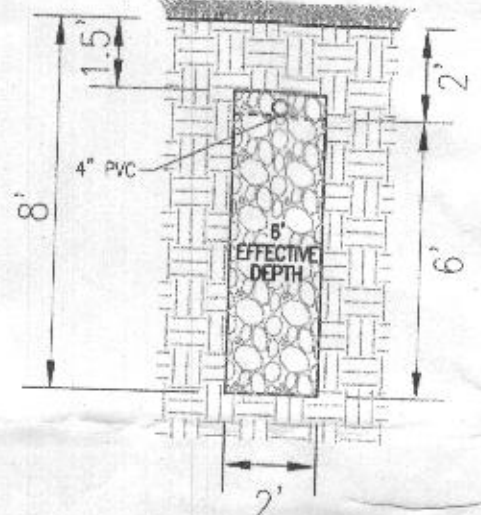


THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON 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.

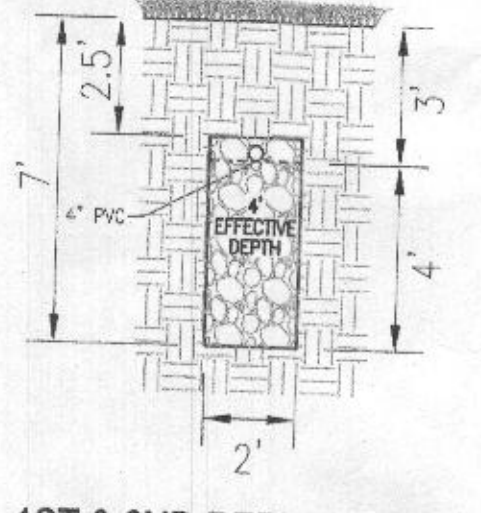
TRENCH	LENGTH	WIDTH	DEPTH	OF EXISTING	GROUND
1	42'	4.34	36"	426.36	436.36
2	42'	4.34	16"	428.16	436.16

**SYSTEM CALCULATIONS:**  
**INITIAL SYSTEM:**  
 5 BEDROOMS AT 750GPD / 1.2 ABSORPTION RATE = 625 SQ. FT.  
 625 SQ. FT. / 2 (TRENCH WIDTH) x .27 (SIDEWALL REDUCTION) = 84 LINEAR FEET  
 84 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE INITIAL SYSTEM.  
 (2 TRENCHES OF 42 FEET IN LENGTH)  
**FIRST & SECOND REPLACEMENT SYSTEM:**  
 5 BEDROOMS AT 750GPD / 1.2 ABSORPTION RATE = 625 SQ. FT.  
 625 SQ. FT. / 2 (TRENCH WIDTH) x .36 (SIDEWALL REDUCTION) = 113 LINEAR FEET  
 114 TOTAL LINEAR FEET OF TRENCH ARE PROVIDED WITH THE FIRST & SECOND REPLACEMENT SYSTEM.  
 (2 TRENCHES OF 57 FEET IN LENGTH FOR EACH SYSTEM)

JINGLI YANG  
 PETER H. LI  
 TM: 34 PARCEL: 393  
 VAN'T HOFF PROP.  
 L-11510/F.001  
 PLAT: 12949  
 LOT: 4  
 5.71 AC.  
 USE: RESIDENTIAL  
 ZONED: RR-DEO



INITIAL SYSTEM TRENCH DETAIL  
 NOT TO SCALE



1ST & 2ND REPLACEMENT SYSTEM TRENCH DETAIL  
 NOT TO SCALE

- GENERAL NOTES:**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISION LOAD BEARING COVER OVER THE TANK IS 3 FEET, GREATER EARTH COVER IS REQUIRED.
  - ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
  - THE WELL (40-17-0330) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
  - ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARY MUST BE FIELD LOCATED AND ACCURATELY SHOWN.
  - GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
  - ANY CHANGES TO THE PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCENTAGE OF THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM HOWARD COUNTY FIELD RUN TOPOGRAPHICAL SURVEYS PREPARED BY ROBERT H. VOGEL ENGINEER AND MAY OF 2016.

**OWNER**  
 ESTATES AT RIVER HILL, LLC  
 MICHAEL PFUHL, MEMBER  
 3675 PARK AVE., SUITE 301  
 ELLICOTT CITY, MD 21043  
 (410) 480-0023

**DEVELOPER**  
 TRINITY HOMES, INC.  
 3675 PARK AVE.  
 ELLICOTT CITY, MD 21043  
 (410) 480-0023

**ONSITE SEWAGE DISPOSAL SYSTEM**

THE ESTATES AT RIVER HILL  
 13613 NOBLE WAY  
 HIGHLAND, MD 20777

PARCEL: 393  
 TAX MAP: 34 GRID: 23  
 5TH ELECTION DISTRICT

**VOGEL ENGINEER**

**TIMMONS GROUP**

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21114  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: JUNE 2021  
 SCALE: AS SHOWN  
 W.O. NO.: 15-39

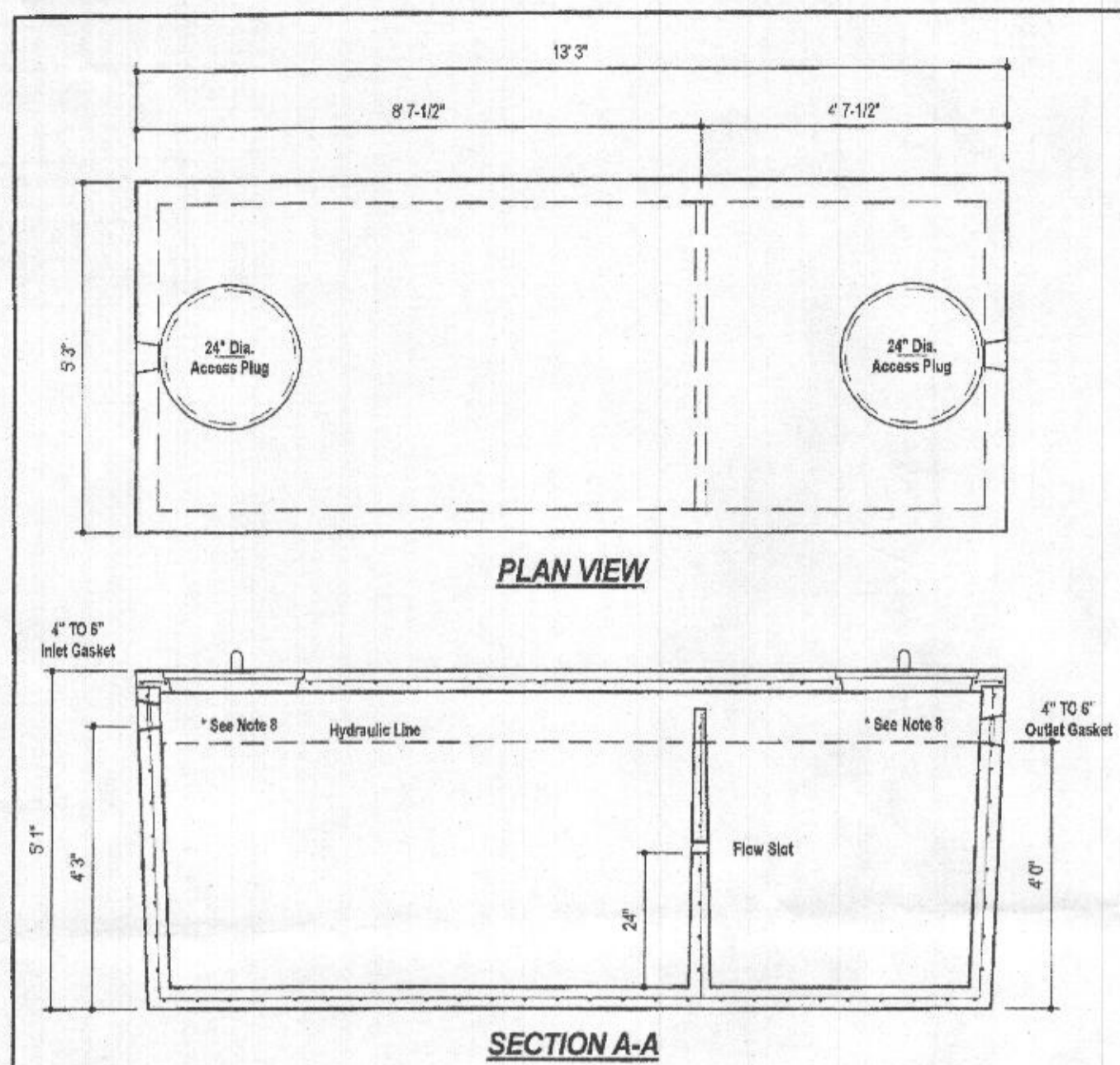
**WELL LOCATION CERTIFICATION:**  
 THE EXISTING WELL SHOWN FOR LOT 6 (TAG #0-17-0330) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN

SCALE 1"=30'

PLAN VIEW  
 SCALE: 1"=30'

Approved Septic System Plan  
 Howard County Health Department  
 1500-gal Septic Tank  
 w/ 1500-gal Pump Tank  
 & 600LBS WEPOL pump or equiv.  
 Signature: [Signature] Date: 7/2/2021  
 To Gravity Drain Field for 5-bedroom SFD

STEVEN A. LOZINI  
 ELISABETH C. LOZI  
 TM: 34 PARCEL: 393  
 VAN'T HOFF PRC  
 PLAT: 20374  
 LOT: 5  
 4.88 AC.

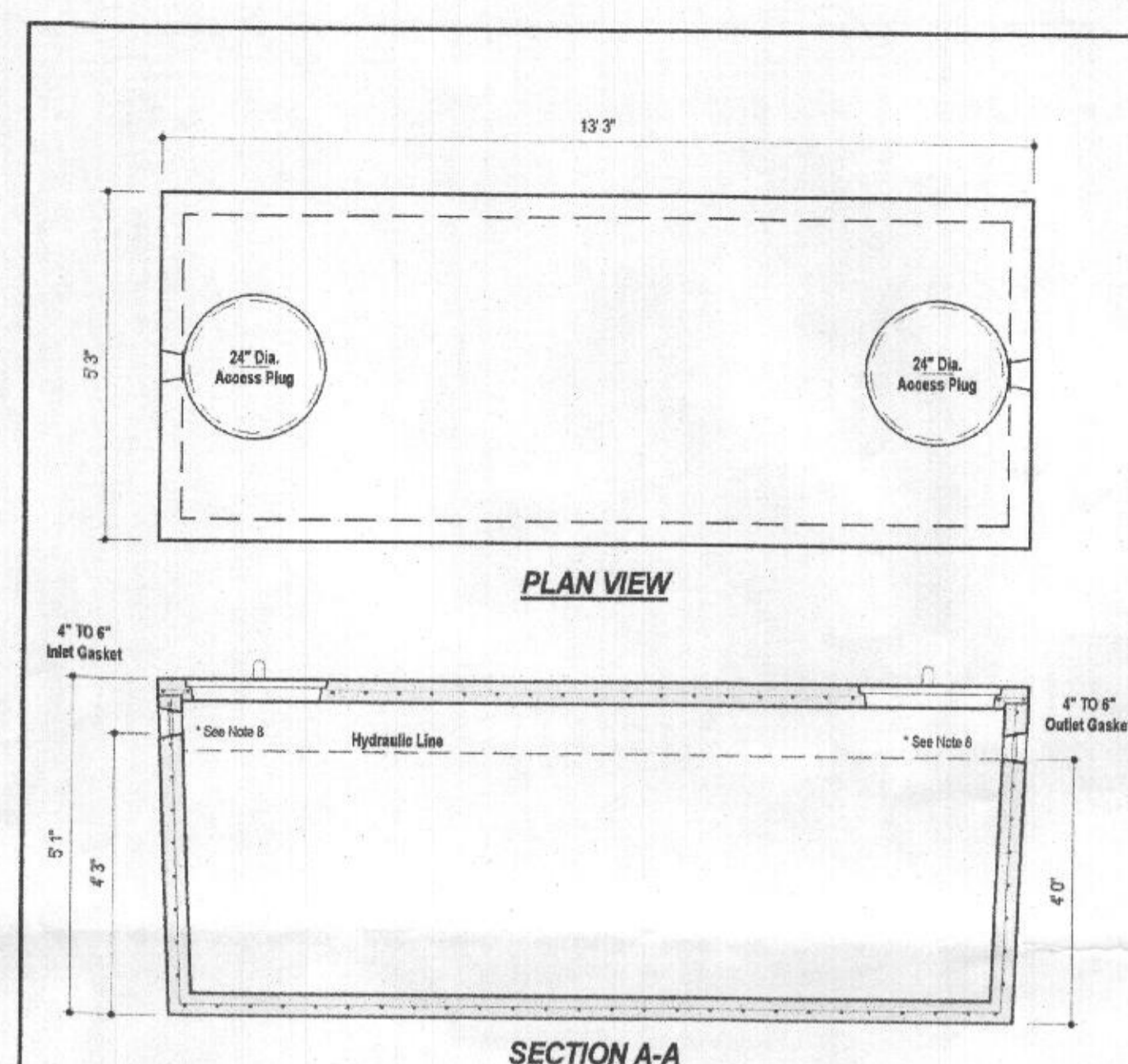


**DESIGN DATA & GENERAL NOTES**

- Concrete strength  $f'c=4,000$  p.s.i. @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-02.
- Aggregate & plasticizers per ASTM C 200-96 & C 494-02.
- Reinforcing per ASTM A108. 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 = 16,750 lbs.

	6264 River Road Elkridge, Maryland 21075 Tel. 410.796.1434 Fax. 410.796.1438 www.maybrosprecast.com	<b>1,500 GALLON TANK (Non-Traffic)</b> <b>2-Compartment</b> Stock Item
	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 150-02.
- Aggregate & plasticizers per ASTM C 200-96 & C 494-02.
- Reinforcing per ASTM A108. 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 River Road Elkridge, Maryland 21075 Tel. 410.796.1434 Fax. 410.796.1438 www.maybrosprecast.com	<b>1,500 GALLON SEPTIC/PUMP TANK</b> <b>1-Compartment</b> NON-TRAFFIC MAX 3" OF COVER
	Dwg. No. 1500-1C	No Scale
	Aug. 11, 2008	

**Wastewater**

**APPLICATIONS**

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

**SPECIFICATIONS**

**Pump**

- Solids handling capabilities: 1/2" 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.

**Goulds Water Technology**

• 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.

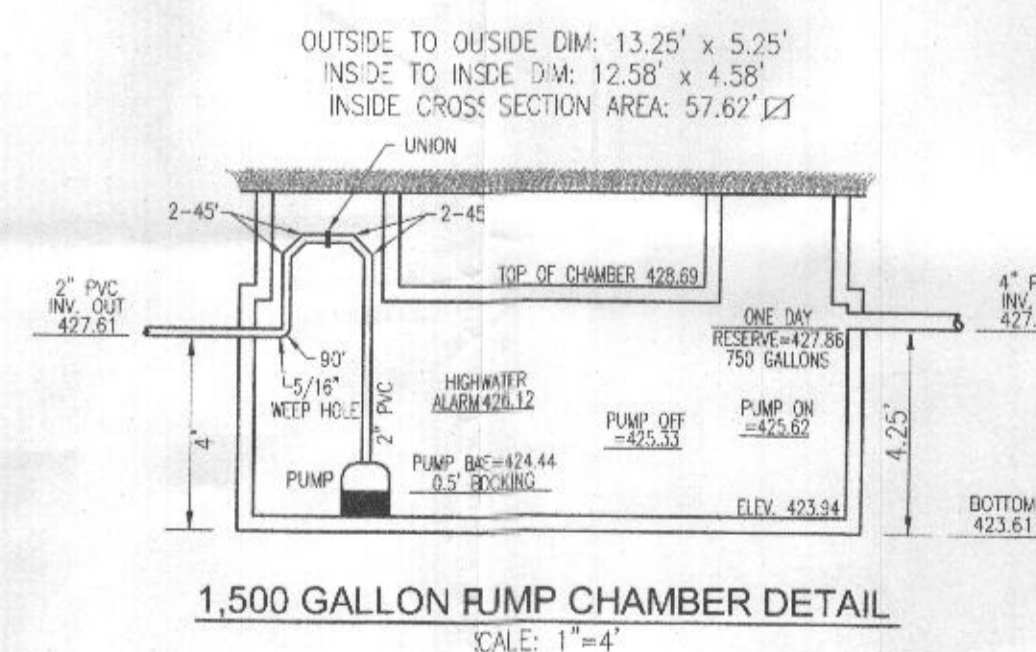
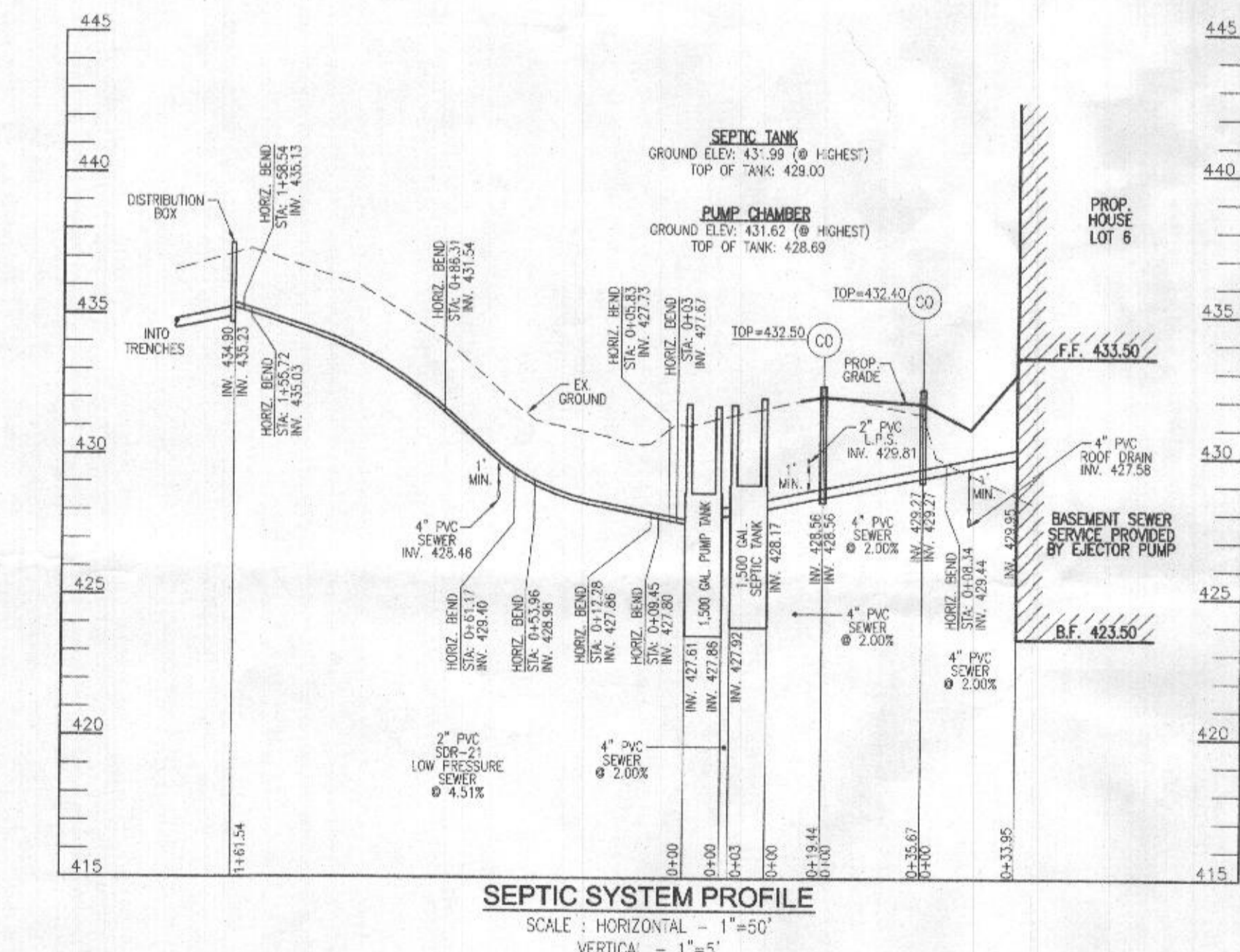
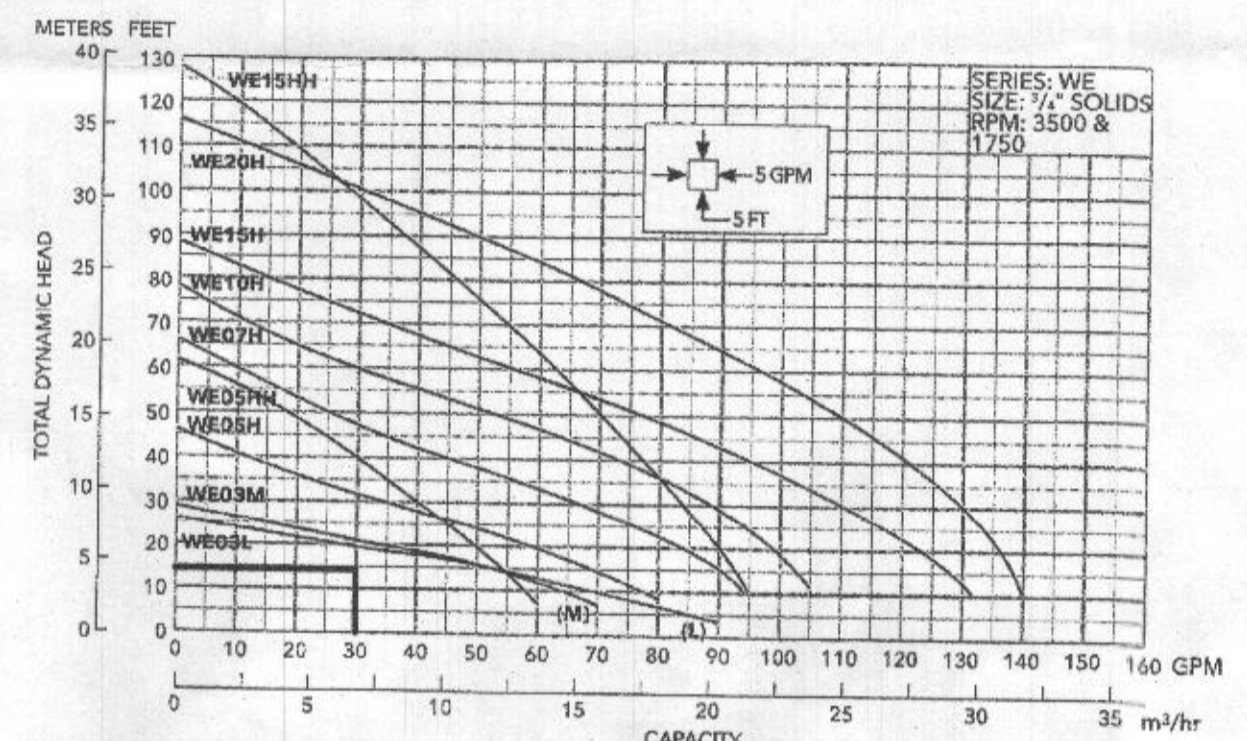
• Bearings: Upper and lower heavy duty ball bearing construction.

• 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 #LR28549



NO. BEDROOMS = 5  
 DESIGN FLOW = 54 (50 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): 13x8 = 104  
 90° ELBOW: 1x7 = 7  
 FITTING ED. LENGTH: 113.0 LF  
 PIPE LENGTH: 181.5 LF  
 TOTAL LENGTH: 274.5 LF

FRICTION LOSS (30 GPM): (1.54)(274.5)/100 = 4.23'  
 STATIC: 435.23-425.33 (PUMP OFF) = 9.90'  
 TDH: 9.90+4.23 = 14.13'  
 USE GOULDS WE3 (OR EQUIVALENT)

Approved Septic System Plan  
 Howard County Health Department  
 1500-gal Septic Tank  
 w/ 1500-gal Pump Tank  
 #1 GOULDS WE303L pump or equiv.  
 [Signature] 2/2/2021 Date  
 To Gravity Drain field for 5-bed room SFD

**OWNER**  
 THE ESTATES AT RIVER HILL, LLC  
 MICHAEL PFAU, MEMBER  
 3675 PARK AVE., SUITE 301  
 ELLICOTT CITY, MD 21043  
 (410) 480-0023

**DEVELOPER**  
 TRINITY HOMES MARYLAND, LLC  
 3675 PARK AVE., SUITE 301  
 ELLICOTT CITY, MD 21043  
 (410) 480-0023

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**

**THE ESTATES AT RIVER HILL - LOT 6**  
 13613 NOBLE WAY  
 HIGHLAND, MD 20777

PARCEL: 389  
 TAX MAP: 34 GRID: 23  
 5TH ELECTION DISTRICT

ZONED: RR-DEO  
 L. 18487 / F. 262  
 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: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: JUNE 2021  
 SCALE: AS SHOWN  
 W.O. NO.: 15-39

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. 16183

2 SHEET OF 2