Howard County Health Department
Maura J. Rossman, M.D., Health Officer

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

RECEIPT DATE: 9/22/2020 **ONSITE SEWAGE DISPOSAL SYSTEM** P 567986

APPROVAL DATE: 12/20/2020 JC **PERMIT: CONSTRUCTION** A

PROPERTY ADDRESS: 5628 DOSA CT., CLARKSVILLE, MD 21029

SUBDIVISION: THE WOODLANDS LOT: 3 TAX ID: 05-601708

CONTRACTOR: EMAIL:

CONTRACTOR ADDRESS: PHONE:

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: ☑ MDE ☑ MANUFACTURER: Norweco

PROPERTY OWNER: WILLIAMSBURG GROUP, LLC EMAIL: marinamorris@williamsburgllc.com

OWNER ADDRESS: 5485 HARPERS FARM ROAD, STE 200, COLUMBIA, MD 21044 PHONE: (410)997-8800

BAT UNIT MODEL: NORWECO TNTLP 500 PUMP SIZE: 1.0 HP PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: DATE RECORDED:

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

2TRENCHES:	LINEAR FEET REQUIRED: 104	INLET DEPTH: 2.0
	TRENCH WIDTH: 3	MAXIMUM BOTTOM DEPTH: 8.0
	MINIMUM SPACE BETWEEN TRENCHES: 10	EFFECTIVE AREA BEGINNING DEPTH: 5.0
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 BAT unit and Pump Tank as illustrated.** **Install 2 cleanouts in SHC.** **See attached Report for LPD design.**	

ISSUED BY: R BRICKER ISSUE DATE: 9/22/2020 EXPIRATION DATE: 9/22/2021

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 ATTACHED AS BUILT

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	2'	8'

LPD

NUMBER OF TRENCHES 2

TOTAL LENGTH 104 F

ABSORPTION AREA 312 SF + SIDE WALL

DISTRIBUTION BOX LEVEL N/A

DISTRIBUTION BOX BAFFLE —

DISTRIBUTION BOX PORT —

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL

MANUFACTURER BACK RIVER

CAPACITY 600 GAL

SEAM LOC TOP

TANK LID DEPTH 3' - 2'

BAFFLES BAT

BAFFLE FILTER MID

MANHOLE LOC FRONT/BACK

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED BAT

DATE ON LID 10/09/2020

2 COMPARTMENT

PUMP/SEPTIC TANK LEVEL

MANUFACTURER GARLON

CAPACITY 1500 GAL

SEAM LOC TOP

TANK LID DEPTH 3' - 2'

BAFFLES —

BAFFLE FILTER —

MANHOLE LOC FRONT/BACK

6" PORT LOC —

WATERTIGHT TEST —

SLOTTED —

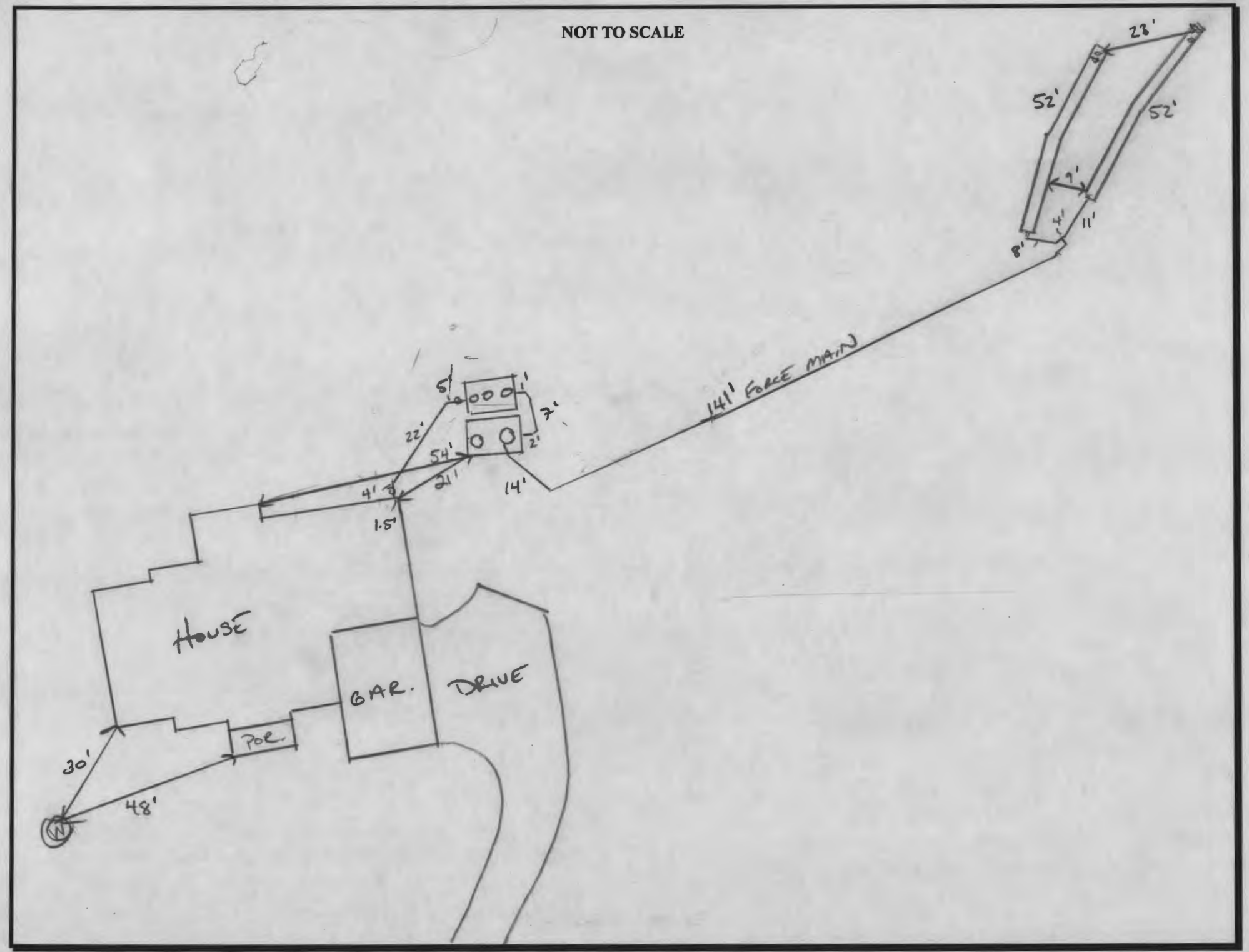
DATE ON LID

PRE-CONSTRUCTION:
10/28/2020 Tanks, FM and LPD trenches staked according to plan. (SL)

INSTALLATION: 11/2/2020 TRENCHES, MANIFOLD AND FM INSTALLED. FM MEASURED TO SUPER SILT FENCE- CONFIRMED LATERAL ORIFICE DIAMETER AND SPACING (SL). 11/4/2020 FM COMPLETE. TANKS SET AND SHC INSTALLED. REINSPECT FOR P/A. (SL)
12/14/2020 P/A test OK (SL)

FINAL INSPECTOR J.C. DATE OF APPROVAL 12/14/2020

NOT TO SCALE



5628 DOSA COURT

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

NORWECO CERTIFICATION

PROPERTY OWNER: WILLIAMBURG GROUP, LLC	INSTALLATION COMPANY: HATFIELD
ADDRESS: 5628 DOSA CT	CERTIFIED INSTALLER: TODD TRACEY
CITY, ZIPCODE & COUNTY: CLARKSVILLE, 21029, HOWARD	PERMIT#
SIZE OF SYSTEM INSTALLED:	DATE INSTALLED: 11-04-20
600 GPD CONCRETE	START-UP DATE: 12-13-20
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: 40"	BURIAL DEPTH OF TANK: 24"
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): 48"	VENTED LID(S) ON AERATION CHAMBER(S): YES
FEMALE PLUG(S) WIRED TO UF WIRE: YES	ANY GROUND SETTLING AROUND TANK:
CONDUIT(S) ENTERING AERATION RISER MADE WITH A WATERTIGHT CONNECTION: YES	NO
ISTHE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

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

_____	Matthew Geckle	December 13, 2020
Signature of BRP Representative	Vice-President	Date

16005 Frederick Road, 2nd Floor
Woodbine, MD 21797
Website: www.sillengineering.com
Office: 443-325-5076
Fax: 410-696-2022
Email: info@sillengineering.com
Civil Engineering for Land Development

SILL ENGINEERING GROUP, LLC

The Woodlands
Lot 3
5628 Dosa Court

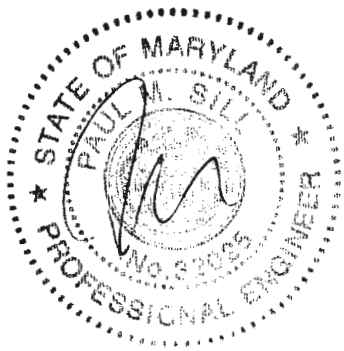
Low Pressure Dosing System Report

April 17, 2020
Revised April 30, 2020
Revised May 09, 2020

report 'OK'
RB
5/19/2020

Prepared For:

Williamsburg Group
5485 Harpers Farm Road
Columbia, Md 21044



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, 2021

Project #20-003

The Woodlands, Lot 3
5628 Dosa Court
April 17, 2020
Revised May 09, 2020

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 x150 gpd = 750 gpd
- Application Rate: 1.2
  - Effective Area Beginning Depth: 5.0'
  - Bottom Maximum Depth: 8.0'
- Square Footage of Drain Field Required:
  - Design Flow (750 gpd) / Application Rate (1.2) = 625.0 sf
- Sidewall Reduction Credit:
  - Trench Width (W) = 3'
  - Trench Effective Depth (D) = 3'
  - (W+2) / (W+1+2D) x 100 = 50%
- Linear Length of Trench Required:

$$\frac{\text{Drain Field Square Footage (625.0) x Sidewall Reduction Credit (0.50)}}{\text{Trench Width (3')}}$$

Liner Length of Trench Required = 104.0'

- Linear Length of Trench Provided = 104.0'
  -Two trenches at 52lf 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:
    - $1/6^{th}$ the design flow: 1/6 x 750 gallons = 125.0 gallons

    OR
    - Volume of Force Main + Volume of Manifold + 5x Volume of the Laterals:

      29.70 gallons + 2.31 gallons + 11.45 gallons x 5 = 29.26 gallons
  - Minimum Dose = 125 gallons

The Woodlands, Lot 3
5628 Dosa Court
April 17, 2020
Revised May 09, 2020

- Pump Design:
  - Pump flow required: 30.35 gpm Use 30 gpm (see Pressure Distribution table for initial system)
  - Dose amount: 125 gallons
  - Pump run time: 4.17 minutes
  - Static head (see profile for detail): 22.80'

- Pipe Lengths:
  - 2.0" Force Main: 170.05'
  - 2.0" Manifold: 12.07'
  - 1.5" Manifold: 2.0'
  - 1.5" Lateral: 52.0' trench

- Friction head calculation (Table 4.3):

Pipe	2" Force Main	2.0" Manifold	1.5" Manifold	1.5" Lateral
1/4 Bend (90°)	3 @ 8.0' = 24.0'	1 @ 8.0' = 8.0'	-	-
1/8 Bend (45°)	4 @ 4.0' = 16.0'	4 @ 4.0' = 16.0'	-	-
1/16 Bend (22.5°)	1 @ 2.0' = 2.0'	-	-	-
1/32 Bend (11.25°)	-	-	-	1 @ 1.5' = 1.5'
Gate Valve	-	-	-	-
Standard Tee	-	-	-	-
Run Tee	-	-	-	-
Cross	-	-	-	-
Reducer	-	2 - 1.5"x2.0" @ 1.0' =2.0'	-	-
Couplings	9 @ 2.0' = 18.0'	-	-	3 @ 2' = 6'
Quick Connect/Disconnect	1 @ 4.5'= 4.5'	-	-	-
Total Equivalent Length of pipe	64.5'	26.0'	0.0'	7.5'

- Flow at 2.0" pipe (force main) = 30 gpm
  - Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 1.54
  - Total equivalent length of 2.0" FM and appurtenances =
    170.05' + 64.5' = 234.05/100 = 2.34 * 1.54= 3.60'

- Flow at 2.0" pipe (manifold) = 15 gpm
  - Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 0.44
  - Total equivalent length of 2.0" FM and appurtenances =
    12.07'+ 26.0' = 38.07/100 = 0.38 * 0.44 = 0.17'

- Flow at 1.5" pipe (manifold) = 15 gpm
  - Friction loss per 100' (Table 4.4) of 1.5" schedule 40 plastic pipe: 1.45
  - Total equivalent length of 1.5" FM and appurtenances =

The Woodlands, Lot 3
5628 Dosa Court
April 17, 2020
Revised May 09, 2020

54.0'+ 7.5' = 61.5/100 = 0.62 * 1.45 = 0.90'
- Total Friction Head = 3.60' + 0.17'+ 0.90' = 4.67'

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

22.80' + ~~2.5'~~ 2.0' + 4.67' + 1.5' = ~~31.47~~ 30.97 use 32' VCB

- Pump Chamber Design:
  - For pump tank dimensions and detail, see plans.
  - Cross sectional area of tank: 50.82cf per one vertical foot
  - Pump chamber elevations:
    - Proposed grade at top of tank (at inlet): 485.60
    - Top of pump tank (interior): 483.50
    - Pump chamber invert in: 482.75
    - High Water Alarm: 481.58
    - Pump On: 481.08
    - Pump Off: 480.75
    - Bottom inside slab of tank: 478.58
  - Pump Chamber volumes:
    - Invert In to High Water Alarm: 45.96 cf or 343.8 gallons
    - Pump On to Pump Off: 16.71 cf or 125.0 gallons
    - Excess volume above Pump On: 122.98 cf or 920.0 gallons
  - Design based on:
    - Myers MW 100 series pump or equivalent
    - Babylon Vaults 1,500-gallon septic tank or equivalent

OK!

PRESSURE DISTRIBUTION ON SLOPING SITES

The Woodlaands, LOT 3 - Pressure System

Lateral No.	Ex. 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	507.30	505.3	499.30	52	2.0	5/16	1.63	5.8	9	14.67	ZONE 1
L2	506.40	504.4	498.40	52	2.9	5/16	1.96	6.5	8	15.68	
				104						30.35	TOTALS
										Use 30 gpm	

Trench I1

Effective area beginning depth = 5

Trench depth = 8

Trench I2

Effective area beginning depth = 5

Trench depth = 8

Merfish Pipe & Supply
Since 1920
Master Distributor of Carbon Steel Pipe, Fittings & Flanges
1211 Kress Street · Houston, TX 77220
(713) 869-5731

DOCUMENT SUMMARY PAGE

Total Pages: 1	Queued By: Patrick Rhodes

NO.	Customer PO#	SO#	Item Description	Heat #
1	P1046155	200618907	6 BLK PE 0.188W SRL IMP 6.625 OD 12.94# A53 GR B ERW	B1706420

AL JAZEERA STEEL PRODUCTS COMPANY SAOG

PO BOX 40, PC 327, Suhar Industrial Estate
SULTANATE OF OMAN
Phone : 968 26751763/4/5 Fax 968 26751766

MILL TEST CERTIFICATE

MTC NO. : 311/07/2017 DATED 24/07/2017
INVOICE NO. : AJSPC/EXP/162 DATED 24/07/2017
CUSTOMER'S NAME :QT TRADING
ADDRESS 2207 CONCORD PIKE BOX 405,
WILMINGTON,DELAWARE,19803-2908,
UNITED STATES OF AMERICA.

P.O. NO. : R1686/LOT NE 1122- IND -1

SR NO.	NPS (Inch)	NPS (MM)	WT (Inch)	LENGTH (Feet)	TYPE	Lb / Ft	HEAT NO.	BUNDLES	PCS	TOTAL (FEET)	NET WT. (MT)	MECHANICAL TESTING				HYADRAULIC TEST (psi)	CHEMICAL ANALYSIS (%)					Zinc Coating (Oz/Ft²)
												UTS (psi)	YS (psi)	% EL IN GL 2"	FLATTENING / BEND TEST		C Cu	Mn Ni	P Cr	S Mo	Si V	
ERW STEEL PIPE CONFORMING TO THE SPECIFICATION ASTM A53-12 GRA/ASTM A 53 - 12 GR. B/ASME SA 53-12 GRB SCH 40 & 0.188"																						
1	3/4" (UL)	1.050	0.113	10.0	BTBE	1.13	A1706217	4	336	3360	1.722	62780/64240	46720/47450	35/37	OK	700	0.114 0.006	0.760 0.008	0.023 0.014	0.006 0.005	0.023 0.003	–
2	1" (UL+FM)	1.315	0.133	10.0	BTBE	1.68	A1706218	23	1380	13800	10.517	63072/63948	46866/47742	36/38	OK	700	0.149 0.019	0.354 0.008	0.013 0.031	0.006 0.004	0.032 0.005	–
3	1" (UL+FM)	1.315	0.133	10.0	BTBE	1.68	A1705213	2	120	1200	0.914	62780/63656	44676/45406	36/38	OK	700	0.148 0.008	0.828 0.022	0.009 0.011	0.005 0.004	0.020 0.003	–
4	2" (UL+FM)	2.375	0.154	10.0	BTBE	3.66	A1707125	42	1092	10920	18.129	62926/63656	41610/42340	40/42	OK	2300	0.130 0.006	0.810 0.040	0.007 0.008	0.007 0.005	0.024 0.004	–
5	3" (GRB- ASME- UL+FM)	3.500	0.216	21.0	BPEB	7.58	B1707424	39	546	11466	39.423	64532/65262	49640/50370	36/38	OK	2500	0.139 0.010	0.402 0.035	0.014 0.023	0.007 0.006	0.033 0.004	–
6	6" (GRB- ASME- UL+FM)	6.625	0.280	21.0	BPEB	18.99	B1706420	2	14	294	2.532	64240/65116	47742/48472	35/37	OK	1780	0.151 0.007	1.000 0.014	0.022 0.009	0.008 0.005	0.032 0.005	–
7	6" (GRB- ASME- UL+FM)	6.625	0.280	21.0	BPEB	18.99	B1705416	1	7	147	1.266	64240/64970	43946/44822	35/37	OK	1780	0.160 0.006	0.515 0.008	0.010 0.009	0.007 0.005	0.006 0.004	–
8	8" (GRB- ASME- UL+FM)	8.625	0.322	21.0	BPEB	28.58	B1706422	24	120	2520	32.669	64824/65554	48910/49640	42/44	OK	1570	0.157 0.007	1.100 0.008	0.026 0.011	0.010 0.005	0.026 0.004	–
9	6" (GRB)	6.625	0.188	21.0	BPEB	12.94	B1706420	7	49	1029	6.040	63510/64240	46720/47450	35/37	OK	1190	0.153 0.008	0.536 0.009	0.006 0.012	0.006 0.005	0.017 0.004	–
10	8" (GRB)	8.625	0.188	21.0	BPEB	16.96	B1706422	12	60	1260	9.693	63364/64094	48180/48910	35/37	OK	920	0.138 0.022	0.880 0.012	0.017 0.300	0.007 0.004	0.010 0.004	–
11	2" (GRB- ASME- UL+FM)	2.375	0.154	21.0	BGE	3.66	B1706423	23	598	12558	20.848	63656/64532	47450/48180	35/37	OK	2500	0.162 0.017	0.452 0.010	0.013 0.031	0.006 0.005	0.038 0.005	–
					GRAND TOTAL			179	4322	58554	143.754											

THIS IS TO CERTIFY THAT THE MATERIAL CONFORMS TO THE SPECIFICATION ASTM A53-12 GRA/ASTM A53-12 GR.B/ASME SA -12 GRB
ALL THE PIPES ARE TESTED NON DESTRUCTIVELY BY EDDY CURRENT METHOD AND HYDROSTATICALLY TESTED
AT THE PRESSURE MENTIONED ABOVE.

For Al Jazeera Steel Products Company SAOG

Authorized Signatory
Quality Control

AL-JAZEERA STEEL PRODUCTS CO. (SAOG) P.O. Box : 40 Suhar Postal Code : 327 S. of Oman

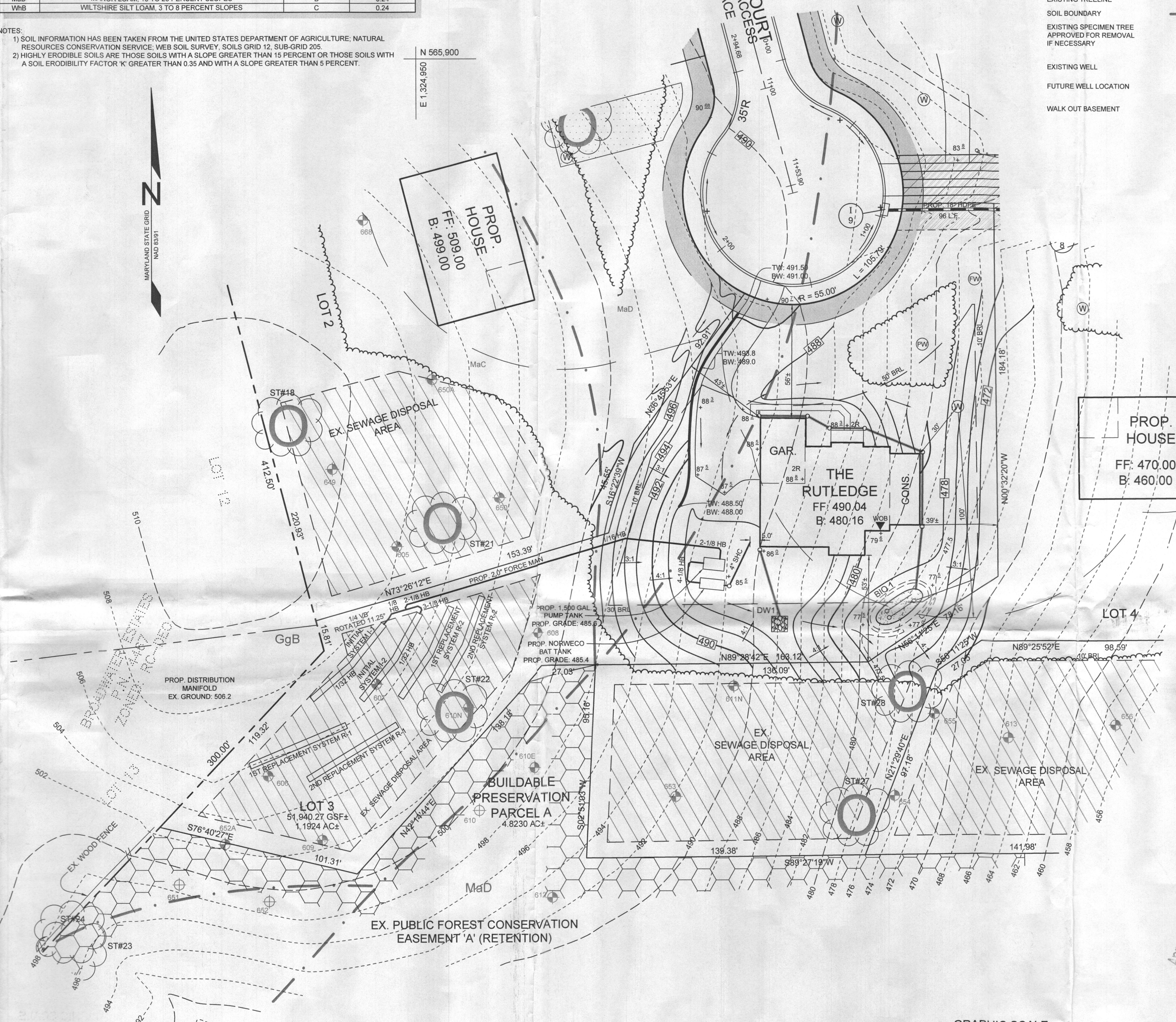
GENERAL NOTES

1. SUBJECT PROPERTY ZONED RC-DEO PER 10/06/13 COMPREHENSIVE ZONING PLAN.
2. PROPERTY ADDRESS: 5628 DOSA COURT, CLARKSVILLE 21029
3. TOTAL AREA OF PROPERTY = 1.1924 AC.±
4. PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
5. ▨ 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. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
6. THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ADCOCK & ASSOCIATES, LLC ON SEPTEMBER 16, 2014.
7. 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.
8. REFERENCE: RECORD PLAT NO. 25051.
9. PREVIOUS HOWARD COUNTY FILE NUMBERS: RECORD PLAT NO. 5471, F-83-114, ECP-15-032, WP-16-017, WP-17-060, SP-16-008, PB 431, WP-18-127, RECORD PLAT NO. 25051, F-18-094.
10. 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.
11. A WETLAND AND STREAM STUDY HAS BEEN PREPARED BY ECO SCIENCE PROFESSIONALS INC. IN NOVEMBER 2014.
12. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
13. 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.
14. 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.
15. GEOTECHNICAL INFORMATION HAS BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE AND FIELD INVESTIGATIONS.
16. STORMWATER MANAGEMENT OBLIGATIONS FOR THIS SITE WILL BE MET ONE BIORETENTION FACILITY (M-6), ONE DRYWELL (M-5), AND TWO NON-ROOF TOP DISCONNECTS.
17. 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.
18. 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.
19. THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
20. FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULFILLED UNDER F-18-019.
21. 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.
22. BIORETENTION FACILITY 1 IS TO BE WRAPPED IN AN IMPERMEABLE LINER WHERE WITHIN 100' FROM EXISTING OR FUTURE WELLS..
23. 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 (16 FEET SERVING MORE THAN ON 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 (CULVERTS/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
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.37
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	0.24
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.24
WhB	WILTSHIRE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.24

NOTES:
1) 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.
2) 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.



PLAN VIEW
SCALE: 1=30'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 INCH = 30 FEET

SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

- INITIAL SYSTEM & 1ST REPLACEMENT SYSTEM:
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 5'
  - BOTTOM MAXIMUM DEPTH: 8'

1. DESIGN FLOW:
   - 5 BEDROOMS AT 150 GPD
     - 5X150 GPD = 750 GPD
2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
   - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
3. SIDEWALL REDUCTION CREDIT:
   - TRENCH WIDTH (W) = 3'
   - TRENCH EFFECTIVE DEPTH (D) = 3'
   - (W+2) / (W+1+2D) X 100 = 50%
4. LINEAR LENGTH OF TRENCH REQUIRED:
   - DRAIN FIELD SQUARE FOOTAGE (625) X SIDEWALL REDUCTION CREDIT (50%) / TRENCH WIDTH (3') = 104'
5. LINEAR LENGTH OF TRENCH PROVIDED = 104'
   - TWO TRENCHES 52 LF/EACH
6. EXISTING GRADE: TRENCH I1: 507.3
   INVERT: TRENCH I1: 505.3
   EXISTING GRADE: TRENCH I2: 506.4
   INVERT: TRENCH I2: 504.4
   EXISTING GRADE: TRENCH R1: 506.0
   INVERT: TRENCH R1: 504.0
   EXISTING GRADE: TRENCH R2: 504.8
   INVERT: TRENCH R2: 502.8

- 2ND REPLACEMENT SYSTEM :
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 3'
  - BOTTOM MAXIMUM DEPTH: 6'

1. DESIGN FLOW:
   - 5 BEDROOMS AT 150 GPD
     - 5X150 GPD = 750 GPD
2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
   - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
3. SIDEWALL REDUCTION CREDIT:
   - TRENCH WIDTH (W) = 3'
   - TRENCH EFFECTIVE DEPTH (D) =3'
   - (W+2) / (W+1+2D) X 100 = 50%
4. LINEAR LENGTH OF TRENCH REQUIRED:
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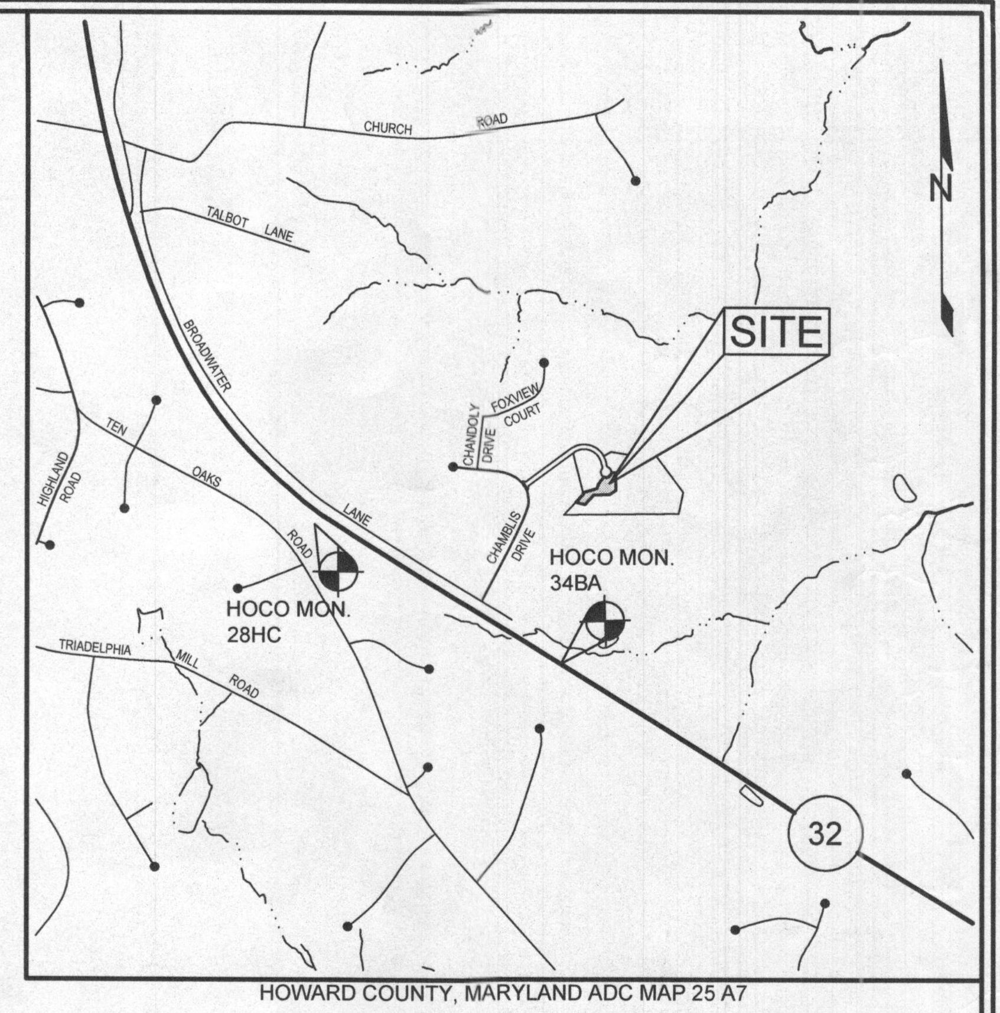
5. LINEAR LENGTH OF TRENCH PROVIDED = 104'
   - TWO TRENCHES 52 LF/EACH
6. EXISTING GRADE: TRENCH R1: 505.6'
   INVERT: TRENCH R1: 503.6'
   EXISTING GRADE: TRENCH R2: 504.3'
   INVERT: TRENCH R2: 502.3'

LEGEND

EXISTING CONTOUR - - - - - - - 462
PROPOSED CONTOUR —382—
EXISTING SPOT ELEVATION 382.3
PROPOSED SPOT ELEVATION + 82 53
DIRECTION OF FLOW
EXISTING TREELINE
SOIL BOUNDARY
EXISTING SPECIMEN TREE APPROVED FOR REMOVAL IF NECESSARY ST#43
EXISTING WELL (W)
FUTURE WELL LOCATION (FW)
WALK OUT BASEMENT WOB ▼



HOWARD COUNTY, MARYLAND ADC MAP 25 A7

VICINITY MAP

SCALE: 1"=2000'

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
28HC	565,351.762	1,332,102.463	552.207	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

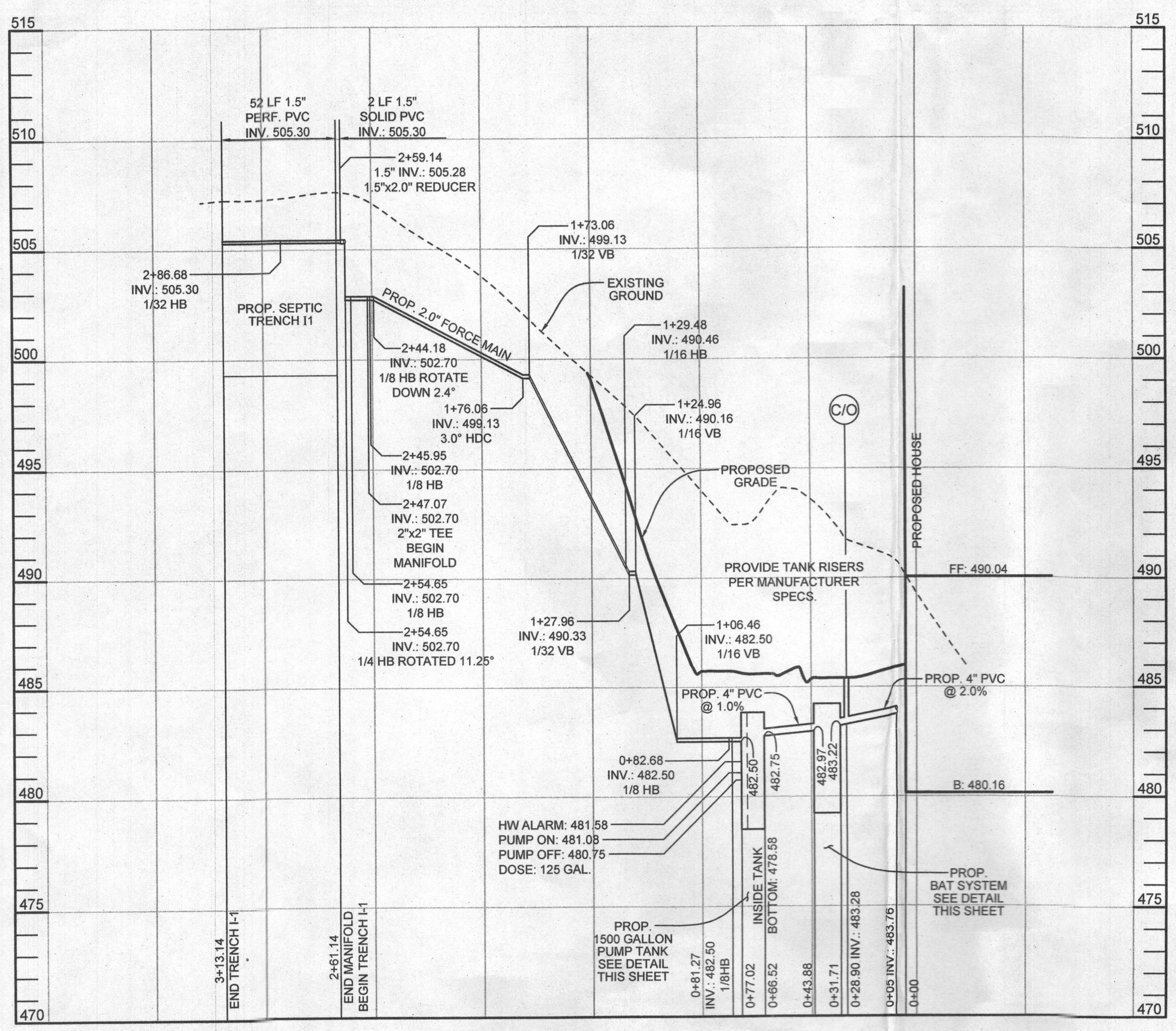
SHEET NO.	DESCRIPTION
1	SITE PLAN FOR BAT INSTALLATION
2	LOW PRESSURE DOSING SYSTEM PLAN AND PROFILE

Approved Septic System Plan
Howard County Health Department
NORWECO TNT LP-500 with 1500-gal Pump Tank and Myers 1.0 HP Pump for 5-Bedroom SFD
[illegible]
Signature
5/19/2020
Date

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

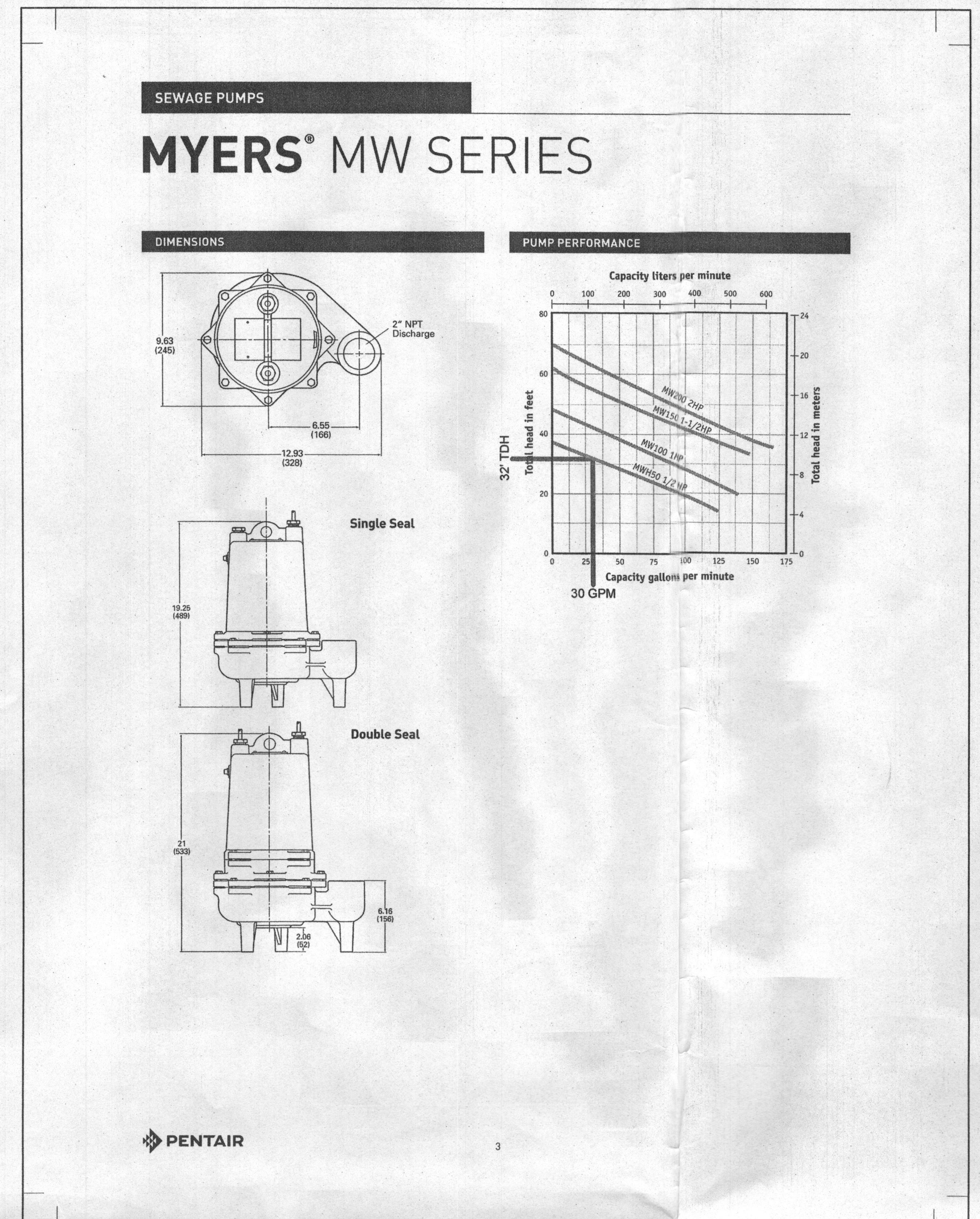
SITE PLAN FOR BAT INSTALLATION
THE WOODLANDS
5628 DOSA COURT, LOT 3

TAX MAP 28 GRID 23 PARCEL 15



PROFILE VIEW

SCALE: HORIZ.: 1"=50'
VERT.: 1"=50'

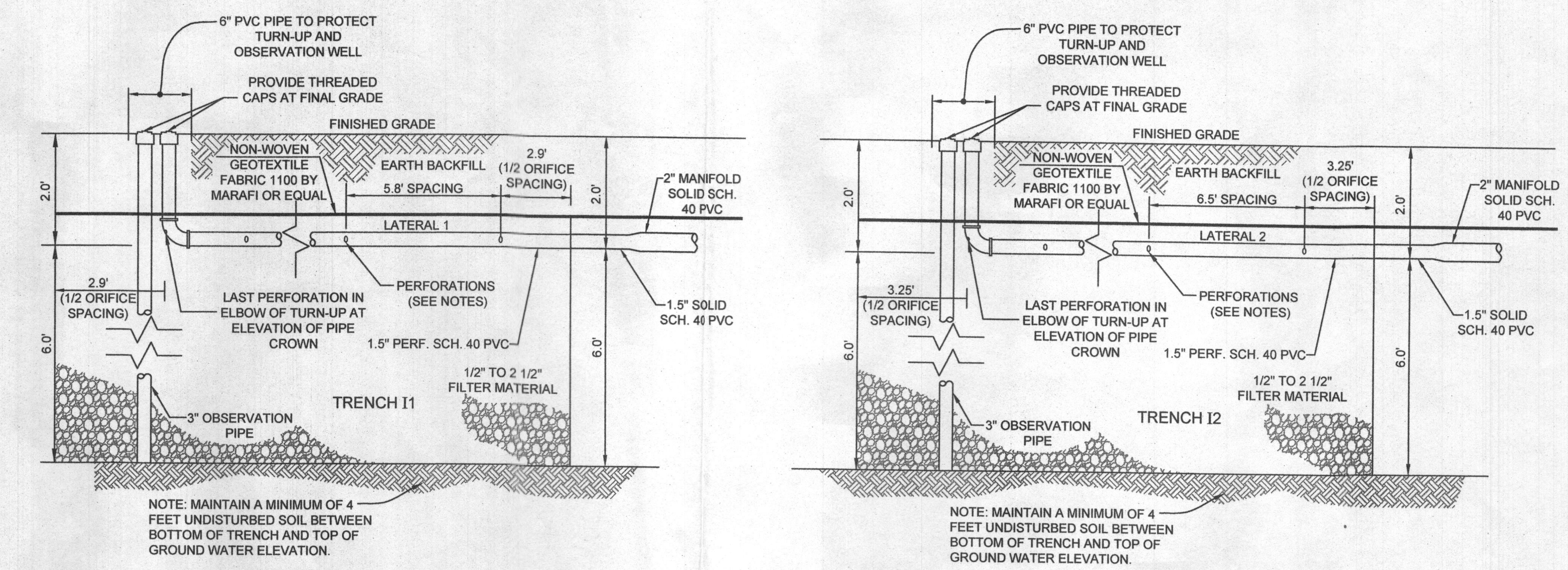


SEWAGE DISPOSAL AREA LATERAL SIZING SUMMARY

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	52.0'	1.5"	505.30	2.0'	5/16"	1.63	5.8'	9	14.67	1
	L2	52.0'	1.5"	504.40	2.9'	5/16"	1.96	6.5'	8	15.68	

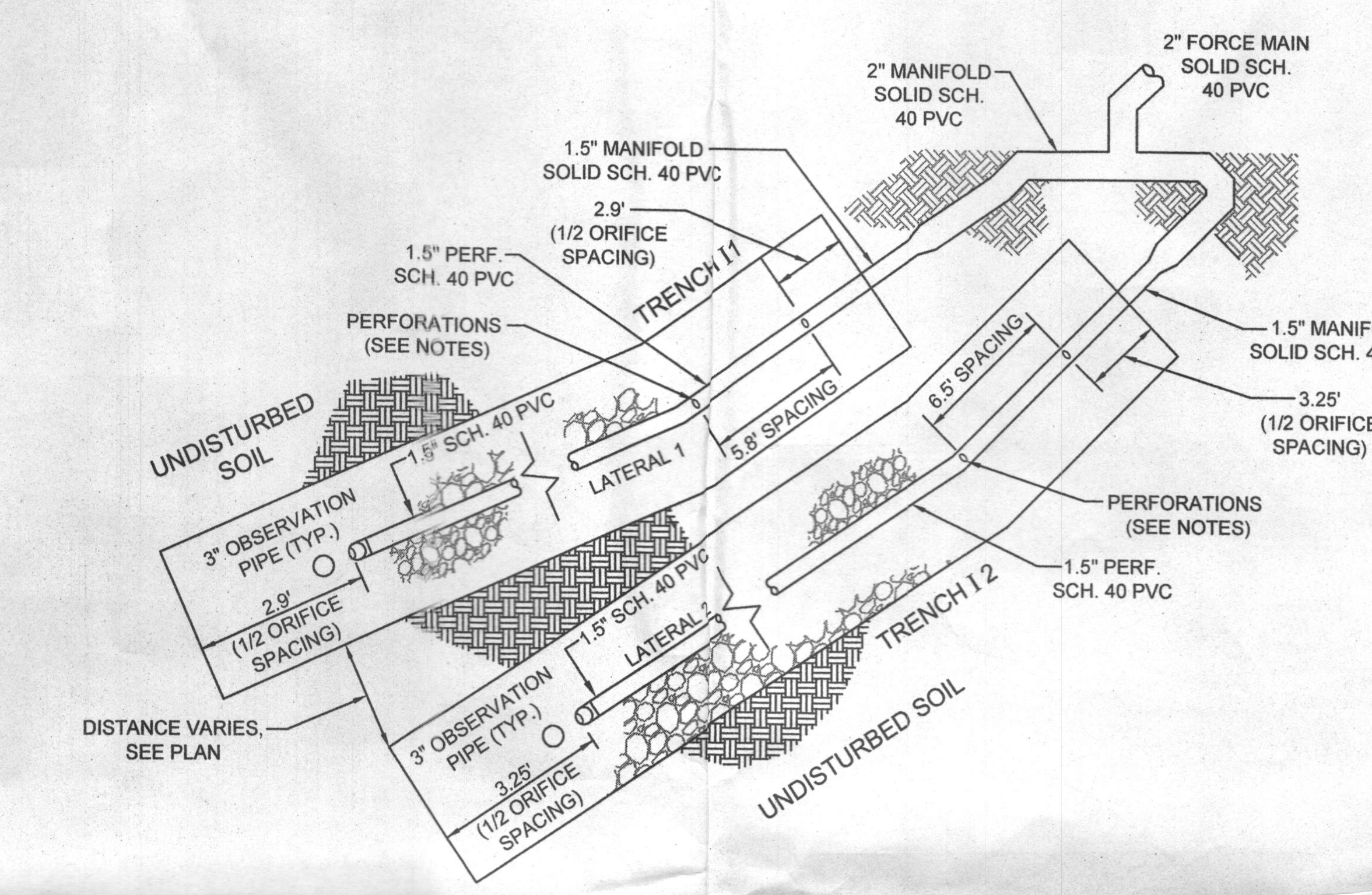
TRENCH DESIGN CHART

TRENCH	GROUND ELEV.	STONE ELEV.	PIPE INV. ELEV.	BOTTOM ELEV.	DEPTH OF STONE	EFFECTIVE DEPTH	TRENCH LENGTH	TRENCH WIDTH	TRENCH SPACING
I1	507.30	505.80	505.30	499.30	6.5'	5.0'	52.0'	3.0'	10.0'
I2	506.40	504.90	504.40	498.40	6.5'	5.0'	52.0	3.0'	10.0'



DISTRIBUTION LATERAL DOSING FIELDS PROFILE VIEW

NOT TO SCALE

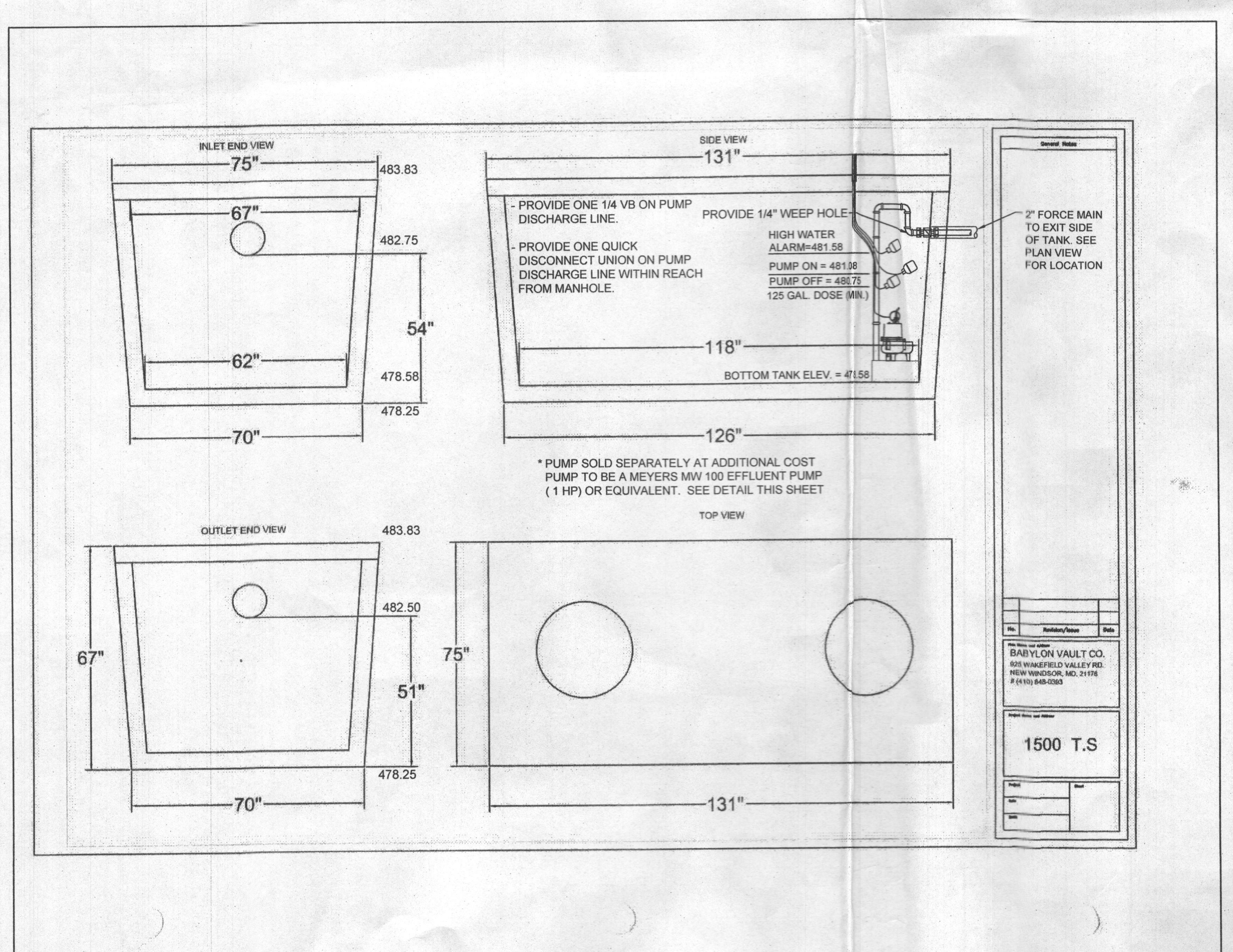


DOSING FIELD TRENCH DETAIL PLAN VIEW

NOT TO SCALE

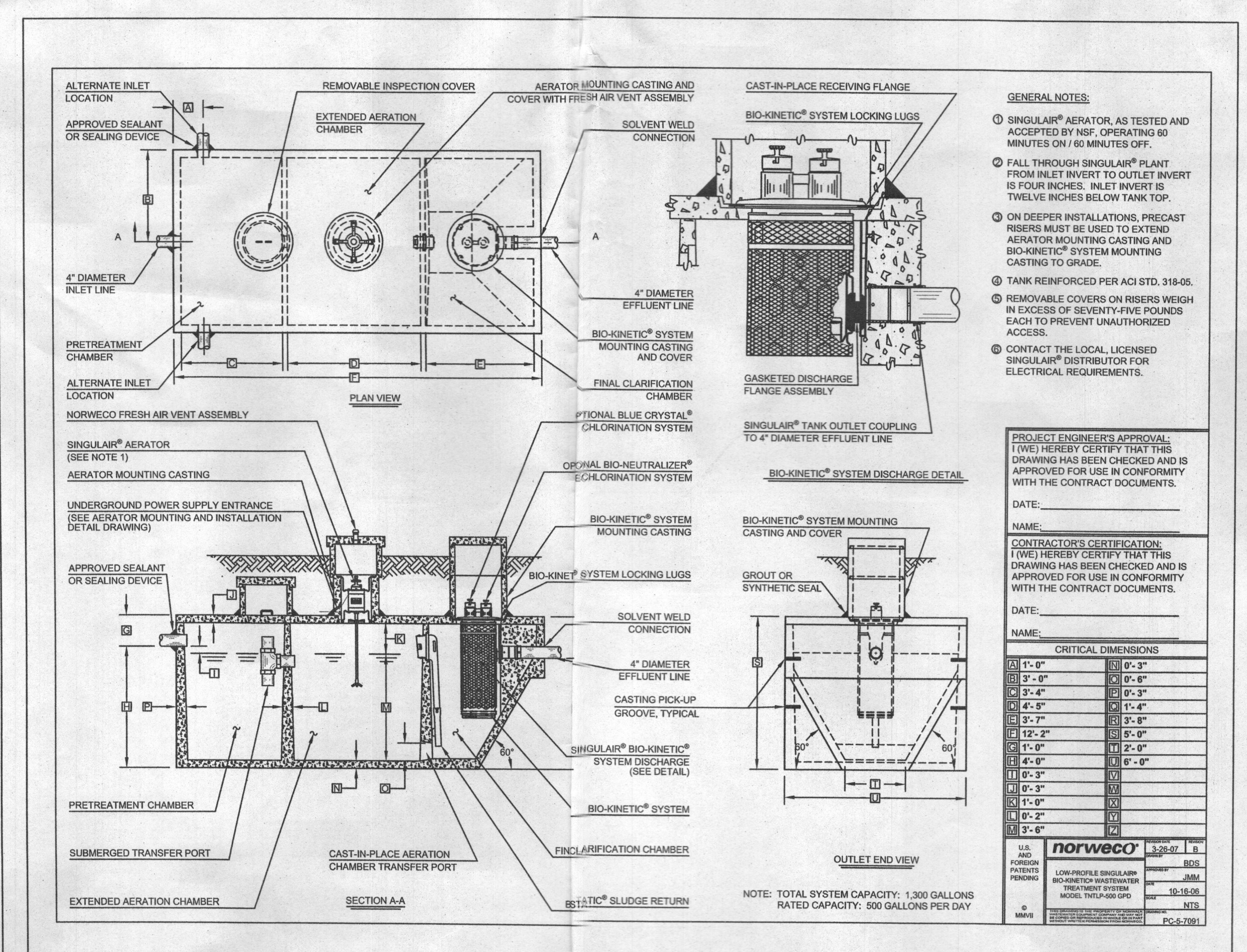
NOTES:

1. CONTRACTOR TO BUILD / INSTALL 3' WIDE DISPOSAL TRENCHES.
2. DISTRIBUTION LATERALS TO BE INSTALLED ON LEVEL GRADE. BOTTOM OF TRENCH TO BE EXCAVATED ON LEVEL GRADE.
3. CONTRACTOR TO DRILL ORIFICES IN DISTRIBUTION LATERALS AS SHOWN, INSTALL PIPE ORIFICE DOWNWARD.
4. THE LAST HOLE IN THE LATERALS MUST BE LOCATED AT THE CROWN OF THE INVERT.
5. TERMS ORIFICE/ORFICES AND PERFORATION/PERFORATIONS ARE INTERCHANGEABLE.



PUMP TANK DETAIL

NTS



BAT SYSTEM DETAIL

NTS

BAT NOTES

1. 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.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 50 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. 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.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
10. DOSE TO BE 125 GALLONS ON A PUMP RUN TIME OF 4.17 MINUTES ON DEMAND.
11. PUMP TO BE A MYERS MW 100 SERIES OR EQUIVALENT.
12. BAT SYSTEM TO BE A NORWECO SINGULAIR MODEL TNTLP-500 OR EQUIVALENT.
13. TOTAL DYNAMIC HEAD (TDH) CALCULATION:
    - TDH = STATIC HEAD + DISTAL HEAD + FRICTION HEAD + LATERAL FRICTION HEAD SAFETY FACTOR = 22.80' + 2.5' + 4.67' - 1.5' = 31.47' USE 32'

OWNER/DEVELOPER

WILLIAMSBURG GROUP
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410.997.8800

LOW PRESSURE DOSING SYSTEM PLAN AND PROFILE

THE WOODLANDS

5628 DOSA COURT, LOT 3

TAX MAP 28 GRID 23
5TH ELECTION DISTRICT

PARCEL 15
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND PAUL M. SILL No. 32025 PROFESSIONAL ENGINEER

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

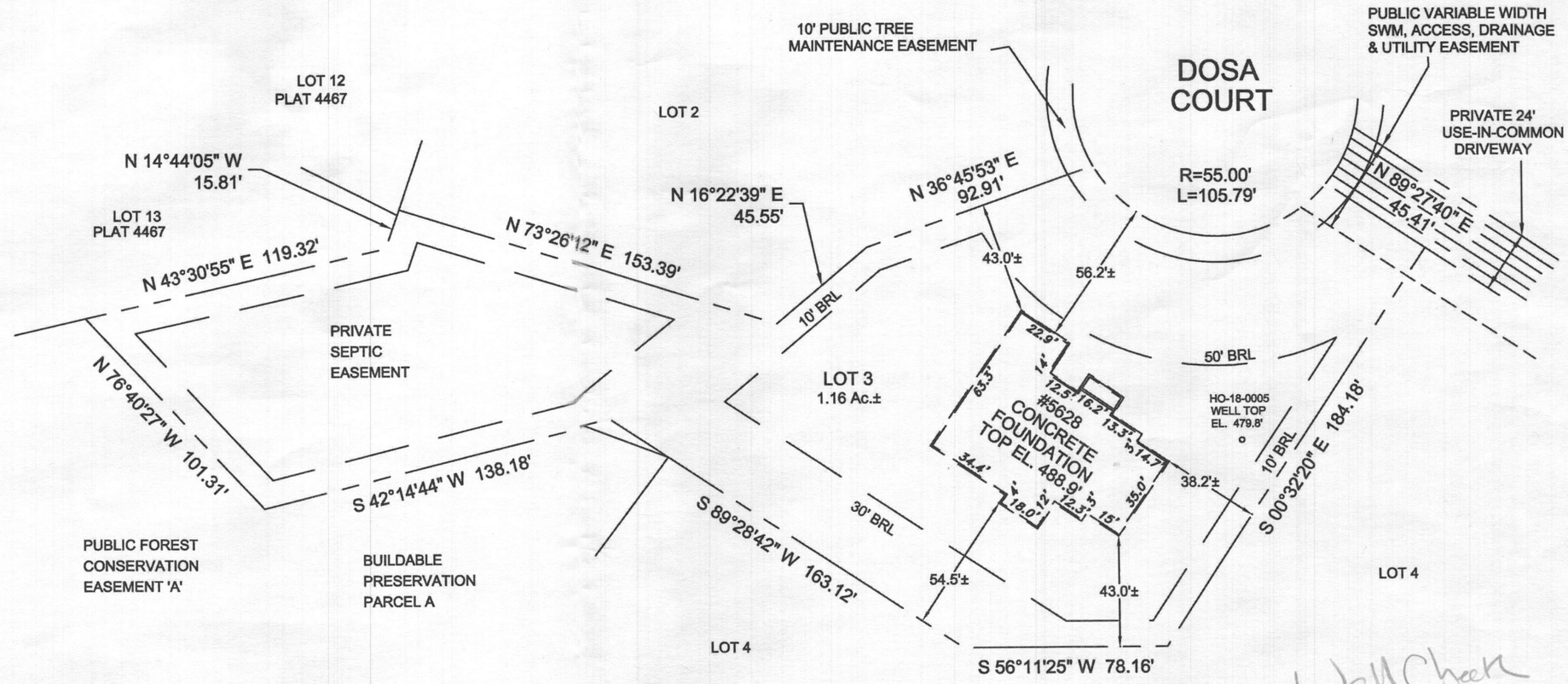
DESIGN BY: PS
DRAWN BY: TB
CHECKED BY: PS
SCALE: AS SHOWN
DATE: MAY 09, 2020
PROJECT #: 20-003
SHEET #: 2 of 2

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, 2021

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



0' 50' 100' 150'

Wall Check
OK
RLE 10/22/2020

REVISED 10/2/2020 TO ADD WELL

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 3 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.

STATE OF MARYLAND · JAMES C. HUDGINS · No. 96 · REGISTERED PROPERTY LINE SURVEYOR

James Carl Hudgins
Property Line Surveyor #96
Expiration Date: 3/11/2022

WALL CHECK
5628 DOSA COURT
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

NTT Associates, Inc.
16205 Old Frederick Rd.
Mt. Airy, Maryland 21771
Phone: (410) 442-2031
Fax: (410) 442-1315
www.nttsurveyors.com

Scale:	1"= 50'
Date:	8/5/2020
Field By:	TOM
Drawn By:	SCK
File No.:	SEG20-003 D
Page No.:	1 of 1

GENERAL NOTES

1. SUBJECT PROPERTY ZONED RC-DEO PER 10/06/13 COMPREHENSIVE ZONING PLAN.
2. PROPERTY ADDRESS: 5628 DOSA COURT, CLARKSVILLE 21029
3. TOTAL AREA OF PROPERTY = 1.1924 AC.±
4. PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
5. ▨ 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. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
6. THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ADCOCK & ASSOCIATES, LLC ON SEPTEMBER 16, 2014.
7. 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.
8. REFERENCE: RECORD PLAT NO. 25051.
9. PREVIOUS HOWARD COUNTY FILE NUMBERS: RECORD PLAT NO. 5471, F-83-114, ECP-15-032, WP-16-017, WP-17-060, SP-16-008, PB 431, WP-18-127, RECORD PLAT NO. 25051, F-18-094.
10. 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.
11. A WETLAND AND STREAM STUDY HAS BEEN PREPARED BY ECO SCIENCE PROFESSIONALS INC. IN NOVEMBER 2014.
12. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
13. 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.
14. 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.
15. GEOTECHNICAL INFORMATION HAS BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE AND FIELD INVESTIGATIONS.
16. STORMWATER MANAGEMENT OBLIGATIONS FOR THIS SITE WILL BE MET ONE BIORETENTION FACILITY (M-6), ONE DRYWELL (M-5), AND TWO NON-ROOF TOP DISCONNECTS.
17. 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.
18. 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.
19. THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
20. FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULFILLED UNDER F-18-019.
21. 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.
22. BIORETENTION FACILITY 1 IS TO BE WRAPPED IN AN IMPERMEABLE LINER WHERE WITHIN 100' FROM EXISTING OR FUTURE WELLS..
23. 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 (16 FEET SERVING MORE THAN ON 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 (CULVERTS/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.

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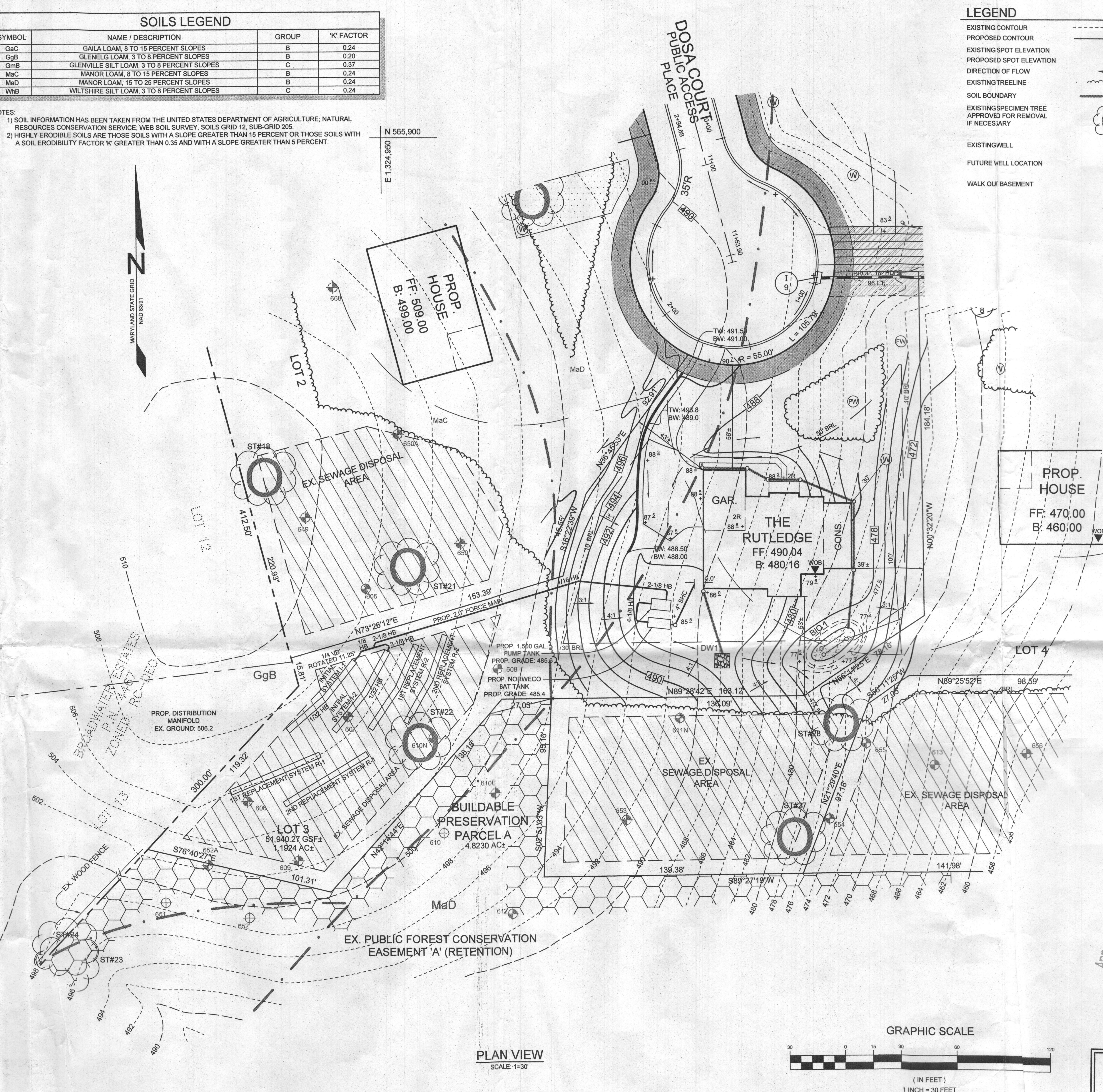
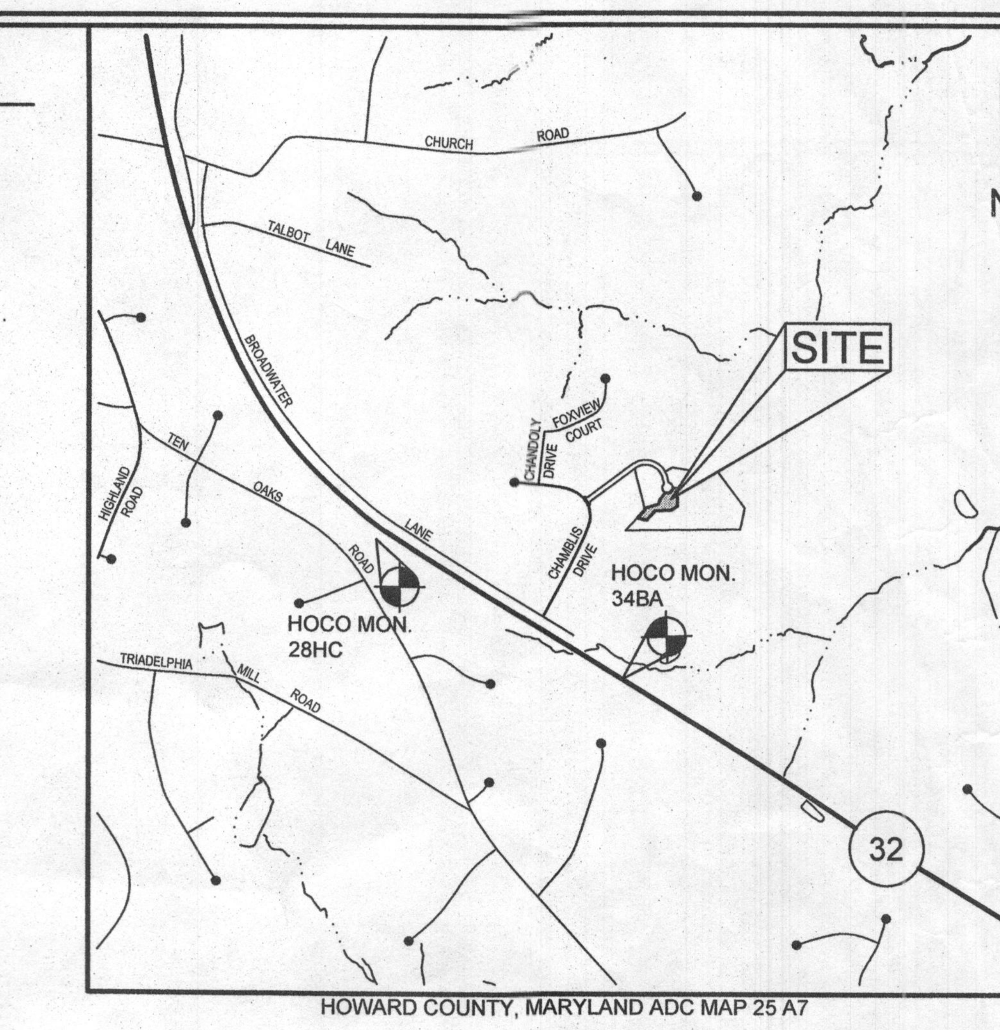


LEGEND

- EXISTING CONTOUR — 462
- PROPOSED CONTOUR — 382
- EXISTING SPOT ELEVATION — 382.3
- PROPOSED SPOT ELEVATION — + 82 53
- DIRECTION OF FLOW
- EXISTING TREELINE
- SOIL BOUNDARY
- EXISTING SPECIMEN TREE APPROVED FOR REMOVAL IF NECESSARY — ST#43
- EXISTING WELL — W
- FUTURE WELL LOCATION — FW
- WALK OUT BASEMENT — WOB



HOWARD COUNTY, MARYLAND ADC MAP 25 A7

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5. LINEAR LENGTH OF TRENCH PROVIDED = 104'
   - TWO TRENCHES 52 LF/EACH
6. EXISTING GRADE: TRENCH I1: 507.3
   INVERT: TRENCH I1: 505.3
   EXISTING GRADE: TRENCH I2: 506.4
   INVERT: TRENCH I2: 504.4
   EXISTING GRADE: TRENCH R1: 506.0
   INVERT: TRENCH R1: 504.0
   EXISTING GRADE: TRENCH R2: 504.8
   INVERT: TRENCH R2: 502.8

- 2ND REPLACEMENT SYSTEM :
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 3'
  - BOTTOM MAXIMUM DEPTH: 6'

1. DESIGN FLOW:
   - 5 BEDROOMS AT 150 GPD
     - 5X150 GPD = 750 GPD
2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
   - DESIGN FLOW (750 GPD) / APPLICATION RATE (1.2) = 625 SF
3. SIDEWALL REDUCTION CREDIT:
   - TRENCH WIDTH (W) = 3'
   - TRENCH EFFECTIVE DEPTH (D) =3'
   - (W+2) / (W+1+2D) X 100 = 50%
4. LINEAR LENGTH OF TRENCH REQUIRED:
   - DRAIN FIELD SQUARE FOOTAGE (625) X SIDEWALL REDUCTION CREDIT (50%) / TRENCH WIDTH (3') = 104'
5. LINEAR LENGTH OF TRENCH PROVIDED = 104'
   - TWO TRENCHES 52 LF/EACH
6. EXISTING GRADE: TRENCH R1: 505.6'
   INVERT: TRENCH R1: 503.6'
   EXISTING GRADE: TRENCH R2: 504.3'
   INVERT: TRENCH R2: 502.3'

N 565,550
E 1,325,400

Approved Septic System Plan
Howard County Health Department
NORWECO TNTLP 500 with
1500-gal Pump Tank & Myers 1.0Hp pump
for 5-Bedroom SFD
5/19/2020
Signature

OWNER/DEVELOPER

WILLIAMSBURG GROUP
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410.997.8800

SITE PLAN FOR BAT INSTALLATION
THE WOODLANDS
5628 DOSA COURT, LOT 3

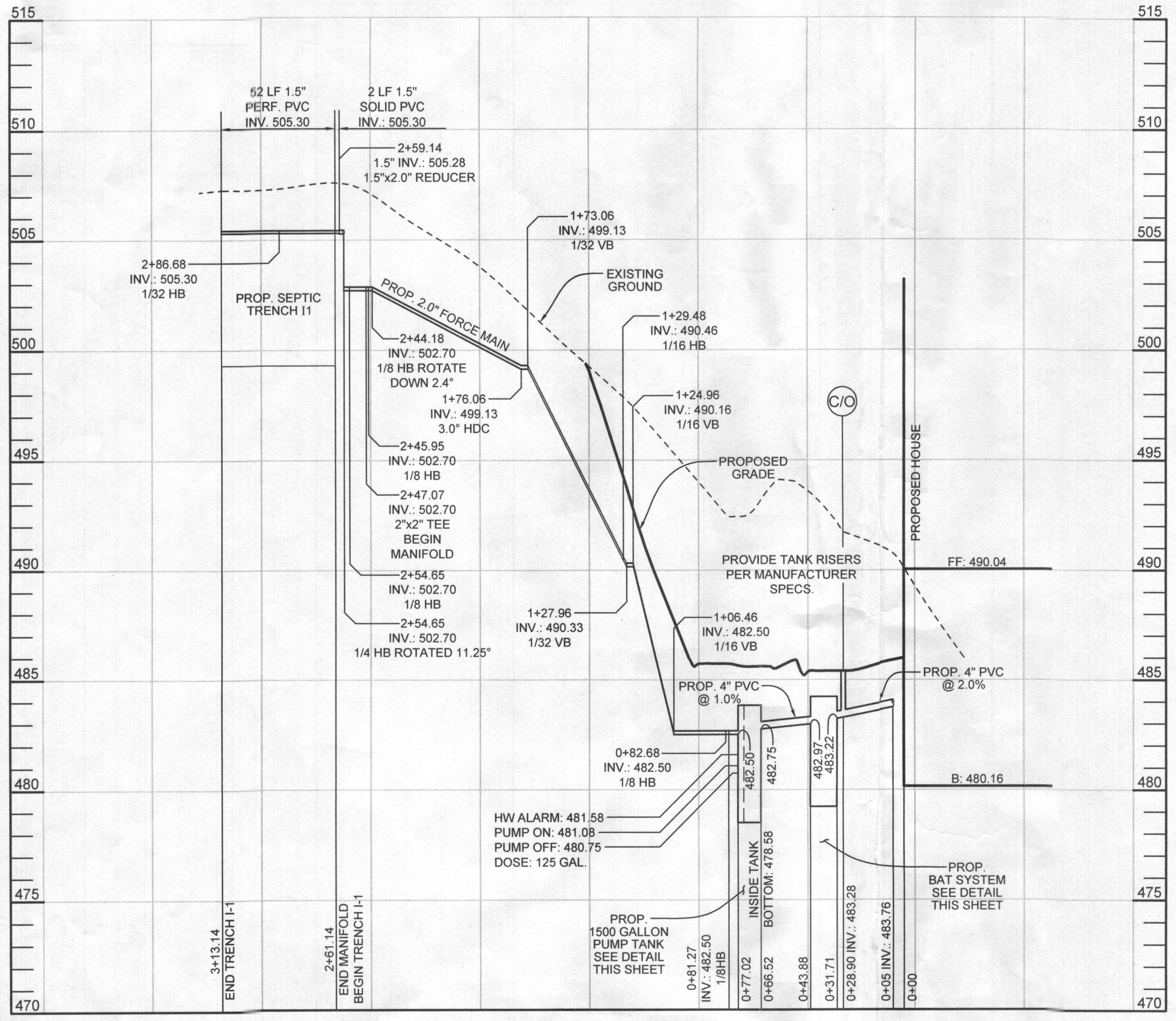
TAX MAP 28 GRID 23
5TH ELECTION DISTRICT
PARCEL 15
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND · PAUL M. SILL · No. 32025 · PROFESSIONAL ENGINEER

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:	PS
DRAWN BY:	TB
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	MAY 09, 2020
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, 2021



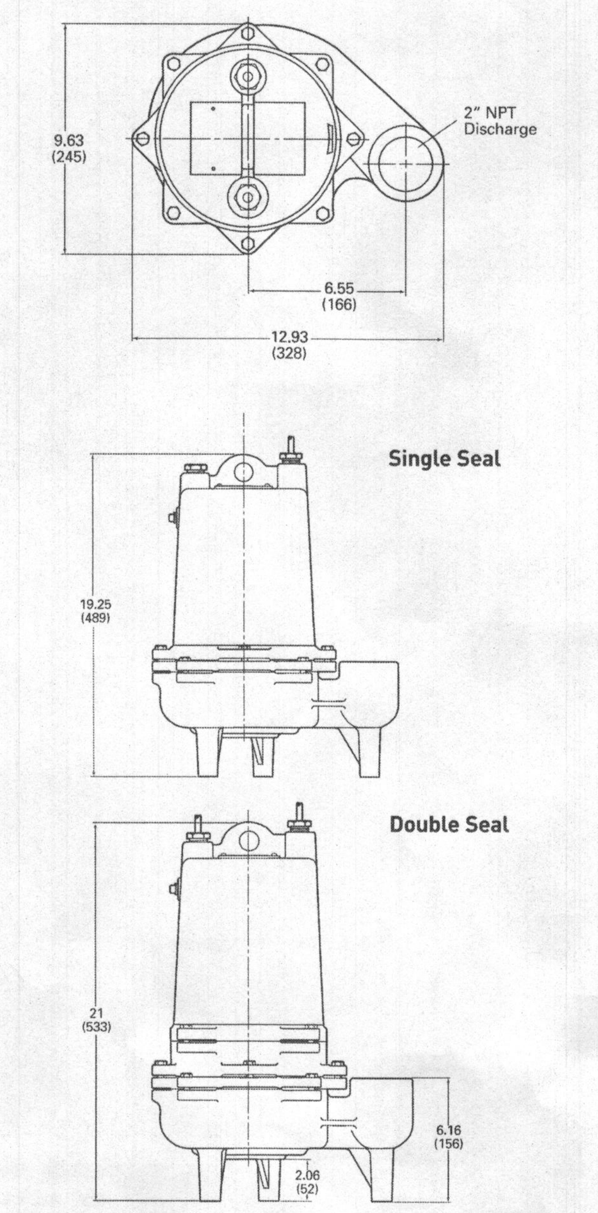
PROFILE VIEW

SCALE: HORIZ.: 1"=50'
VERT.: 1"=50'

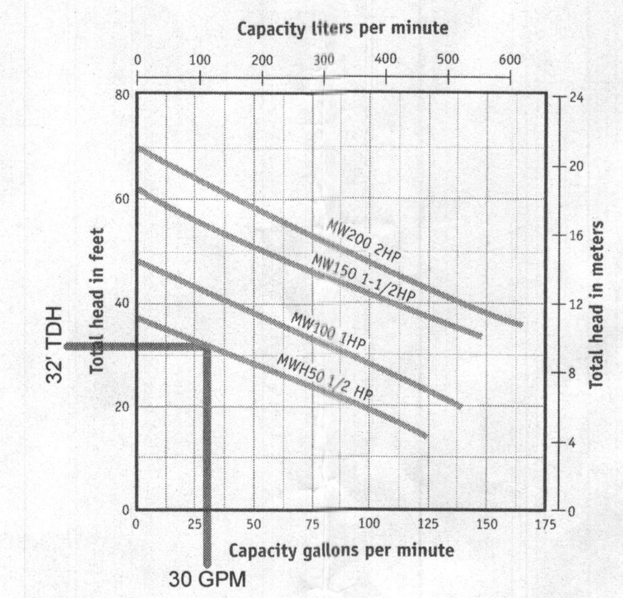
SEWAGE PUMPS

MYERS® MW SERIES

DIMENSIONS

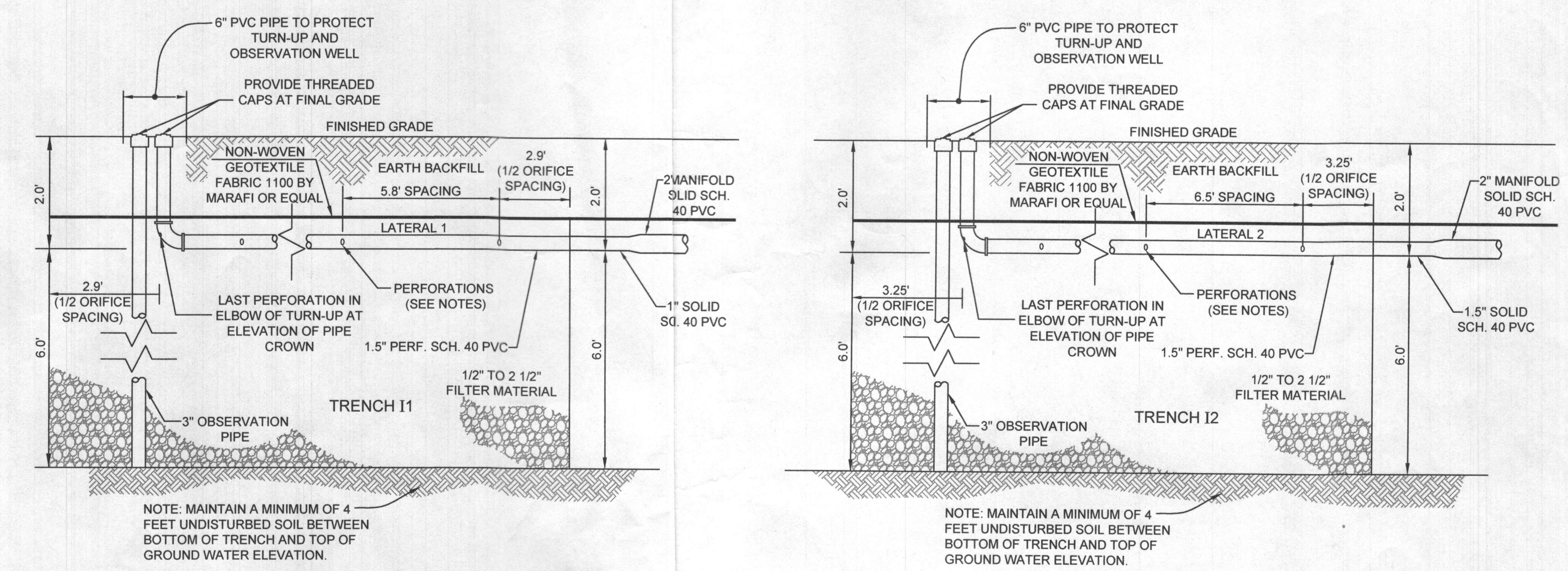


PUMP PERFORMANCE



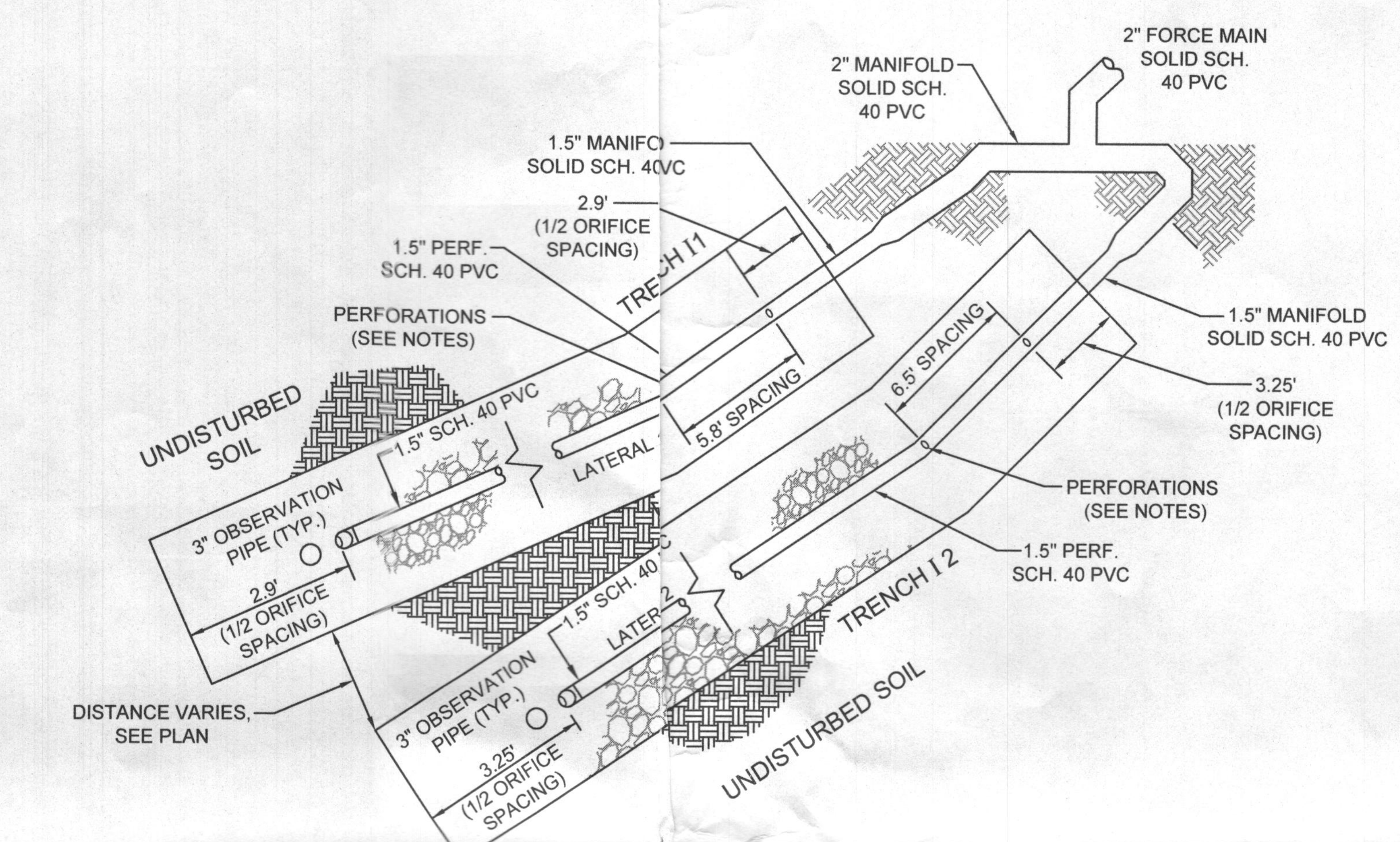
PENTAIR

3



DISTRIBUTION LATERAL DOSING FIELDS PROFILE VIEW

NOT TO SCALE



DOSING FIELD TRENCH DETAIL PLAN VIEW

NOT TO SCALE

SEWAGE DISPOSAL AREA LATERAL SIZING SUMMARY

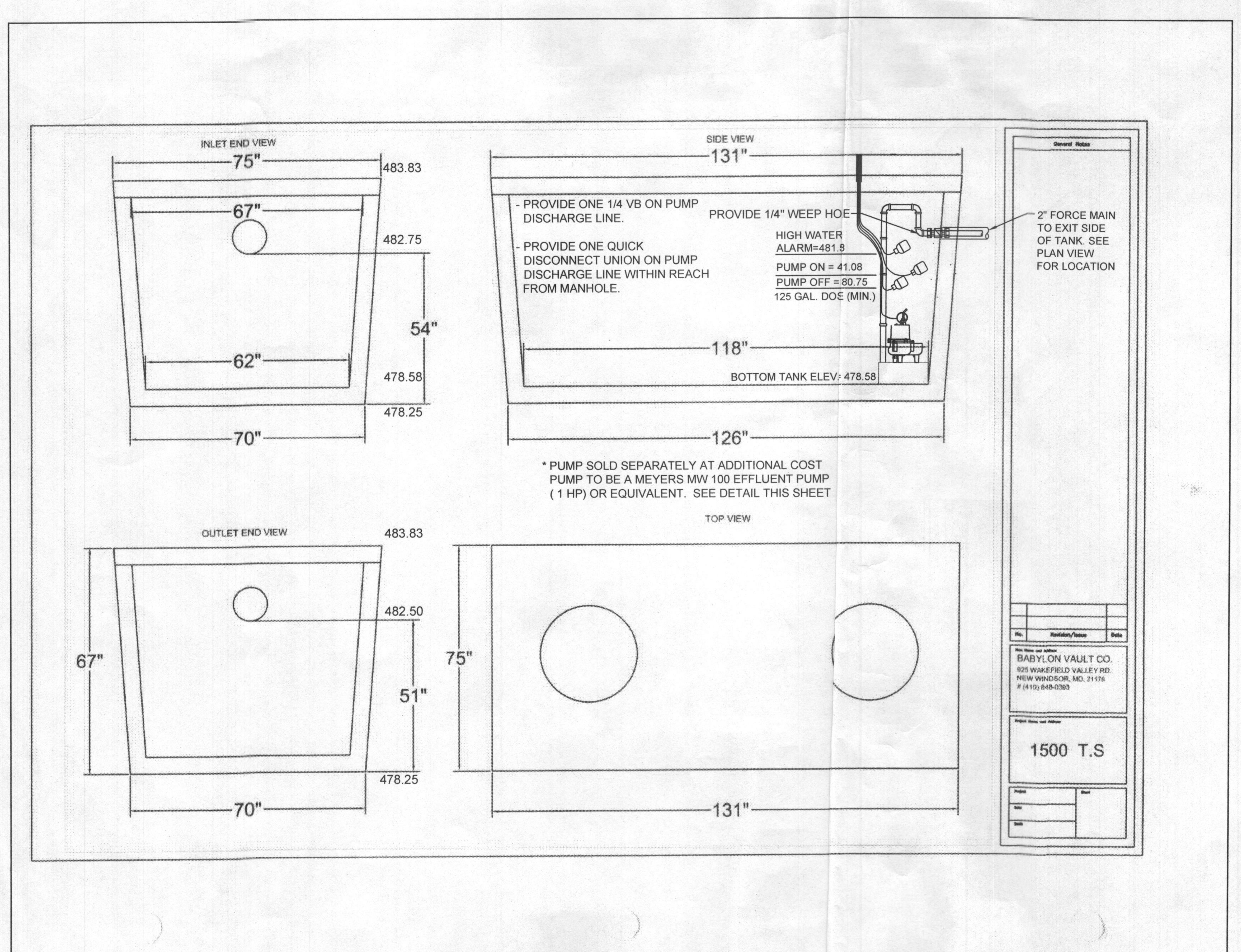
FIELD	LATERAL TRENCH NO.	LATERAL LENGTH	LATERAL DIAMETER	INVERT ELEV.	HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACING	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)	ZONE
INITIAL	L1	52.0'	1.5"	505.30	2.0'	5/16"	1.63	5.8'	9	14.67	1
	L2	52.0'	1.5"	504.40	2.9'	5/16"	1.96	6.5'	8	15.68	

TRENCH DESIGN CHART

TRENCH	GROUND ELEV.	STONE ELEV.	PIPE INV. ELEV.	BOTTOM ELEV.	DEPTH OF STONE	EFFECTIVE DEPTH	TRENCH LENGTH	TRENCH WIDTH	TRENCH SPACING
I1	507.30	505.80	505.30	499.30	6.5'	5.0'	52.0'	3.0'	10.0'
I2	506.40	504.90	504.40	498.40	6.5'	5.0'	52.0'	3.0'	10.0'

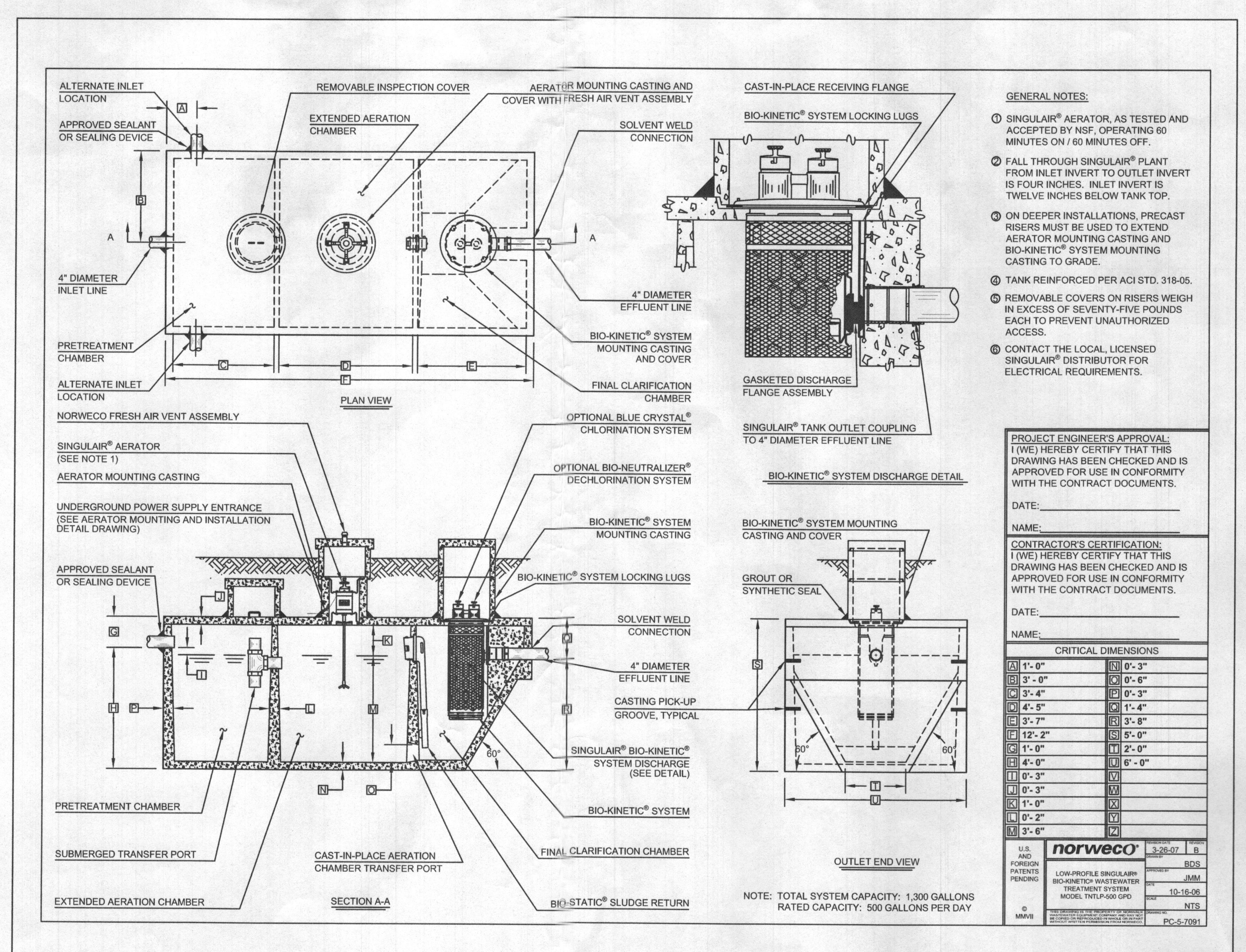
NOTES:

1. CONTRACTOR TO BUILD / INSTAL 3' WIDE DISPOSAL TRENCHES.
2. DISTRIBUTION LATERALS TO BINSTALLED ON LEVEL GRADE. BOTTOM OF TRENCH TO BE EXCAVATED ON LEVEL GRADE.
3. CONTRACTOR TO DRILL ORIFICS IN DISTRIBUTION LATERALS AS SHOWN, INSTALL PIPE ORIFICE DOWNWARD.
4. THE LAST HOLE IN THE LATERAS MUST BE LOCATED AT THE CROWN OF THE INVERT.
5. TERMS ORIFICE/ORFICES AND ERFORATION/PERFORATIONS ARE INTERCHANGEABLE.



PUMP TANK DETAIL

NTS



BAT SYSTEM DETAIL

NTS

BAT NOTES

1. 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 RQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT ER THE MANUFACTURER'S SPECIFICATION IS 3FEET.
3. THE BLOWER MAY NOT BE LOCATE MORE THAN 50 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATION.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. WITHIN ONE MONTH OF INSTALLATON, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRES ANDDATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MIST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIORTO FINAL APPROVAL OF THE INSTALLATION.
10. DOSE TO BE 125 GALLONS ON A PUMP RUNTIME OF 4.17 MINUTES ON DEMAND.
11. PUMP TO BE A MYERS MW 100 SERES OR EQUIVALENT.
12. BAT SYSTEM TO BE A NORWECO SIGULAIRMODEL TNTLP-500 OR EQUIVALENT.
13. TOTAL DYNAMIC HEAD (TDH) CALCULATION:
    - TDH = STATIC HEAD + DISTAL HEAD + FRICTION HEAD + LATERAL FRICTION HEAD SAFETY FACTOR = 22.80' + 2.5' + 4.67' + 1.5' = 3147' USE 32'

OWNER/DEVELOPER

WILLIAMSBURG GROUP
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410.997.8800

LOW PRESSURE DOSING SYSTEM PLAN AND PROFILE

THE WOODLANDS

5628 DOSA COURT, LOT 3

TAX MAP 28 GRID 23 — PARCEL 15
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND ★ PAUL M. SILL ★ No. 32025 PROFESSIONAL ENGINEER

[illegible]

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Woodbine, Maryland 21797
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Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY:	PS
DRAWN BY:	TB
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	MAY 09, 2020
PROJECT #:	20-003
SHEET #:	2 of 2

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