

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

RECEIPT DATE: 12/12/2022 **ONSITE SEWAGE DISPOSAL SYSTEM**

P 572720

APPROVAL DATE: 3/23/2023 **PERMIT: CONSTRUCTION**

A _____

PROPERTY ADDRESS: 1812 Mount Denali Drive

SUBDIVISION: The Preserve at Waverly Glen LOT: 21 TAX ID: _____

CONTRACTOR: Freedom Spatz EMAIL: _____

CONTRACTOR ADDRESS: _____ PHONE: _____

PROPERTY OWNER: The Preserve at Waverly Glen EMAIL: _____

OWNER ADDRESS: 3675 Park Ave, Suite 301 PHONE: _____

SEPTIC TANK SIZE (GALLONS): 1500 TANK MANUFACTURER: 1500

PUMP MODEL: WE03 L PUMP SIZE: 1/3 HP PUMP TANK CAPACITY: 1500

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 0.8

LINEAR FEET REQUIRED: 120

INLET DEPTH: 3.5

TRENCHES:

TRENCH WIDTH: 3'

MAXIMUM BOTTOM DEPTH: 8

MINIMUM SPACE BETWEEN TRENCHES: 12'

EFFECTIVE AREA BEGINNING DEPTH: 3.5

LOCATION:

PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.

NOTES:

Install 2 trenches at 60' each

ISSUED BY: Hank Oswald ISSUE DATE: 5/11/2022 EXPIRATION DATE: 5/11/2023

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 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 22005870

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'	35	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		120 F
ABSORPTION AREA		360 SF + 4 S' SIDE WALL
DISTRIBUTION BOX LEVEL		RUMP
DISTRIBUTION BOX BAFFLE		90 TURN
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL	YES
MANUFACTURER	BABYLON
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	2.5'
BAFFLES	YES
BAFFLE FILTER	-
MANHOLE LOC	FRONT/BACK
6" PORT LOC	-
WATERTIGHT TEST	-
SLOTTED	YES
DATE ON LID	11/15/2022
PUMP/SEPTIC TANK LEVEL	YES
MANUFACTURER	BABYLON
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	2.5'
BAFFLES	-
BAFFLE FILTER	-
MANHOLE LOC	FRONT/BACK
6" PORT LOC	-
WATERTIGHT TEST	-
SLOTTED	-
DATE ON LID	10/21/2022

PRE-CONSTRUCTION:

1/1/2022 Contour was affected by Cul. DE-SAC CONST. HAD TO MOVE UPPER TR AND LOWER TR ACCORDINGLY DUE TO STEEP GRADED PILL. P

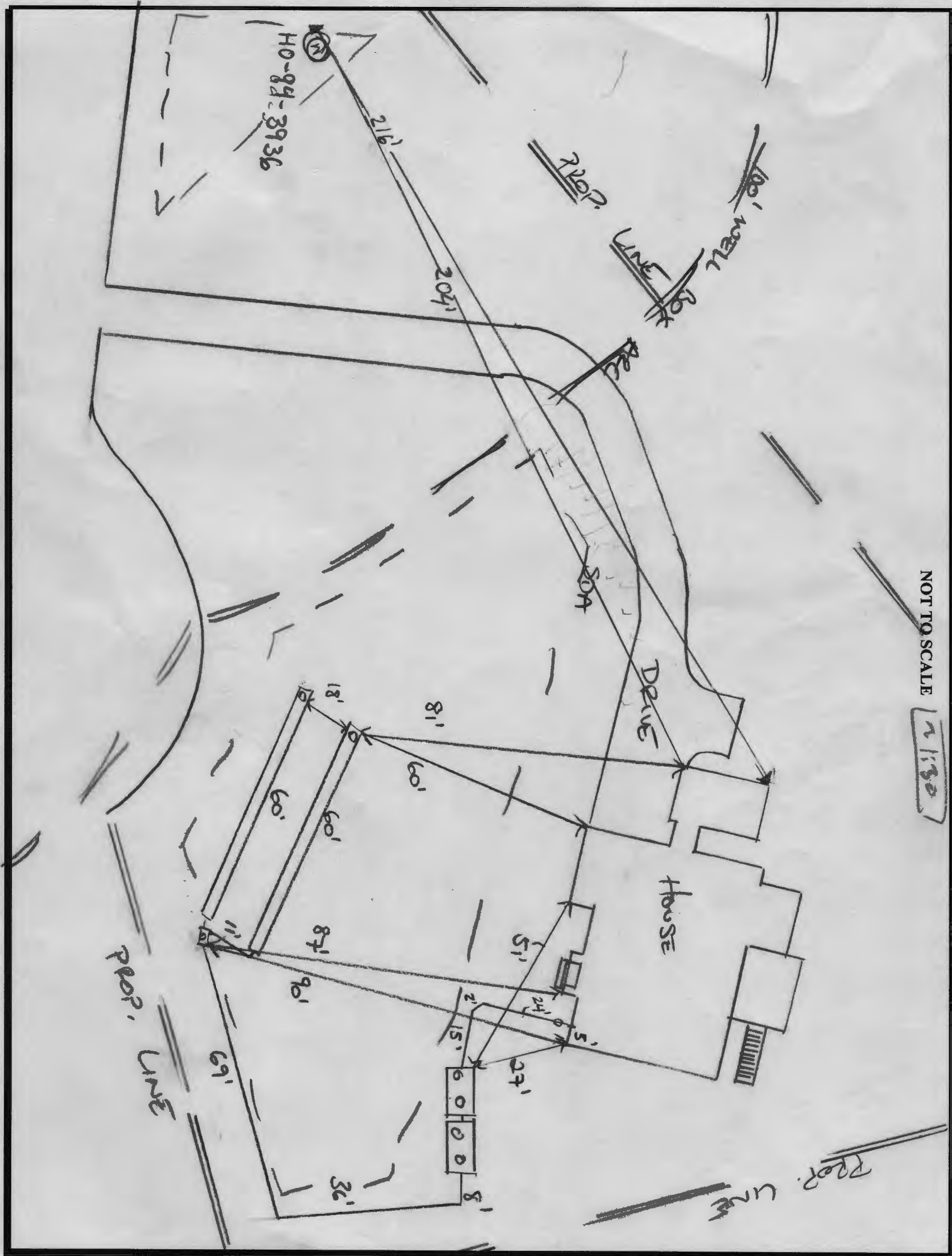
INSTALLATION: 12/19/2022 SL INSTALLED, TANKS SET. P 12/20/2022 UPPER TRENCH COMPLETE. P 12/21/2022 (AM) FM INSTALLED, (PM) LOWER TRENCH INSTALLED. P

3/23/2023- Water pumped successfully to D box. Alarm inside of house, audio good. See attached pictures for Alarm on its own separate circuit. Saw floats inside of tank P

3/24/2023- onsite to triangulate well location

FINAL INSPECTOR Shepsura Page DATE OF APPROVAL 3/23/2023

MOUNT DENALI



NOT TO SCALE

1/1/80

PROP. LINE



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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

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

www.hchealth.org

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

AGREEMENT FOR APPROVAL OF AN INDIVIDUAL DRINKING WELL WITH AN ON-SITE TREATMENT SYSTEM

This agreement is entered into by and between the Howard County Health Department ("the Health Department") and IRFAN HUDA and SABA CHOUDHARY ("the Owner").

WHEREAS, the Owner owns a tract of land at street address 1812 MOUNT DENALI DR., WOODSTOCK, MD 21163 and the deed and subdivision plat of the property is recorded among the Land Records of Howard County, Maryland, Tax Map # 10, Block # 23, Parcel # 330, Deed Reference # _____ and Tax Account # _____ ("the Property").

WHEREAS, the Property lacks an available public drinking water source and is required to have and individual well as the source of drinking water for the residence of the property.

WHEREAS, the Owner has installed a residential drinking well under well permit HO-94-3936 that has been tested by the Health Department (or a private laboratory certified to perform testing) for radionuclide particles. The results of the tests have shown that the gross alpha particle content and/or the gross beta particle content and/or the combined radium 226/228 levels exceeds the standards of 15 picocuries per liter (pCi/L), 4 millirems per year (mrem/yr) and/or 5pCi/L respectively.

WHEREAS, The Maryland Department of the Environment (MDE) has promulgated rules and regulations under which a Certificate of Potability may be issued and has delegated the authority to issue such Certificate to the Health Department.

WHEREAS, MDE regulations permit the Health Department to issue as a special condition, a permanent deviation to the Certificate of Potability for individual wells where treatment has been installed to meet the maximum contaminate levels (MCL's) for radionuclides.

WHEREAS, MDE has determined that radium can be effectively removed from the drinking water by the use of treatment devices (e.g., ion exchange or reverse osmosis).

WHEREAS, the Owner is requesting that the Health Department issue a Certificate of Potability contingent upon installation and maintenance of a water treatment device to reduce radionuclides.

WHEREAS, neither the Owner nor the Health Department has knowledge of an alternative safe source of water for the Property.

NOW THEREFORE, the parties have agreed to the following terms and conditions:

1. The Owner will record this Agreement among the Land Records of Howard County, Maryland and provide confirmation to the Health Dept.
2. The Owner agrees to install and maintain a water treatment device, which effectively reduces the gross alpha, gross beta and radium levels to below their respective MCL. The Health Department

shall verify that the treatment device is operating effectively and the Owner agrees to allow access to the Health Department to collect a follow-up sample(s).

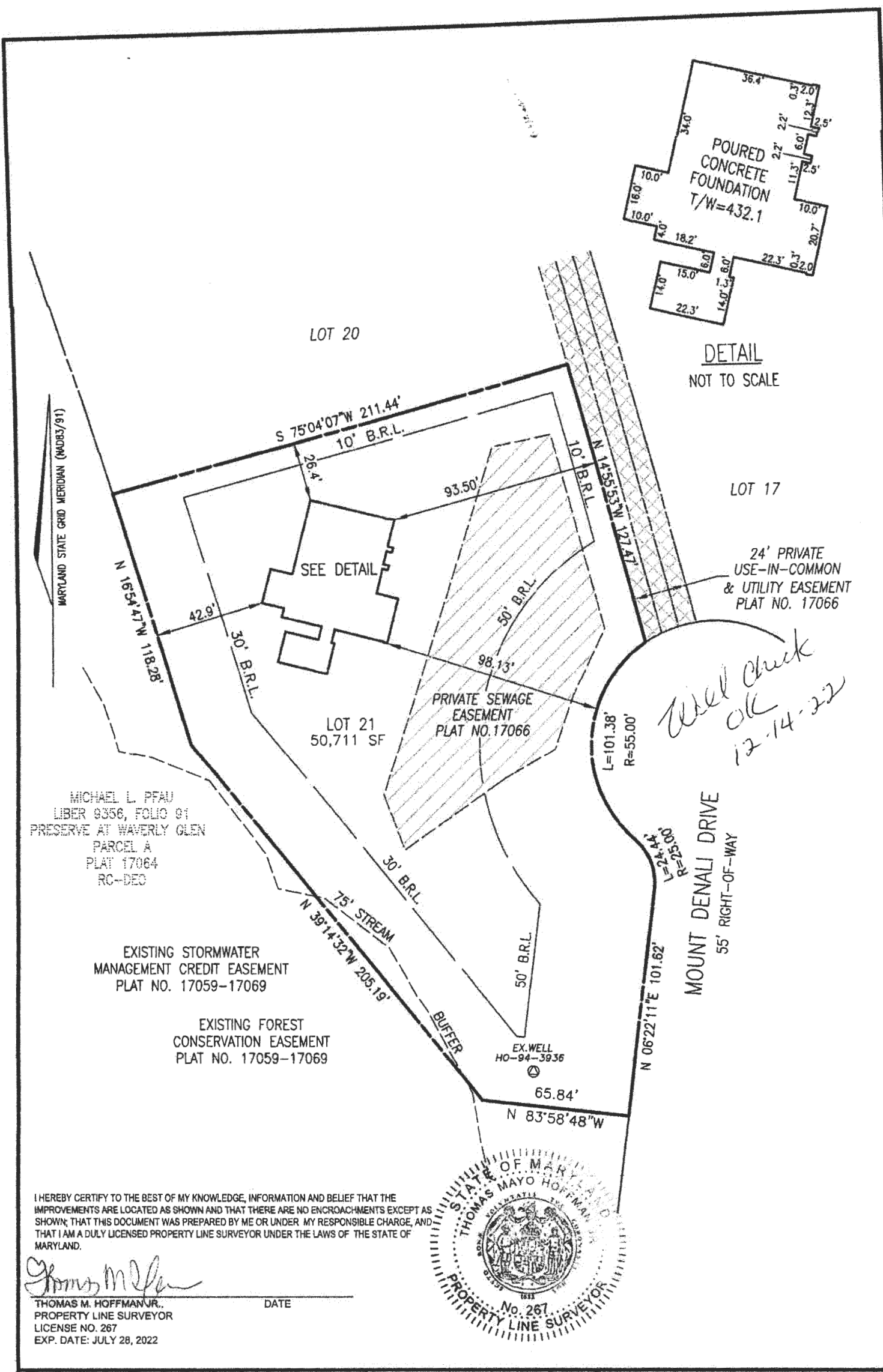
3. The Health Department shall issue a Certificate of Potability for the well once follow-up sampling shows acceptable gross alpha, gross beta (short and long term) and radium 226 / 228 levels.
4. The Owner agrees that there shall be no liability on part of the Health Department for any immediate or long term impacts to health or property, under any circumstance or including, but not limited to, treatment device failure, improper maintenance or installation, or defect. The Health Department does not warranty or guarantee that the device will adequately or properly function and the Owner agrees to implement and pay for any necessary changes or corrections.
5. The Owner acknowledges and agrees that neither the Health Department nor any of its agents or employees, either officially or individually, underwrites the operation of any system or treatment device.
6. This Agreement shall not be construed to limit any authority of the Health Department to protect the public health, safety or enjoyment of property or to issue any other orders to take any other action, which is now or may hereafter be within its authority.
7. This agreement contains the entire agreement and understanding between the Health Department 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 their authorized representatives.
8. The Agreement shall run with the land and binds the Owner, his heirs, successors, and assigns. The owner agrees to provide a copy of this agreement to any purchaser or lessee of the property.
9. The laws of the State of Maryland govern the provisions of all transactions.

The parties have signed and sealed this Agreement on the dates set forth below.

x Michael Pfaun 04-15-23 x [Signature] 4-da 04/18/23
Owner Date Buyer Date
MICHAEL PFAUN IRFAN HUDA

Owner Date x [Signature] 4/18/23
Buyer Date
SABA CHOUDHARY

[Signature] 4/20/23
Howard County Health Department Date



MICHAEL L. PFAU
 LIBER 0356, FOLIO 01
 PRESERVE AT WAVERLY GLEN
 PARCEL A
 PLAT 17064
 RC-DEC

EXISTING STORMWATER
 MANAGEMENT CREDIT EASEMENT
 PLAT NO. 17059-17069

EXISTING FOREST
 CONSERVATION EASEMENT
 PLAT NO. 17059-17069

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF THAT THE IMPROVEMENTS ARE LOCATED AS SHOWN AND THAT THERE ARE NO ENCROACHMENTS EXCEPT AS SHOWN; THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

Thomas M. Hoffman

THOMAS M. HOFFMAN JR.
 PROPERTY LINE SURVEYOR
 LICENSE NO. 267
 EXP. DATE: JULY 28, 2022



SCALE 1"=50'	DATE 06/02/2022
DRAWN BY B.D.A.	CHECKED BY T.M.H.
PLAT NUMBER 17059-17069	JOB NUMBER 01-139.0

VOGEL ENGINEERING

+

TIMMONS GROUP

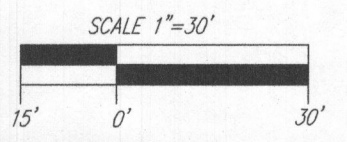
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

WALL CHECK DRAWING
 1812 MOUNT DENALI DRIVE
 LOT 21
 THE PRESERVE AT WAVERLY GLEN
 PLAT NO. 17066
 3rd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

WS-SP-APP-22-00302



PLAN VIEW
SCALE: 1"=30'



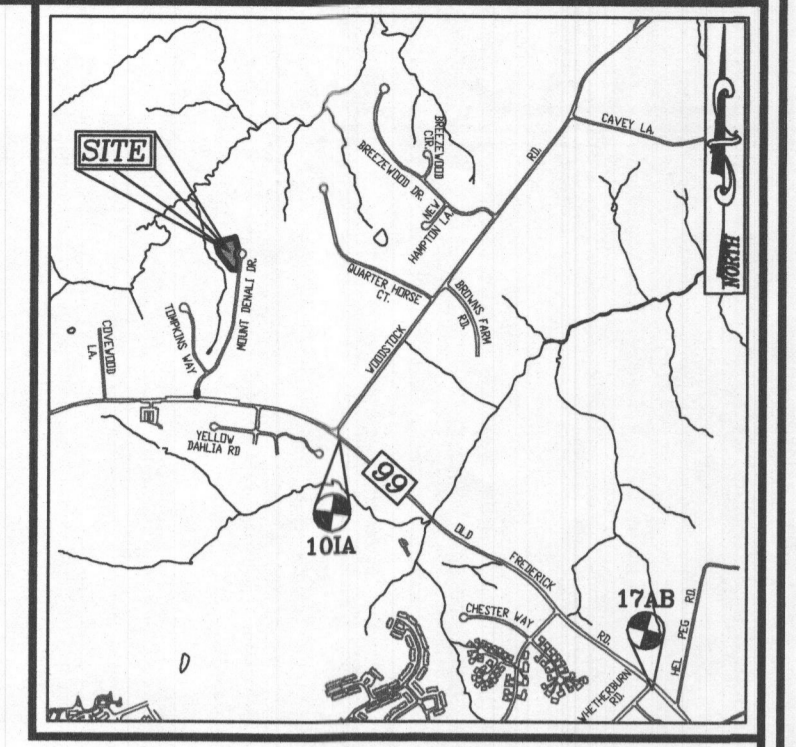
Maryland State Grid Meridian

E 1344500
N 603150

E 1344500
N 602900

BENCHMARKS
HOWARD COUNTY BENCHMARK 101A (CONC. MON.)
N 600995.13 E 1345340.39 ELEV. 441.90
LOCATION: CORNER RT-99 & WOODSTOCK ROAD

HOWARD COUNTY BENCHMARK 177A (CONC. MON.)
N 598435.30 E 1348615.30 ELEV. 508.40
LOCATION: CORNER RT-99 & WETHERBURN ROAD



VICINITY MAP
SCALE: 1"=2000'
ADC MAP: 4694-39

TRENCH	TRENCH LENGTH	TRENCH WIDTH	INTO BOTTOM OF TRENCH	EXISTING GROUND
1	60'	43.36'	433.89'	441.96'
2	60'	43.69'	431.19'	438.19'

SYSTEM CALCULATIONS:

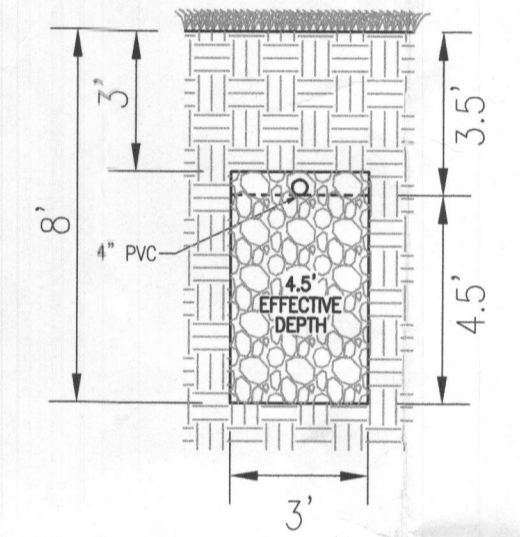
INITIAL SYSTEM:
5 BEDROOMS AT 750gpd / 0.8 ABSORPTION RATE = 938 SQ. FT.
938 SQ. FT. / 3 (TRENCH WIDTH) x .38 (SIDEWALL REDUCTION) = 119 LINEAR FEET
120 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE INITIAL SYSTEM.
(2 TRENCHES OF 60 FEET IN LENGTH)

FIRST REPLACEMENT SYSTEM:
5 BEDROOMS AT 750gpd / 0.8 ABSORPTION RATE = 938 SQ. FT.
938 SQ. FT. / 2 (TRENCH WIDTH) x .31 (SIDEWALL REDUCTION) = 145 LINEAR FEET
146 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE FIRST REPLACEMENT SYSTEM.
(2 TRENCHES OF 73 FEET IN LENGTH)

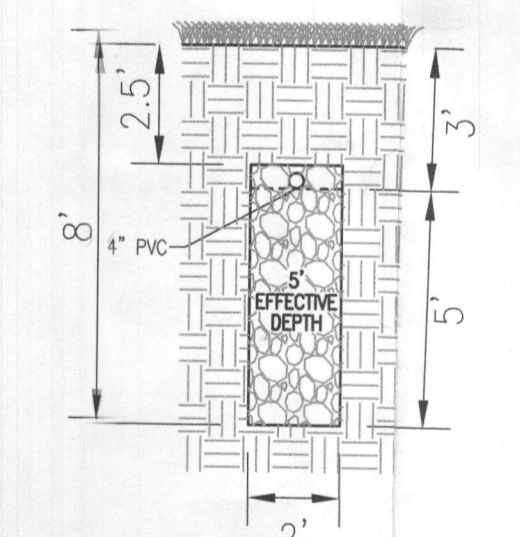
SECOND REPLACEMENT SYSTEM:
5 BEDROOMS AT 750gpd / 1.2 ABSORPTION RATE = 625 SQ. FT.
625 SQ. FT. / 3 (TRENCH WIDTH) x .38 (SIDEWALL REDUCTION) = 79 LINEAR FEET
80 LINEAR FEET OF TRENCH ARE PROVIDED WITH THE SECOND REPLACEMENT SYSTEM.
(2 TRENCHES OF 40 FEET IN LENGTH)

LEGEND:

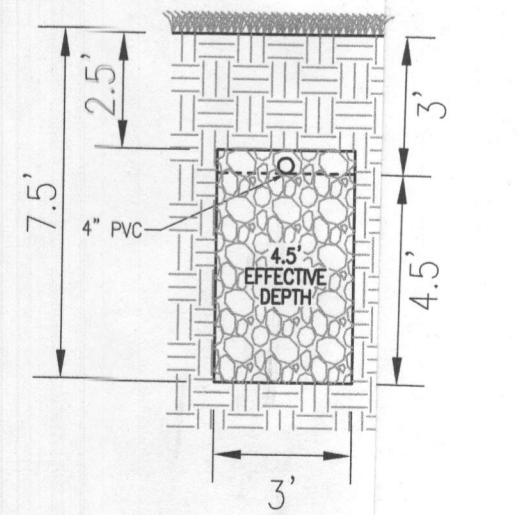
- PROPERTY LINE
- - - ADJACENT PROPERTY LINE
- - - RIGHT-OF-WAY LINE
- - - EXISTING EDGE OF PAVING
- EXISTING WELL
- EXISTING TREE LINE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- SHC2
- APPROVED PRIVATE SEWAGE DISPOSAL AREA
- EXISTING FOREST CONSERVATION EASEMENT (PLAT #17059-17069)
- EXISTING 24' PRIVATE USE-IN-COMMON & UTILITY EASEMENT FOR THE BENEFIT OF LOT 18, 19 & 20 (PLAT #17066)
- MODERATE SLOPES (15%-24.99% SLOPES)
- STEEP SLOPES (25%-100% SLOPES)
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- APPROVED WELL AREA
- EXISTING WELL
- PASSED PERC. TEST
- FAILED PERC. TEST



INITIAL SYSTEM TRENCH DETAIL
NOT TO SCALE



1ST REPLACEMENT SYSTEM TRENCH DETAIL
NOT TO SCALE



2ND REPLACEMENT SYSTEM TRENCH DETAIL
NOT TO SCALE

WELL LOCATION CERTIFICATION:
THE EXISTING WELL SHOWN FOR LOT 1 (TAG #H0-94-3936) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN

Approved Septic System Plan
Howard County Health Department
Signature: *Mark Council* Date: 5/11/22

GENERAL NOTES:

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- THE WELL (MD-94-3936) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
- ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL PREPARED BY POTOMAC AERIAL SURVEYS, DATED APRIL 14, 2001.

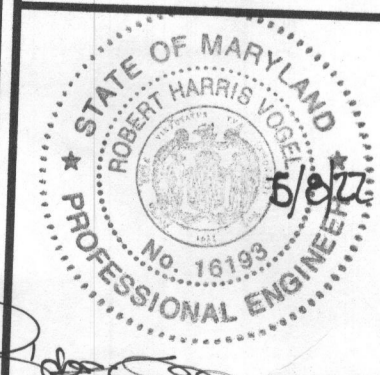
OWNER
THE PRESERVE AT WAVERLY GLEN, LLC
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023

DEVELOPER
TRINITY HOMES MARYLAND, LLC
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
THE PRESERVE AT WAVERLY GLEN - LOT 21
1812 MOUNT DENALI DRIVE
WOODSTOCK, MD 21163
(1.16 AC.)

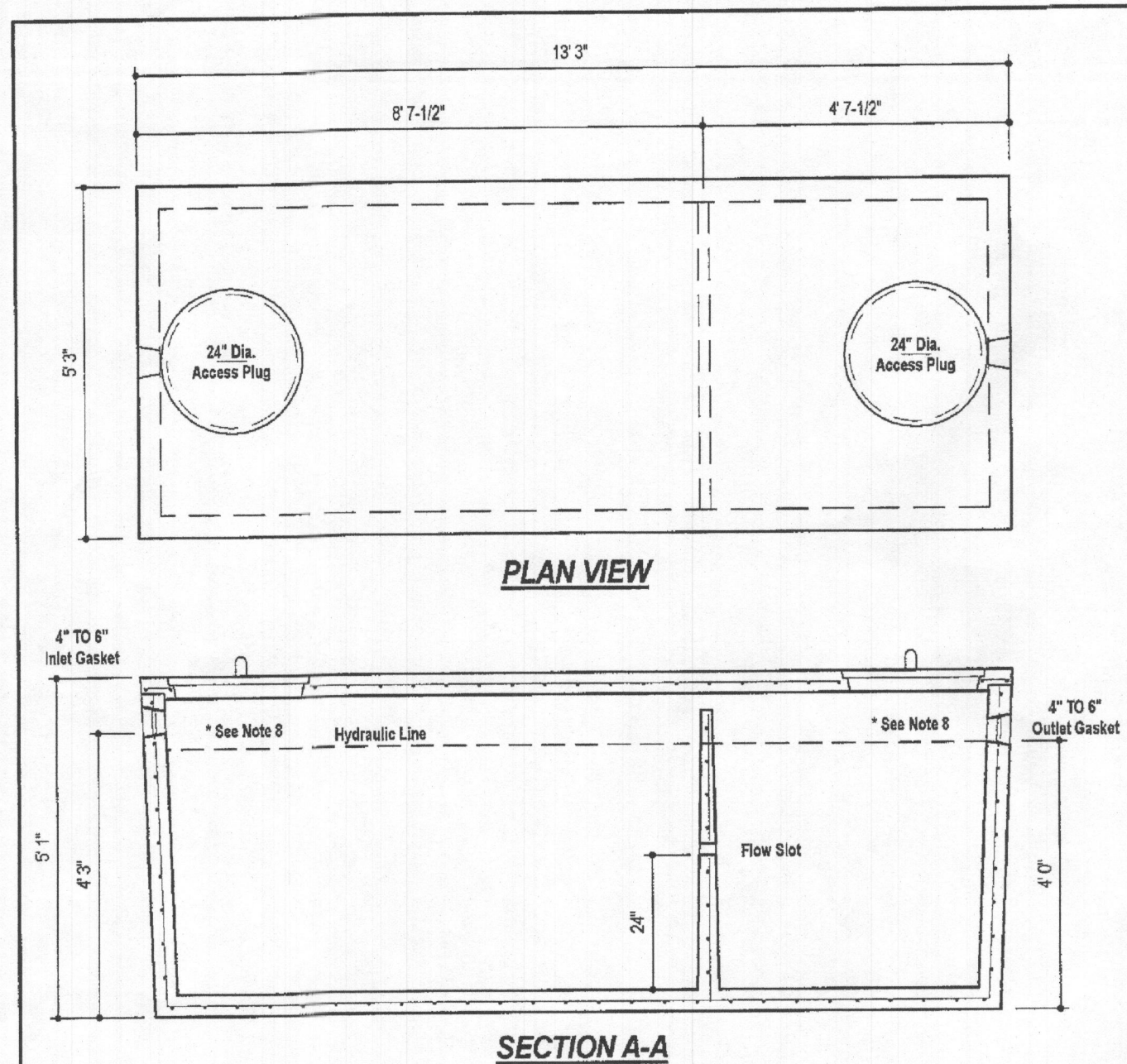
L 6964 / F. 191
3RD ELECTION DISTRICT
TAX MAP: 10 GRID: 23
PARCEL: 330
ZONED: RC-DEO
HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MAY 2022
SCALE: AS SHOWN
W.O. NO.: 2017139

PROFESSIONAL CERTIFICATE
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. 18193, EXPIRATION DATE: 05-27-2022

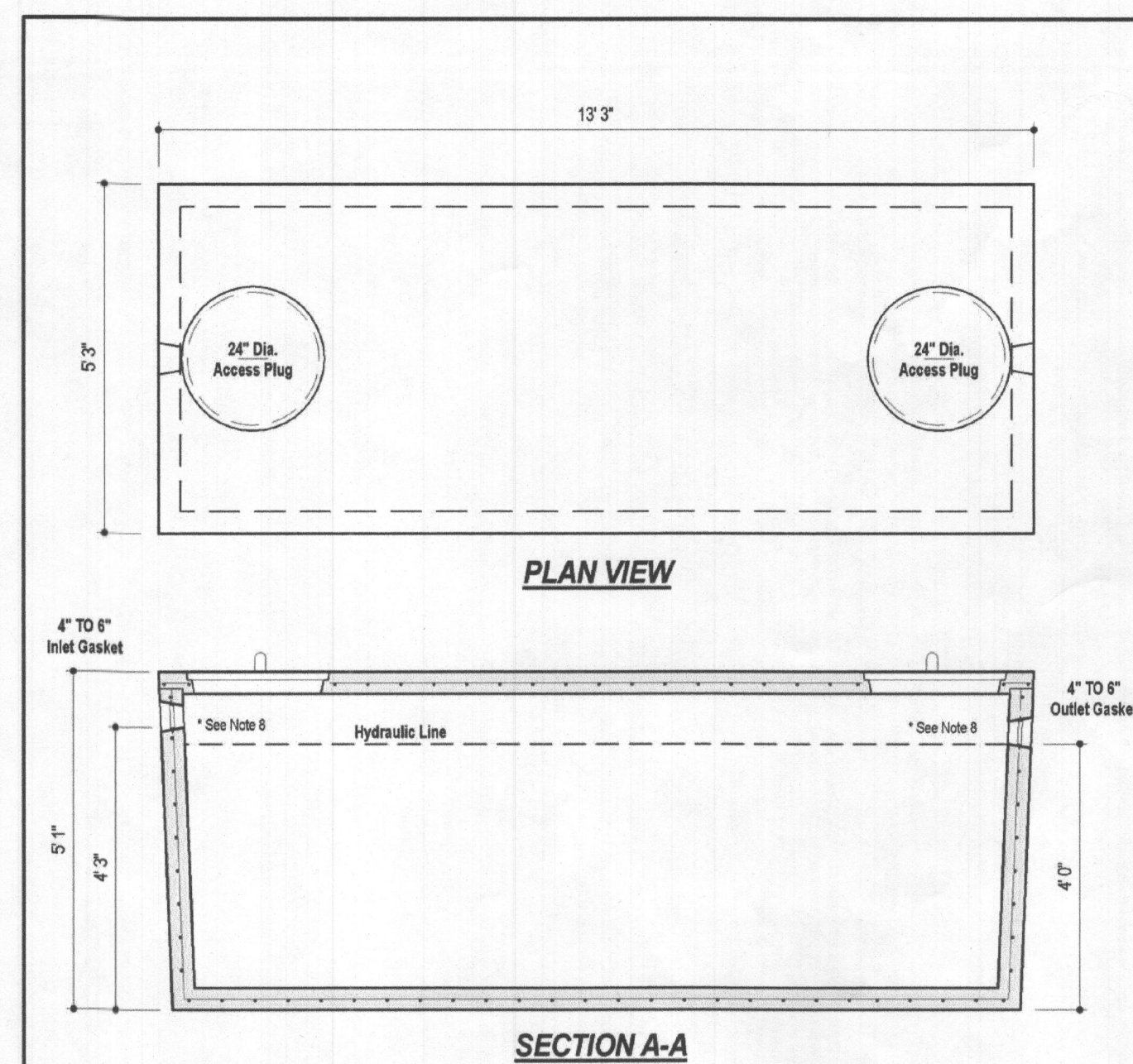


DESIGN DATA & GENERAL NOTES

- Concrete strength f'c=4,000 p.s.i. @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-92.
- Admixtures & plasticizers per ASTM C 260-86 & C 494-82.
- Reinforcing per ASTM A198. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 1-5/8" of cover.
- Depending on use of tank, Inlet & Outlet baffles may be required by code.

WEIGHT = 16,750 lbs.

<p>Mayer Bros, Inc. www.mayerbrosprecast.com</p>	<p>1,500 GALLON TANK (Non-Traffic) 2-Compartment</p>	
	<p>Stock Item</p>	
Dwg. No. 1500-2C	No Scale	Aug. 11, 2008



DESIGN DATA & GENERAL NOTES

- Concrete strength f'c=4,000 p.s.i. @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-92.
- Admixtures & plasticizers per ASTM C 260-86 & C 494-82.
- Reinforcing per ASTM A198. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 1" of cover.
- Depending on use of tank, Inlet & Outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

<p>Mayer Bros, Inc. www.mayerbrosprecast.com</p>	<p>1,500 GALLON SEPTIC/PUMP TANK 1-Compartment</p>	
	<p>NON-TRAFFIC MAX 3 FT. OF COVER</p>	
Dwg. No. 1500-1C	No Scale	Aug. 11, 2008

Goulds Water Technology

Wastewater

APPLICATIONS

Specifically designed for the following uses:
 • Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump
 • Solids handling capabilities: 3/8" maximum
 • Discharge size: 2" NPT
 • Capacities: up to 140 GPM
 • Total heads: up to 128 feet TDH
 • Temperature:
 • 104°F (40°C) continuous, 140°F (60°C) intermittent.
 • See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

• Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
 • Class B insulation on 1/2 - 1 1/2 HP models.
 • Class F insulation on 2 HP models.

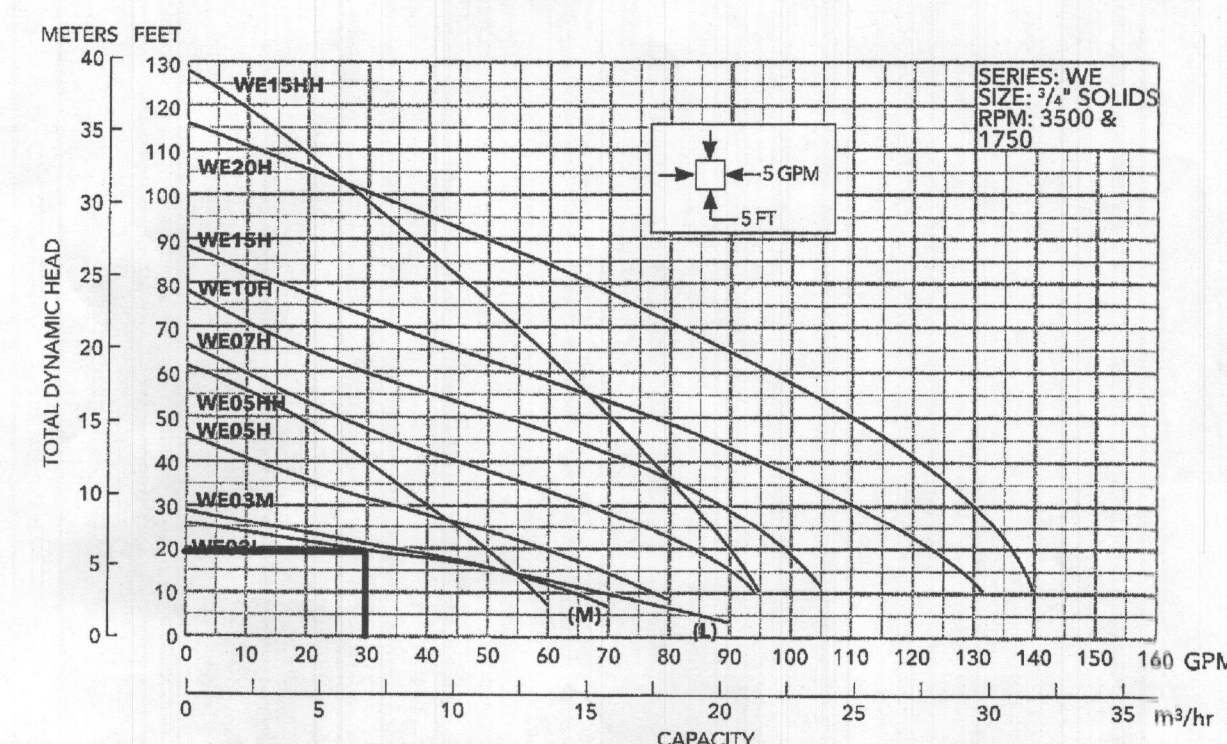
Single phase (60 Hz):

• Capacitor start motors for maximum starting torque.
 • Built-in overload with automatic reset.

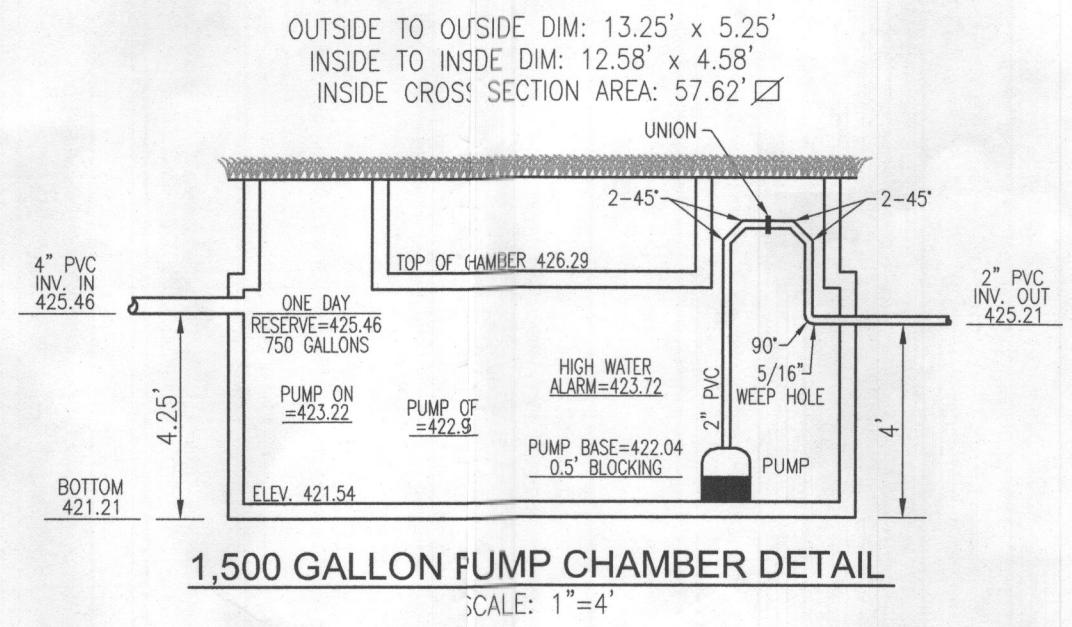
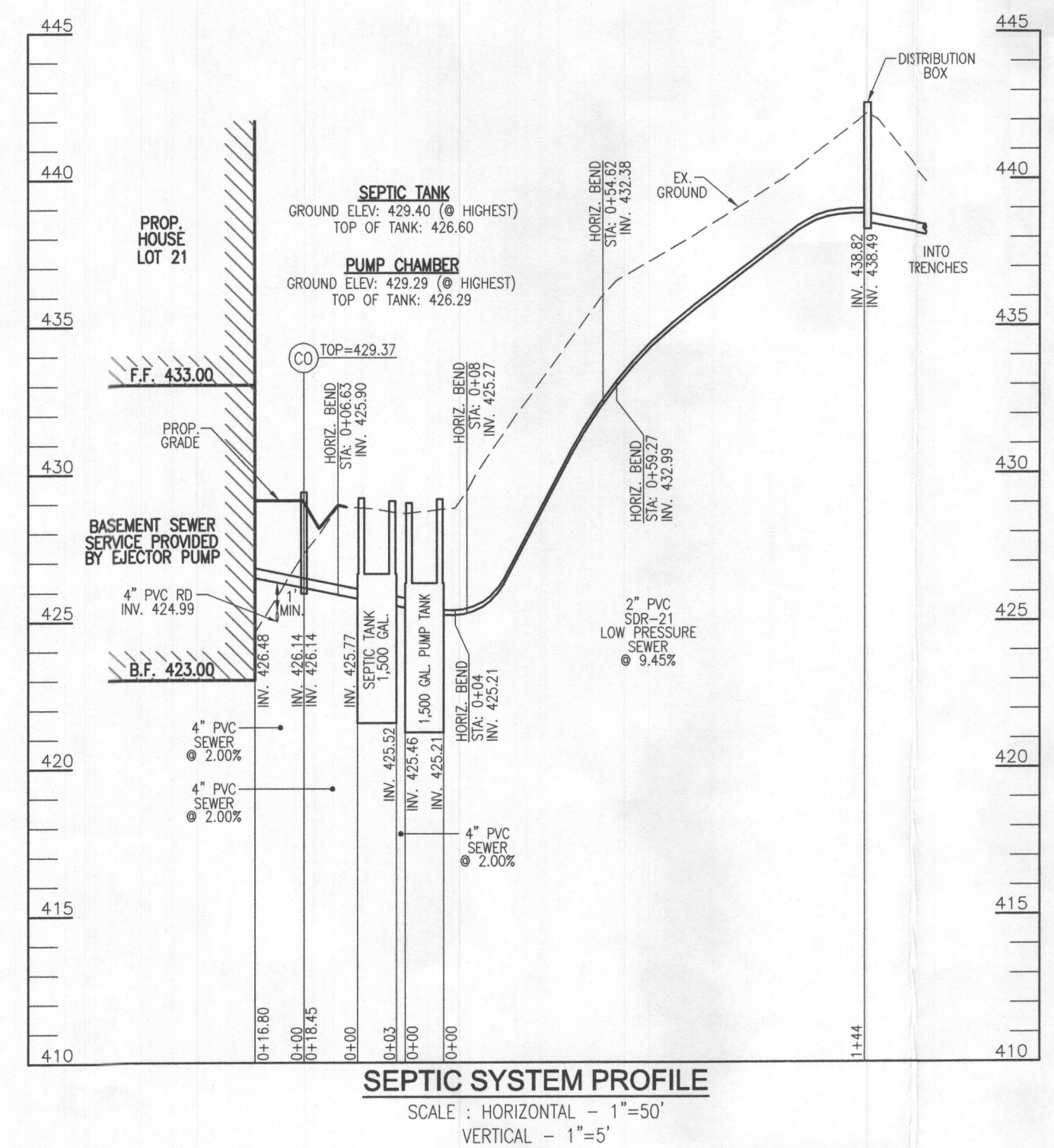
• SJTOW or STOW severe duty oil and water resistant power cords.
 • 1/2 - 1 HP models have NEMA three prong grounding plugs.
 • 1 1/2 HP and larger units have bare lead cord ends.
Three phase (60 Hz):
 • Class 10 overload protection must be provided in separately ordered starter unit.
 • STOW power cords all have bare lead cord ends.
 • Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
 • Bearings: Upper and lower heavy duty ball bearing construction.
 • Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
 • O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards
 By Canadian Standards Association File #R38549



FLOW: 30 GPM
 H=19.23'
 USE GOULDS WE23L (OR EQUIVALENT)



NO. BEDROOMS = 5
 DESIGN FLOW = 5(150 GPD) = 750 GPD
 DOSE: 1/6 DESIGN FLOW = 125 GPD
 125 GALLONS/7.48 FT³/GAL = 16.71 FT³
 16.71 FT³/57.62 SF = 0.29'
 ONE DAY RESERVE: 750 GALLONS/7.48 FT³/GAL = 100.27 FT³
 100.27 FT³/57.62 SF = 1.74 FT
 TDH (FRICTION + STATIC)
 FRICTION FITTINGS: UNION: 1x2 = 2
 45° ELBOW (H+V): 8x8 = 64
 90° ELBOW: 1x7 = 7
 PIPE LENGTH: 144.0 LF
 TOTAL LENGTH: 217.0 LF
 FITTING EQ. LENGTH: 73.0 LF
 FRICTION LOSS (30 GPM): (1.54)(217.0)/100 = 3.34'
 STATIC: 438.82-422.93 (PUMP OFF) = 15.89'
 TDH: 15.89+3.34 = 19.23'
 USE GOULDS WE23L (OR EQUIVALENT)

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

THE PRESERVE AT WAVERLY GLEN - LOT 21

1812 MOUNT DENALI DRIVE
 WOODSTOCK, MD 21163
 (1.16 AC.)

L. 6964 / F. 191
 3RD ELECTION DISTRICT
 TAX MAP: 10 GRID: 23

PARCEL: 330
 ZONED: RC-DEO
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21143
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: RHY
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: MAY 2022
 SCALE: AS SHOWN
 W.O. NO.: 2017139

PROFESSIONAL CERTIFICATE

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. 16183, EXPIRATION DATE: 09-27-2022

ROBERT H. VOGEL, PE No. 16193

2 SHEET OF 2



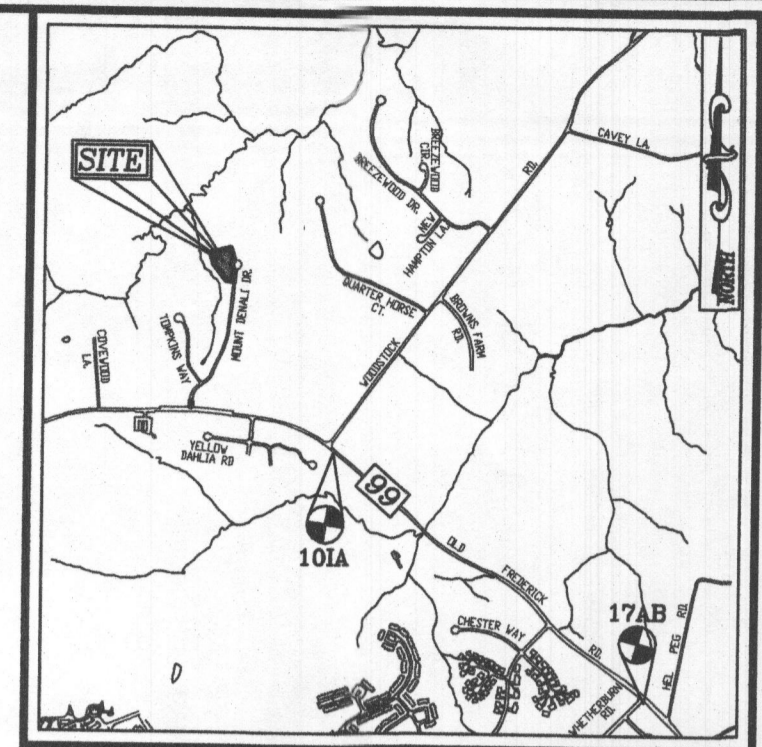
PLAN VIEW
SCALE: 1"=30'

THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET 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 WELL 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.

BENCHMARKS

HOWARD COUNTY BENCHMARK 101A (CONC. MON.)
N 800995.13 E 1345340.39 ELEV. 441.90
LOCATION: CORNER RT-99 & WOODSTOCK ROAD

HOWARD COUNTY BENCHMARK 17AB (CONC. MON.)
N 598435.30 E 1348615.30 ELEV. 508.40
LOCATION: CORNER RT-99 & WHETHERBURN ROAD



INITIAL SYSTEM TRENCH INFO.

TRENCH	LENGTH	TRENCH	TRENCH	OF EXISTING GROUND
1	60'	435.36	433.86	441.86
2	60'	435.69	431.19	439.19

SYSTEM CALCULATIONS:

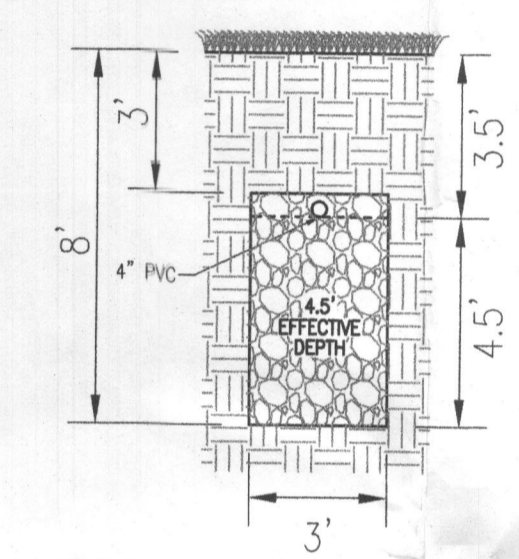
INITIAL SYSTEM:
5 BEDROOMS AT 750gpd / 0.8 ABSORPTION RATE = 938 SQ. FT.
938 SQ. FT. / 3 (TRENCH WIDTH) x .38 (SIDEWALL REDUCTION) = 119 LINEAR FEET
120 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE INITIAL SYSTEM.
(2 TRENCHES OF 60 FEET IN LENGTH)

FIRST REPLACEMENT SYSTEM:
5 BEDROOMS AT 750gpd / 0.8 ABSORPTION RATE = 938 SQ. FT.
938 SQ. FT. / 2 (TRENCH WIDTH) x .31 (SIDEWALL REDUCTION) = 145 LINEAR FEET
146 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE FIRST REPLACEMENT SYSTEM.
(2 TRENCHES OF 73 FEET IN LENGTH)

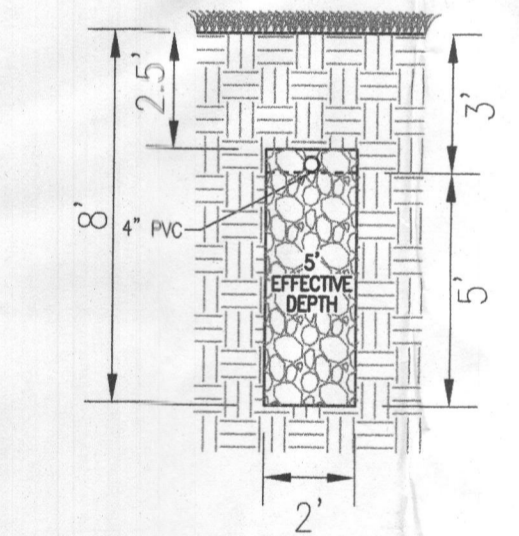
SECOND REPLACEMENT SYSTEM:
5 BEDROOMS AT 750gpd / 1.2 ABSORPTION RATE = 625 SQ. FT.
625 SQ. FT. / 3 (TRENCH WIDTH) x .38 (SIDEWALL REDUCTION) = 79 LINEAR FEET
80 LINEAR FEET OF TRENCH ARE PROVIDED WITH THE SECOND REPLACEMENT SYSTEM.
(2 TRENCHES OF 40 FEET IN LENGTH)

LEGEND:

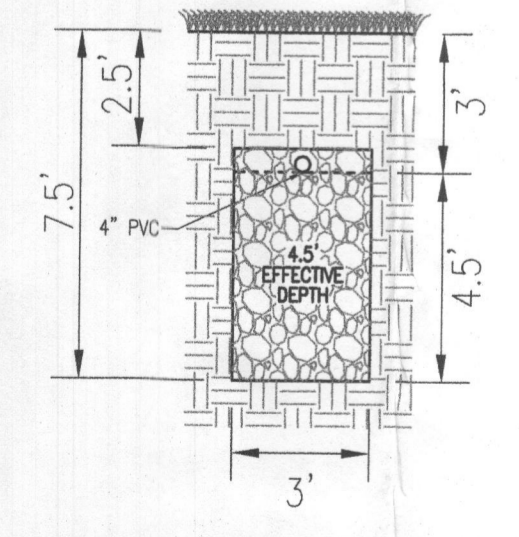
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING EDGE OF PAVING
- EXISTING WELL
- EXISTING TREE LINE
- 3.30' EXISTING 10' CONTOUR
- 3.28' EXISTING 2' CONTOUR
- S&E SOILS
- S&C2
- APPROVED PRIVATE SEWAGE DISPOSAL AREA
- EXISTING FOREST CONSERVATION EASEMENT (PLAT #17059-17069)
- EXISTING 24' PRIVATE USE-IN-COMMON & UTILITY EASEMENT FOR THE BENEFIT OF LOT 18, 19 & 20 (PLAT #17066)
- MODERATE SLOPES (15%-24.99% SLOPES)
- STEEP SLOPES (25%-100% SLOPES)
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- APPROVED WELL AREA
- EXISTING WELL
- PASSED PERC. TEST
- FAILED PERC. TEST



INITIAL SYSTEM TRENCH DETAIL
NOT TO SCALE



1ST REPLACEMENT SYSTEM TRENCH DETAIL
NOT TO SCALE



2ND REPLACEMENT SYSTEM TRENCH DETAIL
NOT TO SCALE

WELL LOCATION CERTIFICATION:
THE EXISTING WELL SHOWN FOR LOT 21 (TAG #H0-94-3936) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN

Approved Septic System Plan
Howard County Health Department
Hank Donald S/11/22
Signature Date

- GENERAL 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 SITE PLAN MAY BE REQUIRED.
 2. THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
 3. ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 4. THE WELL (H0-94-3936) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
 5. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
 6. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
 7. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL PREPARED BY POTOMAC AERIAL SURVEYS, DATED APRIL 14, 2001.

OWNER
THE PRESERVE AT WAVERLY GLEN, LLC
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023

DEVELOPER
TRINITY HOMES MARY LAND, LLC
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023

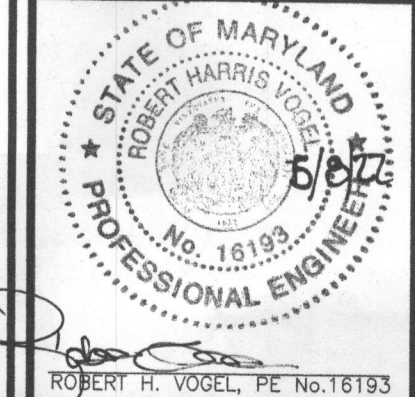
ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

THE PRESERVE AT WAVERLY GLEN - LOT 21
1812 MOUNT DENALI DRIVE
WOODSTOCK, MD 21163
(1.16 AC.)

L 6964 / F. 191
3RD ELECTION DISTRICT
TAX MAP: 10 GRID: 23

PARCEL: 330
ZONED: RC-DEO
HOWARD COUNTY, MARYLAND

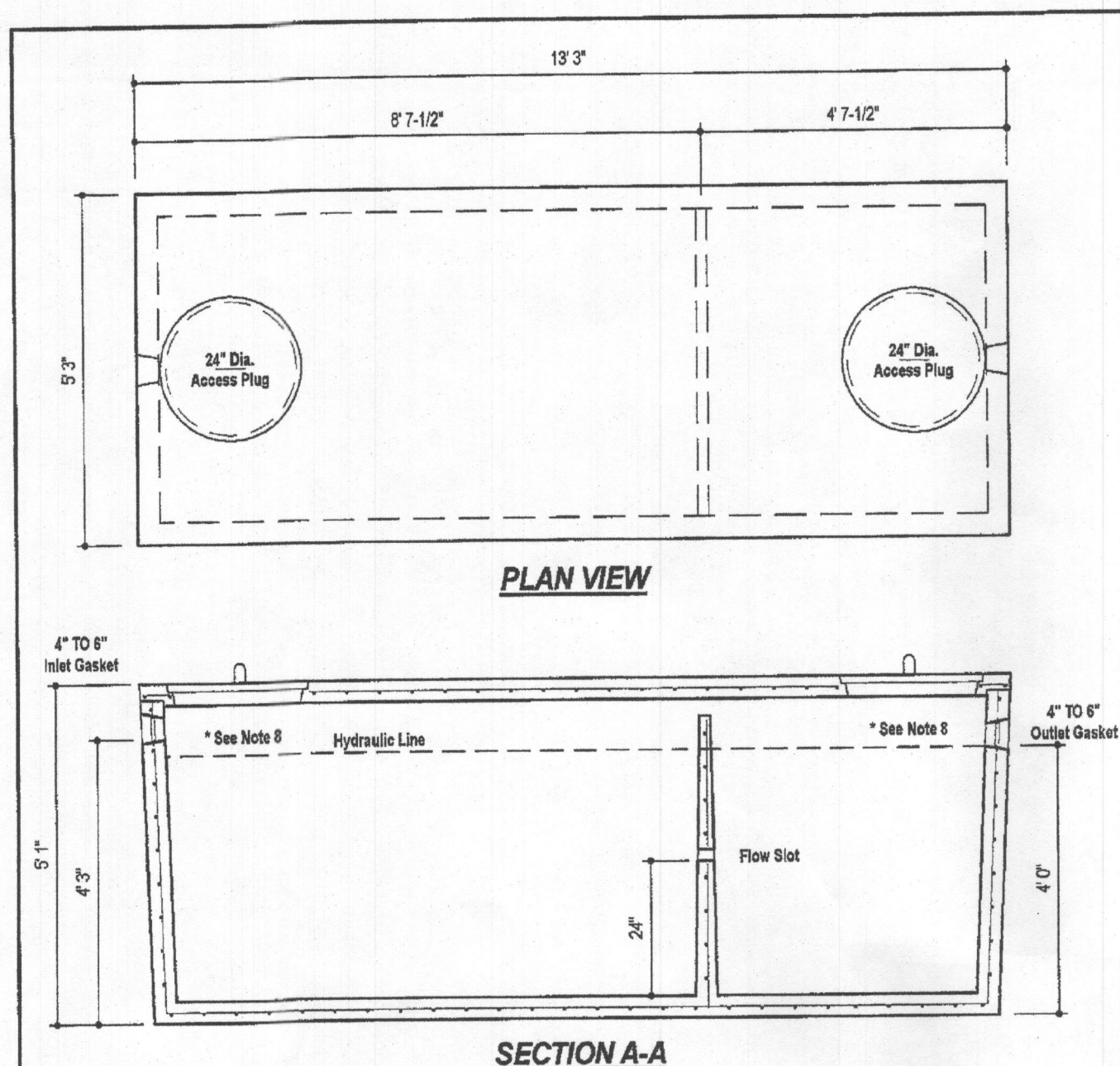
VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MAY 2022
SCALE: AS SHOWN
W.O. NO.: 2017139

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193
EXPIRATION DATE: 09-27-2022

1 SHEET OF 2

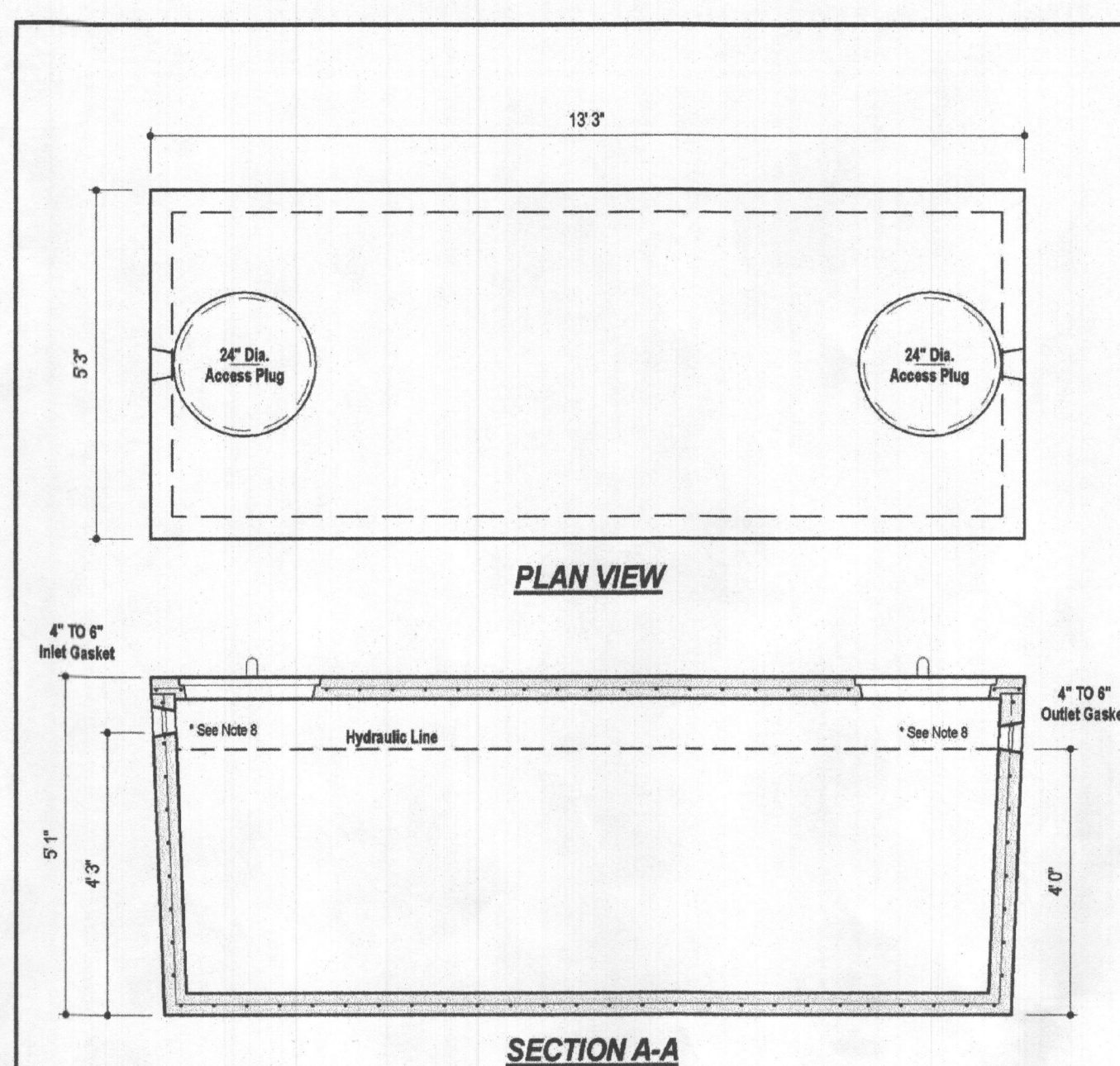


DESIGN DATA & GENERAL NOTES

- Concrete strength $f'c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-82.
- Admixtures & plasticizers per ASTM C 260-88 & C 494-82.
- Reinforcing per ASTM A198. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 3-1/2" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 16,750 lbs.

	6264 Race Road Elkridge, Maryland 21075 Tel. 410.796.1434 Fax. 410.796.1438 www.mayerbrosgroup.com	1,500 GALLON TANK (Non-Traffic) 2-Compartment Stock Item	Dwg. No. 1500-2C No Scale Aug. 11, 2008
	Mayer Bros, Inc.		



DESIGN DATA & GENERAL NOTES

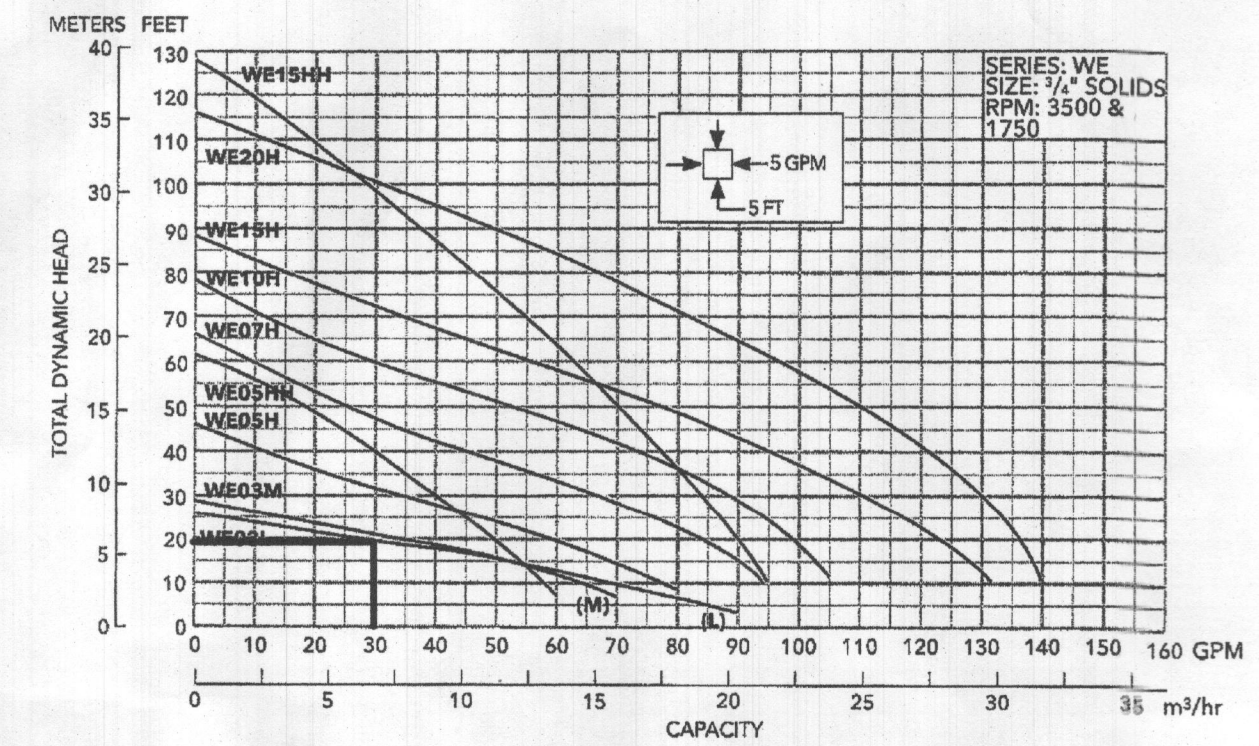
- Concrete strength $f'c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-82.
- Admixtures & plasticizers per ASTM C 260-88 & C 494-82.
- Reinforcing per ASTM A198. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 3" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

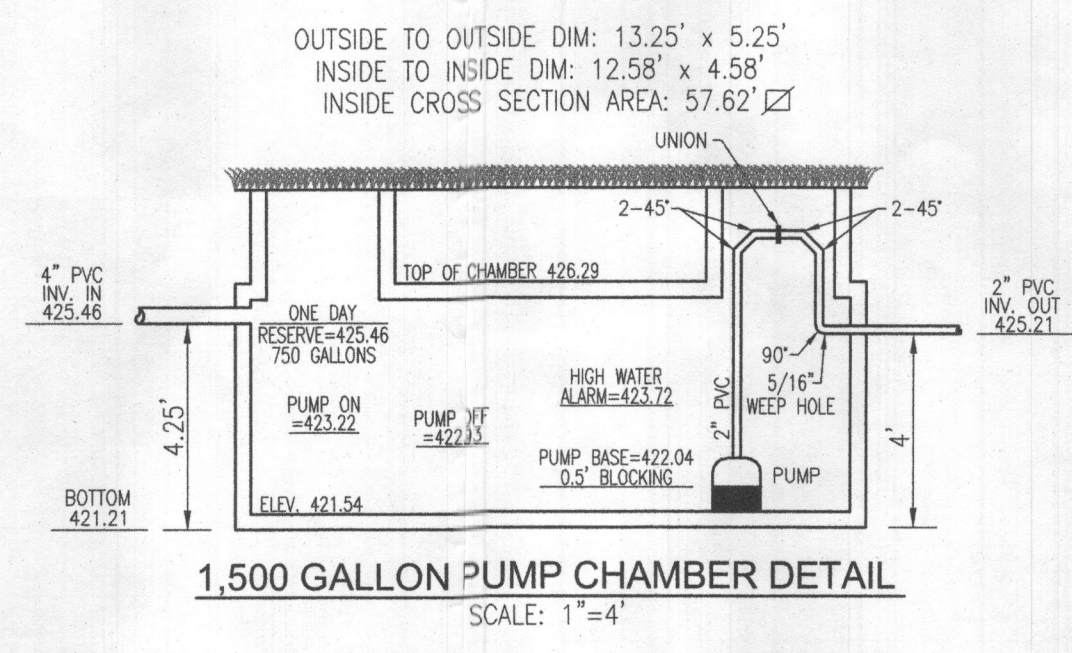
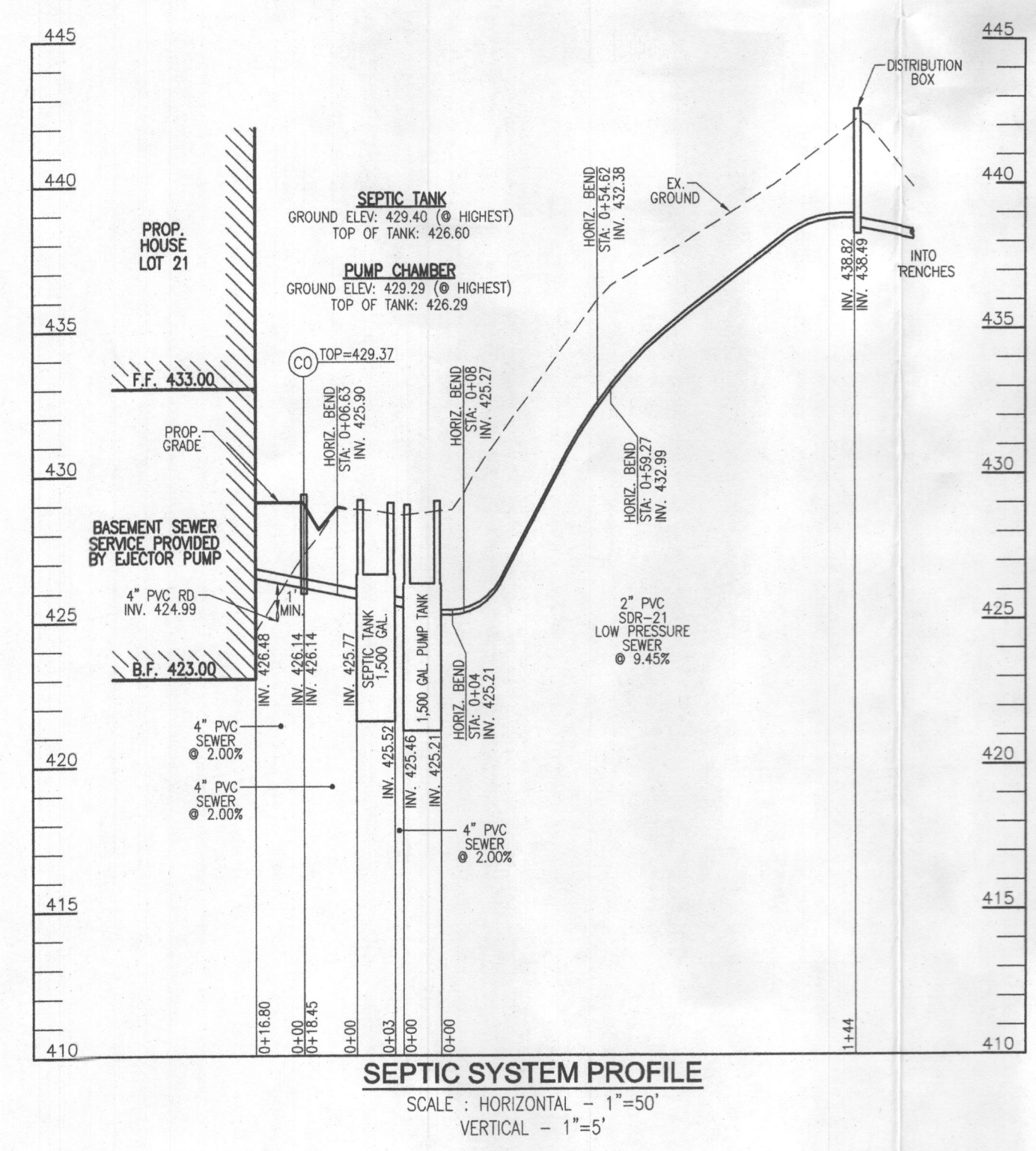
	6264 Race Road Elkridge, Maryland 21075 Tel. 410.796.1434 Fax. 410.796.1438 www.mayerbrosgroup.com	1,500 GALLON SEPTIC/PUMP TANK 1-Compartment NON-TRAFFIC MAX 3 ft. OF COVER	Dwg. No. 1500-1C No Scale Aug. 11, 2008
	Mayer Bros, Inc.		

Wastewater

- APPLICATIONS**
Specifically designed for the following uses:
- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems
- SPECIFICATIONS**
- Pump**
- Solids handling capabilities: 3/4" maximum
 - Discharge size: 2" NPT
 - Capacities: up to 140 GPM
 - Total heads: up to 128 feet TDH
 - Temperatures: 104°F (40°C) continuous, 140°F (60°C) intermittent
 - See order numbers on reverse side for specific HP, voltage, phase and RPM's available.
- MOTORS**
- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
 - Class B insulation on 1/2 - 1 1/2 HP models.
 - Class F insulation on 2 HP models.
- Single phase (60 Hz):**
- Capacitor start motors for maximum starting torque.
 - Built-in overload with automatic reset.
- Three phase (60 Hz):**
- Class 10 overload protection must be provided in separately ordered starter unit.
 - STOW power cords all have bare lead cord ends.
 - Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
 - Bearings: Upper and lower heavy duty ball bearing construction.
 - Power Cables: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
 - O-ring: Assures positive sealing against contaminants and oil leakage.
- AGENCY LISTINGS**
- Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR59569



FLOW: 30 GPM
H=19.23'
USE GOULDS WE3XL (OR EQUIVALENT)



NO. BEDROOMS = 5
 DESIGN FLOW = 5(150 GPD) = 750 GPD
 DOSE: 1/8 DESIGN FLOW = 125 GPD
 125 GALLONS/7.48 FT³/GAL = 16.71 FT³
 16.71 FT³/57.62 SF = 0.29'
 ONE DAY RESERVE: 750 GALLONS/7.48 FT³/GAL = 100.27 FT³
 100.27 FT³/57.62 SF = 1.74 FT

TDH (FRICTION + STATIC)
 FRICTION FITTINGS: UNION: 1x2 = 2
 45° ELBOW (H+V): 8x8 = 64
 90° ELBOW: 1x7 = 7

FITTING EQ. LENGTH: 73.0 LF
 PIPE LENGTH: 144.0 LF
 TOTAL LENGTH: 217.0 LF

FRICTION LOSS (30 GPM): (1.54)(217.0)/100 = 3.34'
 STATIC: 438.82-422.93 (PUMP OFF) = 15.89'
 TDH: 15.89+3.34 = 19.23'
 USE GOULDS WE3XL (OR EQUIVALENT)

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

THE PRESERVE AT WAVERLY GLEN - LOT 21
 1812 MOUNT DENALI DRIVE
 WOODSTOCK, MD 21163
 (1.16 AC.)

L. 6964 / F. 191
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 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

	PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18199, EXPIRATION DATE: 09-27-2022.
DESIGN BY: R.H.V. DRAWN BY: J.M.R. CHECKED BY: R.H.V. DATE: MAY 2022 SCALE: AS SHOWN W.O. NO.: 2017139	2 SHEET OF 2