat. Any easements, restrictions, rights of way, or any other property alterations not referred to in the current title deed may not be shown.
- 7) Unless otherwise noted, the bearings and north arrow shown hereon are in the meridian of the current title deed or record plat.
- 8) Building Restriction Line Information, if shown, was obtained from existing records only and is not guaranteed by NTT Associates, Inc.
- 9) Flood Zone information shown on FIRM maps is subject to interpretation.
- 10) Improvements which in the surveyor's opinion appear to be in a state of disrepair or considered "temporary" may not be shown.
- 11) If it appears encroachments may exist, a Boundary Survey is recommended to determine the exact location of the property boundary lines and improvements.
- 12) The locations of fence lines, if shown, are approximate.

Subject property is shown in Zone X on the FIRM Map of Howard County, Maryland on Community Panel Number 24027C0130 D , effective 11/06/2013



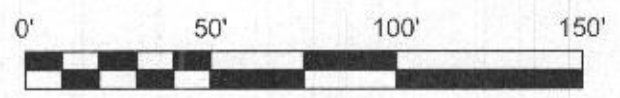
The purpose of this drawing is to locate, describe, and represent the positions of buildings and substantial improvements affecting the property shown hereon, being known as: LOT 5 as shown on the plat entitled "THE WOODLANDS" recorded among the land records of Howard County, Maryland in Plat Number 25052

This is to certify that I either personally prepared or was in responsible charge over the preparation of this drawing and the surveying work reflected in it, all set forth in Regulation .12 of Chapter 09.13.06 of the Code of Maryland Annotated Regulations.



WALL CHECK  
5636 DOSA COURT  
5th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

NTT Associates, Inc.	Scale: 1" = 50'
16205 Old Frederick Rd. Mt. Airy, Maryland 21771	Date: 12/2/2021
Phone: (410) 442-2031	Field By: CB
Fax: (410) 442-1315	Drawn By: SCK
www.nttsurveyors.com	File No.: SEG20-003 AAK
	Page No.: 1 of 1



**GENERAL NOTES**

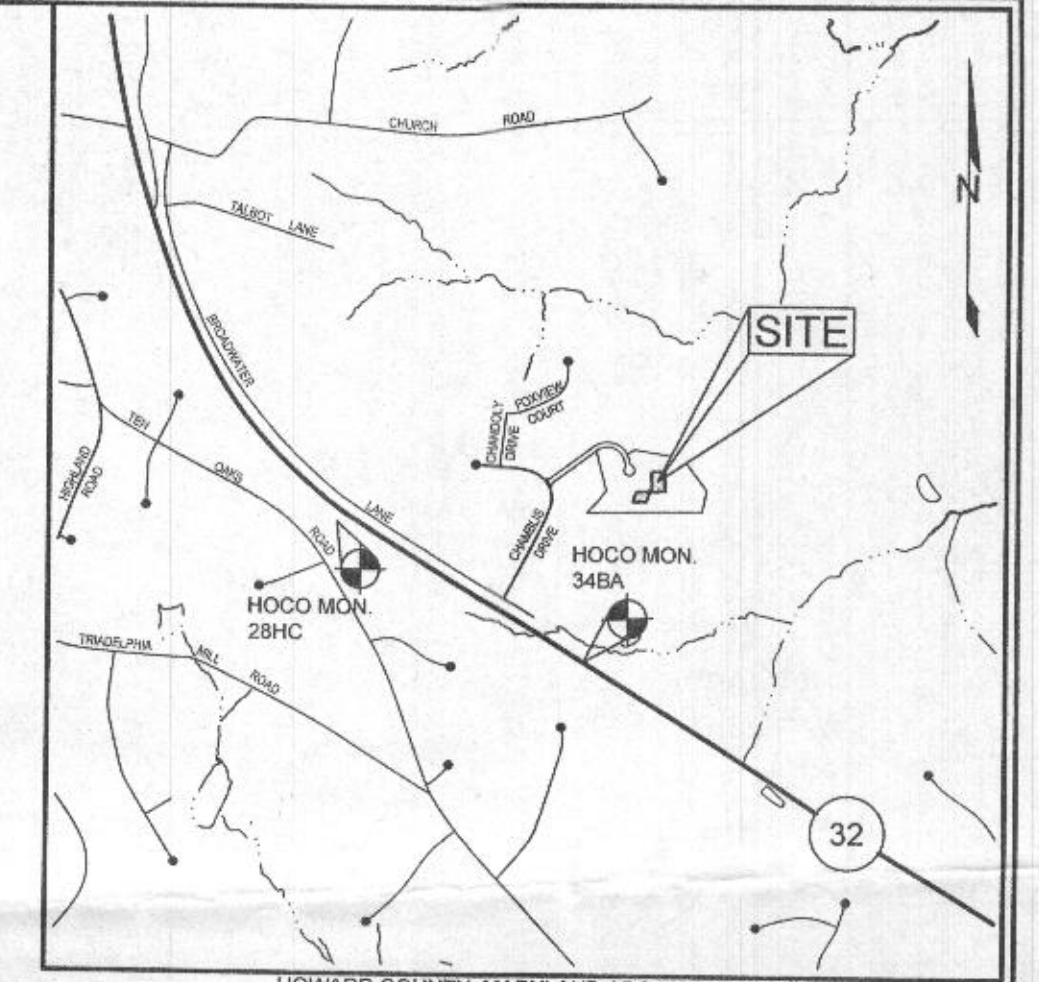
- SUBJECT PROPERTY ZONED RC-DEO PER 1009/13 COMPREHENSIVE ZONING PLAN.
- PROPERTY ADDRESS: 5636 DOSA COURT, CLARKSVILLE 21029
- TOTAL AREA OF PROPERTY = 1.0750 AC.
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. (COMAR 26.04.03). 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 COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECONSTRUCTION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY. THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ADCOCK & ASSOCIATES, LLC ON SEPTEMBER 16, 2014.
- THE TOPOGRAPHY SHOWN HEREON HAS BEEN FIELD RUN BY ADCOCK & ASSOCIATES, LLC. ON SEPTEMBER 16, 2014. THE EXISTING TOPOGRAPHY SHOWN OUTSIDE THE SITE IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004. REFERENCE: RECORD PLAT NO. 25051
- PREVIOUS HOWARD COUNTY FILE NUMBERS: RECORD PLAT NO. 5471, F-53-114, ECP-15-032, WP-16-017, WP-17-060, SP-16-008, PB 431, WP-18-127, RECORD PLAT NO. 25051, F-18-094
- THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE. HOWARD COUNTY SOILS GRID 12, SUB-GRID 205.
- A WETLAND AND STREAM STUDY HAS BEEN PREPARED BY ECO SCIENCE PROFESSIONALS INC. IN NOVEMBER 2014.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREAS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREAS HAVE BEEN FIELD LOCATED.
- EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- GEO TECHNICAL INFORMATION HAS BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE AND FIELD INVESTIGATIONS.
- STORMWATER MANAGEMENT OBLIGATIONS FOR THIS SITE WILL BE MET ONE BIORETENTION FACILITY (M-6) AND THREE DRYWELLS (M-5).
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NUMBERS 28HC AND 34BA WERE USED FOR THIS PROJECT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS, UNLESS ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED OR ACTIVITIES HAVE BEEN DETERMINED ESSENTIAL BY THE DEPARTMENT OF PLANNING AND ZONING.
- THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
- FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULFILLED UNDER F-18-019.
- ANY VEGETATION WITHIN AND NEAR TO WELL ZONES OR SEWAGE DISPOSAL AREAS POTENTIALLY COULD BE DAMAGED OR DESTROYED DURING INSTALLATION OF WELLS OR SEPTIC SYSTEMS. ALL SPECIMEN TREES WITHIN OR NEAR SDA OR WELL ZONES HAVE BEEN DESIGNATED FOR REMOVAL AND APPROVED FOR REMOVAL UNDER SP-16-008 AND WP-17-060.
- BIORETENTION FACILITY 1 IS TO BE WRAPPED IN AN IMPERMEABLE LINER.
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF AN USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING REQUIREMENTS:
  - WIDTH - 12 FEET (OR FEET SERVING MORE THAN ONE RESIDENCE)
  - SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM)
  - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS
  - STRUCTURES - CURBS/BRIDGES - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING)
  - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
  - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
  - DRIVEWAY ENTRANCES TO BE PER HOWARD COUNTY STANDARD DETAIL R-6.05 FOR DRIVEWAY LOTS, 1, 2, AND THE USE IN COMMON DRIVEWAY FOR LOTS 3, 4, 5, 6, 7 AND 8, AND BUILDABLE PRESERVATION PARCEL A.

SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	K' FACTOR
GaC	GAILA LOAM, 8 TO 15 PERCENT SLOPES	B	0.24
GnB	GLENELO LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
GnB	GLENEVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.37
MaC	MAJOR LOAM, 8 TO 15 PERCENT SLOPES	B	0.24
MaD	MAJOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.24
WnB	WILTSHIRE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.24

- NOTES:
- SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY, SOILS GRID 12, SUB-GRID 205
  - HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TRENCH
- SOIL BOUNDARY
- EXISTING SPECIMEN TREE
- APPROVED FOR REMOVAL IF NECESSARY
- EXISTING WELL
- FUTURE WELL LOCATION
- WALK OUT BASEMENT



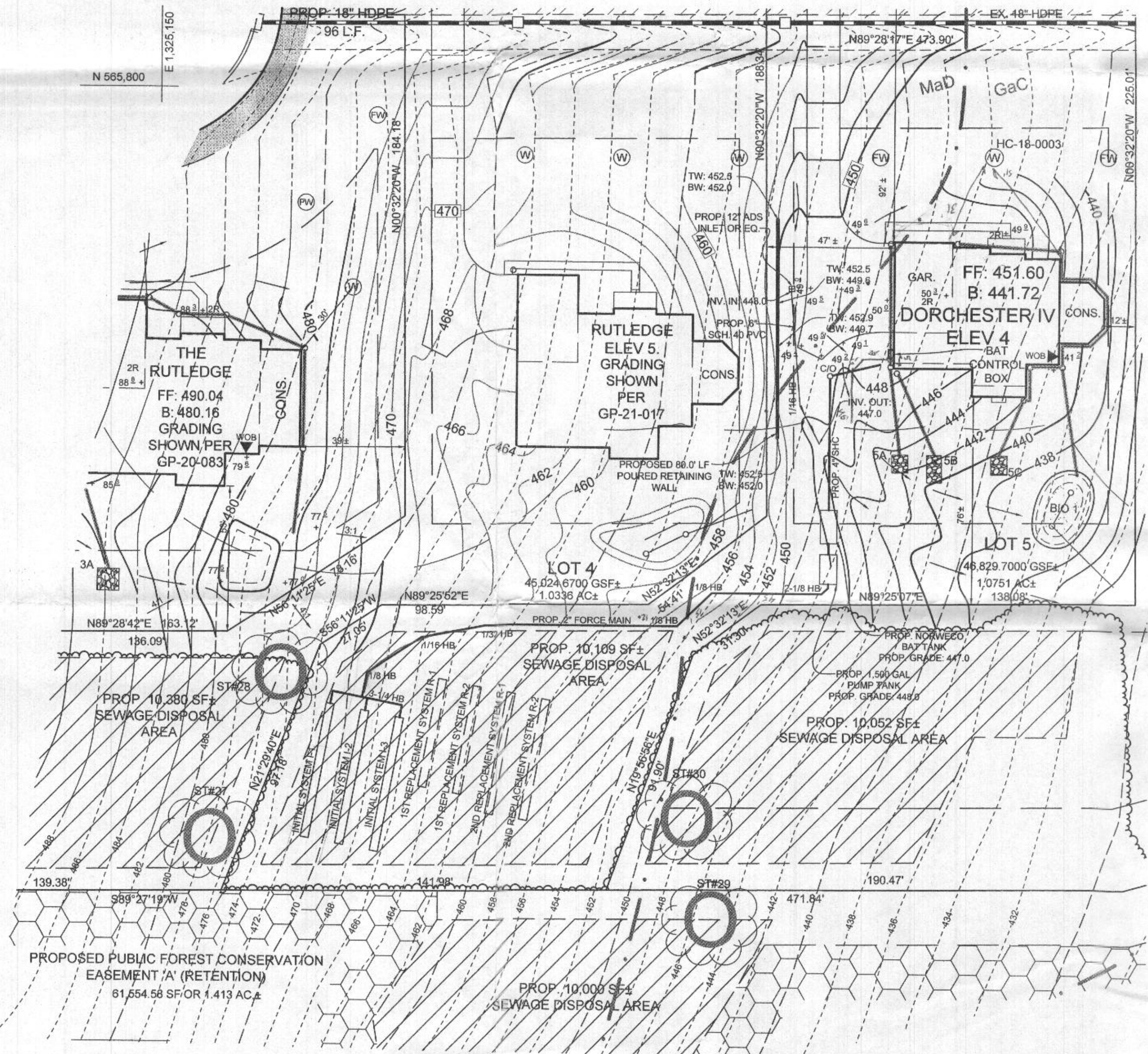
VICINITY MAP  
SCALE: 1"=2000'

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
28HC	565,351.762	1,332,102.463	562.207	S SIDE OF ROUTE 32, 0.2 MILES W OF EXIT 20 SIGN, +/- 320' E OF GUARD RAIL
34BA	563,852.491	1,324,672.167	450.048	2.5' N OF EDGE OF PAVEMENT OF ROUTE 32, 13.3' SE OF EXIT 20 SIGN

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	SITE PLAN FOR BAT INSTALLATION
2	LOW PRESSURE DOSING SYSTEM PLAN AND PROFILE

**SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS**

- INITIAL SYSTEM SYSTEM**
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 6.5'
  - BOTTOM MAXIMUM DEPTH: 8.0'
- DESIGN FLOW:**
  - 5 BEDROOMS AT 150 GPD
  - 5x150 GPD = 750 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
  - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
- SIDEWALL REDUCTION CREDIT:**
  - TRENCH WIDTH (W) = 3.0'
  - TRENCH EFFECTIVE DEPTH (D) = 1.5'
  - (W+2) / (W+1+2D) X 100 = 71%
- LINEAR LENGTH OF TRENCH REQUIRED:**
  - DRAIN FIELD SQUARE FOOTAGE (625) X SIDEWALL REDUCTION CREDIT (71%) / TRENCH WIDTH (3.0) = 147.9'
  - LINEAR LENGTH OF TRENCH PROVIDED = 150'
  - THREE TRENCHES 50.0 LF EACH
- EXISTING GRADE:**
  - TRENCH 11: 471.0
  - TRENCH 12: 468.8
  - TRENCH 13: 466.6
- INVERT:**
  - TRENCH 11: 469.8
  - TRENCH 12: 466.8
  - TRENCH 13: 464.6
- 1ST REPLACEMENT SYSTEM:**
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 3.5'
  - BOTTOM MAXIMUM DEPTH: 8.0'
- DESIGN FLOW:**
  - 5 BEDROOMS AT 150 GPD
  - 5x150 GPD = 750 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
  - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
- SIDEWALL REDUCTION CREDIT:**
  - TRENCH WIDTH (W) = 3.0'
  - TRENCH EFFECTIVE DEPTH (D) = 4.5'
  - (W+2) / (W+1+2D) X 100 = 38%
- LINEAR LENGTH OF TRENCH REQUIRED:**
  - DRAIN FIELD SQUARE FOOTAGE (625) X SIDEWALL REDUCTION CREDIT (38%) / TRENCH WIDTH (3.0) = 79.2'
  - LINEAR LENGTH OF TRENCH PROVIDED = 80.0'
  - TWO TRENCHES 40.0 LF EACH
- EXISTING GRADE:**
  - TRENCH R1: 464.4
  - TRENCH R2: 462.2
- INVERT:**
  - TRENCH R1: 462.4
  - TRENCH R2: 460.2
- 2ND REPLACEMENT SYSTEM:**
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 4.0'
  - BOTTOM MAXIMUM DEPTH: 8.0'
- DESIGN FLOW:**
  - 5 BEDROOMS AT 150 GPD
  - 5x150 GPD = 750 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
  - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
- SIDEWALL REDUCTION CREDIT:**
  - TRENCH WIDTH (W) = 3.0'
  - TRENCH EFFECTIVE DEPTH (D) = 4.0'
  - (W+2) / (W+1+2D) X 100 = 42%
- LINEAR LENGTH OF TRENCH REQUIRED:**
  - DRAIN FIELD SQUARE FOOTAGE (625) X SIDEWALL REDUCTION CREDIT (42%) / TRENCH WIDTH (3.0) = 87.5'
  - LINEAR LENGTH OF TRENCH PROVIDED = 90.0'
  - TWO TRENCHES 45 LF EACH
- EXISTING GRADE:**
  - TRENCH R1: 460.1
  - TRENCH R2: 458.3
- INVERT:**
  - TRENCH R1: 458.3
  - TRENCH R2: 456.3



PLAN VIEW  
SCALE: 1"=30'

Approved Septic System Plan  
Howard County Health Department  
NORWECO INTLP - 500  
w/ 1500 gallon Pump Tank  
& Goulbs WEETH pump or equiv.  
Binkler 7/13/2021  
Signature Date  
To LPD for 5-bedroom residence

**OWNER/DEVELOPER**  
WILLIAMSBURG GROUP  
5485 HARPERS FARM ROAD, SUITE 200  
COLUMBIA, MARYLAND 21044  
410.997.8800

**SITE PLAN FOR BAT INSTALLATION**  
**THE WOODLANDS**  
5636 DOSA COURT, LOT 5

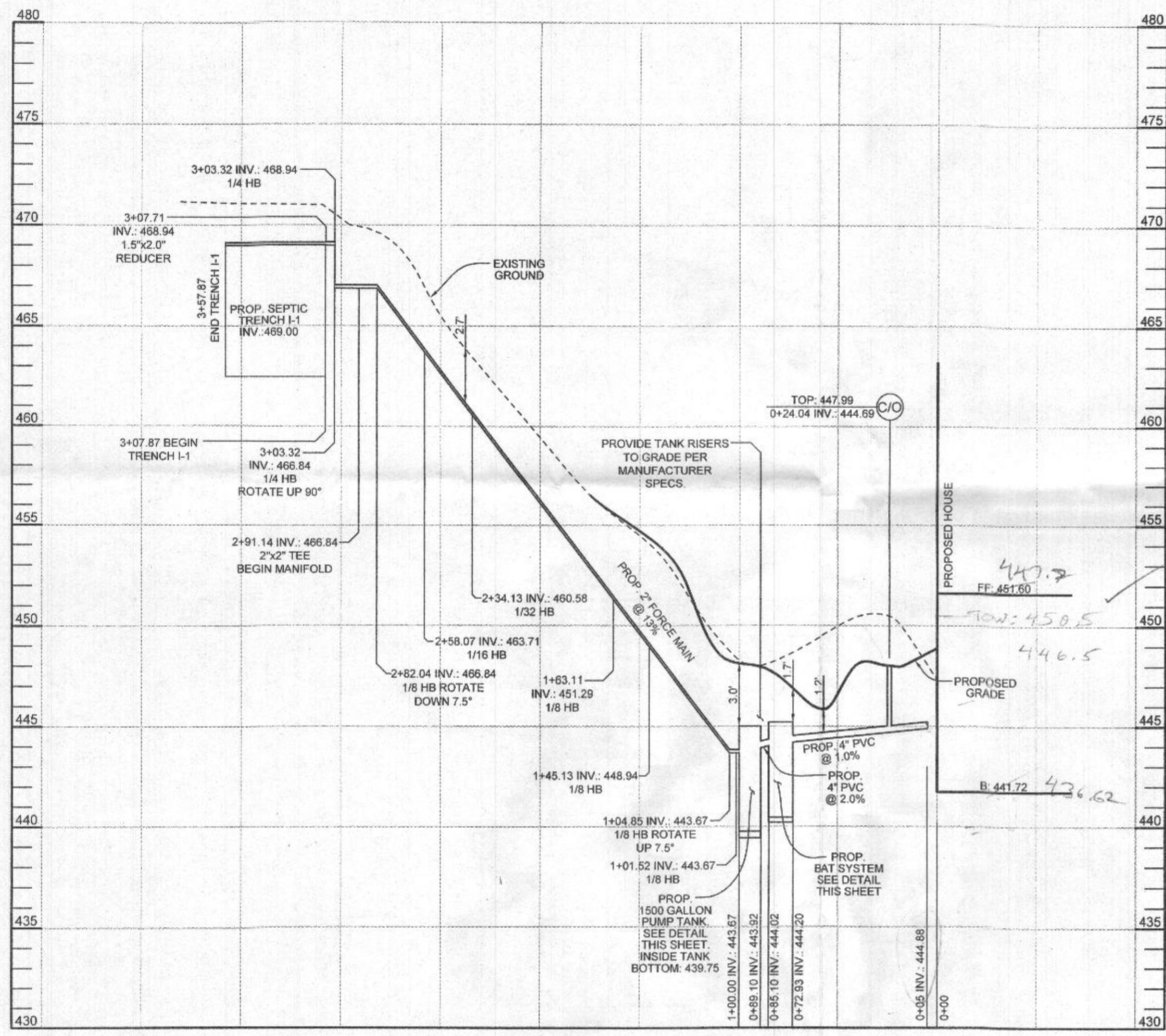
TAX MAP 28 GRID 23  
5TH ELECTION DISTRICT

PARCEL 15  
HOWARD COUNTY, MARYLAND

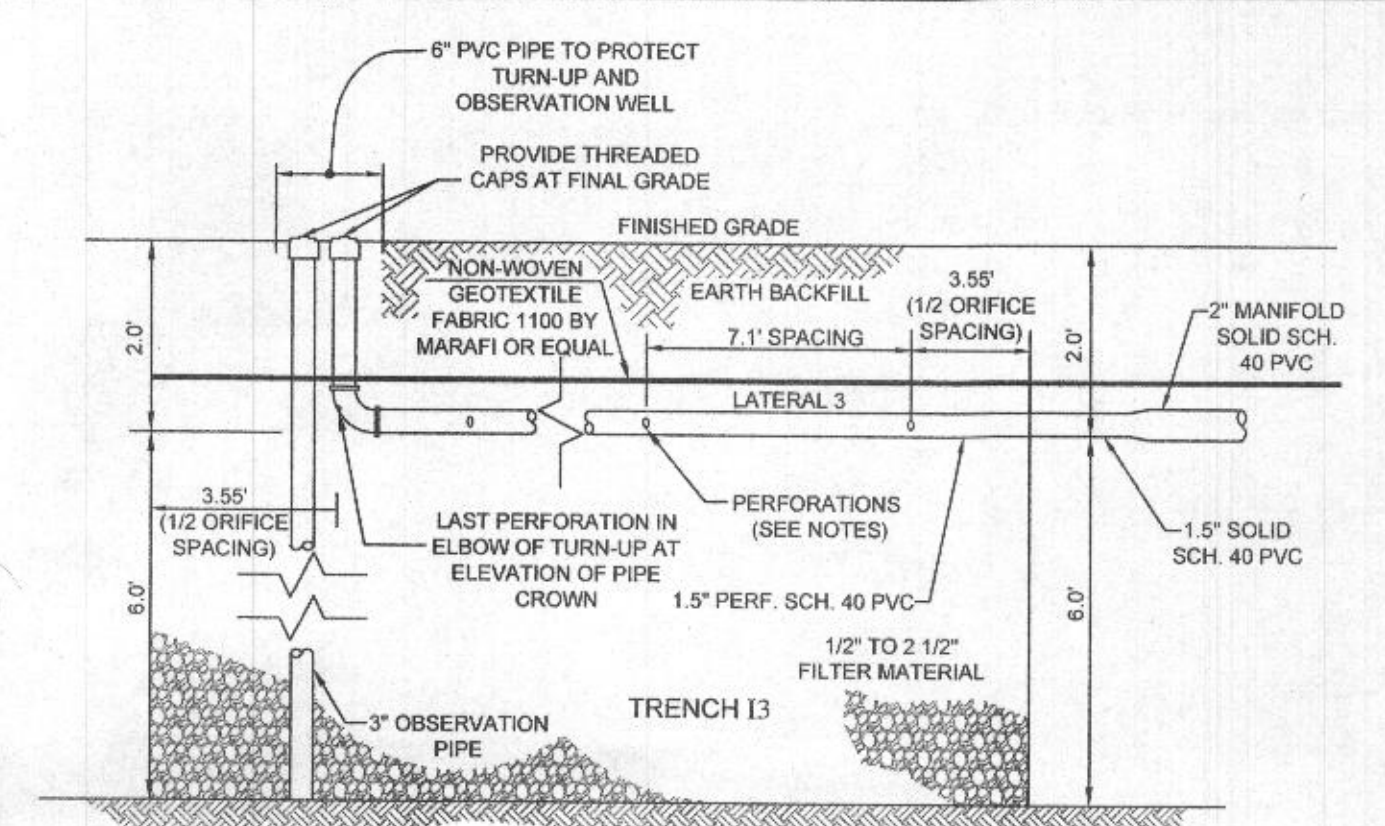
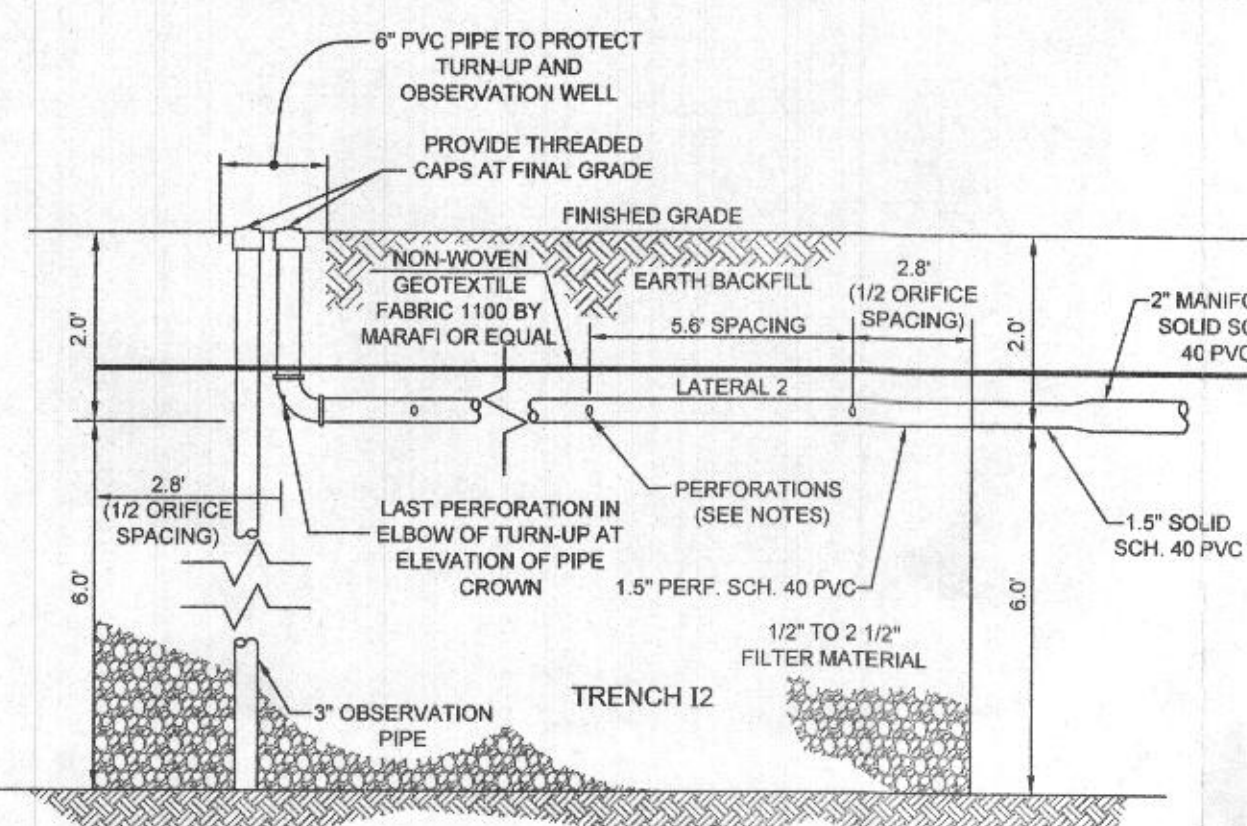
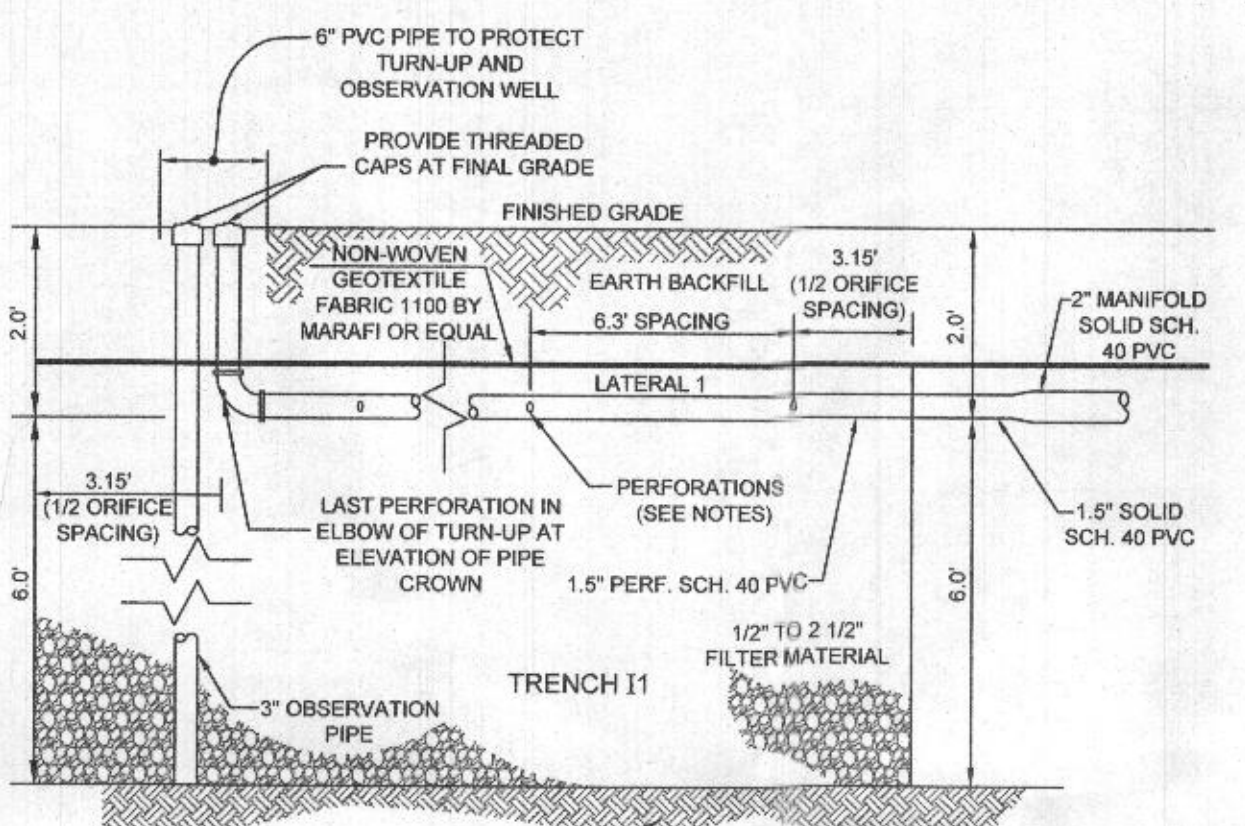
**SILL ENGINEERING GROUP, LLC**  
16005 Frederick Road, 2nd Floor  
Woodbine, Maryland 21797  
Phone: 443.325.5076  
Fax: 410.696.2022  
Email: info@sillengineering.com  
Civil Engineering for Land Development

DESIGN BY: JDB  
DRAWN BY: JDB  
CHECKED BY: PS  
SCALE: AS SHOWN  
DATE: JULY 9, 2021  
PROJECT #: 20-003  
SHEET #: 1 of 2

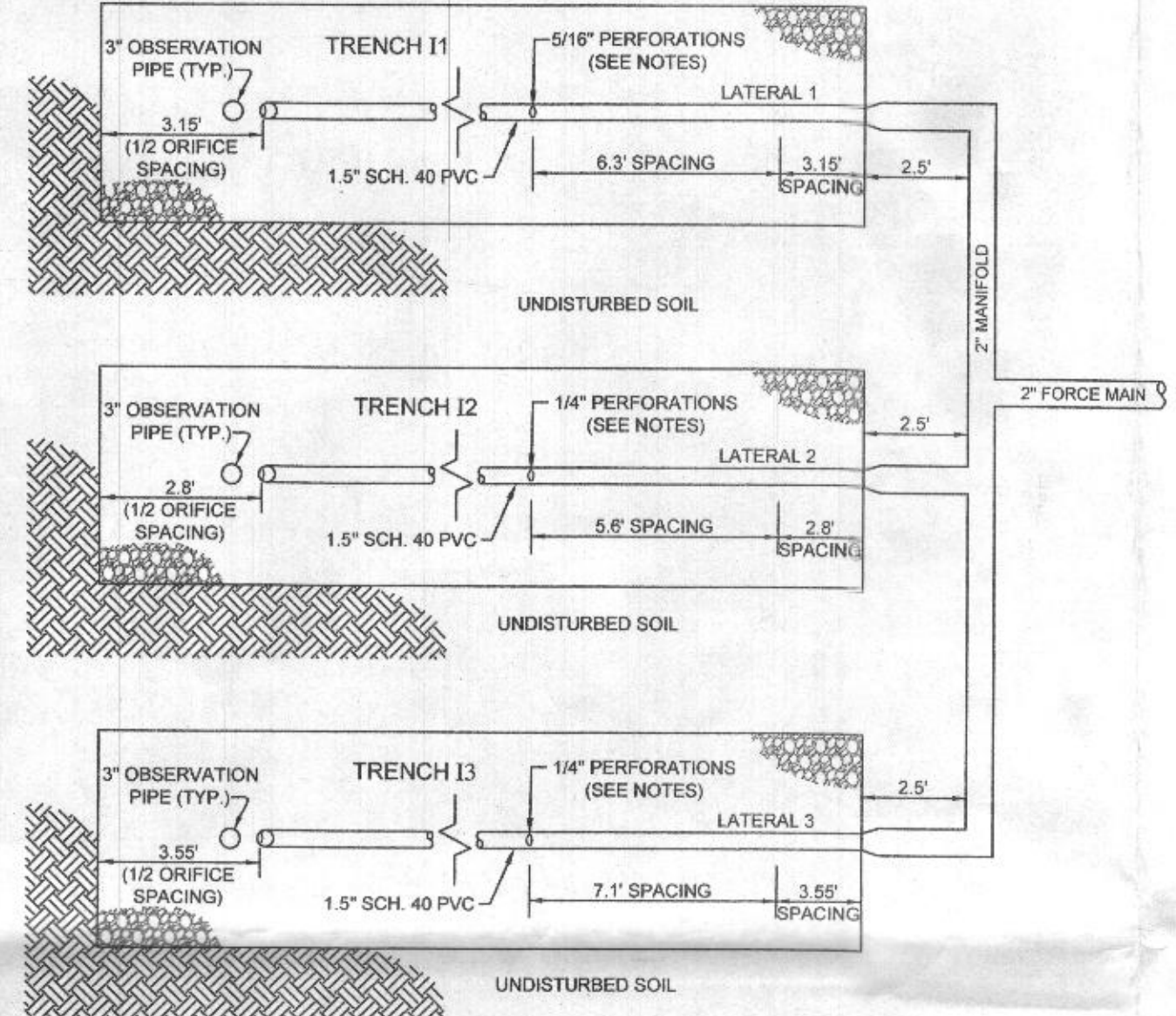
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2023



**PROFILE VIEW**  
SCALE: HORIZ.: 1"=50'  
VERT.: 1"=50'



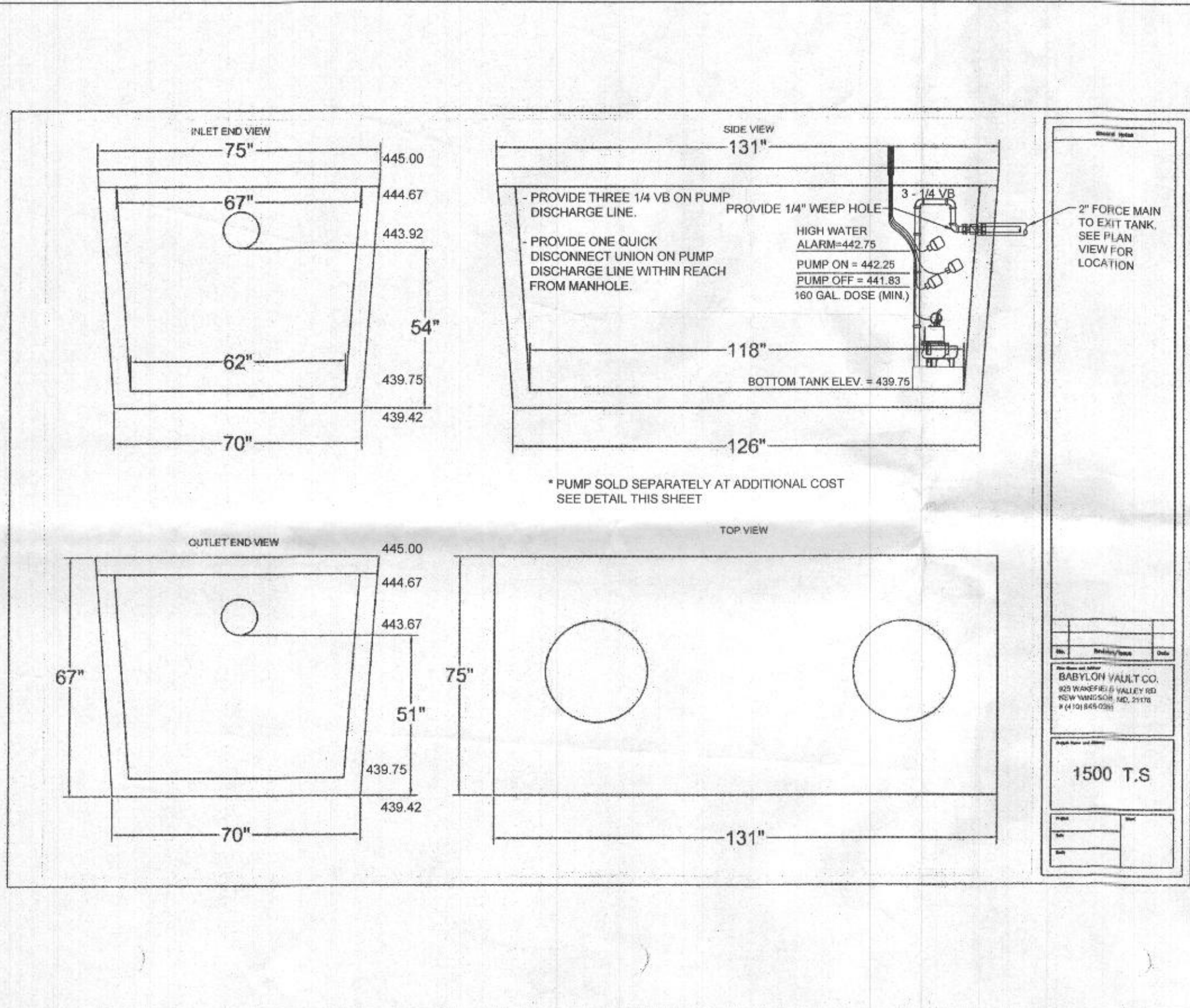
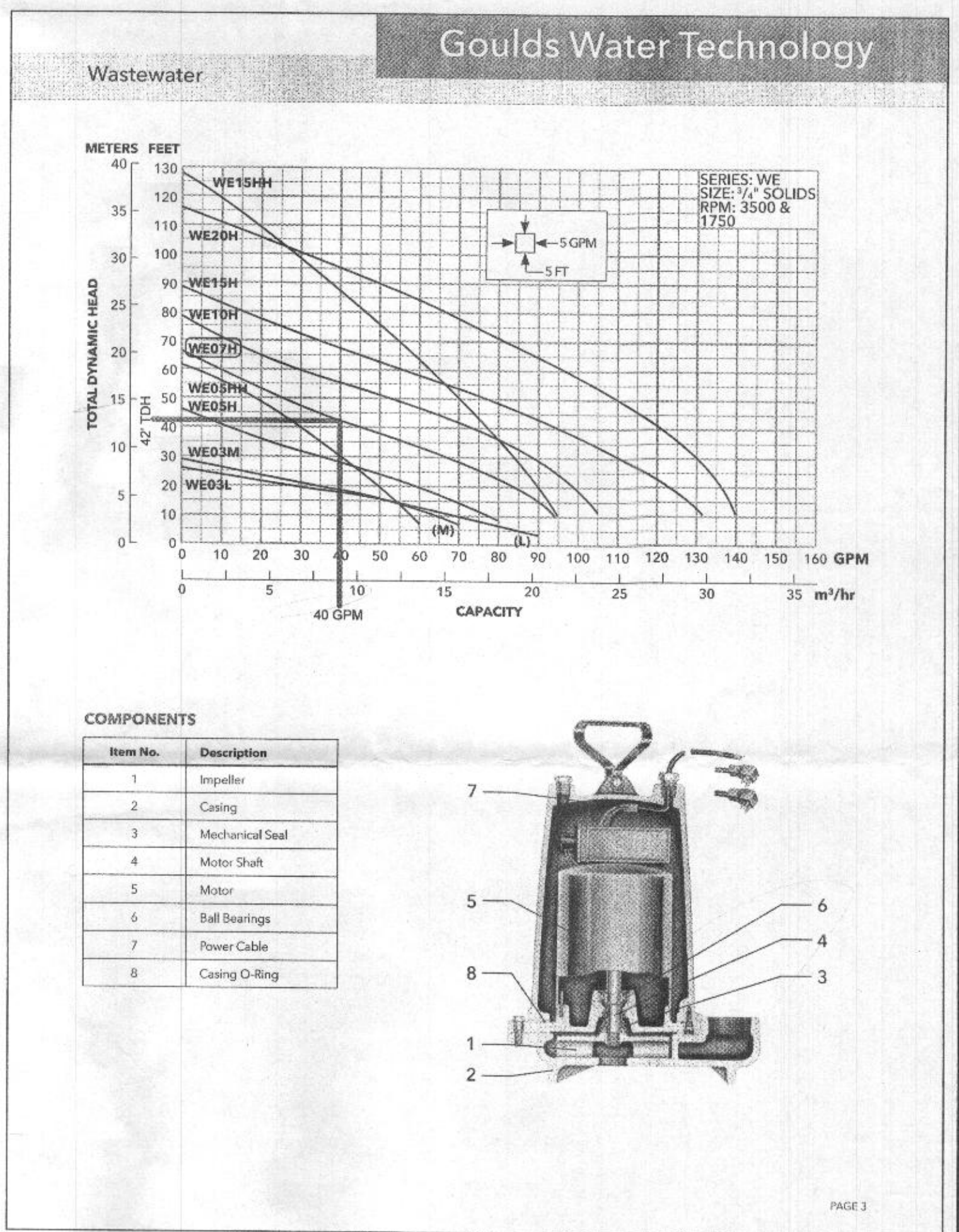
**DISTRIBUTION LATERAL DOSING FIELDS PROFILE VIEW**  
NOT TO SCALE



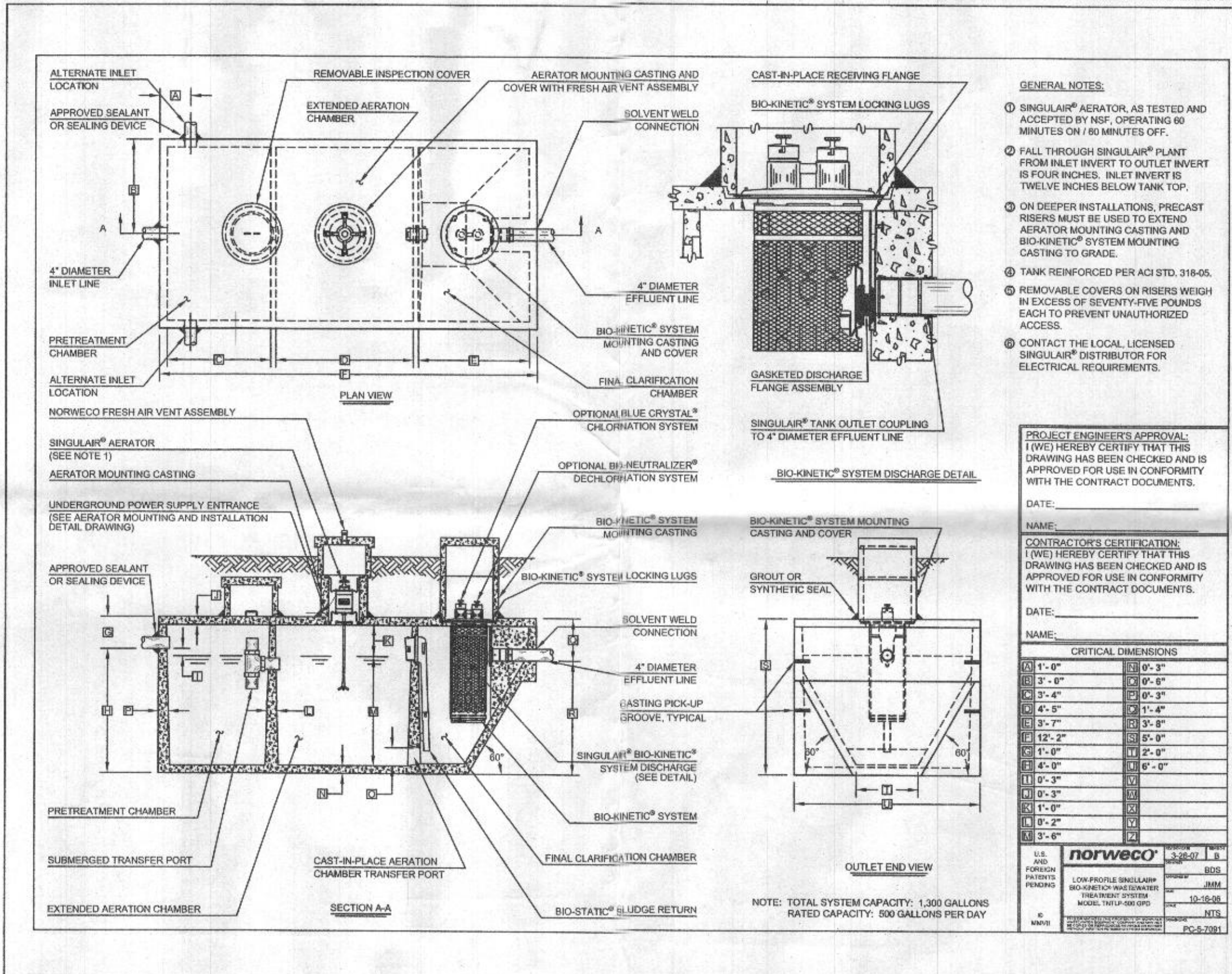
**DOSING FIELD TRENCH DETAIL PLAN VIEW**  
NOT TO SCALE

TRENCH	GROUND ELEV.	STONE ELEV.	PIPE INV. ELEV.	BOTTOM ELEV.	DEPTH OF STONE	EFFECTIVE DEPTH	TRENCH LENGTH	TRENCH WIDTH	TRENCH SPACING
11	471.0	469.5	469.0	463.0	7.5'	1.5'	50.0'	3.0'	10.0'
12	468.8	467.3	466.8	460.8	7.5'	1.5'	50.0'	3.0'	10.0'
13	466.6	465.1	464.6	458.6	7.5'	1.5'	50.0'	3.0'	10.0'

FIELD	LATERAL TRENCH NO.	LATERAL LENGTH	LATERAL DIAMETER	INVERT ELEV.	HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACING	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)	ZONE
INITIAL	L1	50.0'	1.5"	469.0	2.0'	5/16"	1.63	6.3'	8	13.04	1
	L2	50.0'	1.5"	466.8	4.2"	1/4"	1.51	5.8'	9	13.59	
	L3	50.0'	1.5"	464.6	6.4'	1/4"	1.86	7.1'	7	13.02	



**PUMP TANK DETAIL**  
NTS



**BAT SYSTEM DETAIL**  
NTS

**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 BAT SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET. DEEPER INSTALLATIONS MAY REQUIRE PRECAST CONCRETE RISERS.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 50 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 THE LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP PROCEDURE FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- DISEASE PREVENTION: THE BAT SYSTEM SHALL BE OPERATED ON A PUMP RUN TIME OF 4-60 MINUTES ON DEMAND.
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Approved Septic System Plan  
Howard County Health Department  
NORWECO NTLT-500  
1500-gallon Pump Tank  
& Goulds WE07H pump  
Signature: [Signature] 7/13/2021  
To LPD for 5-bedroom residents

**LOW PRESSURE DOSING SYSTEM PLAN AND PROFILE**

**THE WOODLANDS**  
5636 DOSA COURT, LOT 5

TAX MAP 28 GR21 23  
5TH ELECTION DISTRICT

PARCEL 15  
HOWARD COUNTY, MARYLAND

**OWNER/DEVELOPER**  
WILLIAMSBURG GROUP  
5485 HARRERS FARM ROAD, SUITE 200  
COLUMBIA, MARYLAND 21044  
410.997.8800

**SILL ENGINEERING GROUP, LLC**  
16005 Frederick Road, 2nd Floor  
Woodlawn, Maryland 21797  
Phone: 443.325.5076  
Fax: 410.696.2022  
Email: info@sillengr.com  
Civil Engineering for Land Development

DESIGN BY: JDB  
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DATE: JULY 9, 2021  
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SHEET #: 2 of 2