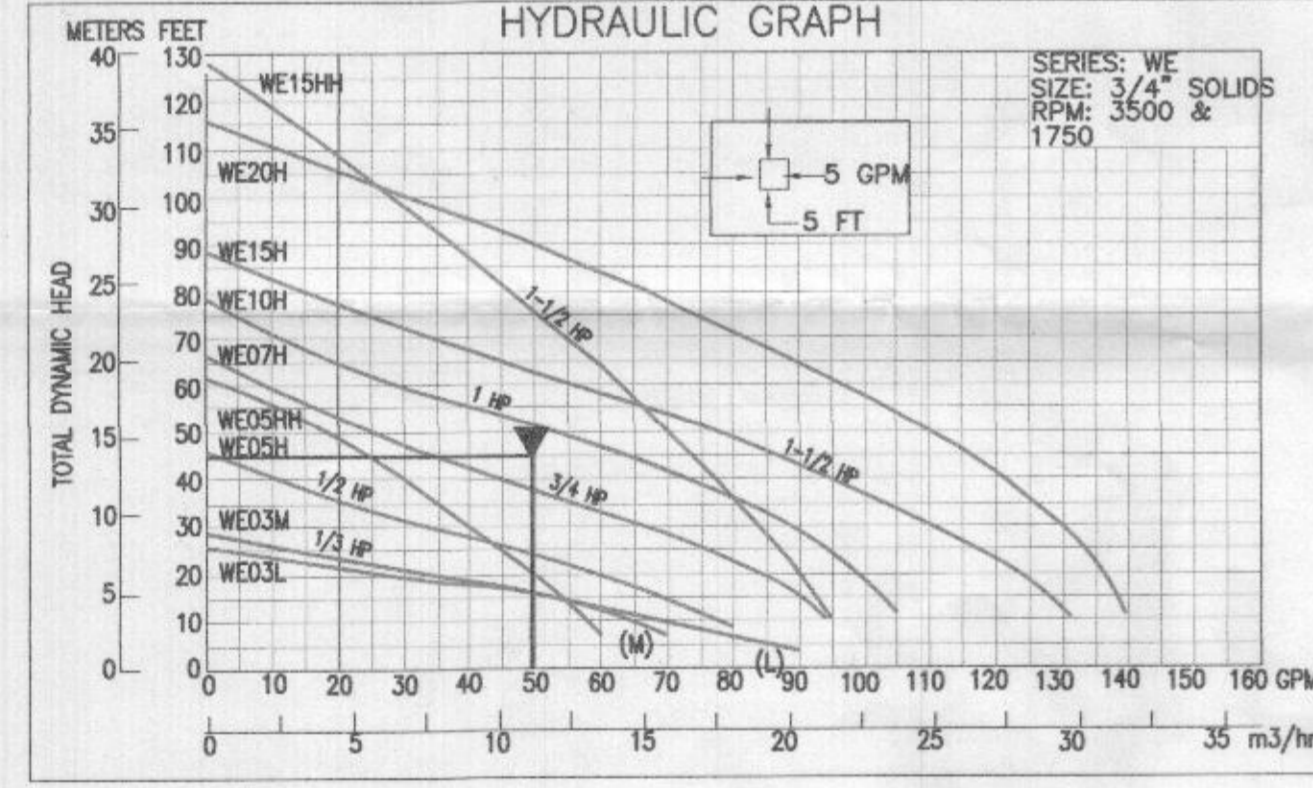
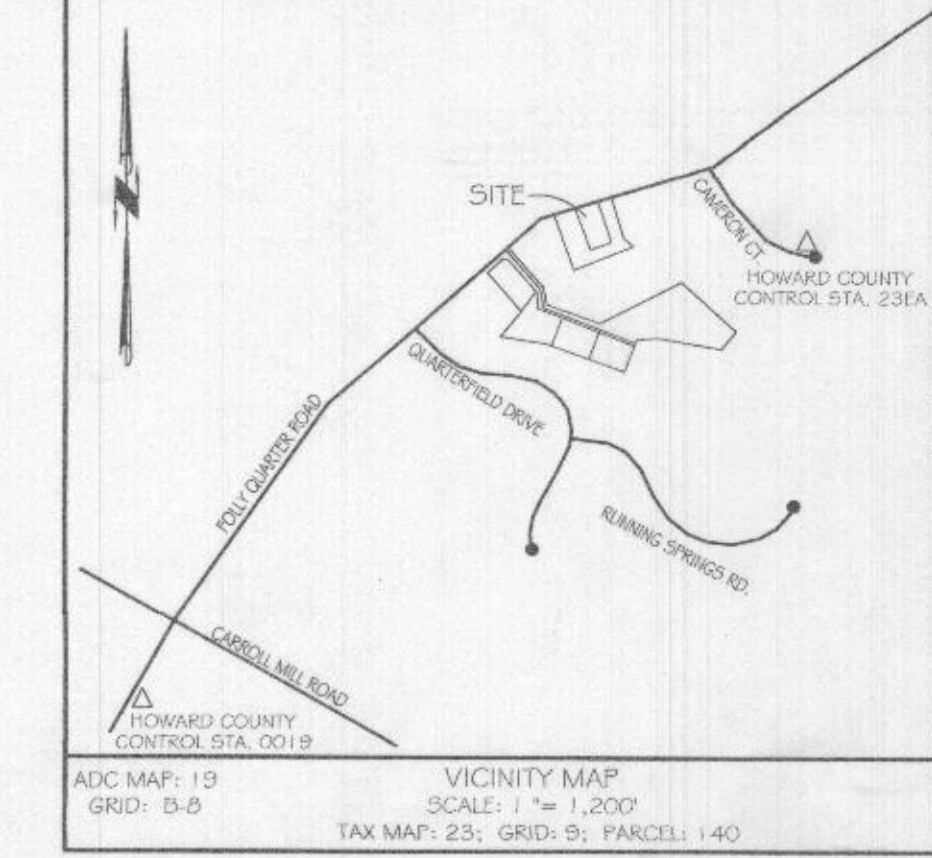
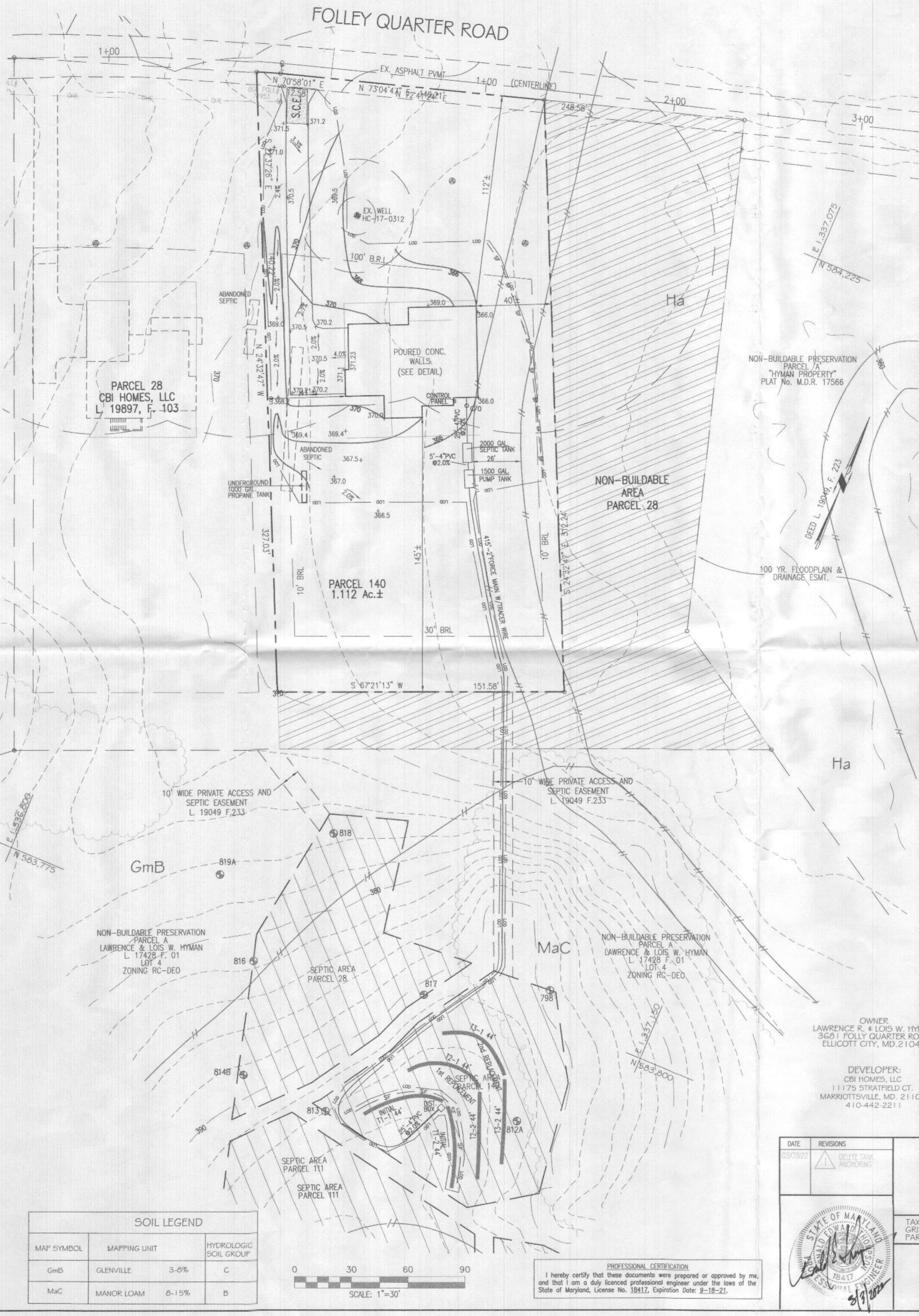
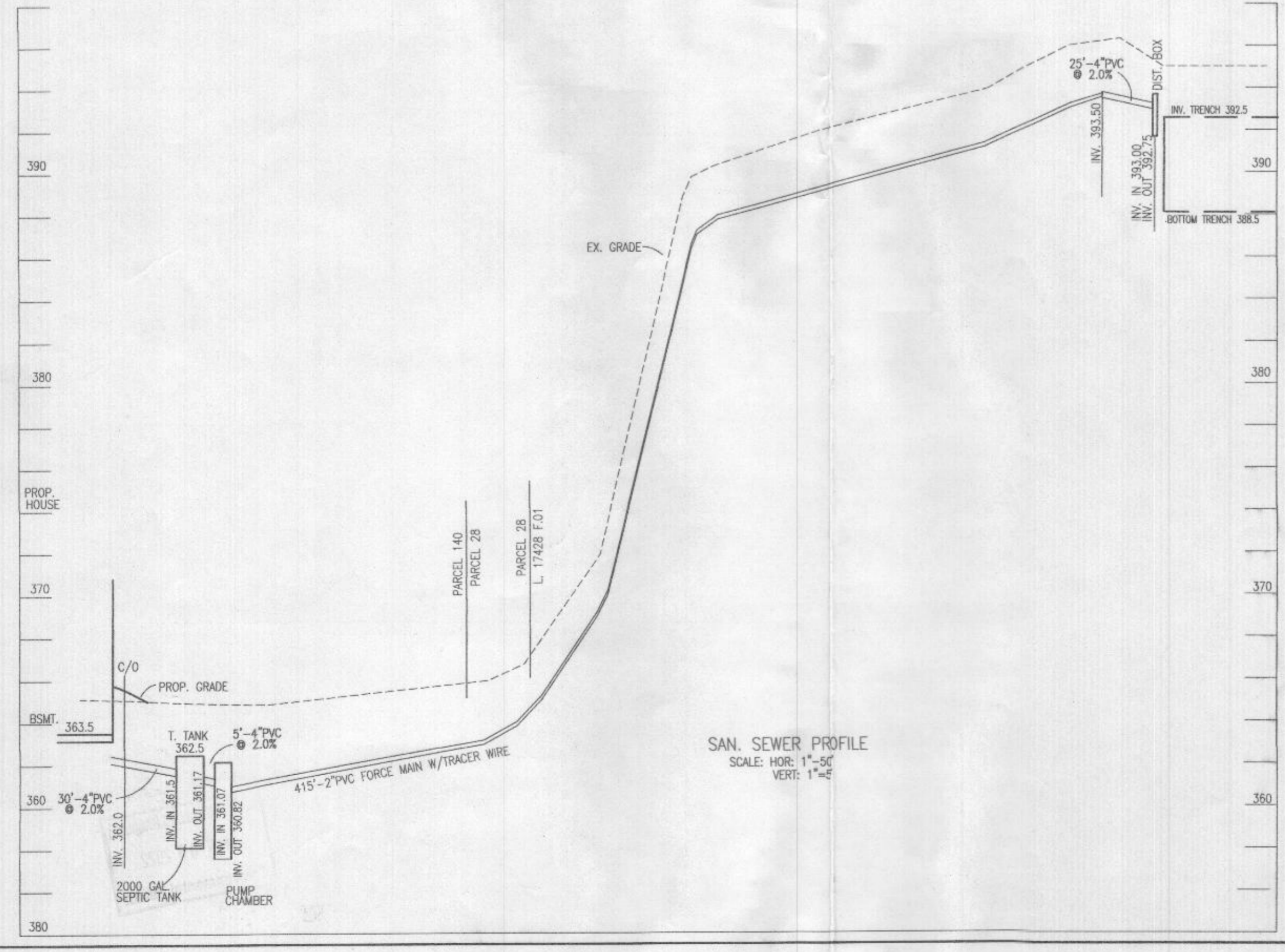


* 1500 GAL. PUMP CHAMBER BY BABYLON VAULT COMPANY (1500 T.S) OR APPROVED EQUAL



TOTAL DESIGN HEAD (TDH) COMPUTATION	
STATIC HEAD (393.50-360.82)	32.68
FRICITION HEAD	12.11
PIPE 2.84 x (415+11.3)/100	
FITTINGS = 7.0	
DISCONNECT = 3	
CHECK VALVE = 1.3	
TOTAL DESIGN HEAD (TDH)	44.79

PUMP CHART	
1500 GAL-1 CHAMBER TANK	GOULDS WE-10H
MAX. PUMP FLOW RATE = 41.7 GPM	
PIPE = 2" PLASTIC	
PIPE LENGTH = 415 FEET	
ELEV. DIFF. = 37.18 FEET	
TDH = 49.29 FEET	



- GENERAL NOTES:**
- TOPOGRAPHY & PLANNING FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD83.
 - THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
 - ZONING DISTRICT: RC-DEO
 - LIMIT OF DISTURBANCE (LOD) = 25,550 SQ.FT.
 - THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.

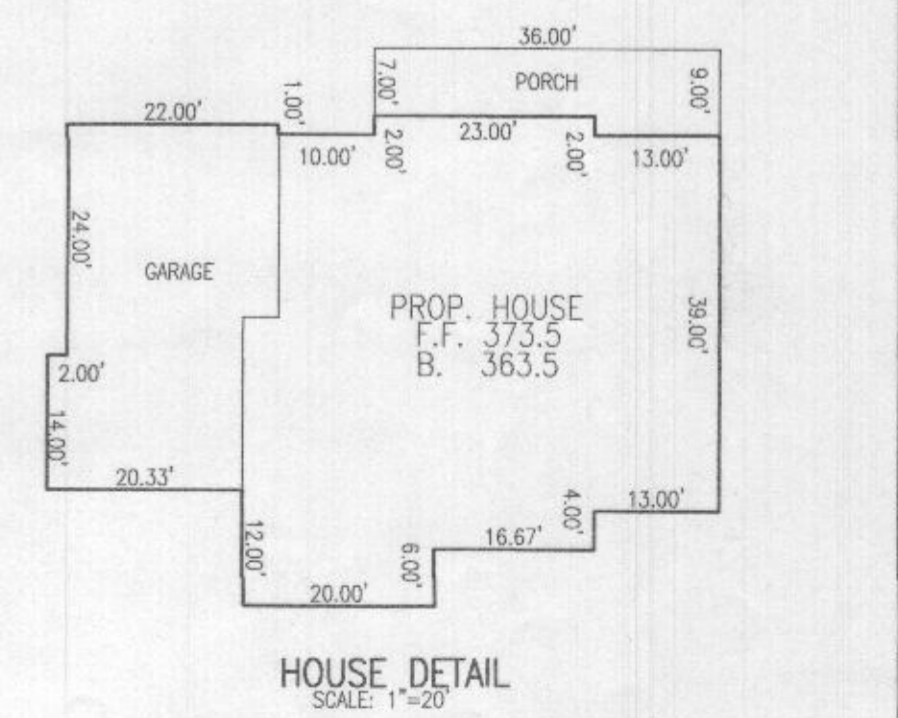
SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 5
 APPLICATION RATE = 1.2 GPD / sq.ft.
 DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
 750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
 625 sq.ft. / 3 ft. WIDE TRENCH = 208.3 LF TRENCH
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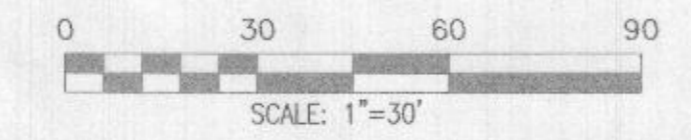
2nd REPLACEMENT
 APPLICATION RATE = 1.2 GPD / sq.ft.
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- SITE PLAN NOTES:**
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 - MAXIMUM COVER OVER THE TANK IS 3 FEET. GREATER DEPTH WILL REQUIRE A HEAVY LOAD BEARING TANK.
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 - BOTH SEPTIC TANK AND PUMP TANK MUST BE TESTED FOR WATERTIGHTNESS AT TIME OF INSTALLATION. EACH TANK MUST PASS THE WATERTIGHT TEST FOR THE INSTALLATION TO BE APPROVED.

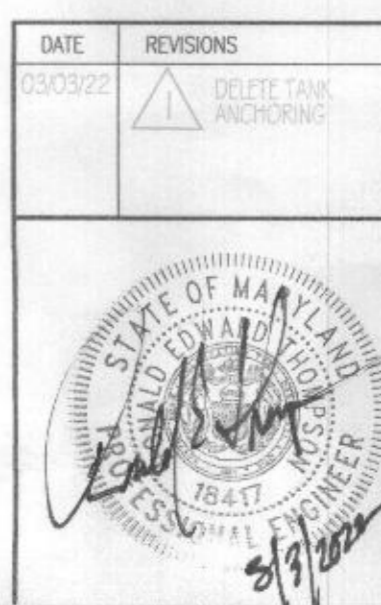


SOIL LEGEND

MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GmB	GLENVILLE	3-6% C
MaC	MANOR LOAM	8-15% B



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. 18417, Expiration Date: 9-18-21.



ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
HYMAN PROPERTY
 L. 19049 F.233
 FOLLY QUARTER ROAD
 PARCEL 140

OWNER: LAWRENCE R. & LOIS W. HYMAN
 3650 FOLLY QUARTER ROAD
 ELLICOTT CITY, MD. 21042

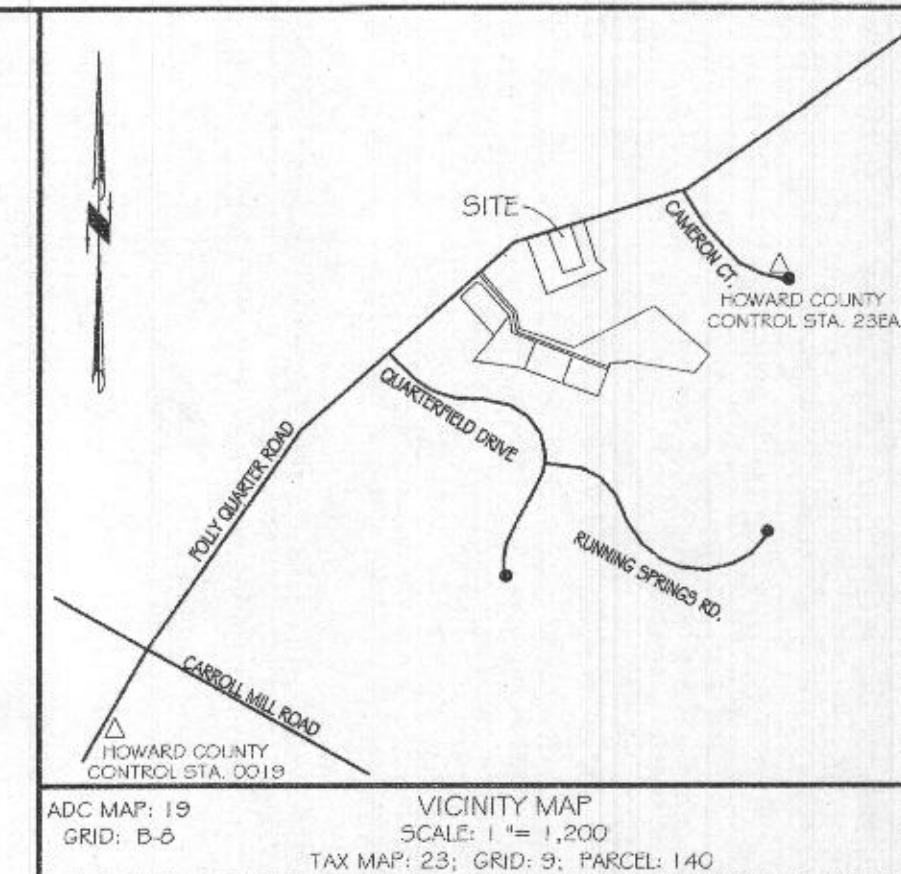
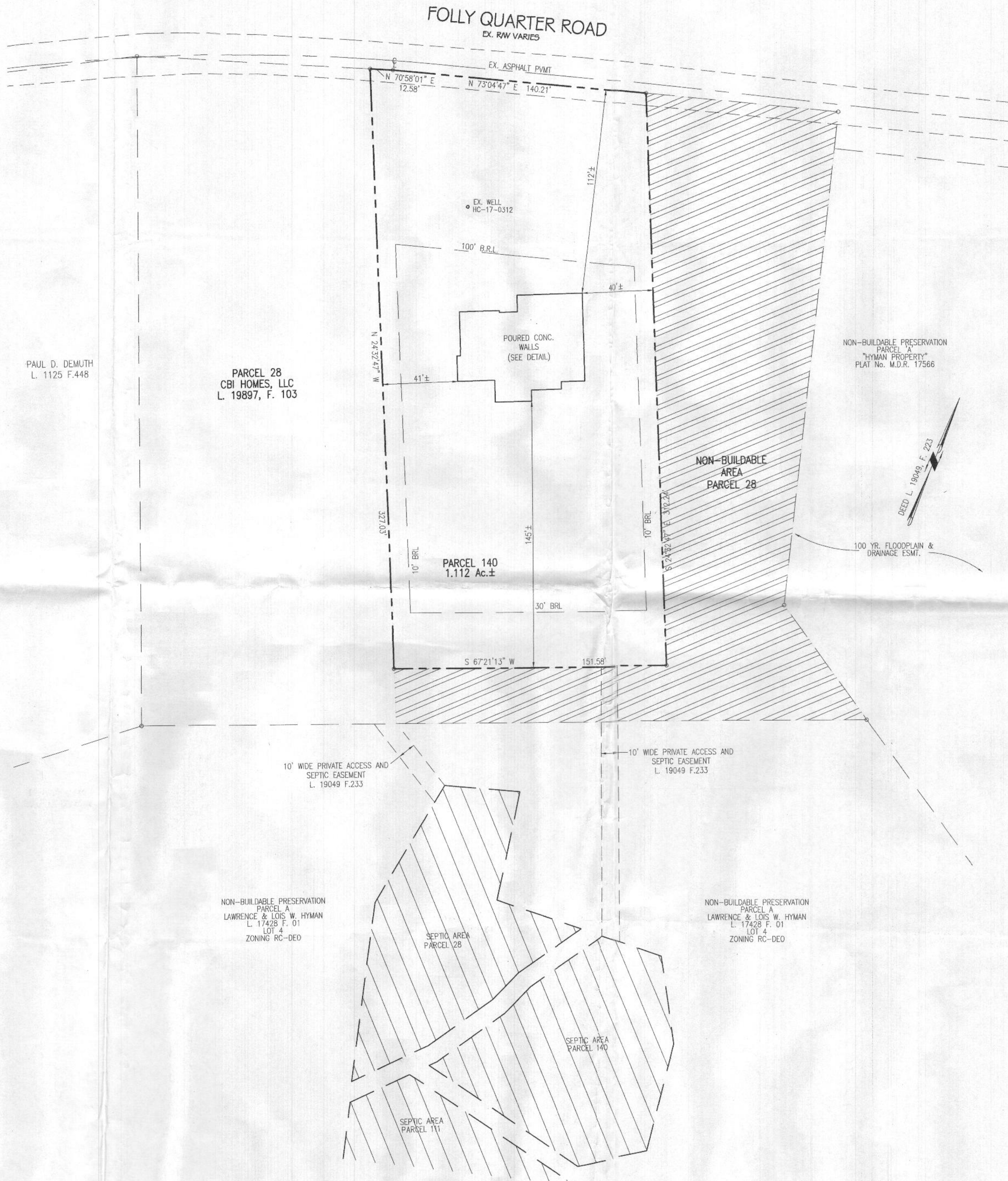
DEVELOPER: CBI HOMES, LLC
 11175 STRATFIELD CT.
 MARRIOTTSVILLE, MD. 21104
 410-442-2211

TAX MAP: 23
 GRID NO: 9
 PARCEL NO: 140

ELECTION DISTRICT: No. 3
 HOWARD COUNTY, MARYLAND
 EX. ZONING: RC-DEO

SCALE: 1" = 30'
 DATE: JUNE, 2021
 SHEET 1 OF 1

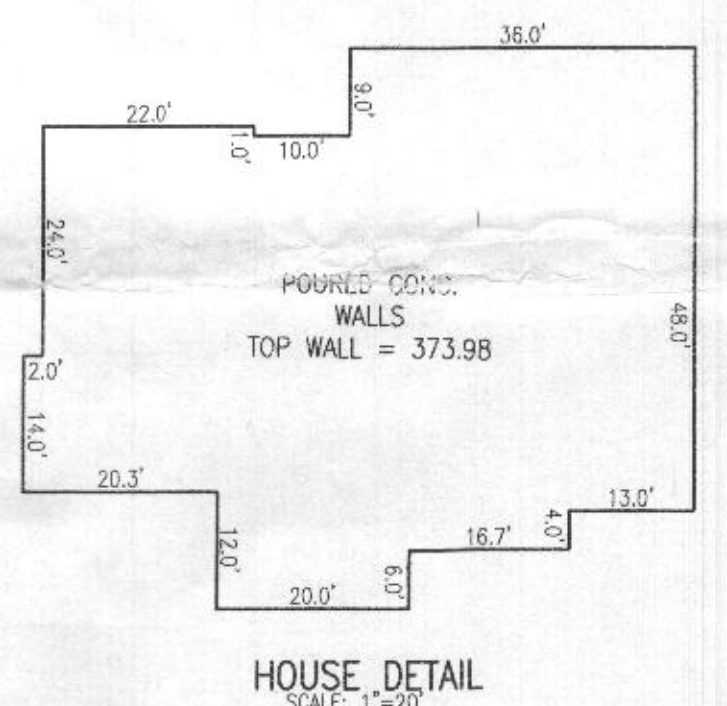
VANMAR ASSOCIATES, INC.
 Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771
 (301) 829-2890 (301) 831-5015 (410) 549-2751
 Fax (301) 831-5603 ©Copyright, Latest Date Shown



- NOTES:
1. FOOTINGS AND FOUNDATION ARE SHOWN HEREON.
 2. TOP OF WALL = 373.98
 3. BUILDING TIES ARE ±0.5' UNLESS OTHERWISE NOTED HEREON.

PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21512, EXPIRATION DATE AUGUST 4, 2023, IN ACCORDANCE WITH COMAR 09.13.06.15.
 I CERTIFY THIS PLAN TO BE CORRECT; IT IS THE RESULT OF AN ACTUAL FIELD SURVEY, BASED ON DATA FOUND AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND, AS REFERENCED HEREON.

Jeffery W. Elkins 11/11/2021
 For VanMar Associates, Inc.
 Jeffery W. Elkins, Prof. Land Surveyor



*Wall Check OK
 R/E 2/4/2022*

DATE	REVISIONS	WALL CHECK DRAWING CHALITA C. & CHRISTINE L. ATALLAH L. 20776, F.266 365 I FOLLY QUARTER ROAD PARCEL 140		
TAX MAP: 23 GRID NO: 9 PARCEL NO: 140	ELECTION DISTRICT: No. 3 HOWARD COUNTY, MARYLAND EX. ZONING: RC-DEO	SCALE: 1" = 30' DATE: NOVEMBER, 2021 SHEET 1 OF 1		
		VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 ©Copyright, Latest Date Shown		

2,000 Gallon Septic Tank

Assume Blockage of Flow - COMPUTE BUOYANT FORCE

Septic Tank Volume = 71.90 cf
Add Concrete Vol = 88.90 cf
Total Volume = 160.80 cf
Weight of Water x 64.4 lb/cf
Weight of Water = 10,355.25 ~~cf~~ lb

Septic Tank Weight 20,000.00 lbs
Anti-Flotation WT = 0.00 lbs
Total Weight = 20,000.00 lbs

Anti-Flotation Volume

	<u>Inches</u>	<u>Feet</u>
Depth =		0
Length =		0.00
Width =		0.00
Volume =		0.00 cf

Weight of Concrete = 150 lbs/cf

BUOYANCY COMPUTATION

Factor of Safety =

20000.00	10355.25
----------	----------

 1.93

Factor of Safety = 1.93 > 1.2 OK

2000 gal septic volume (per plan)

$$165" \times 65" \times 75" = 804,375 \text{ in}^3$$

$$1,728 \text{ in}^3 = 1 \text{ ft}^3 \quad \textcircled{465.49 \text{ ft}^3}$$

Weight of water displaced

$$62.43 \frac{\text{lbs}}{\text{ft}^3} \times 465.49 \text{ ft}^3 =$$

$$\textcircled{29,060.54 \text{ lbs}}$$

$$2000 \text{ gallons} = 321.1 \text{ ft}^3$$

$$1 \text{ ft}^3 = 6.22884 \text{ gal}$$

Riser Anti-Flotation Computations

	A	B	C	D	E	F	G	H	I
1			<u>Anit-Flotation Computations</u>						
2									
3									
4			Factor of Safety =	1.2		ID	OD		
5			Weight of Water =	62.4	lbs/cf				
6			Weight of Concrete =	150.00	lbs/cf				
7									
8									
9									
10			SEPTIC TANK DATA						Tank
11				Weight				Volume	
12			2000 GAL Top Seam	10.0	Ton	20,000.00	lbs	71.9	cf
13			2000 GAL Pump Tank Traffic Bearing Lid	10.5	Ton	21,000.00	lbs	71.9	cf
14			1500 GAL Top Seam	8.0	Ton	16,000.00	lbs	52.8	cf
15			1500 GAL Pump Tank Traffic Bearing Lid	8.5	Ton	17,000.00	lbs	52.8	cf
16									
17			2000 gal SEPTIC TANK - Concrete Volume						
18			4" walls and Lids	Inches	inches				
19			Concrete Volume	Length	Width				
20			Lid	165	75	28.65	cf		
21		?	Walls (Length x 2) <i>59" x 2</i>	118	63	34.42	cf		?
22		?	Walls (Width x 2) <i>31" x 2</i>	62	63	18.08	cf		?
23			Baffle wall	62	54	7.75	cf		
24			Total			88.90	cf		
25									
26			1500 gal PUMP TANK - Concrete Volume						
27			4" walls and Lids	Inches	inches				
28			Concrete Volume	Length	Width				
29			Lid <i>inside</i>	118	75	20.49	cf		
30			Walls (Length x 2) <i>59" x 2</i>	118	63	34.42	cf		
31			Walls (Width x 2) <i>31" x 2</i>	62	63	18.08	cf		
32			Baffle wall	0	0	0.00	cf		
33			Total			72.99	cf		

Wolf, Kevin

From: Ron Thompson <ron@vanmar.com>
Sent: Wednesday, March 2, 2022 12:37 PM
To: Wolf, Kevin
Cc: Wt Coon; Shorty (wtccoon@aol.com)
Subject: Foxleigh/Hyman Property Parcel 140
Attachments: doc_20220302121916.pdf

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hello Kevin:

When the design was originally completed, the anti-flotation device was requested by the Health Department. We did not complete any anti-flotation computations at that time. I have now completed the Ant-Flotation Computations for the 2000 gallon septic tank and the 1500 gallon pump tank being used on Parcel 140. Based on the weight of the septic and pump tank (as provided by manufacturer), both structures do not require any anti-flotation measures such as strapping or additional concrete weight. These computations are attached.

Thank you. Please feel free to call and discuss.

Ronald E. Thompson, PE*
VANMAR ASSOCIATES
310 South Main Street PO Box 328
Mount Airy, Maryland 21771
O 301-829-2890 / C 443-421-2164 / F 301-831-5603

*(*licensed in MD, VA, DE, DC, SC, GA, FL, NC, MA)*

1,500 Gallon Pump Tank

Assume Blockage of Flow - COMPUTE BUOYANT FORCE

Pump Tank Volume = 52.80 cf
Add Concrete Vol = 72.99 cf
Total Volume = 125.79 cf
Weight of Water x 64.4 lb/cf
Weight of Water = 8,100.63 cf³

PUMP TANK WEIGHT 16,000.00 lbs
Anti-Flotation WT = 0.00 lbs
Total Weight = 16,000.00 lbs

Anti-Flotation Volume

	Inches	Feet
Depth =		0
Length =		0.00
Width =		0.00
Volume =		0.00 cf

Weight of Concrete = 150 lbs/cf

BUOYANCY COMPUTATION

Factor of Safety = $\frac{16000.00}{8100.63}$ 1.98

Factor of Safety = 1.98 > 1.2 OK

Well	Tester	Date	Source	Site	Treatment	pH	Total Coliform	Escherichia coli	Nitrates	Turbidity	Sand	Iron	Gross Alpha	Gross Beta	Radium 226	Radium 228
HO-17-0309	Fountain Valley Labs	3/9/2020	Well Water	Bathroom Sink	None	7.4	<1.0 MPN/100 ml	<1.0 MPN/100 ml	<1.0 mg/L	<0.30 NTU	NS					
HO-17-0310	Fountain Valley Labs	2/26/2020	Well Water	Well Tank	None	6.4										
HO-17-0310	Radiation Lab Ashland	1/30/2019	Well Water	Yield	None	7.5							11.0 + 2.5 pCi/L	4.4 + 1.9 pCi/L	1.5 pCi/L	2.8 pCi/L
HO-17-0310	Fountain Valley Labs	2/10/2021	Well Water	Laundry Tub	None	6.9	<1.0 MPN/100 ml	<1.0 MPN/100 ml	<1.0 mg/L	0.35 NTU	NS					
HO-17-0310	Fountain Valley Labs	12/23/2020	Well Water	Water System Di	None	6.2									0.6 pCi/L	1.4 pCi/L
HO-17-0308	Radiation Lab Ashland	1/28/2019	Well Water	Yield	None	7.5							18.9 + 2.9 pCi/L	10.5 + 2.1 pCi/L	0.8 pCi/L	<0.8 pCi/L
HO-17-0308	Fountain Valley Labs	9/24/2020	Well Water	Front Hose Bib	None	6.6										
HO-17-0308	Fountain Valley Labs	10/26/2020	Well Water	Powder Room	None	7.2	<1.0 MPN/100 ml	<1.0 MPN/100 ml	<1.0 mg/L	0.58 NTU	NS					
HO-17-0311	Fountain Valley Labs	11/9/2020	Well Water	Well Tank	None	6.4	<1.0 MPN/100 ml	<1.0 MPN/100 ml	<1.0 mg/L	<0.30 NTU	NS	<0.02 mg/L				
HO-17-0311	Fountain Valley Labs															
HO-17-0313	Fountain Valley Labs	3/4/2021	Well Water	Laundry Tub	None	6.8	<1.0 MPN/100 ml	<1.0 MPN/100 ml	1.15 mg/L	0.47 NTU	NS					



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

LEAK TESTING CERTIFICATION

Leak testing performed in accordance with ASTM C 1227.9.2.1 – watertight integrity testing utilizing vacuum.

Date: March 04, 2022

Address: 3651 Folly Quarter Rd., Ellicott City, MD 21042

Tank #1: closest to house

Size: 2000-gallon 2 compartment septic tank

Test start time: 10:52 am

Test finish time: 10:57 am

Gauge # 1: 4.6 hg

Gauge # 2: 5.4 hg

Tank #2: furthest from house

Size: 1500-gallon pump chamber

Test start time: 10:24 am

Test finish time: 10:29 am

Gauge # 1: 5.0 hg


Gauge # 2: 5.3 hg

Tank manufacture: Babylon Vault, New Windsor, MD

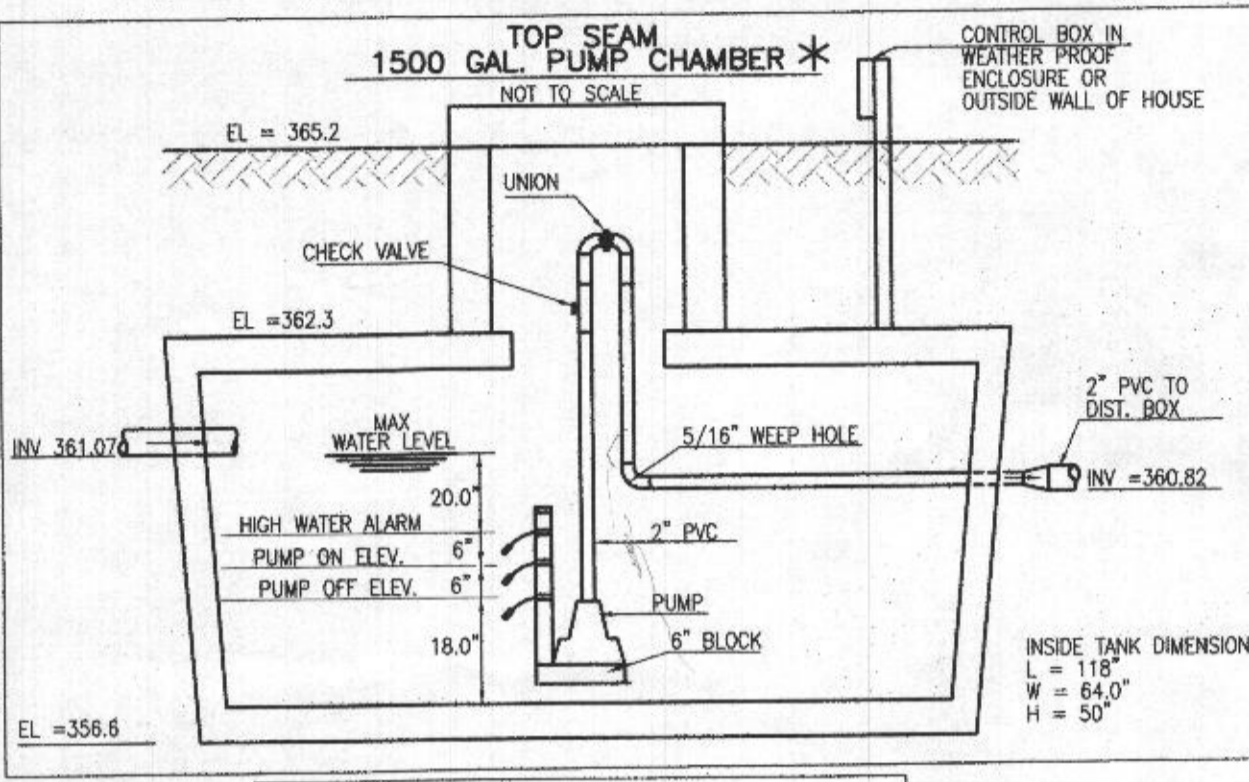
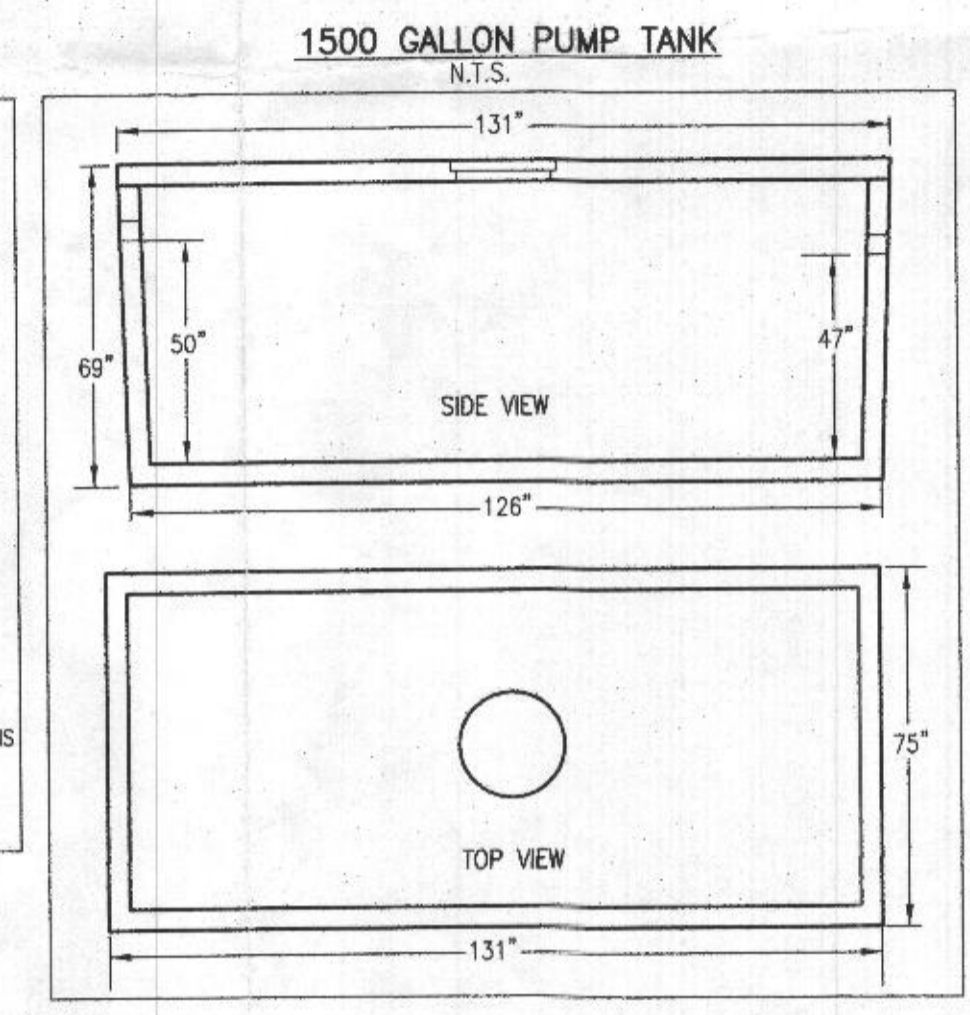
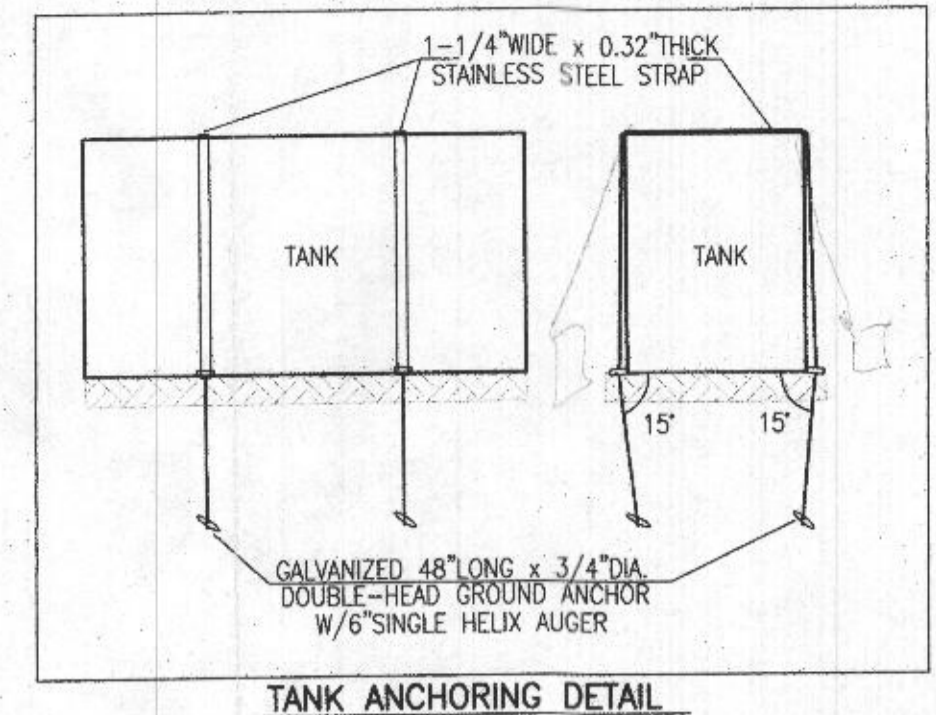
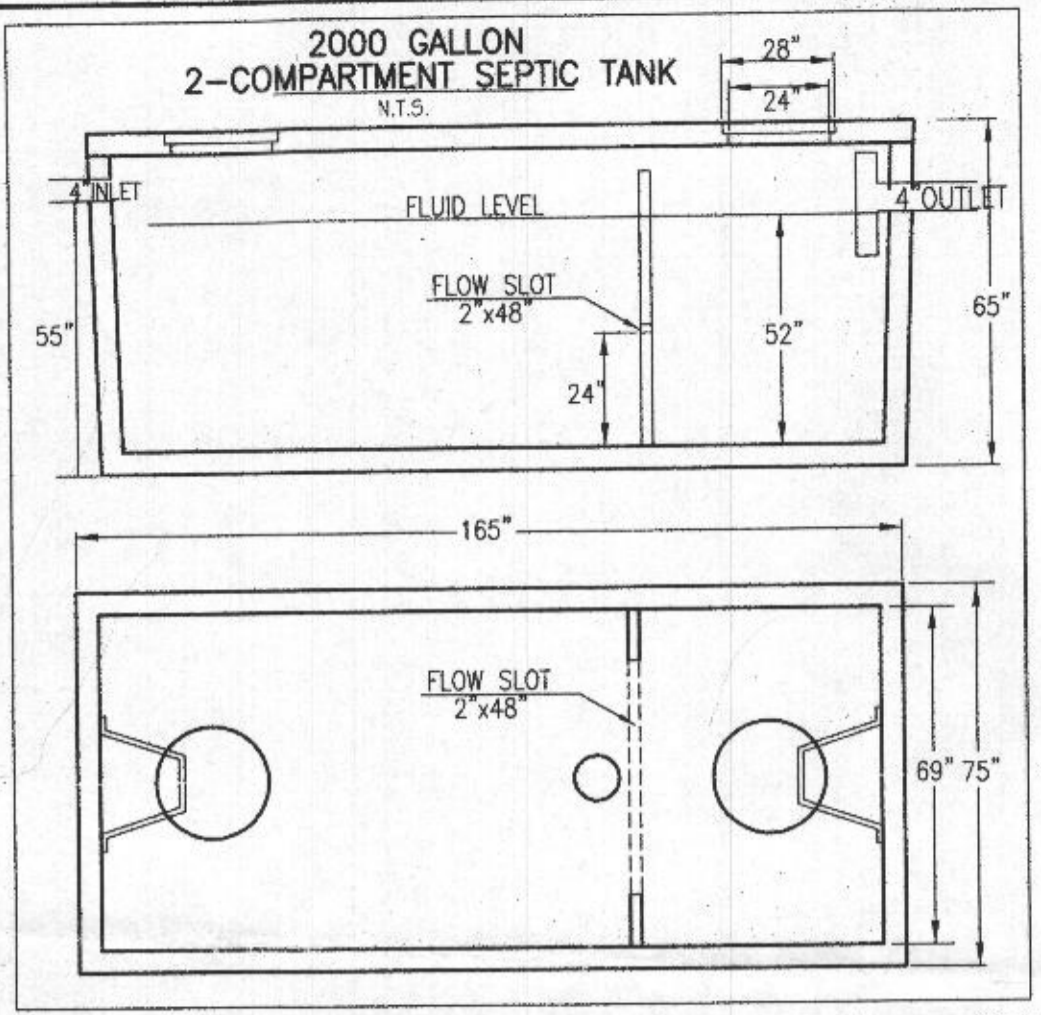
Installer: WTC Contractors

County representative present onsite: Susan Thomas

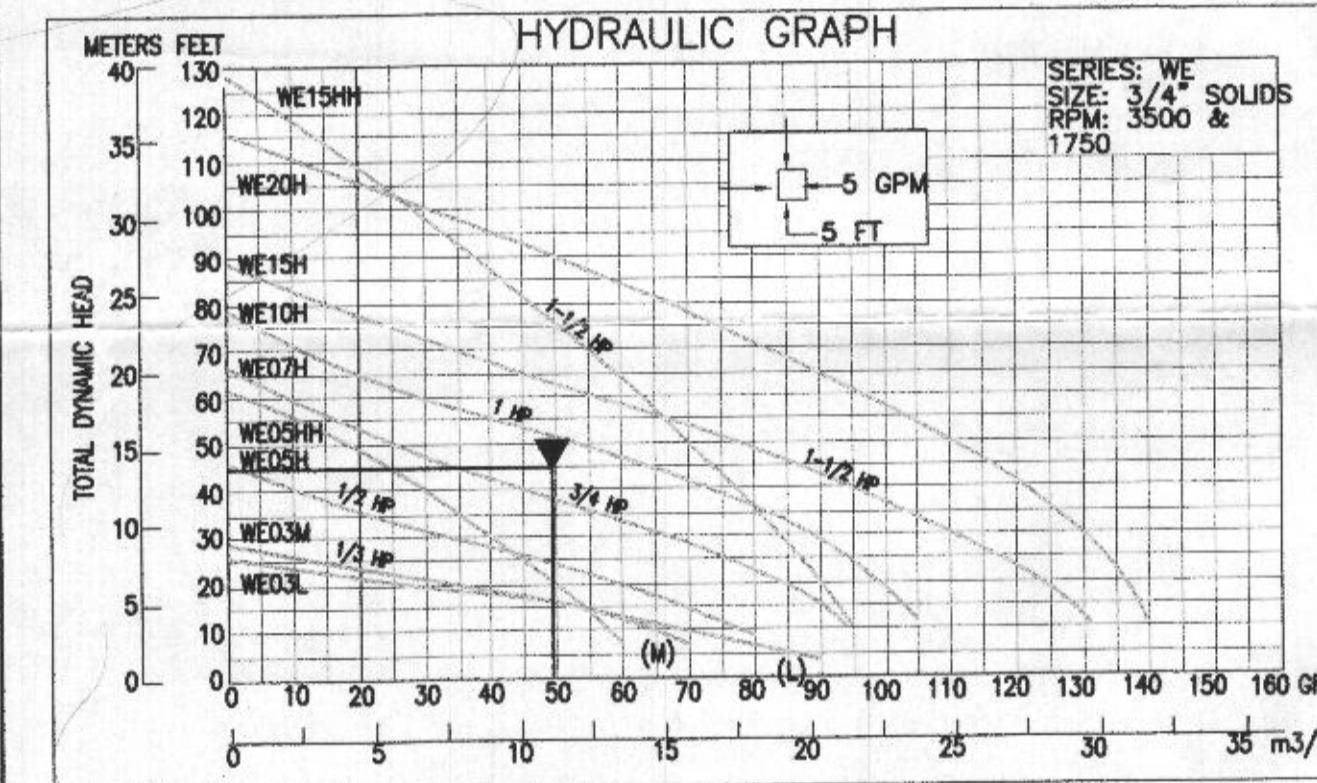
I certify that above holding tanks passed vacuum testing in accordance with ASTM C 1227


Matthew Geckle

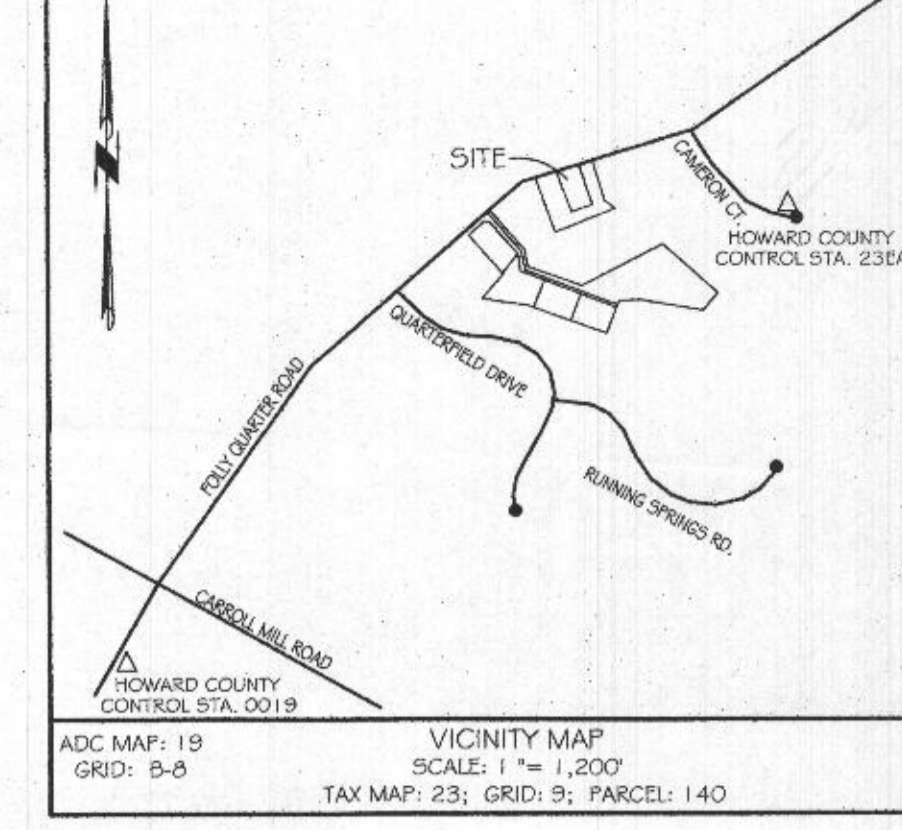
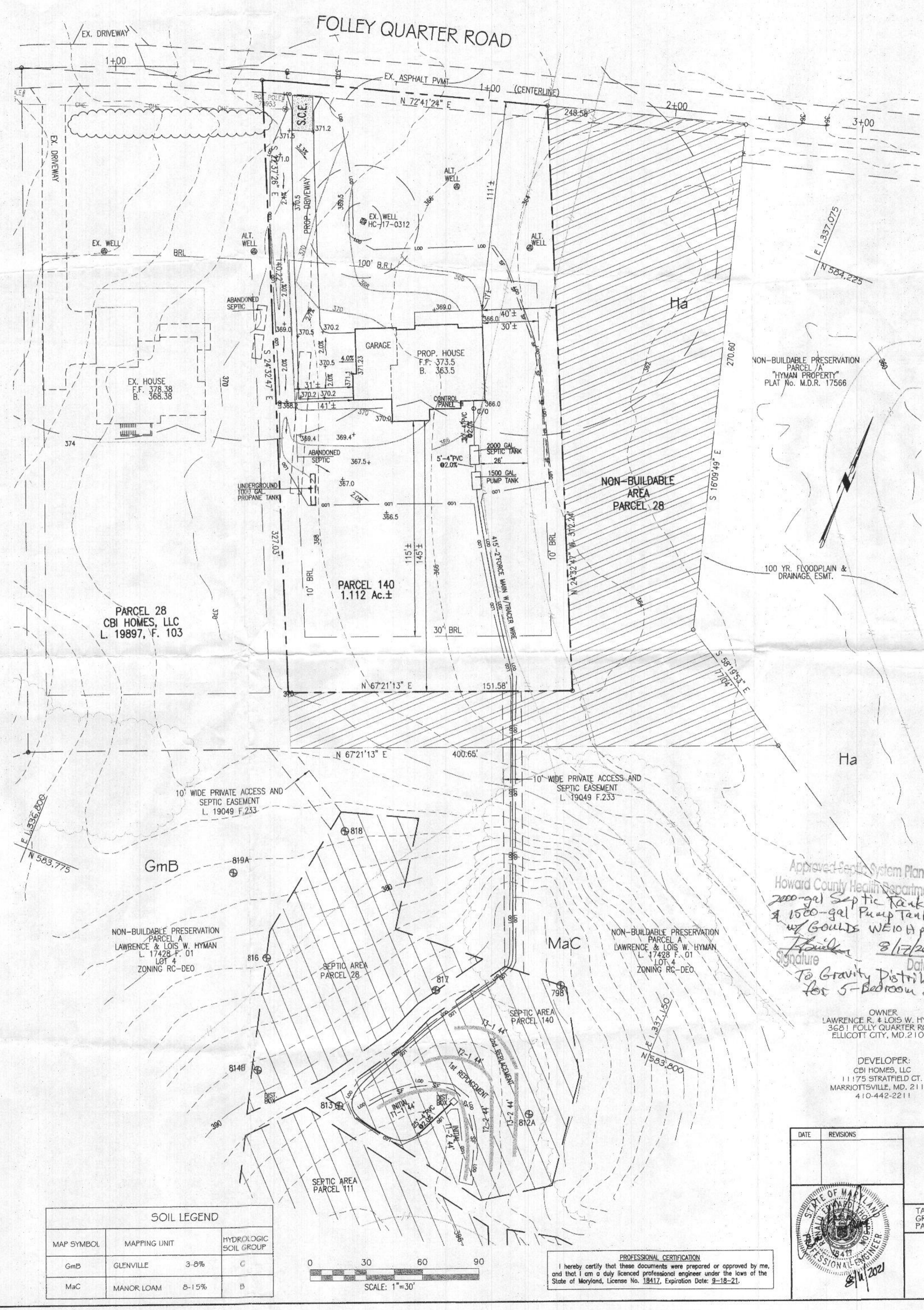
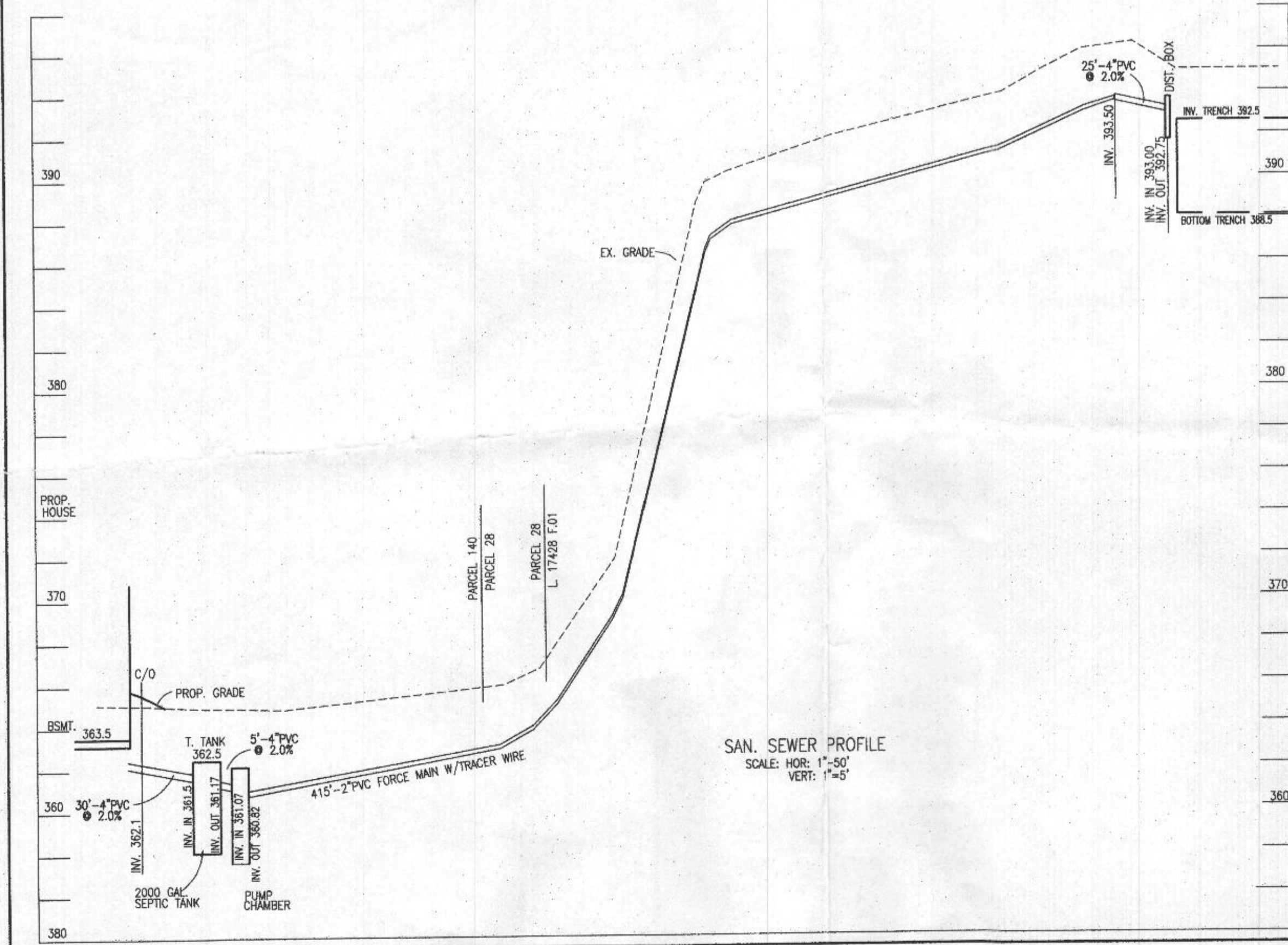
Vice-President



* 1500 GAL. PUMP CHAMBER BY BABYLON VAULT COMPANY (1500 T.S) OR APPROVED EQUAL



1500 GAL-1 CHAMBER TANK
GOULDS WE-10H
MAX. PUMP FLOW RATE = 41.7 GPM
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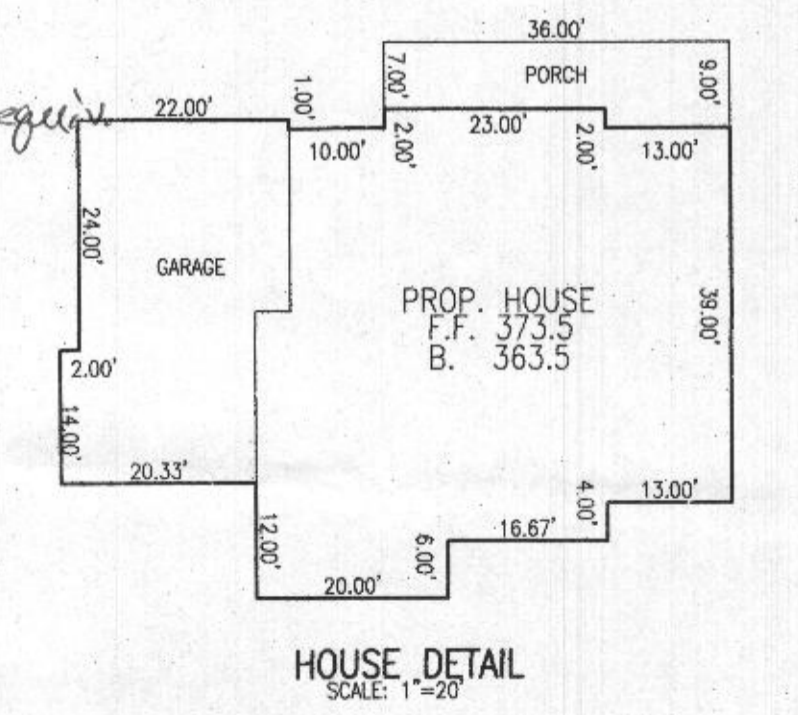
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Approved Septic System Plan
 Howard County Health Department
 2000-gal Septic Tank
 & 1500-gal Pump Tank
 w/ GOULDS WE10H pump & 5-1/2\"/>

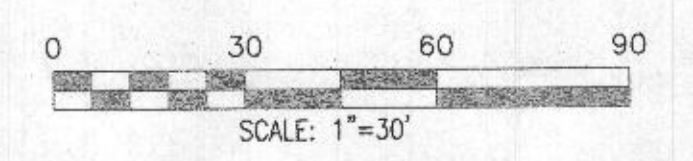
Signature: [Signature]
 Date: 8/17/2021
 To Gravity Distribution for 5-Bedroom SFD

OWNER:
 LAWRENCE R. & LOIS W. HYMAN
 3651 FOLLEY QUARTER ROAD
 ELLICOTT CITY, MD 21042

DEVELOPER:
 CBI HOMES, LLC
 11175 STRATFIELD CT.
 MARRIOTTSVILLE, MD 21104
 410-442-2211

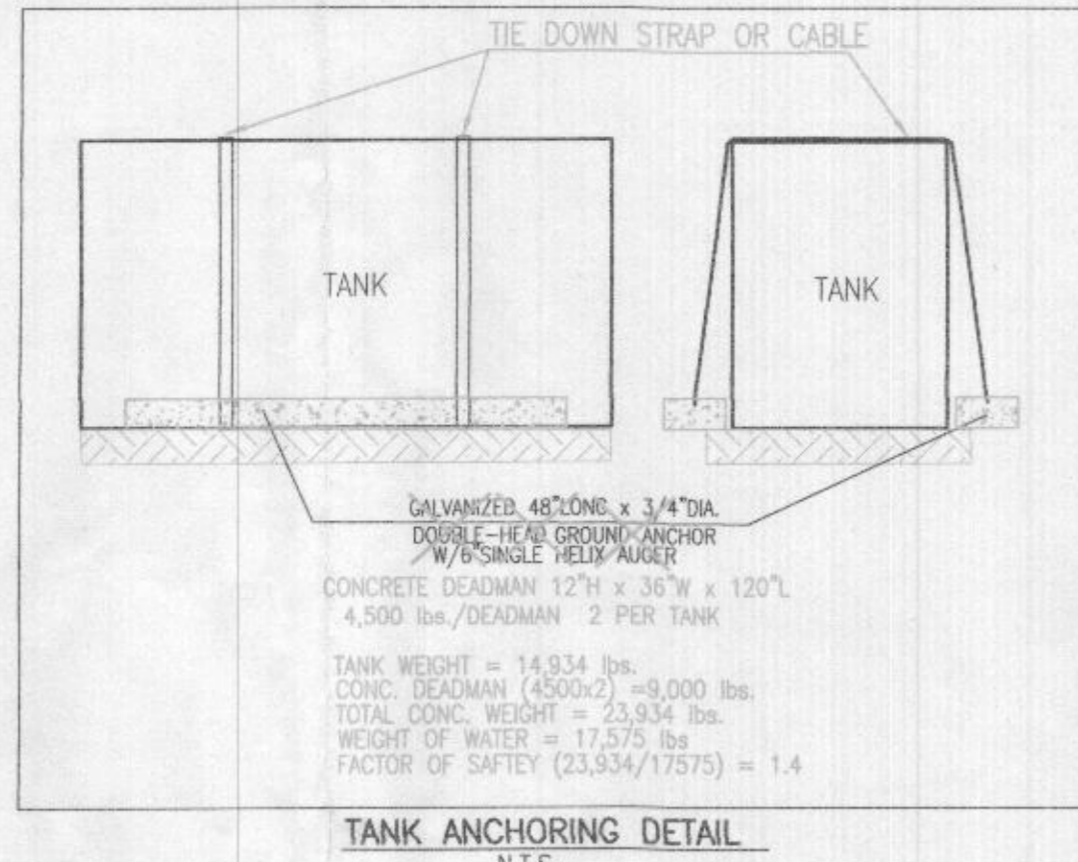
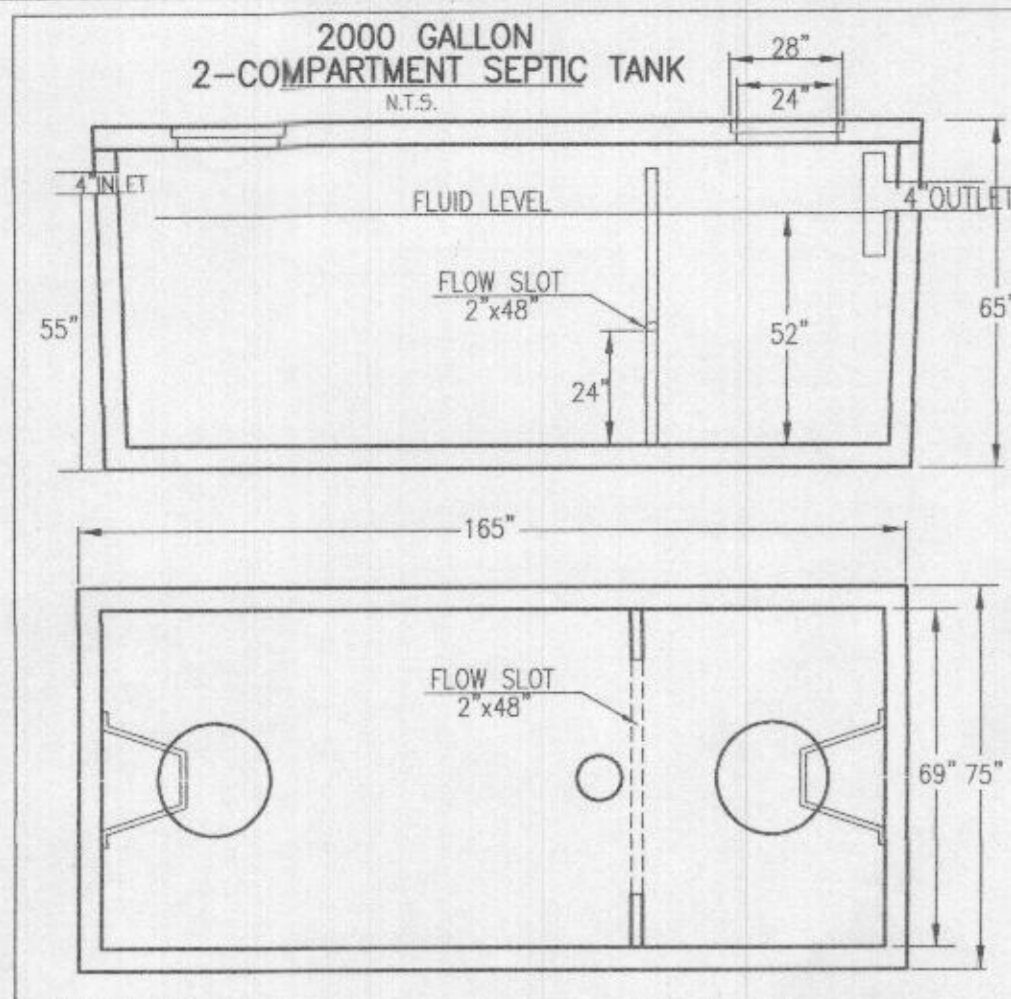


MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GmB	GLENVILLE	3-6% C
MaC	MANOR LOAM	8-15% B

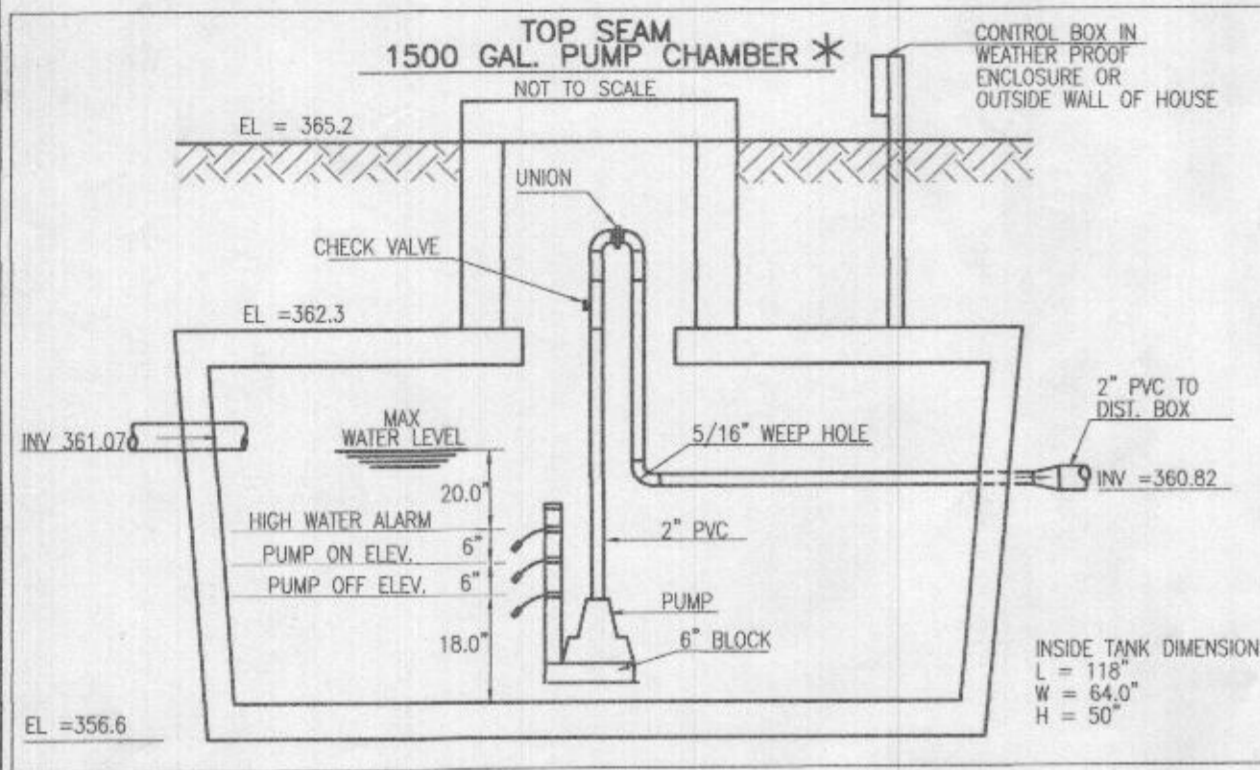
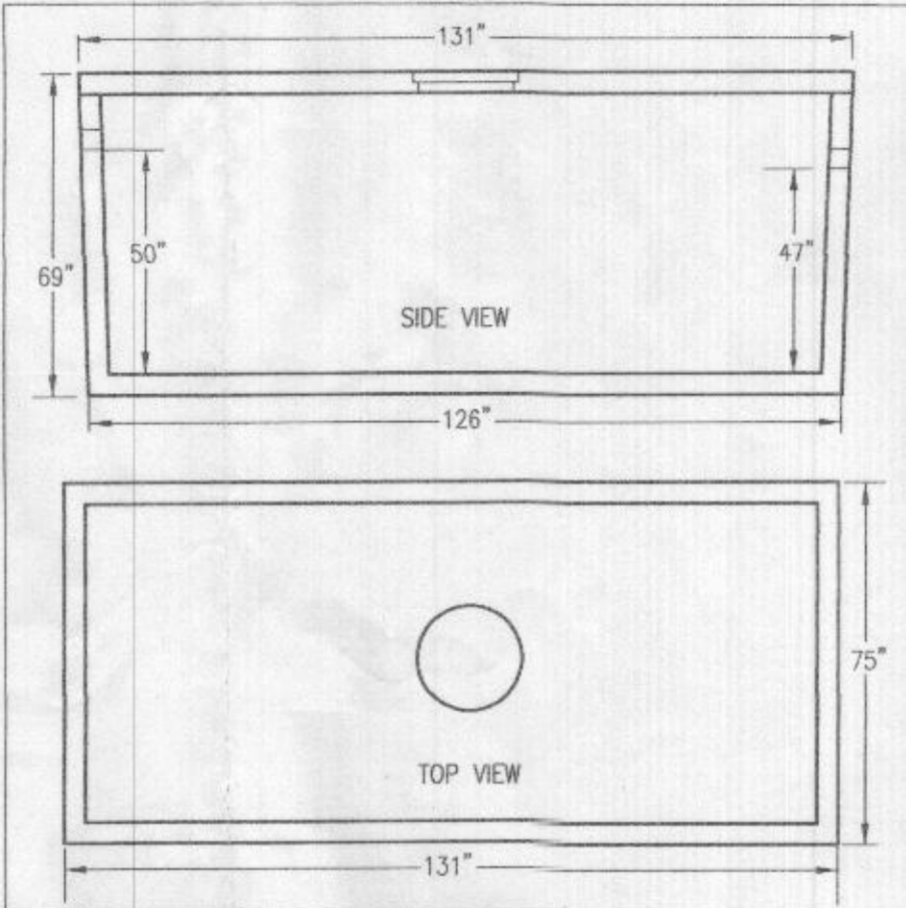


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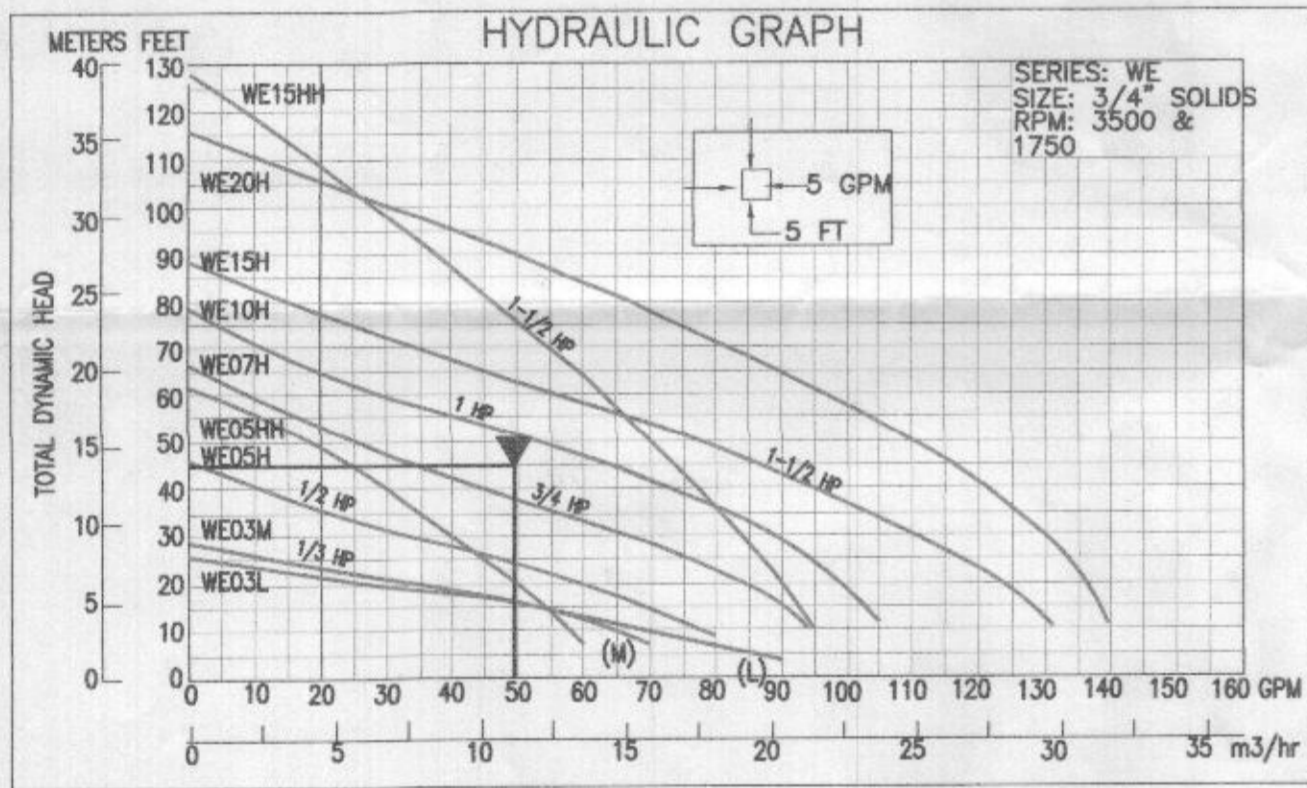
DATE	REVISIONS	ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
		HYMAN PROPERTY	
		L. 19049 F. 233	
		FOLLEY QUARTER ROAD	
		PARCEL 140	
TAX MAP: 23	ELECTION DISTRICT: No. 3	SCALE: 1" = 30'	
GRID NO: 9	HOWARD COUNTY, MARYLAND	DATE: JUNE, 2021	
PARCEL NO: 140	EX. ZONING: RC-DEO	SHEET 1 OF 1	
VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 ©Copyright, Latest Date Shown			



1500 GALLON PUMP TANK N.T.S.



* 1500 GAL. PUMP CHAMBER BY BABYLON VAULT COMPANY (1500 T.S.) OR APPROVED EQUAL

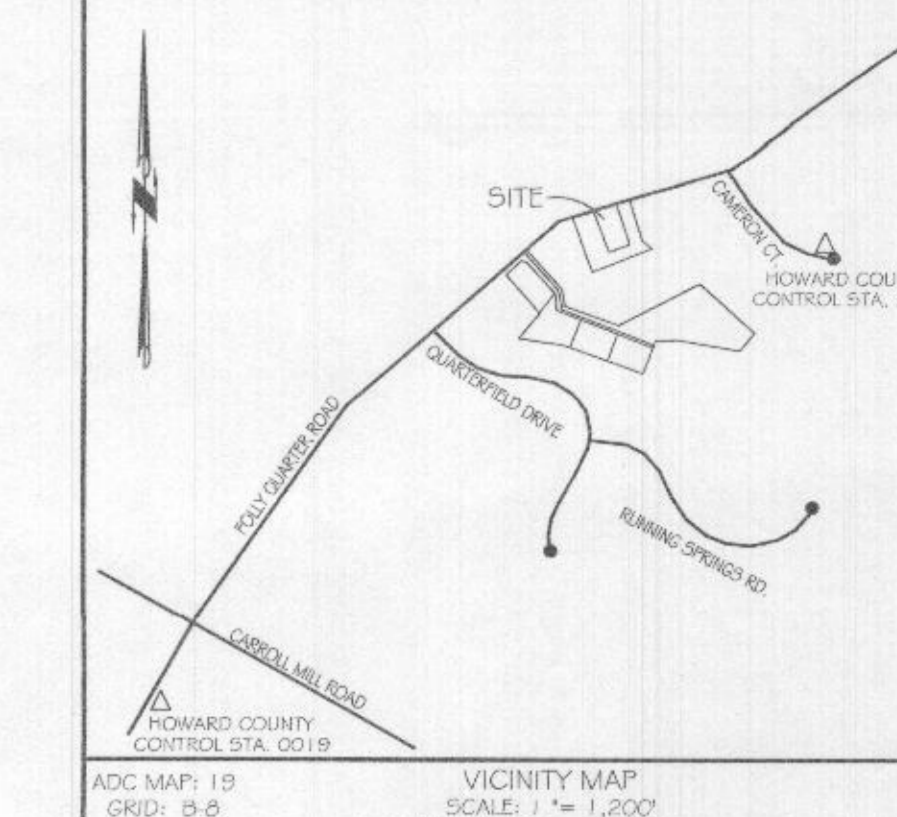
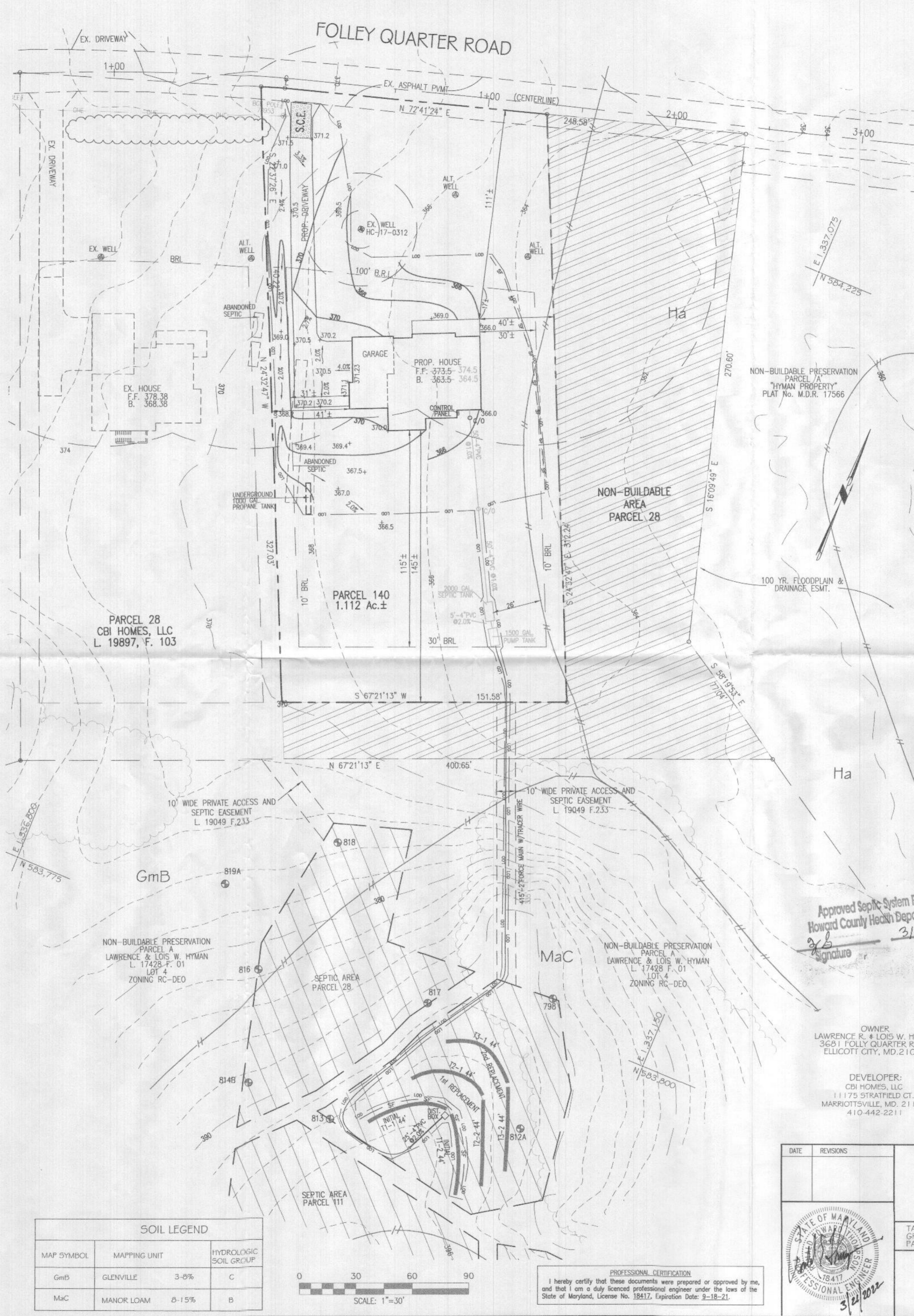


TOTAL DESIGN HEAD (TDH) COMPUTATION

STATIC HEAD (393.50 - 360.82)	32.68
FRICITION HEAD PIPE 2.84 x (415' + 11.3') / 100	12.11
FITTINGS = 7.0	
DISCONNECT = 3	
CHECK VALVE = 1.3	
TOTAL DESIGN HEAD (TDH)	44.79

PUMP CHART

1500 GAL-1 CHAMBER TANK	
GOULDS WE-TD	
MAX. PUMP FLOW RATE = 41.7 GPM	
PIPE = 2" PLASTIC	
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SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 5
 APPLICATION RATE = 1.2 GPD / sq.ft.
 DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
 750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
 625 sq.ft. / 3 ft. WIDE TRENCH = 208.3 LF TRENCH
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1st REPLACEMENT

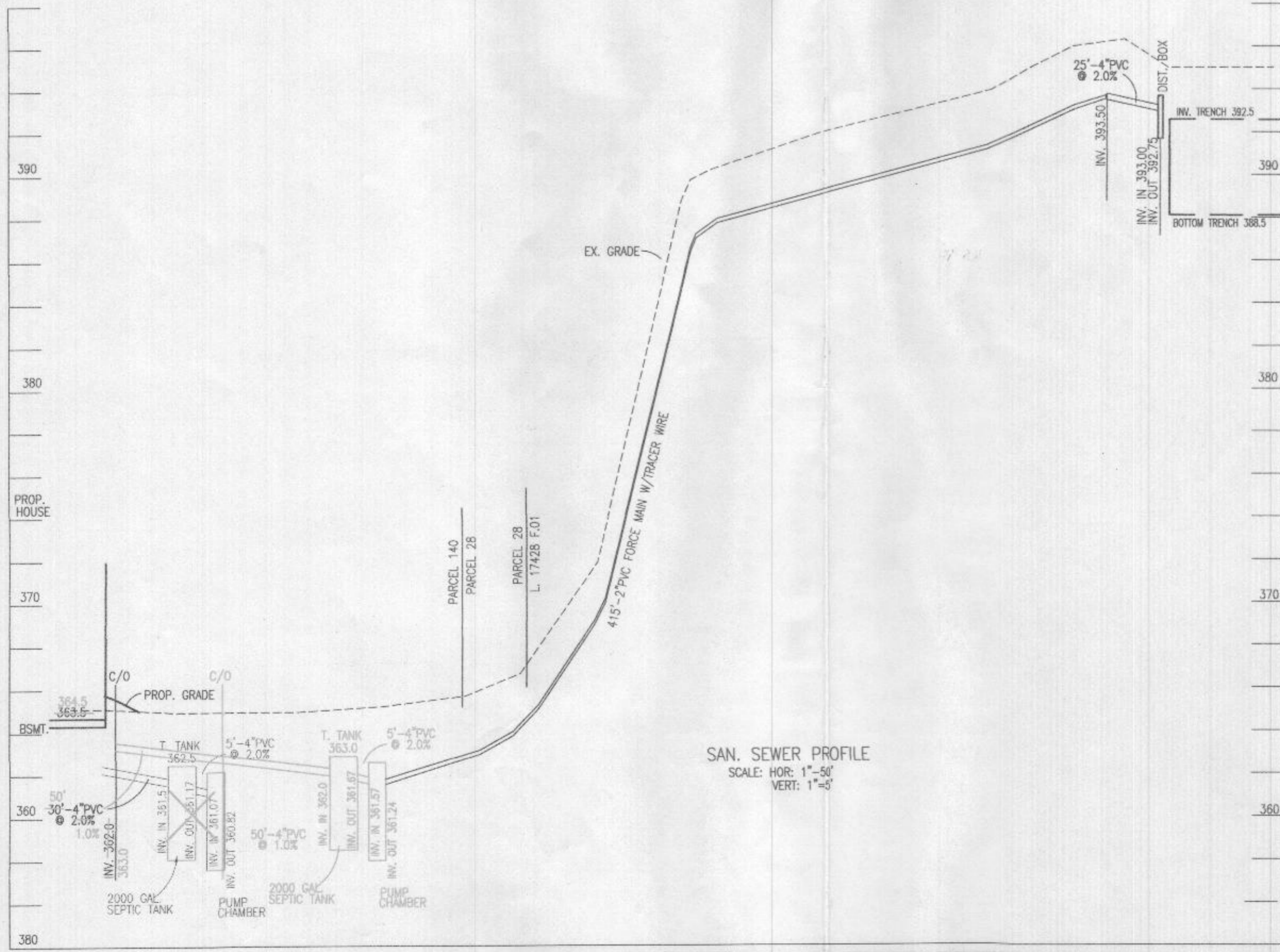
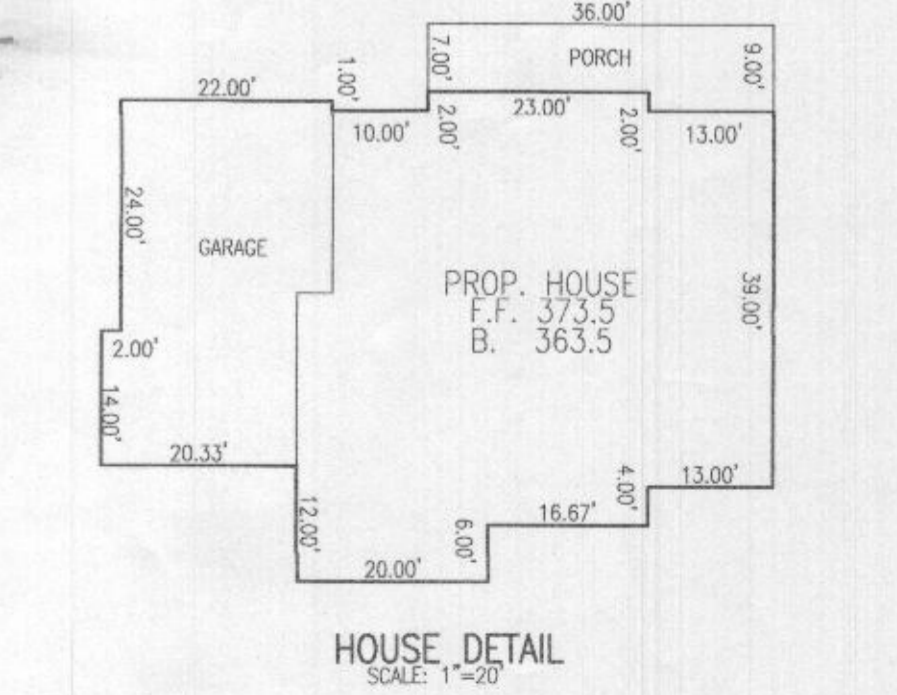
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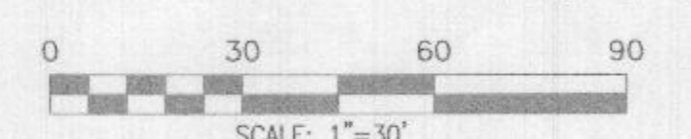
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Approved Septic System Plan
 Howard County Health Department
 Signature: [Signature] Date: 3/23/22



SOIL LEGEND

MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GmB	GLENVILLE 3-8%	C
MaC	MAJOR LOAM 8-15%	B



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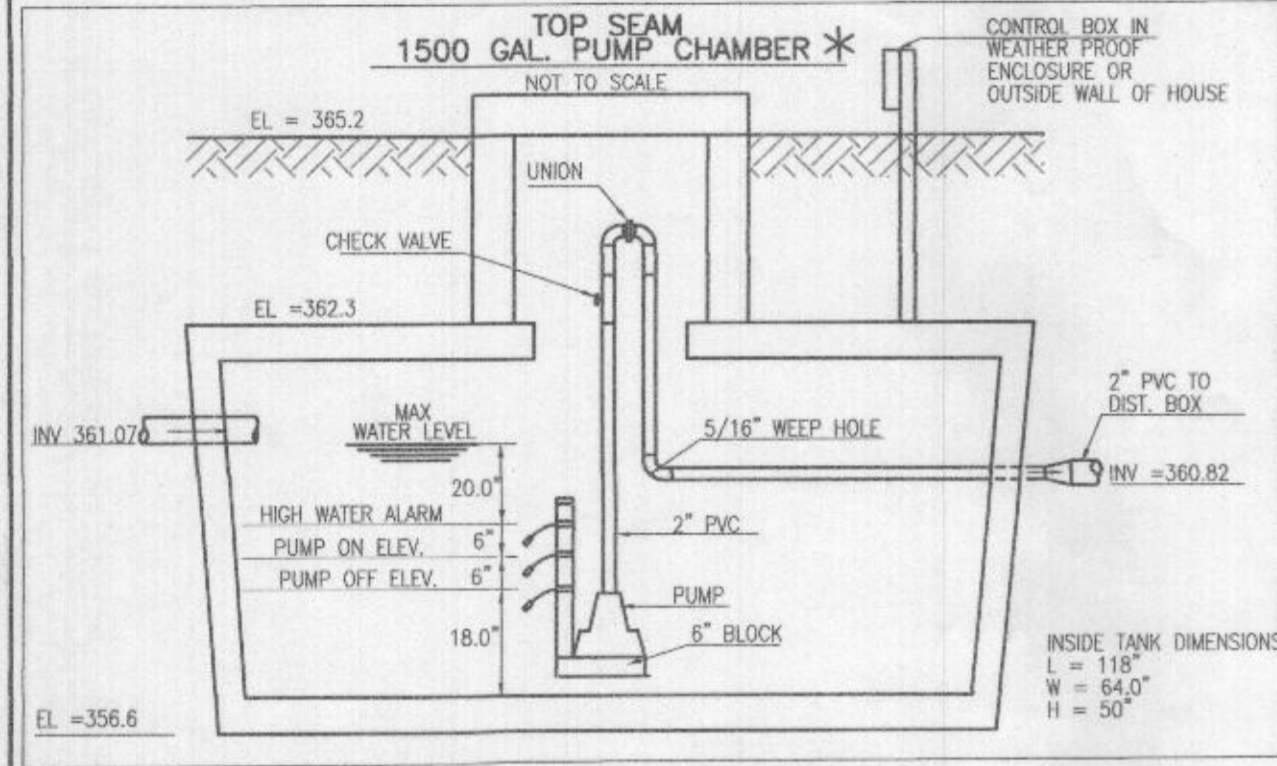
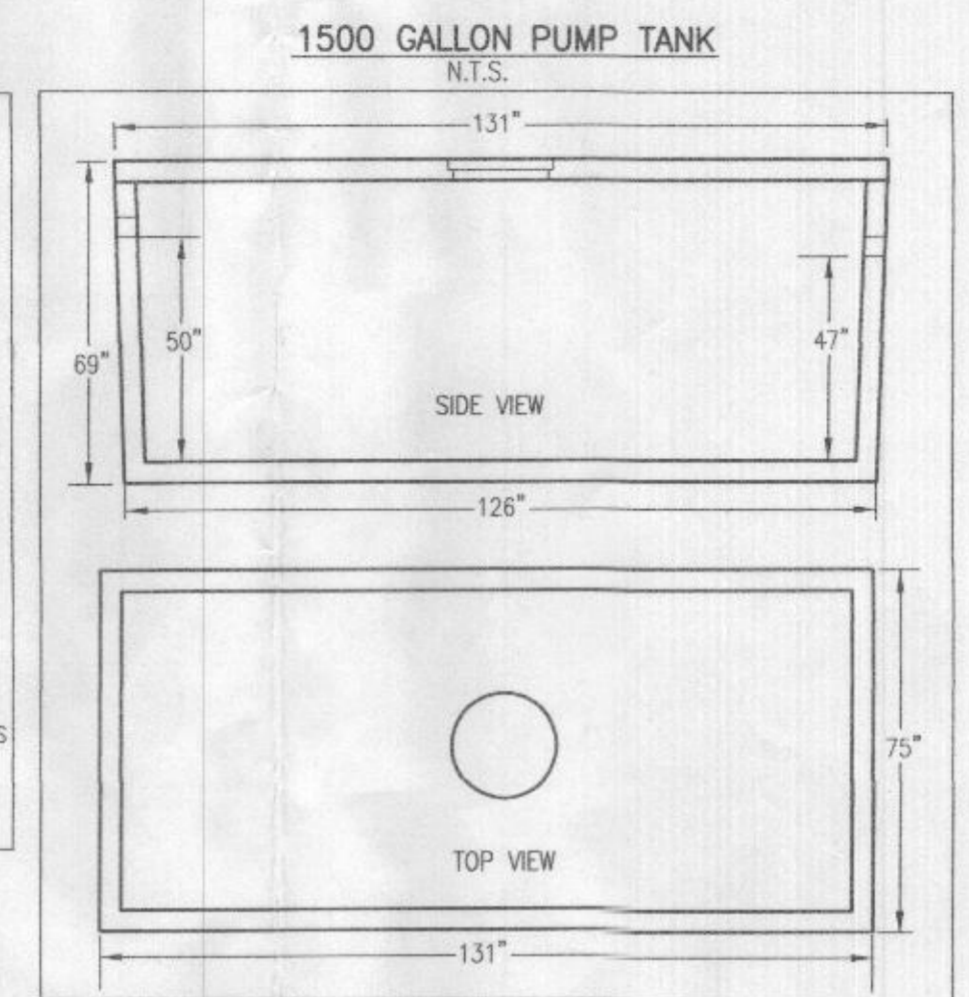
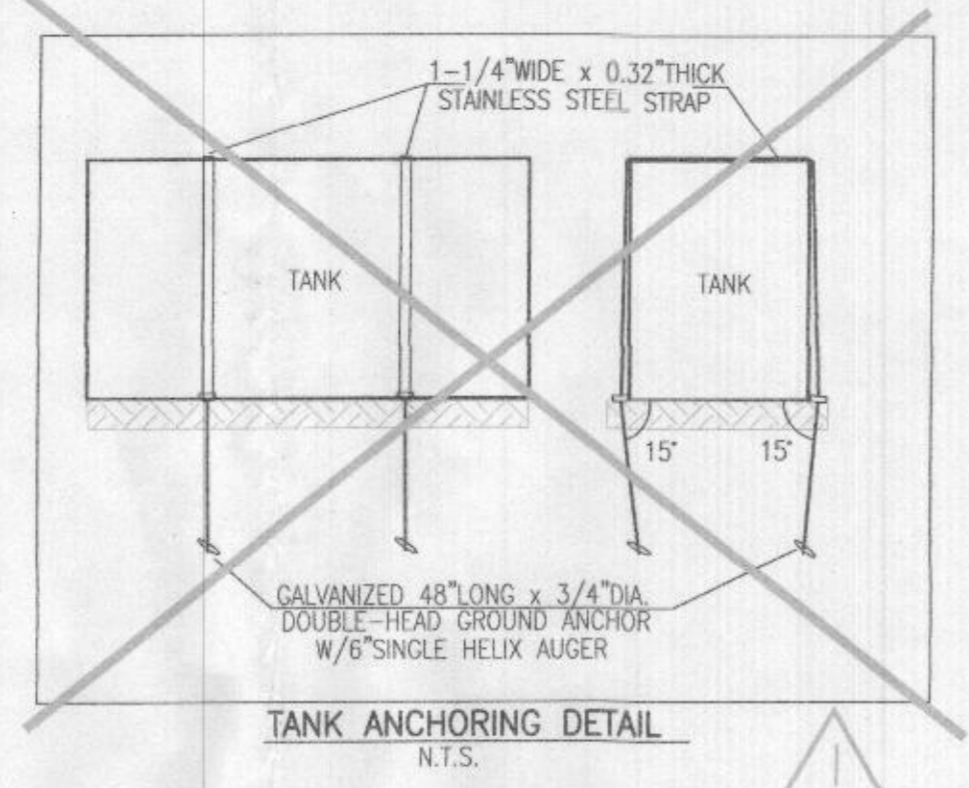
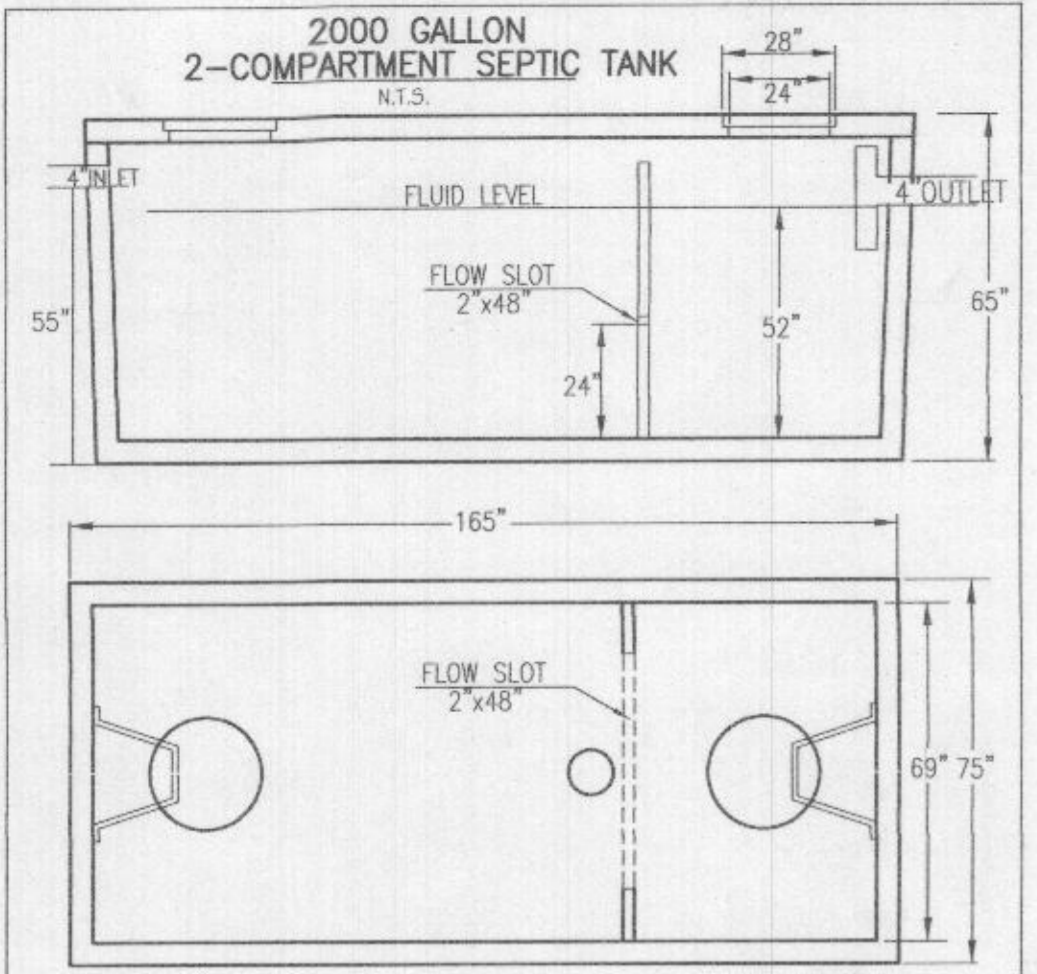
ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
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 FOLLY QUARTER ROAD
 PARCEL 140

TAX MAP: 23
 GRID NO: 5
 PARCEL NO: 140

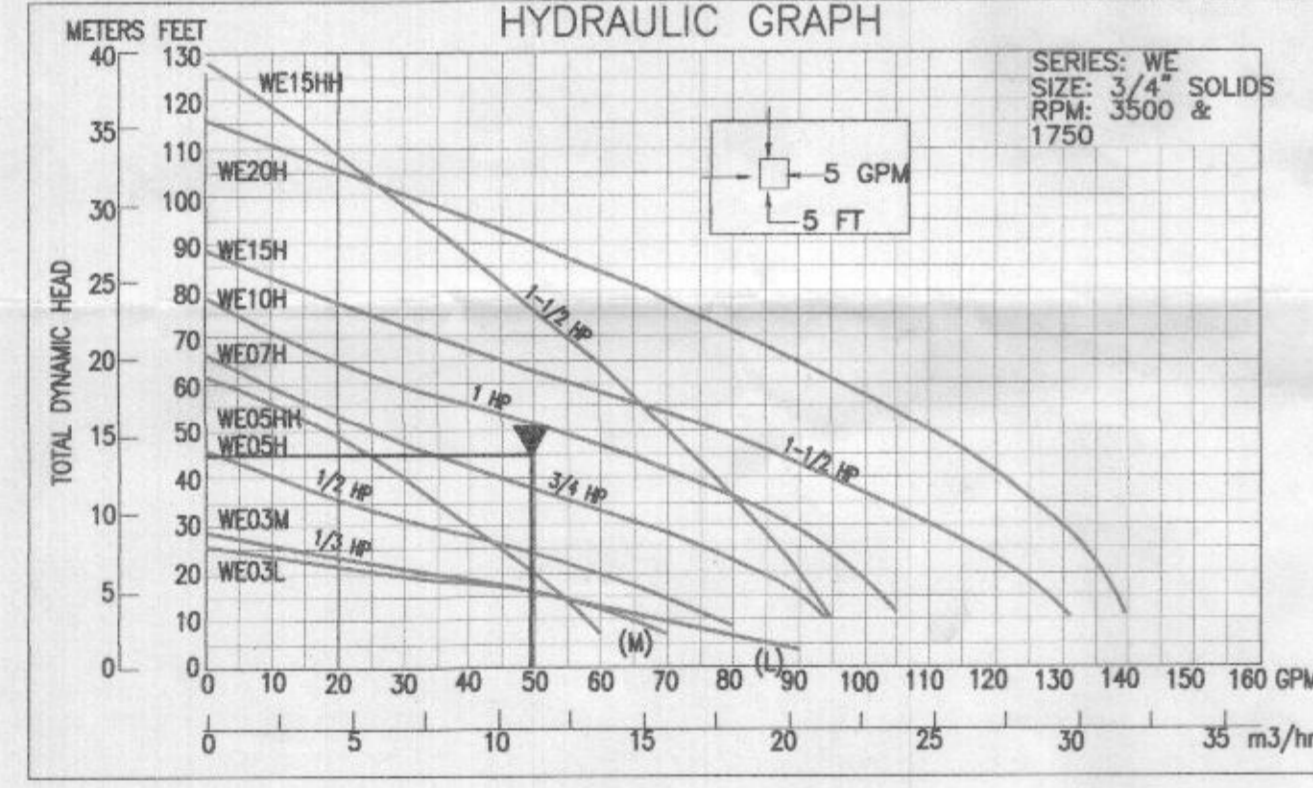
ELECTION DISTRICT: No. 3
 EX. ZONING: RC-DEO

SCALE: 1" = 30'
 DATE: JUNE, 2021
 SHEET 1 OF 1

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 Engineers Surveyors Planners
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 Fax (301) 831-5803 ©Copyright, Latest Date Shown

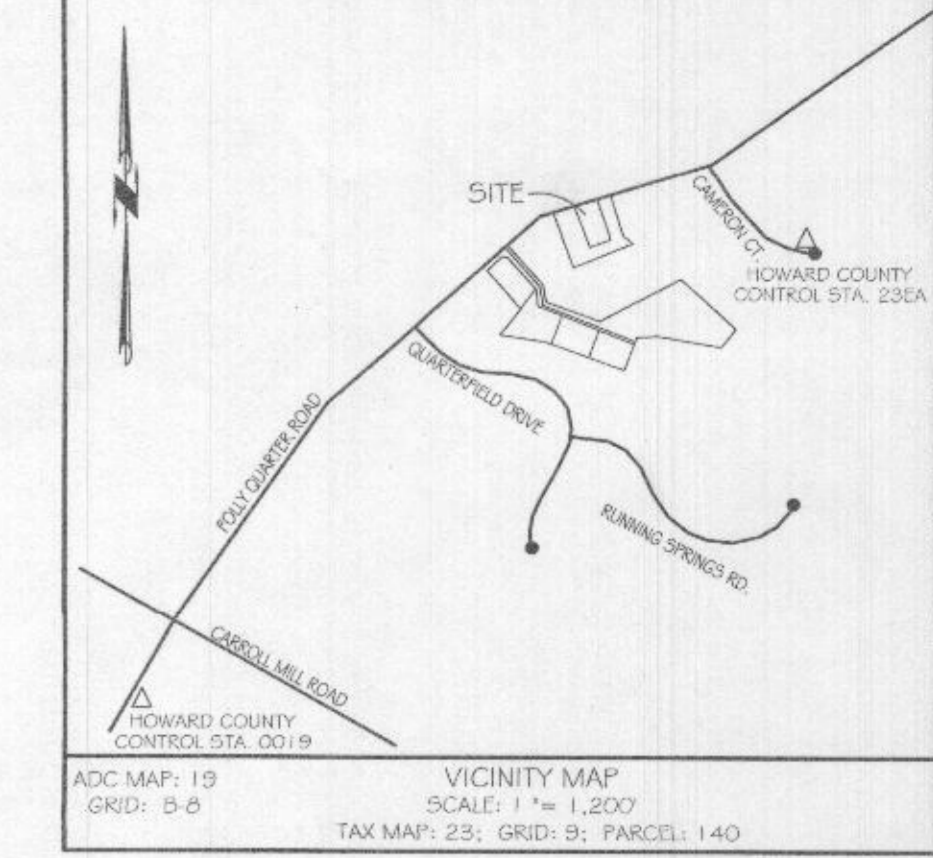
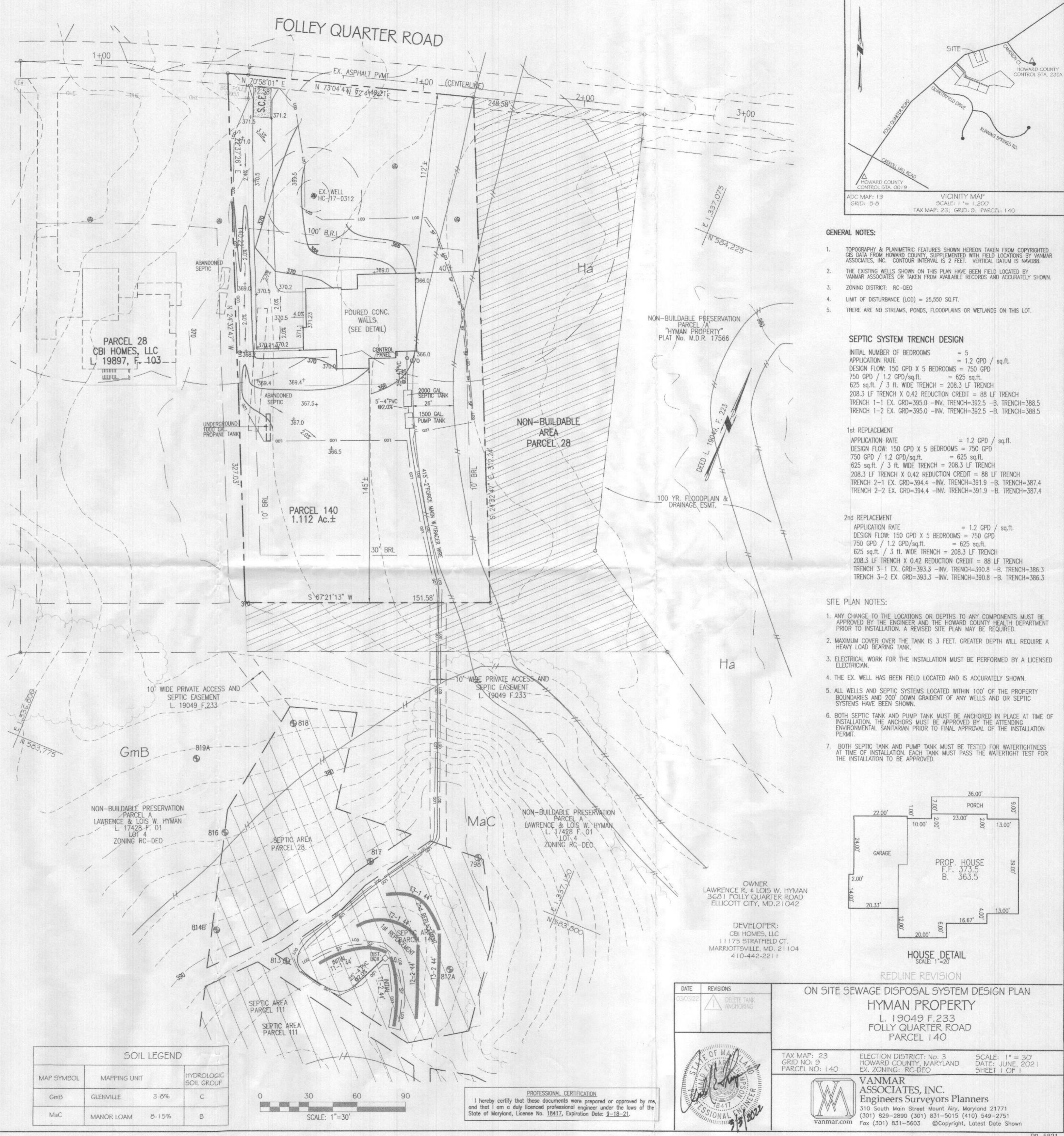
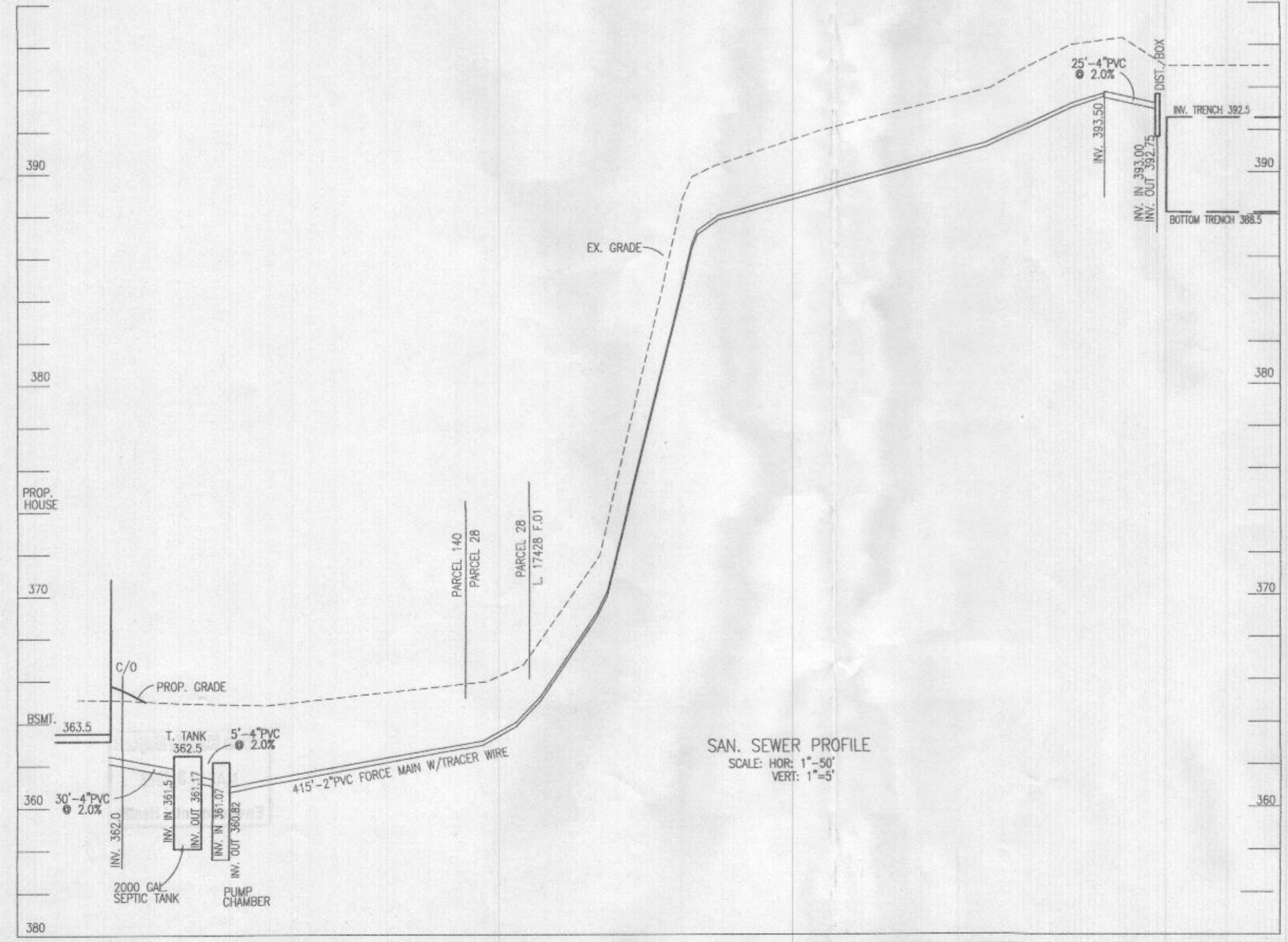


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208.3 LF TRENCH X 0.42 REDUCTION CREDIT = 88 LF TRENCH

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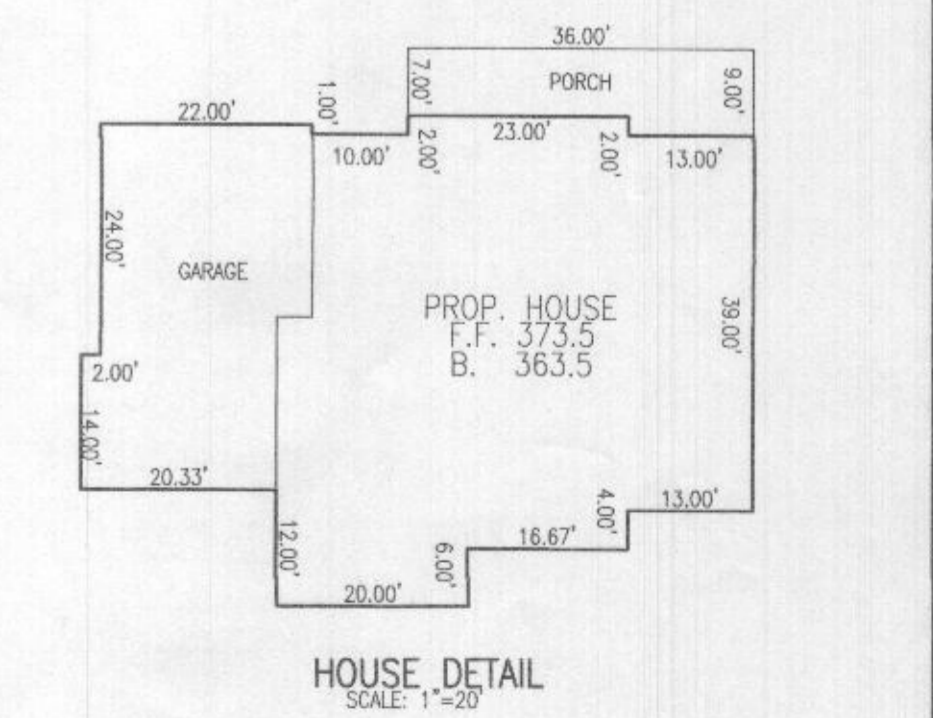
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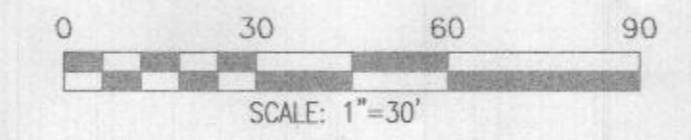
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SOIL LEGEND

MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP
GmB	GLENNVILLE	3-6% C
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DATE: 03/03/22

REVISIONS: DELETE TANK ANCHORING

ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

HYMAN PROPERTY

L 19049 F.233

FOLLEY QUARTER ROAD

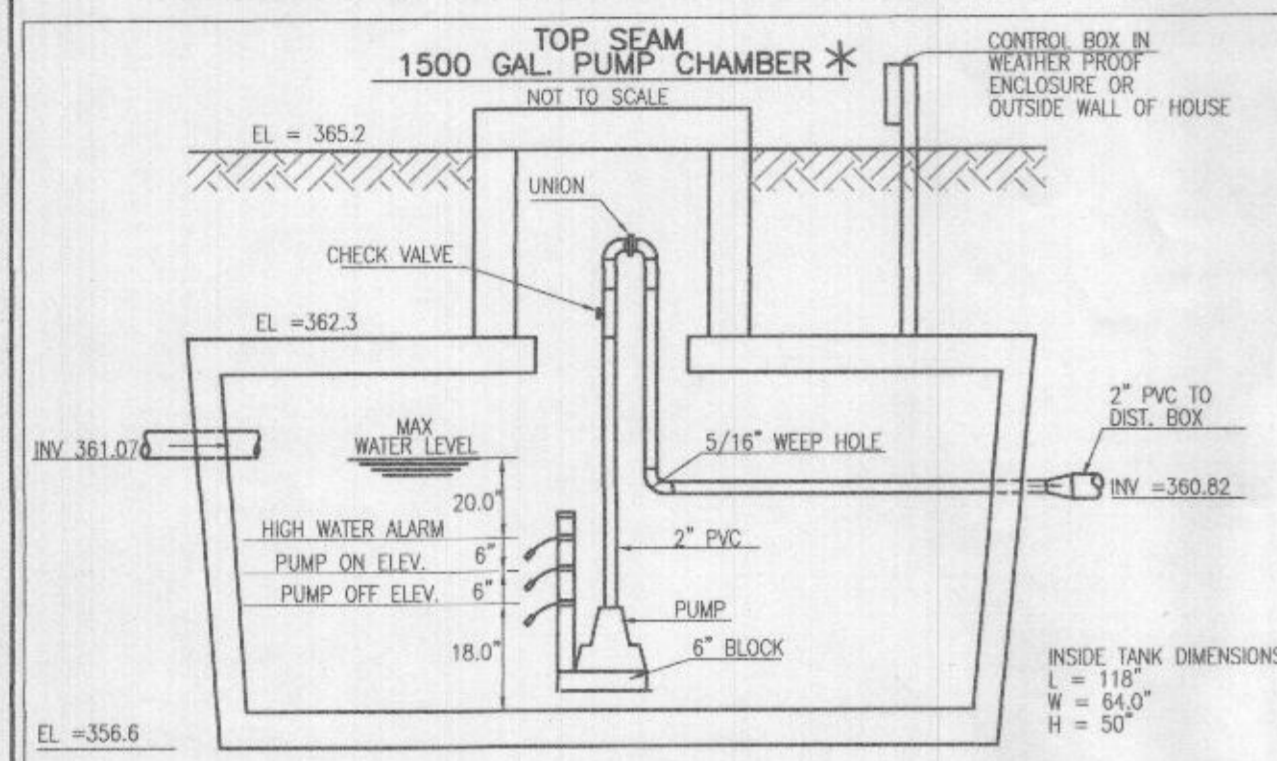
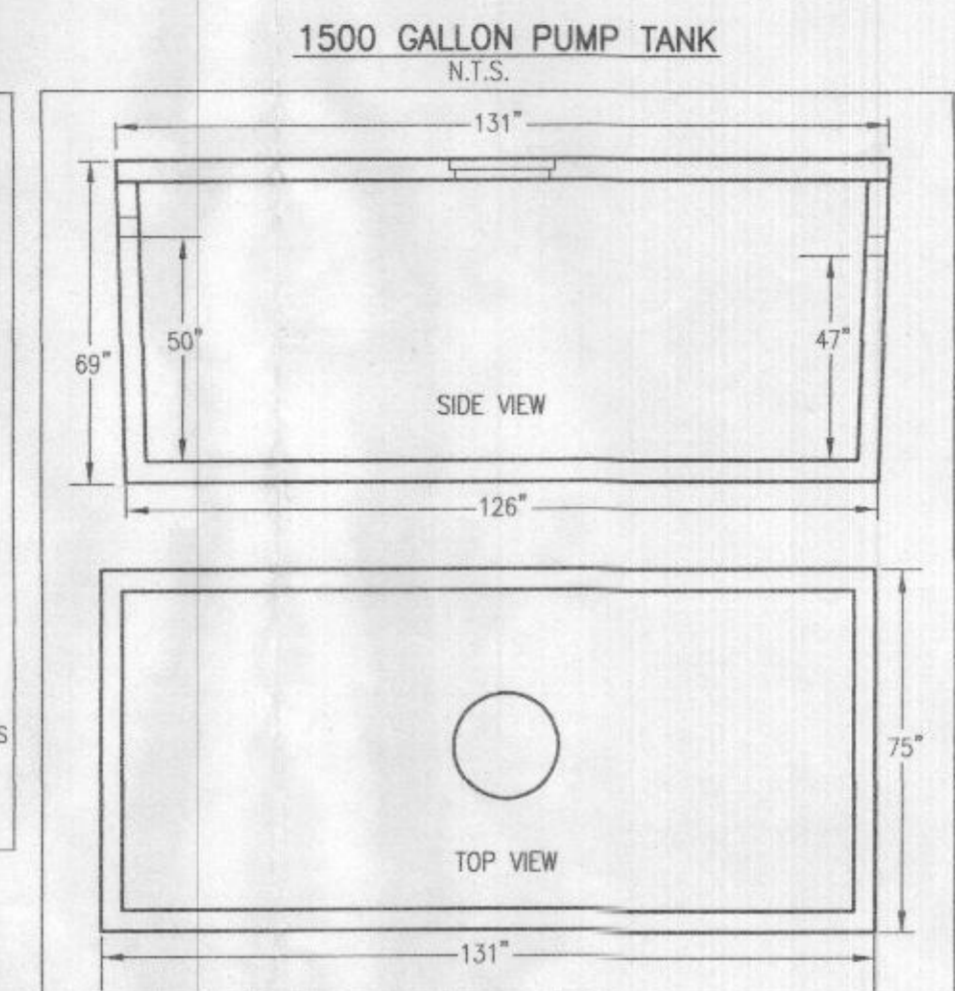
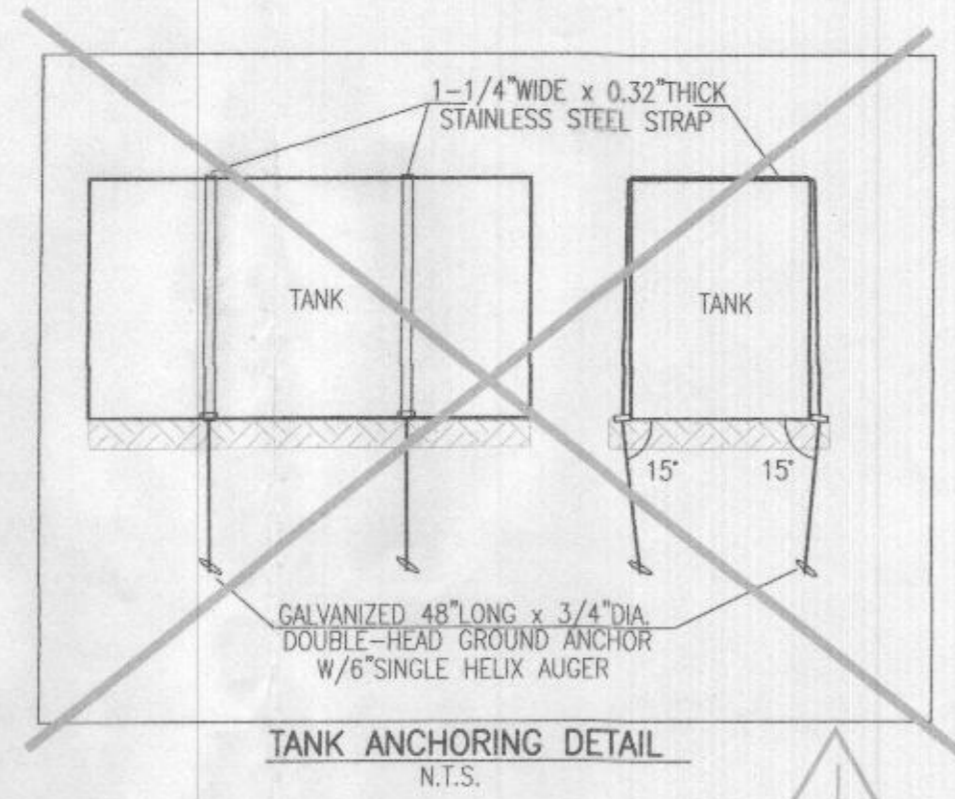
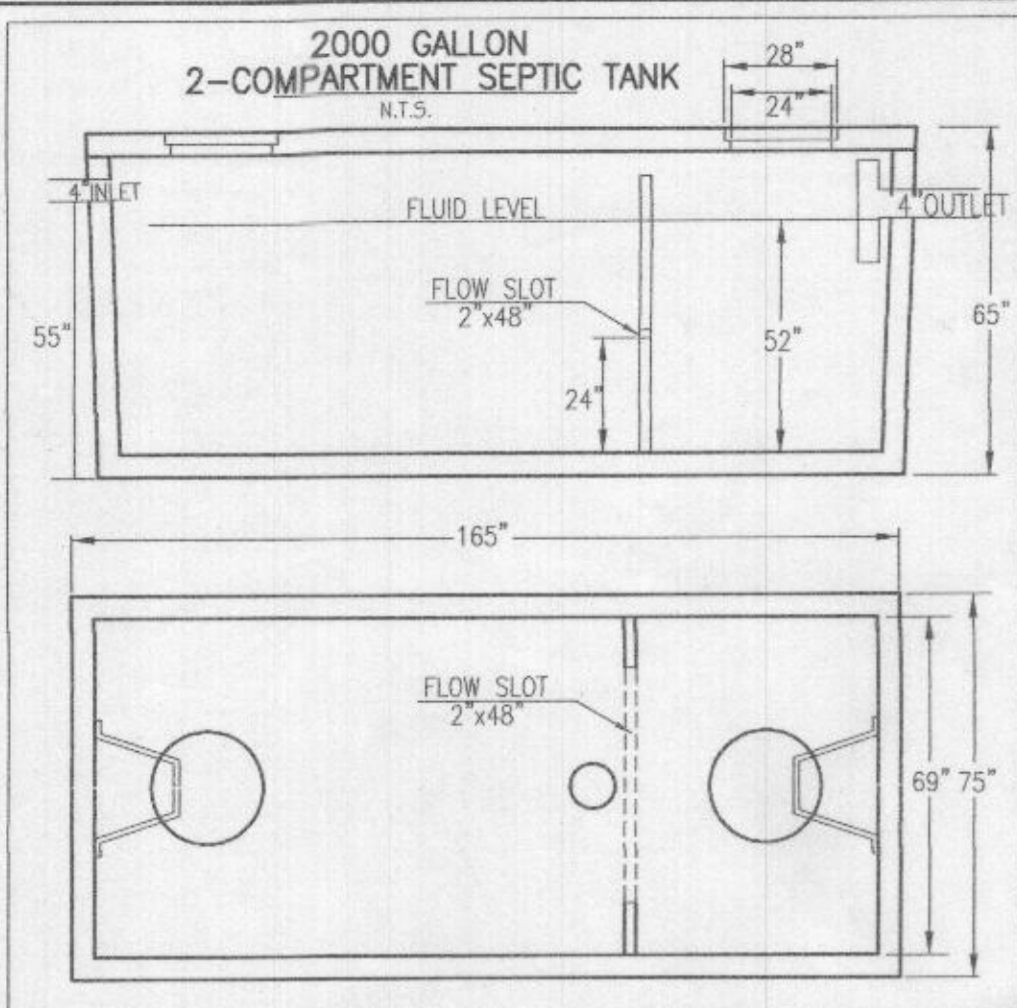
PARCEL 140

TAX MAP: 23
GRID NO: 9
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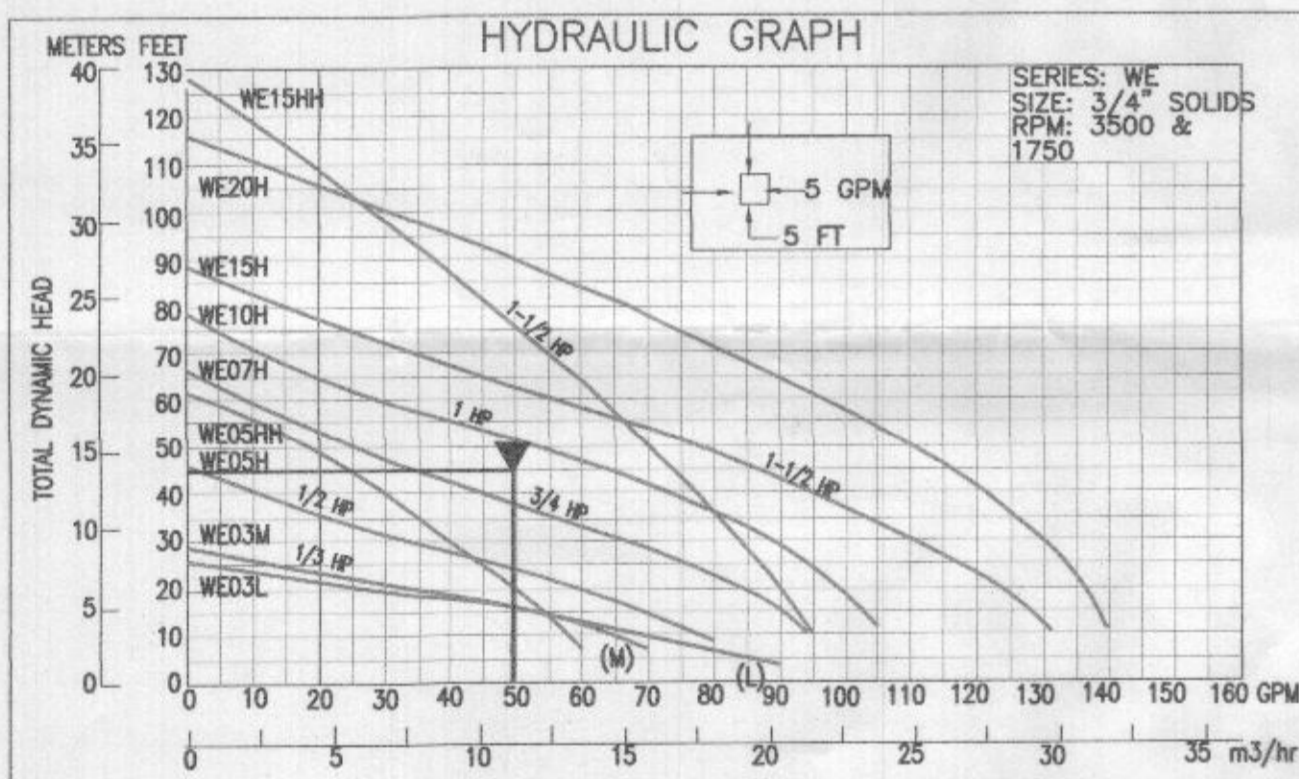
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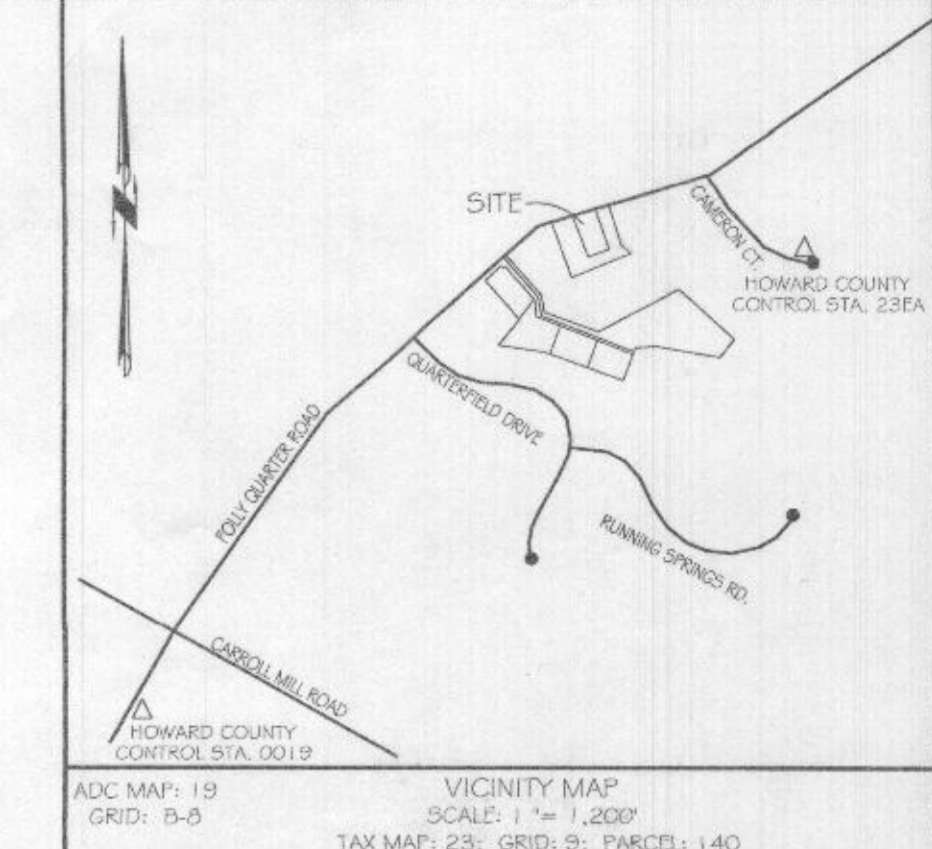
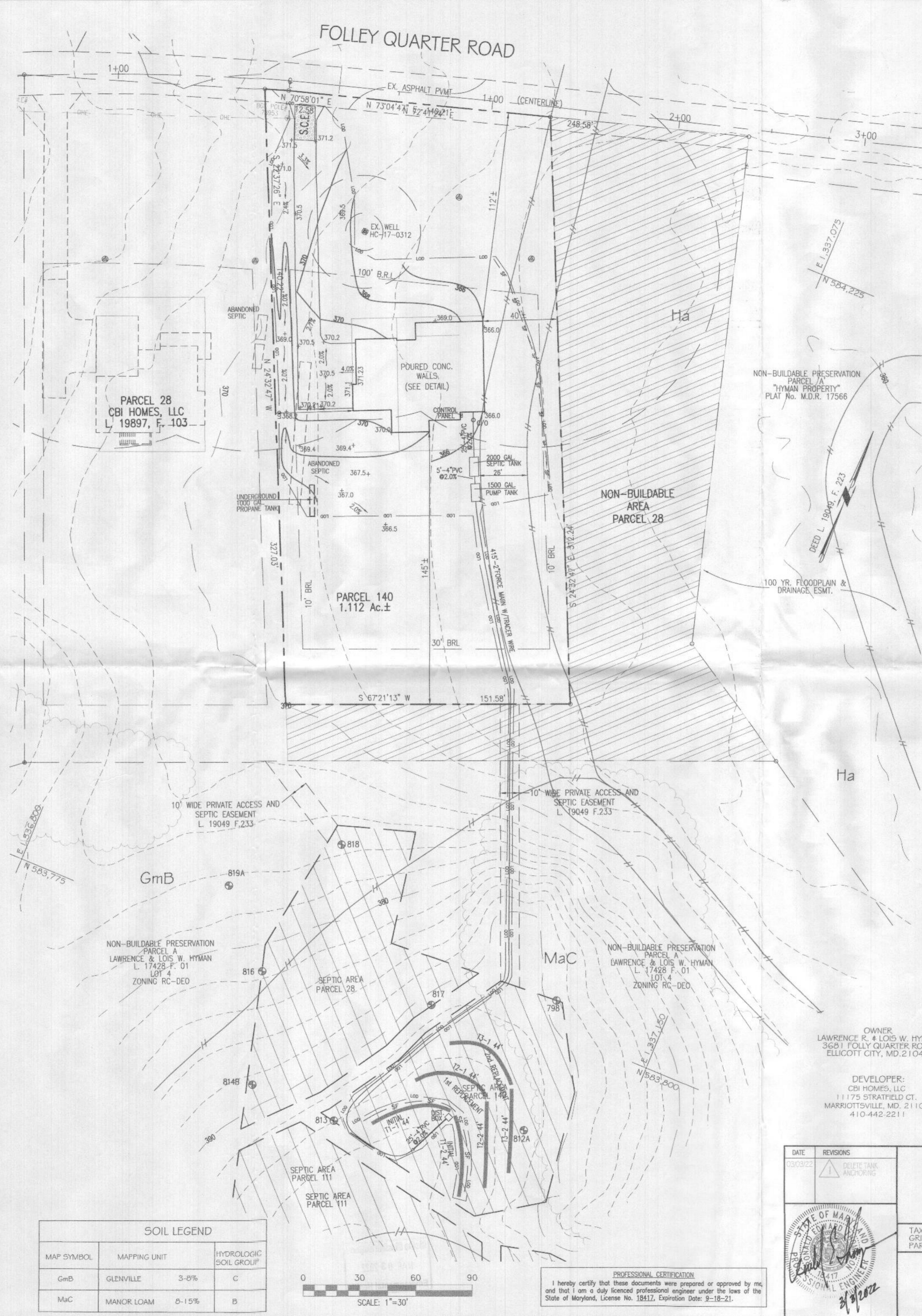
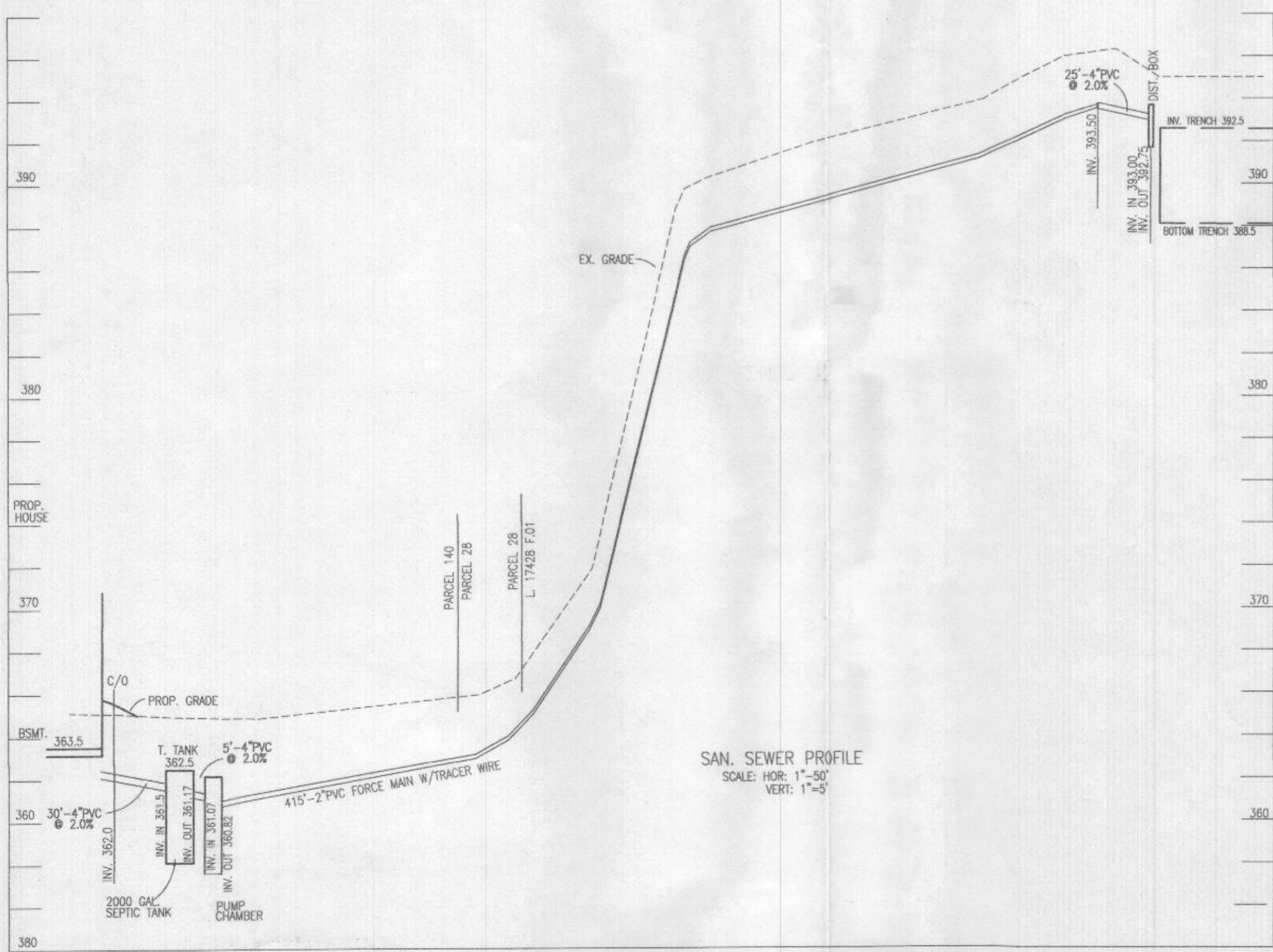


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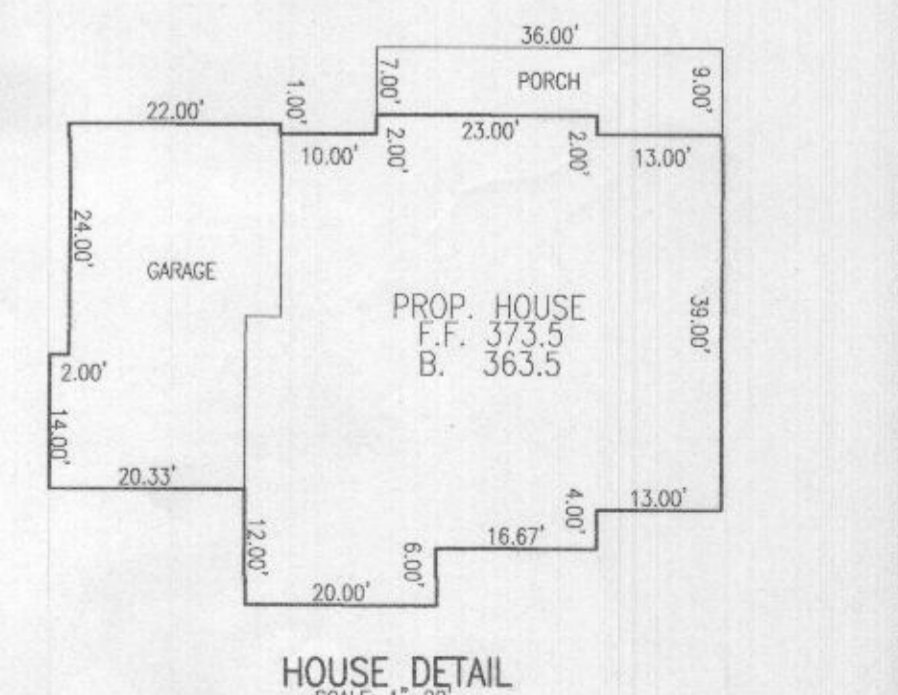
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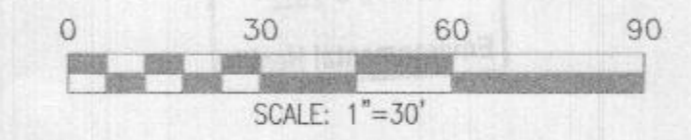
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