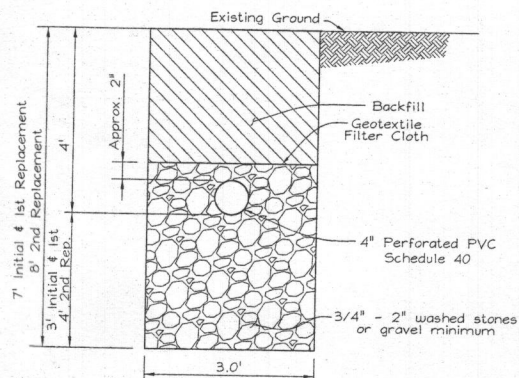
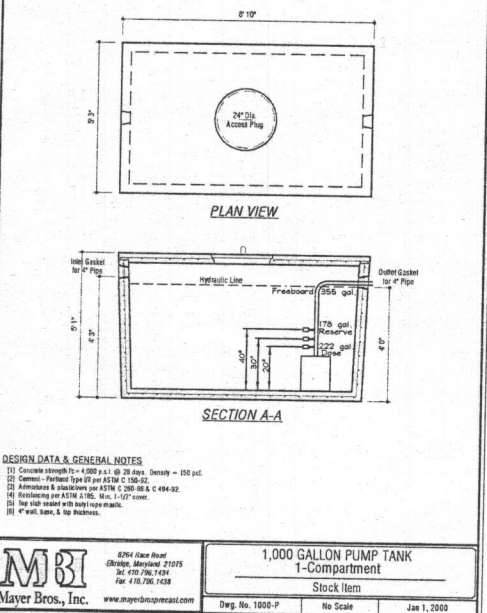


FSH ASSOCIATES — TRANSMITTAL OF MATERIALS

TO:	Howard county health department 8930 Stanford Blvd. Columbia MD 21045	DATE:	9/18/2017		
		FSH JOB #:	4038		
		JOB NAME:	The woods at Triadelphia lot 4		
		REGARDING:	Revised septic design plan		
ATTENTION:	Jeff Williams/ Robert Freemon , Well and septic program	FROM:	Zach Fisch PE.		
<input type="checkbox"/>	FOR YOUR INFORMATION AND/OR USE AS PER YOUR REQUEST	<input type="checkbox"/>	FOR YOUR PICK-UP FROM FSH HAND DELIVERED TO YOU		
<input type="checkbox"/>	FOR YOUR REVIEW AND/OR COMMENT	<input type="checkbox"/>	FAXED TO YOU		
X	FOR YOUR APPROVAL AND/OR SIGNATURE	<input type="checkbox"/>	EMAILED TO YOU		
<input type="checkbox"/>	WHEN DONE, PLEASE RETURN THIS TO FSH	<input type="checkbox"/>	MAILED TO YOU		
<input type="checkbox"/>		<input type="checkbox"/>	SENT TO YOU OVERNIGHT / NEXT-DAY		
IMPORTANT REMARKS: 					
DEPT. / AGENCY	MEDIA / OBJECT	SETS	SHEETS (ITEMS)	DATE	ITEM DESCRIPTION
Health Dpt.	Prints	2	1		Revised septic design plan , Willow pond lot 10.
RECEIVED					
RECEIVING PERSON'S ACKNOWLEDGEMENT					
Signature Confirming Statement to Left			Date Received	Company / Agency	
X					

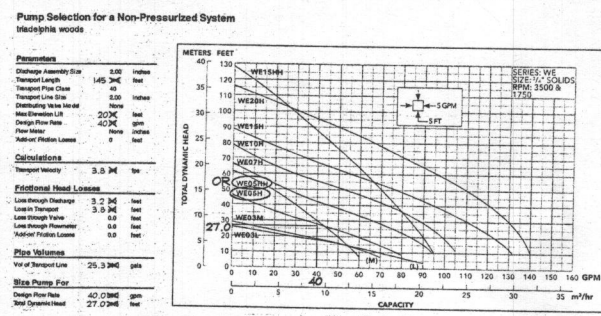
FSH Associates • 6339 Howard Lane • Elkridge, Maryland 21075
Phone: 410-567-5200 • Fax: 410-796-1562 • Email: ZFisch@fsheri.com



- NOTES:
1. Trenches shall be constructed 10 ft. (Min.) edge to edge.
 2. Trench bottoms shall be level along the length of 4" Perforated Distribution Pipe.

SEPTIC TRENCH DETAIL
Not to Scale

Not to Scale



WE Series Model 3885
WE0511H or WE0511HH Gould Water
Technology Effluent Pump
40 GPM, 1/2HP, 115 1φ

Goulds Water Technology

Wastewater

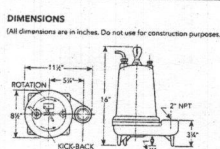
MODELS

Order Number	HP	Phase	Volts	FRM	Impeller Diameter (in.)	Maximum Flow (GPM)	Locked Arm (in.)	NPSA Code	Full Load Efficiency %	Resistance Start Line-Line	Power Cable Size	Weight (lbs.)
W00311	115				10.7	8	14	54	51	9.1	4.2	
W00318	200				9.5	19.5	5	51	51	9.1	4.2	
W00326	230				4.9	14.1	1	53	14.5	8.0		
W00331	115	0.33	1750	5.38	10.7	30.5	8	54	11.9	11.7		16/3
W00318A	200				6.8	19.5	5	51	9.1	4.2		
W00326A	230				4.9	14.1	1	53	14.5	8.0		
W00327B	115				14.5	40.0	18	54	7.5	1.0		14/3
W00318B	200				8.1	11.0	0	58	9.2	2.4		
W00329A	230				7.3	34.5	8	53	9.6	4.0		
W00329B	200			3.54	4.9	22.6	8	66	NA	3.8		
W00332A	230				3.3	13.8	8	70	NA	1.8		
W00332B	415				1.7	9.4	8	70	NA	21.2		14/4
W00333A	230				1.4	7.5	8	82	NA	35.3		
W00333B	415	0.5			1.4	46.0	8	84	7.5	1.4		60
W00311B	1	3/3			8.1	31.0	0	58	9.2	1.4		

PERFORMANCE RATINGS (hp/mph per minute)											
Order No.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
hp	1750	1500	1300	1100	900	700	500	300	200	150	100
1	-	-	-	-	-	-	-	-	-	-	-
5	86	-	-	-	-	-	-	-	-	-	-
10	70	63	78	94	-	-	58	95	-	-	-
15	52	52	70	90	108	123	53	93	138	-	-
20	35	45	60	81	96	-	-	60	134	-	-
25	5	15	48	74	94	117	45	87	133	-	-
30	-	-	35	67	88	100	40	83	120	-	-
35	-	-	22	57	82	103	35	80	126	-	-
40	-	-	10	45	74	95	30	77	121	-	-
45	-	-	-	35	64	86	25	74	116	-	-
50	-	-	-	25	53	77	-	70	110	-	-
55	-	-	-	-	40	87	-	66	103	-	-
60	-	-	-	-	30	74	-	55	95	-	-
65	-	-	-	-	20	65	-	48	89	-	-
70	-	-	-	-	-	55	-	55	81	-	-
75	-	-	-	-	-	25	-	51	74	-	-
80	-	-	-	-	-	-	-	46	68	-	-
90	-	-	-	-	-	-	-	37	47	-	-
100	-	-	-	-	-	-	-	23	30	-	-

COMPONENTS

Item No.	Description
1	Chassis
2	Casting
3	Timing Belt
4	Motor Shaft
5	Magnet
6	Tool Bearing
7	Power Cables
8	Casting Casing



PUMP DETAIL

MP DETAIL

xylem
Let's Solve W

Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.gouldswatertechnology.com
Goulds is a registered trademark of Goulds Pump
© 2016 Xylem Inc. 81885-02 September 2016

TRENCH INFORMATION			
Trench	Length	Pipe Inv.	Bottom Ground
Initial Sys.	65'	479.0	476.0 483.0
	65'	476.4	473.4 480.4
	65'	474.3	471.3 478.3
1st Replace	65'	472.0	469.0 476.0
	65'	470.0	467.0 474.0
	65'	468.0	465.0 472.0
2nd Replace	78'	466.1	462.1 470.1
	78'	464.2	460.2 468.2

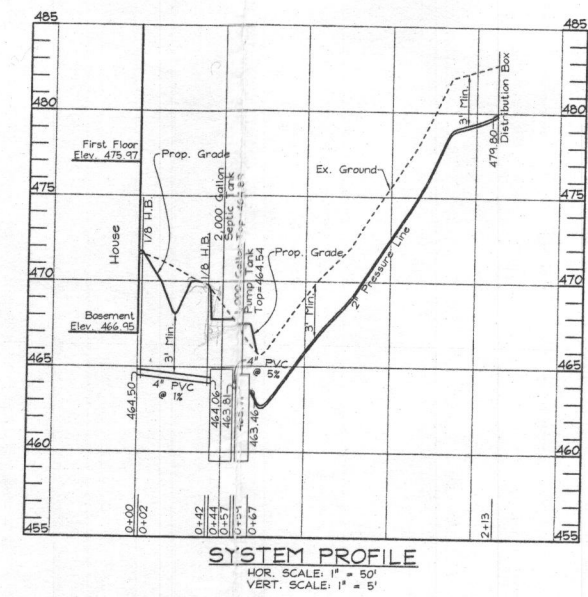
INITIAL SYSTEM	
Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5'
Bottom maximum depth	7'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

1st REPLACEMENT SYSTEM	
Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5' ¹
Bottom maximum depth	7' ¹
Design flow	750 gpd
Drainage field square footage	438 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

2nd REPLACEMENT SYSTEM	
Number of bedrooms	5
Application rate	0.8 apd/sf
Effective area beginning depth	5'
Bottom maximum depth	8'
Design flow	750 apd
Drainage field square footage	436 sf
Sidewalk reduction credit	0.500
Trench width	3'
Effective area depth	3'
Linear length of trench required	156 lf

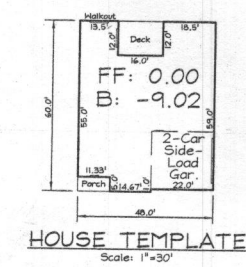
SYMBOL	NAME / DESCRIPTION	K VALUE	SOIL GROUP
Mac	Minor loam, 8 to 15 percent slopes	0.28	B
Med	Minor loam, 15 to 25 percent slopes	0.28	B
GmC	Gelvinville silt loam, 8 to 15 percent slopes	0.43	C

PROFESSIONAL CERTIFICATION



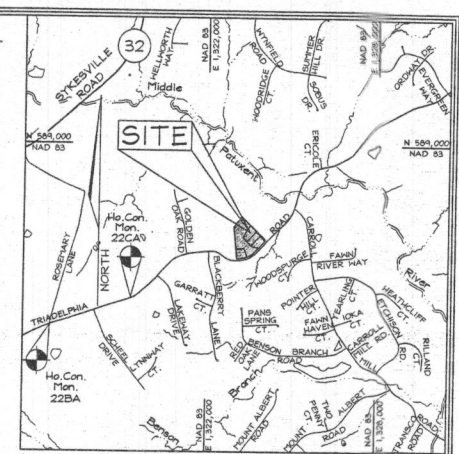
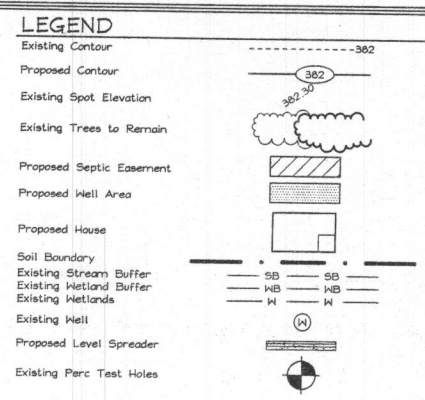
SYSTEM PROFILE

HOR. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



SCHEMATIC
ELEVATION

NOT TO SCALE

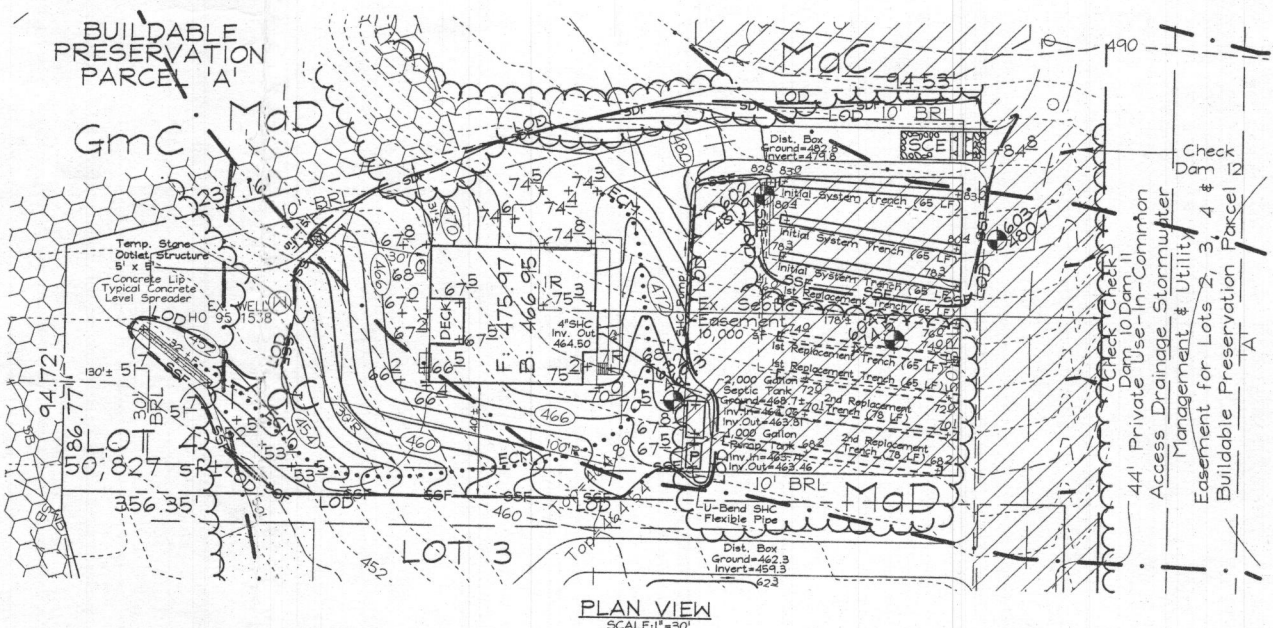
VICINITY MAP

SCALE: 1"=2000'

GEODETIC CONTROL STATIONS

Coordinates based on NAD'83, Maryland coordinate system as projected by Howard County geodetic control stations no. 22BA and no. 22CA denotes approximate location (see vicinity map).

Sta.	22BA	N 585,134.7933	E 1,323,322.6629	EI: 576.164 (feet)
Sta.	22CA	N 585,783.3061	E 1,325,230.5994	EI: 574.248 (feet)



GENERAL NOTES

1. Any change to the location or depths to any component must be approved by the engineer and 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 supporting tank.
3. The well HO-MS-1538 has been field located by FSH Associates and is accurately shown.
4. All wells and septic systems located within 100' of the property boundaries and 200' down gradient of any well and/or septic system have been shown.
5. Electrical work for the installation must be performed by a licensed electrician.

HOUSE WILL NOT
SEWER BY GRAVITY.

PLAN FOR SEPTIC & PUMP INSTALLATION
THE WOODS AT TRIADELPHIA

LOT 4
TRIADDELPHIA WOODS PLAT #19925
12502 Triadadelphia Road

TAX MAP 22 GRIDS 5 & 6
3RD ELECTION DISTRICT

PARCEL 582
HOWARD COUNTY, MARYLAND

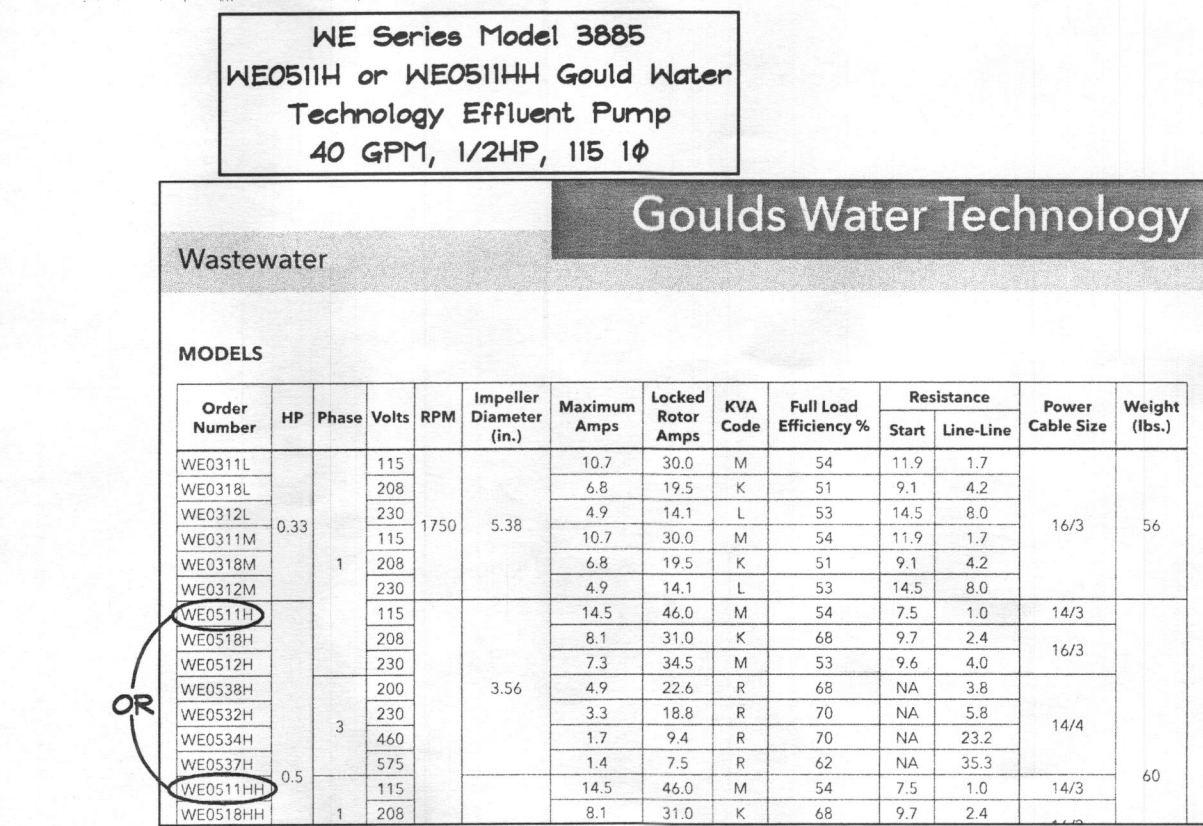
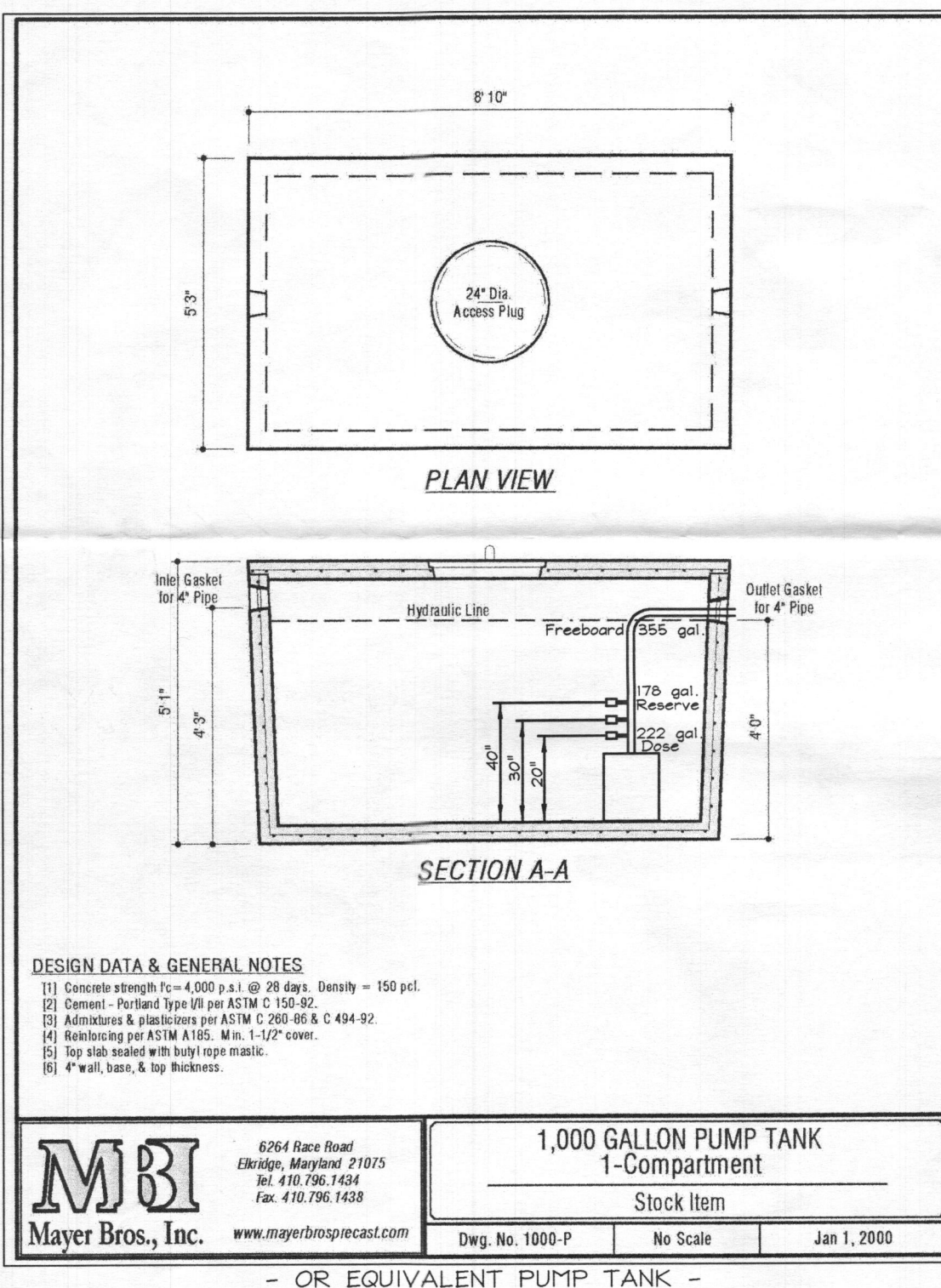


FSH Associates
Engineers Planners Surveyors

Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
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E-mail: info@fsherl.com

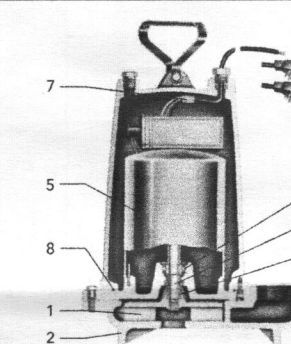
DESIGN BY: CRH2
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: As Shown
DATE: Oct. 12, 2017
W.O. No.: 4038
SHEET NO. : _____

OWNER
Michael Eckstein
9427 Fields Road
Gaithersburg, MD 20878
(240) 893-0036



PERFORMANCE RATINGS (gallons per minute)									
Order No.	WSP-1500	WSP-2500	WSP-3500	WSP-4500	WSP-5500	WSP-6500	WSP-7500	WSP-8500	WSP-9500
5	86	-	-	-	-	-	-	-	-
10	70	63	78	94	-	-	58	95	-
15	52	70	60	103	128	53	93	138	-
20	25	60	83	63	120	80	75	100	100
25	5	15	48	76	94	117	45	87	133
30	-	35	67	88	100	40	83	130	-
35	-	22	57	82	110	35	80	126	-
40	-	-	45	74	90	30	79	121	-
45	-	-	35	64	80	25	74	116	-
50	-	-	25	53	77	20	70	110	-
55	-	-	40	67	86	103	64	100	-
60	-	-	30	56	63	96	96	96	-
65	-	-	20	45	58	80	80	80	-
70	-	-	10	35	55	65	65	65	-
75	-	-	25	51	74	80	80	80	-
80	-	-	30	57	80	80	80	80	-
85	-	-	35	63	87	90	90	90	-
90	-	-	40	69	94	96	96	96	-
95	-	-	45	75	100	100	100	100	-
100	-	-	50	81	105	105	105	105	-

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



PUMP DETAIL
SCALE: None

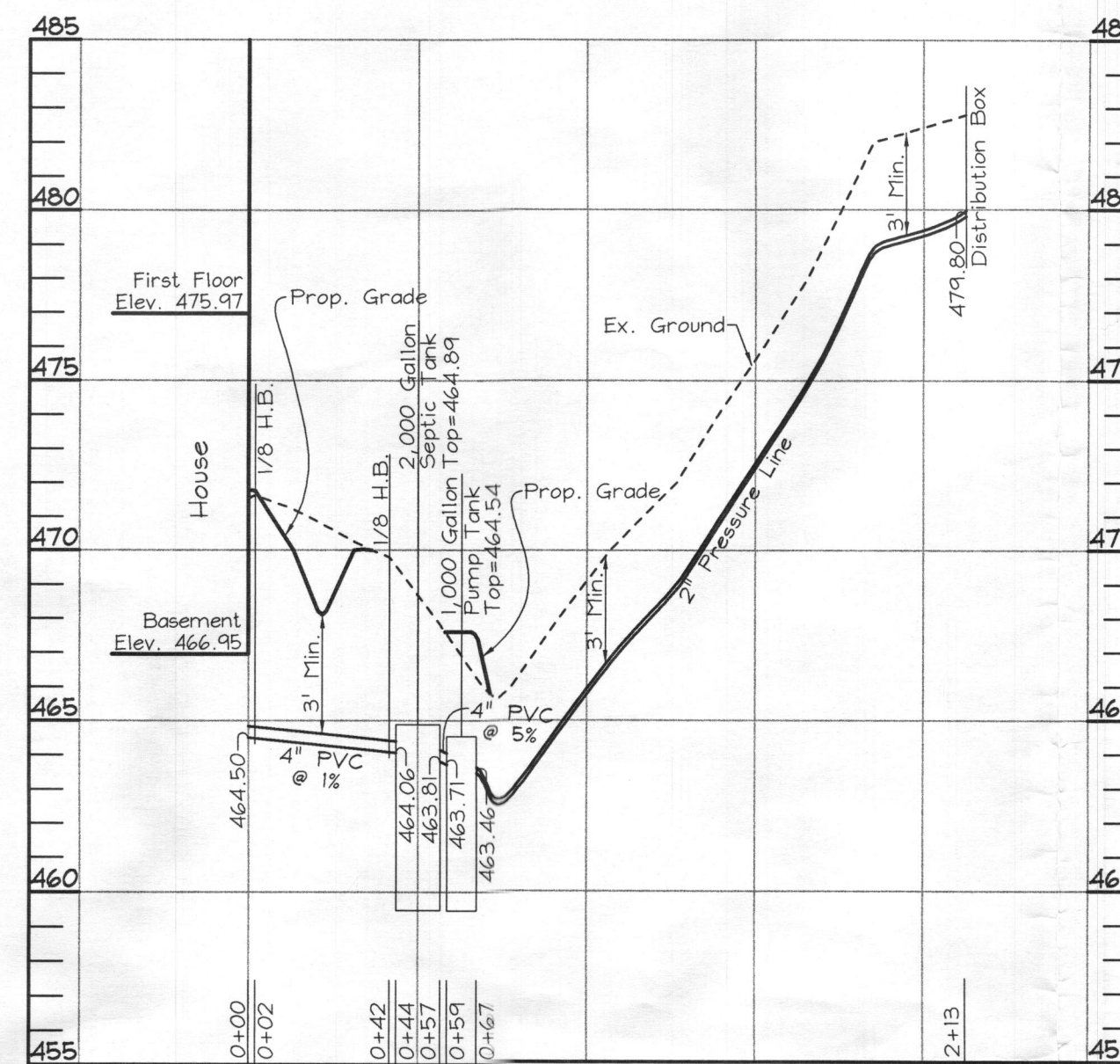
TRENCH INFORMATION				
Trench	Length	Pipe Inv.	Bottom	Ground
Initial Sys.	65'	479.0	476.0	483.0
	65'	476.4	473.4	480.4
	65'	474.3	471.3	478.3
1st Replace	65'	472.0	469.0	476.0
	65'	470.0	467.0	474.0
	65'	468.0	465.0	472.0
2nd Replace	78'	466.1	462.1	470.1
	78'	464.2	460.2	468.2

INITIAL SYSTEM	
Number of bedrooms	5
Application rate	0.8 gpd/s
Effective area beginning depth	5'
Bottom maximum depth	7'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

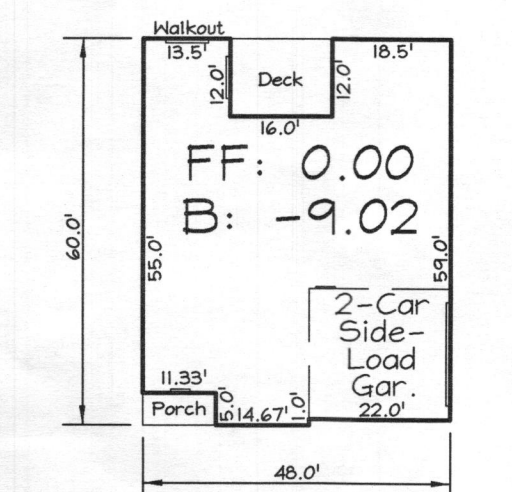
1st REPLACEMENT SYSTEM	
Number of bedrooms	5
Application rate	0.8 gpd/s
Effective area beginning depth	5'
Bottom maximum depth	7'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

2nd REPLACEMENT SYSTEM	
Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5'
Bottom maximum depth	8'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.500
Trench width	3'
Effective area depth	3'
Linear length of trench required	156 lf

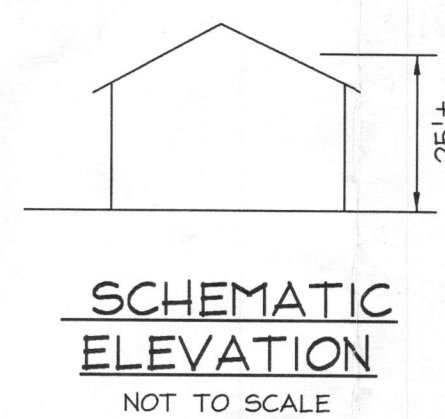
SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	K VALUE	SOIL GROUP
MaC	Manor loam, 8 to 15 percent slopes	0.28	B
MaD	Manor loam, 15 to 25 percent slopes	0.28	B
GmC	Gelville silt loam, 8 to 15 percent slopes	0.43	C



SYSTEM PROFILE
HOR. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

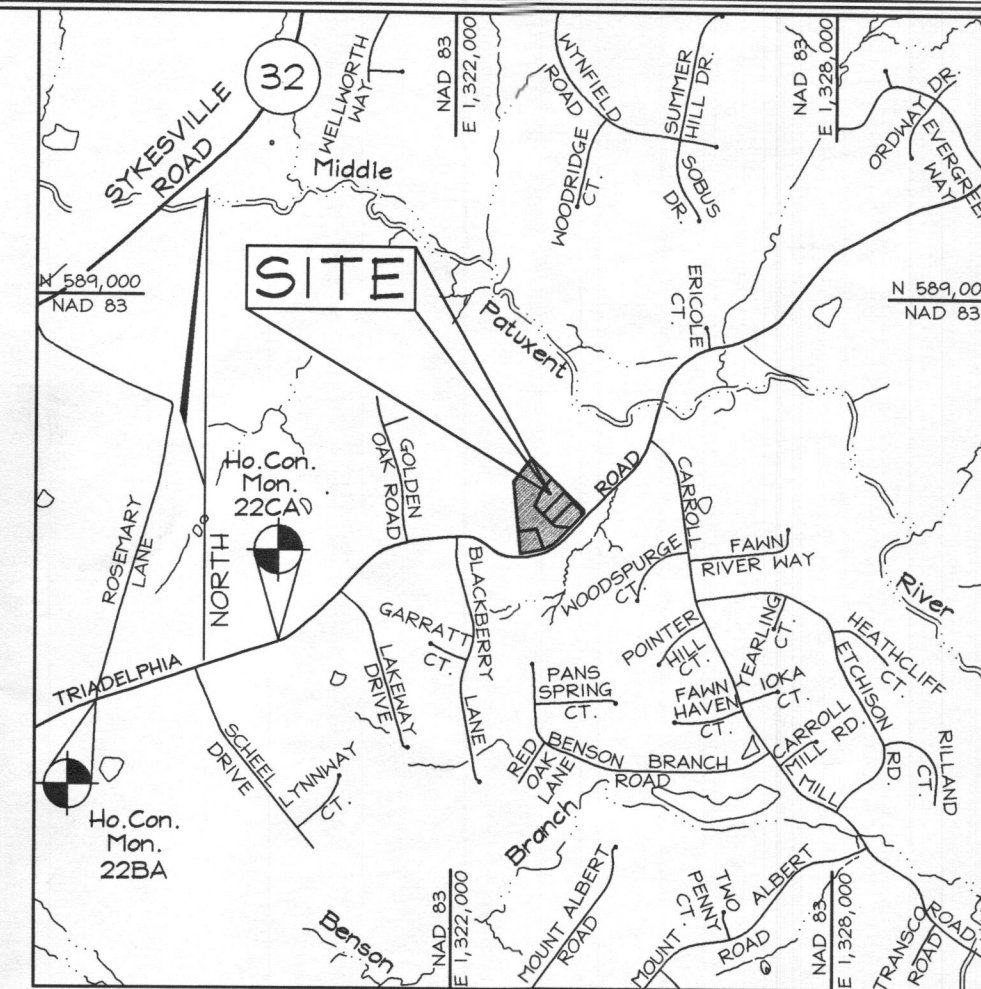
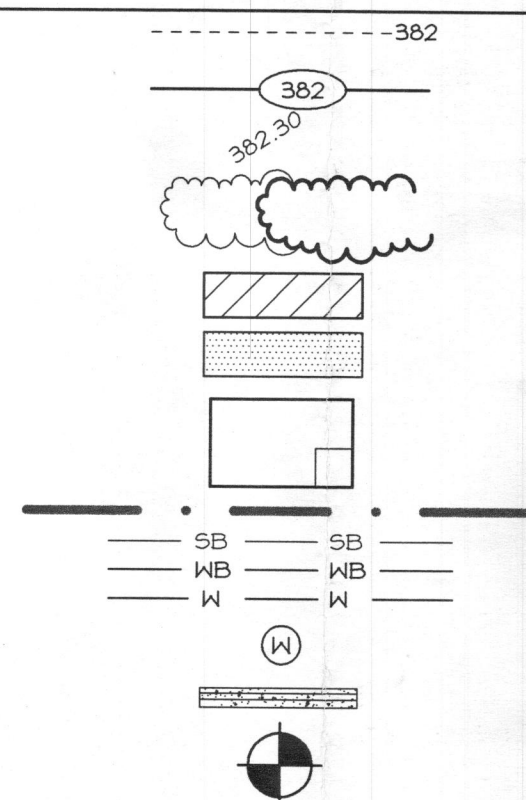


HOUSE TEMPLATE



LEGEND

- Existing Contour
Proposed Contour
Existing Spot Elevation
Existing Trees to Remain
Proposed Septic Easement
Proposed Well Area
Proposed House
Soil Boundary
Existing Stream Buffer
Existing Wetland Buffer
Existing Wetlands
Existing Well
Proposed Level Spreader
Existing Perc Test Holes



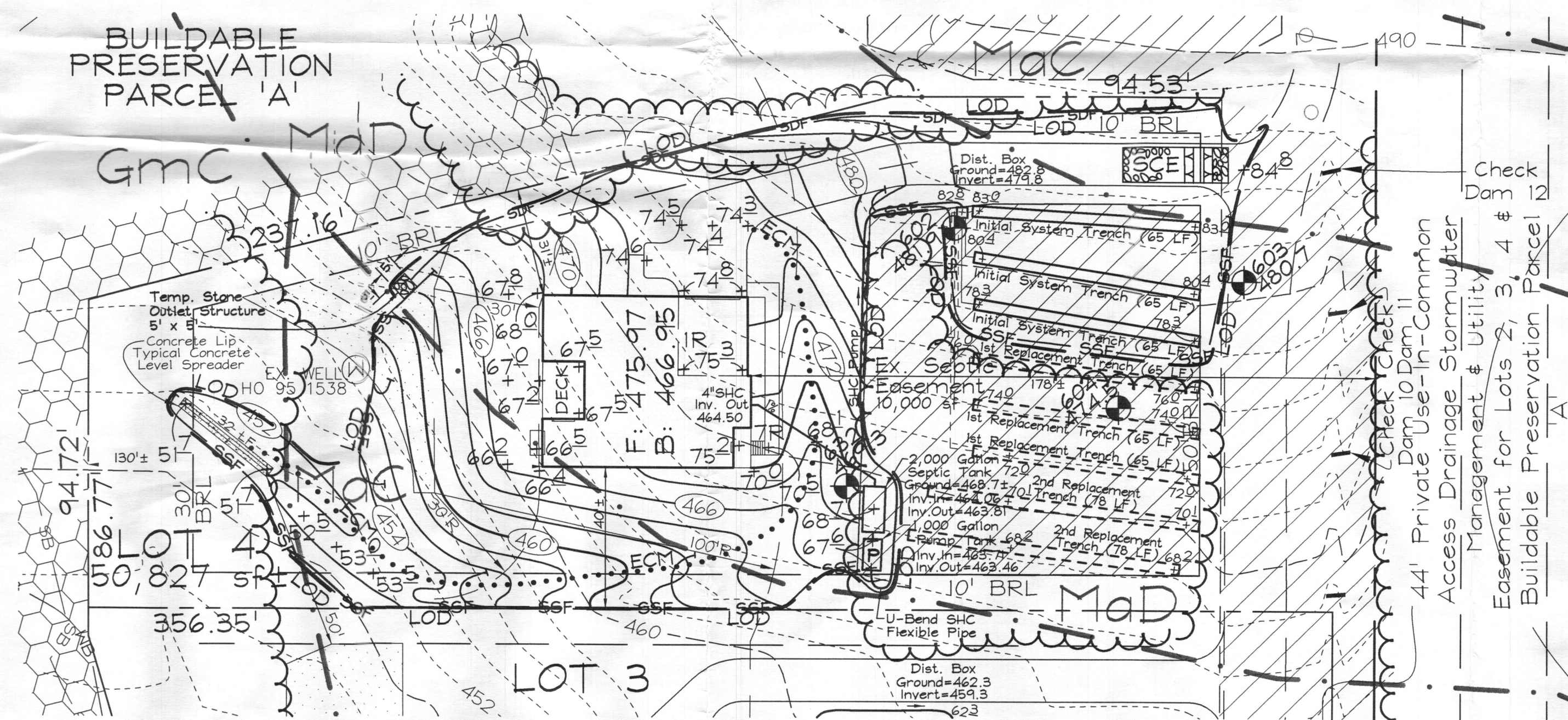
VICINITY MAP
SCALE: 1"=2000'

GEODETIC CONTROL STATIONS

Coordinates based on NAD'83, Maryland coordinate system as projected by Howard County geodetic control stations no. 22BA and no. 22CA denotes approximate location (see vicinity map).

Sta.	22BA	N 585,134.7933	E 1,323,322.6629	El: 576.164 (feet)
Sta.	22CA	N 585,783.3061	E 1,325,230.5994	El: 574.248 (feet)

BUILDABLE
PRESERVATION
PARCEL 'A'



PLAN VIEW
SCALE: 1"=30'

GENERAL NOTES

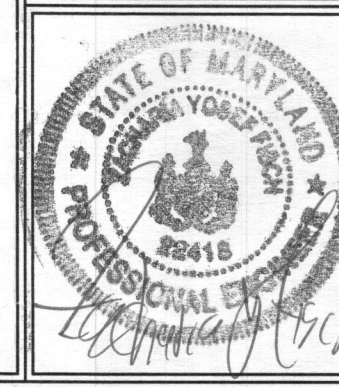
1. Any change to the location or depths to any component must be approved by the engineer and Howard County Health Department prior to installation. A revised site plan may be required.
2. The maximum earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank.
3. The well H-45-1538 has been field located by FSH Associates and is accurately shown.
4. All wells and septic systems located within 100' of the property boundaries and 200' down gradient of any well and/or septic system have been shown.

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. #22418 Expiration Date: 07/29/2019.

OWNER

Michael Eckstein
9427 Fields Road
Gaithersburg, MD 20878
(240) 893-0036



ESU Associates

FSA ASSOCIATE
Engineers Planners Surveyors

Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075

Tel: 410-567-5200 Fax: 410-796-1562

E-mail: info@fsheri.com

11/11/11

DESIGN BY: CRH2

DRAWN BY: CRH2

DRAWN BY: CHZ

CHECKED BY: ZYF

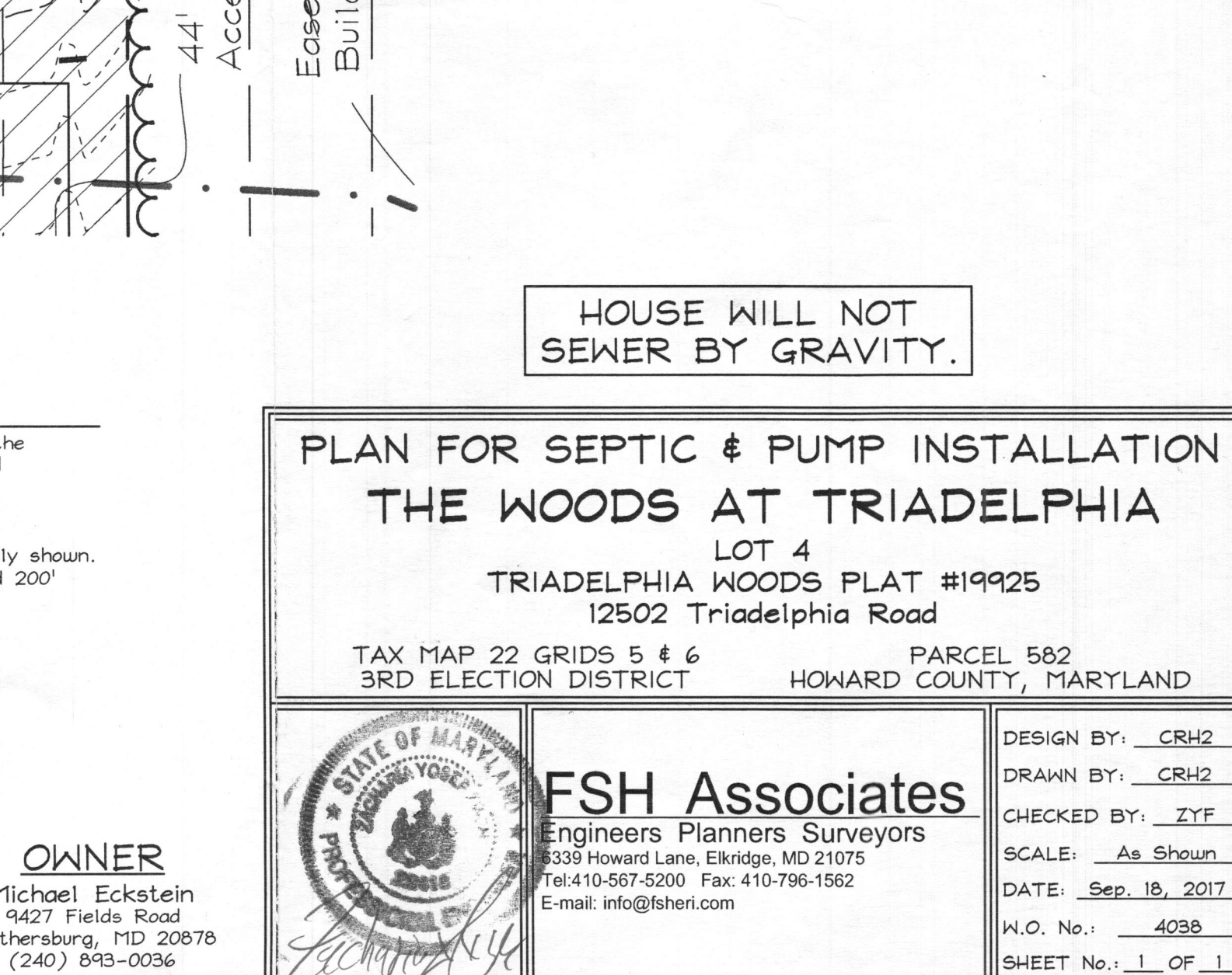
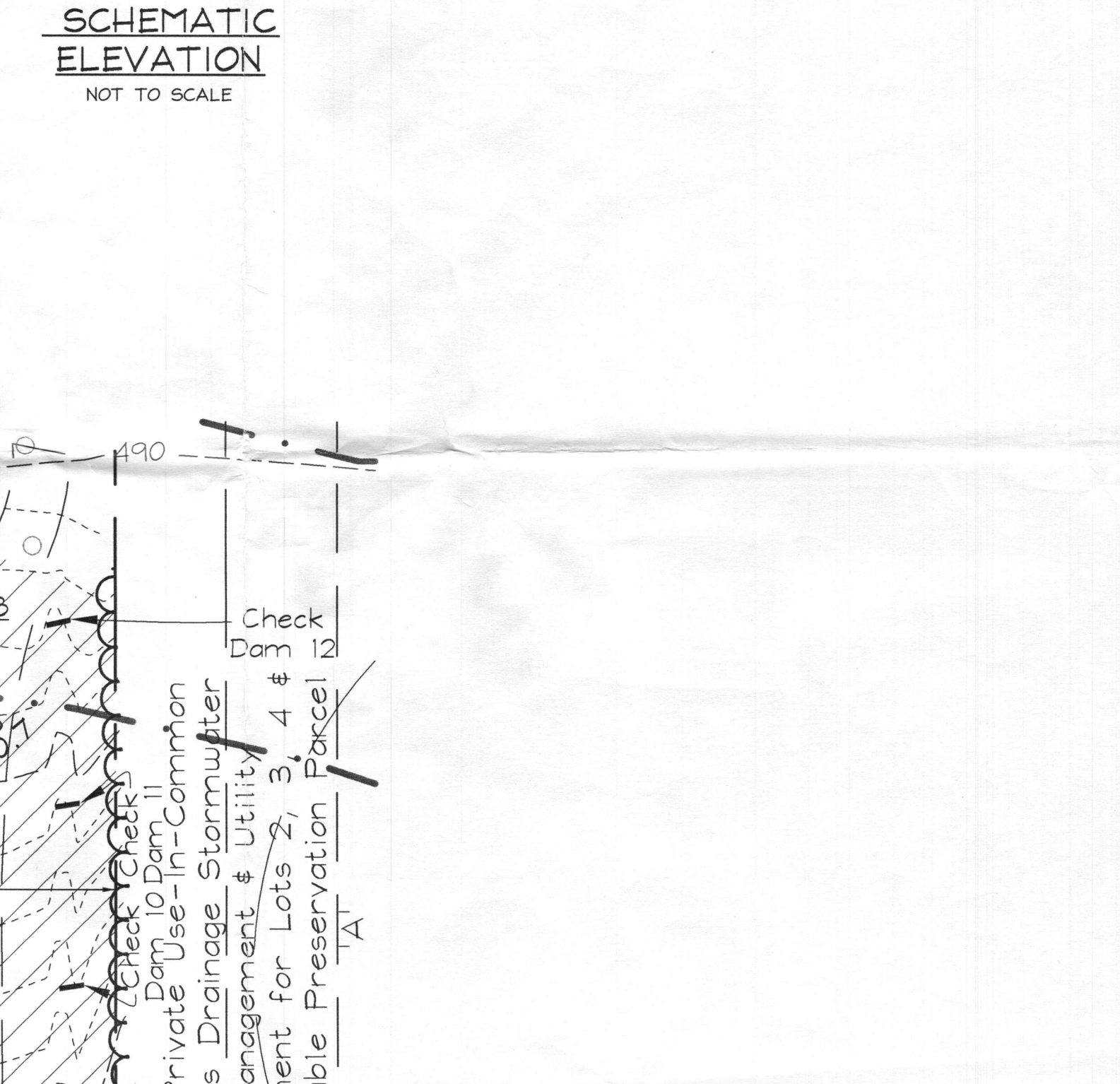
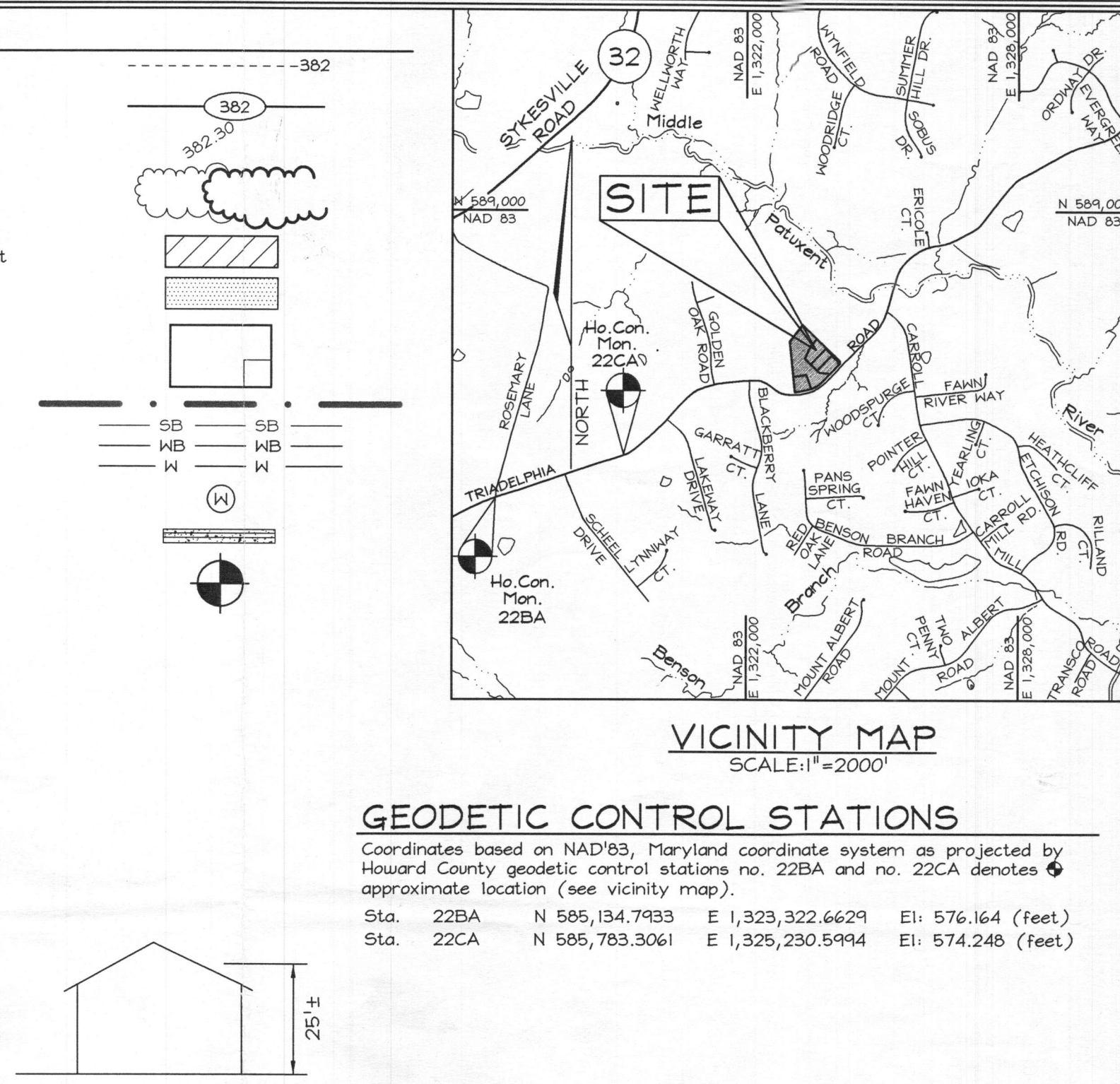
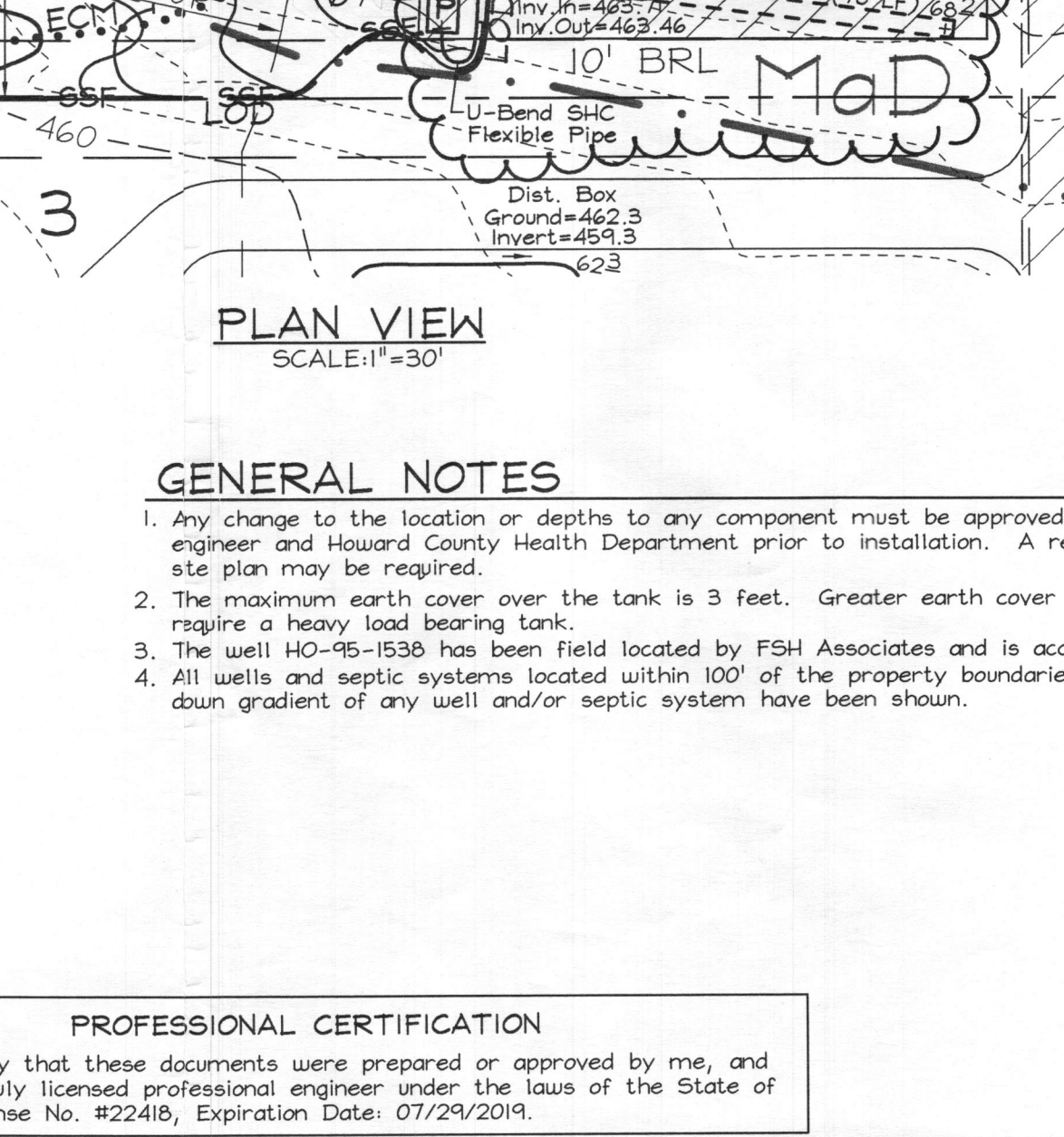
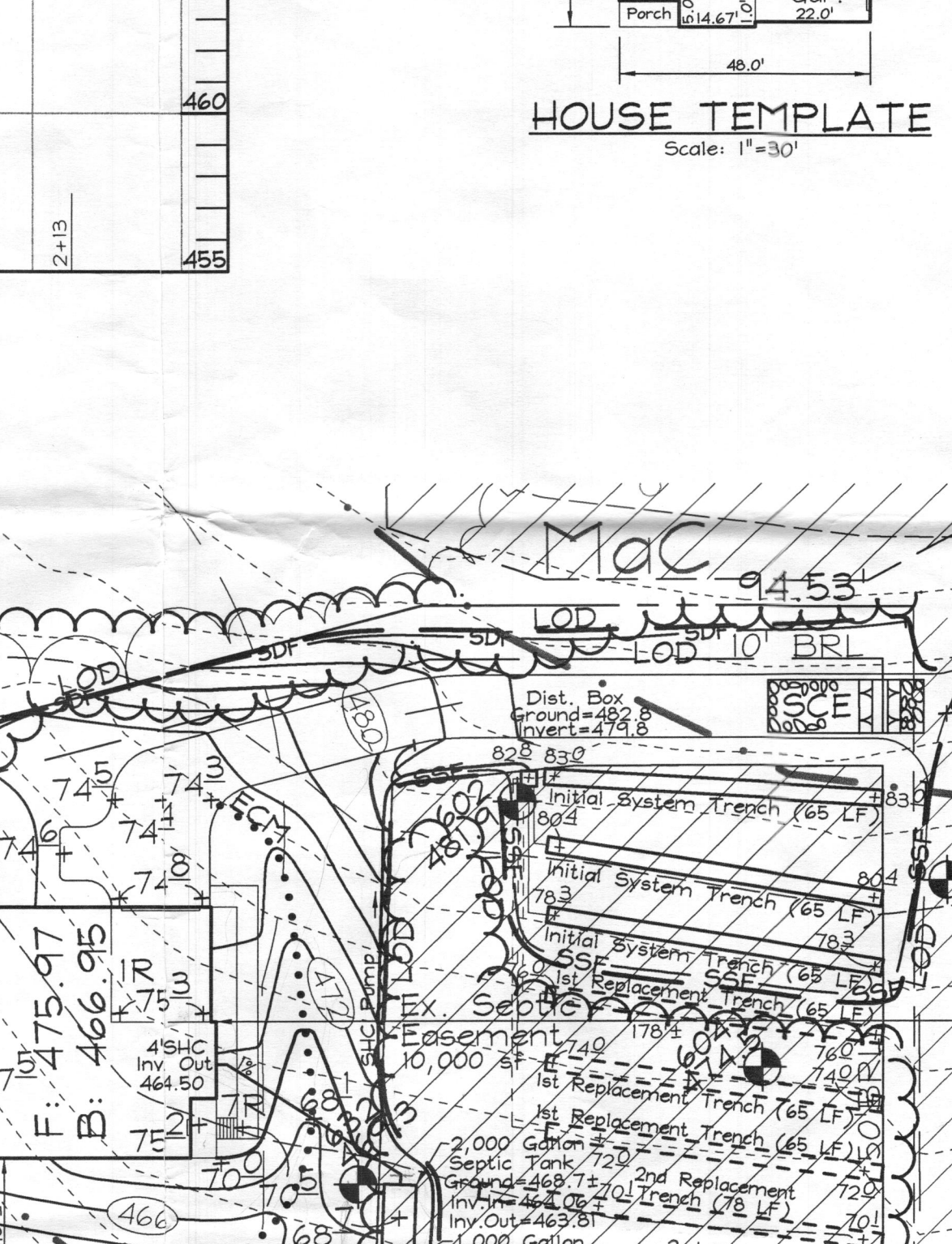
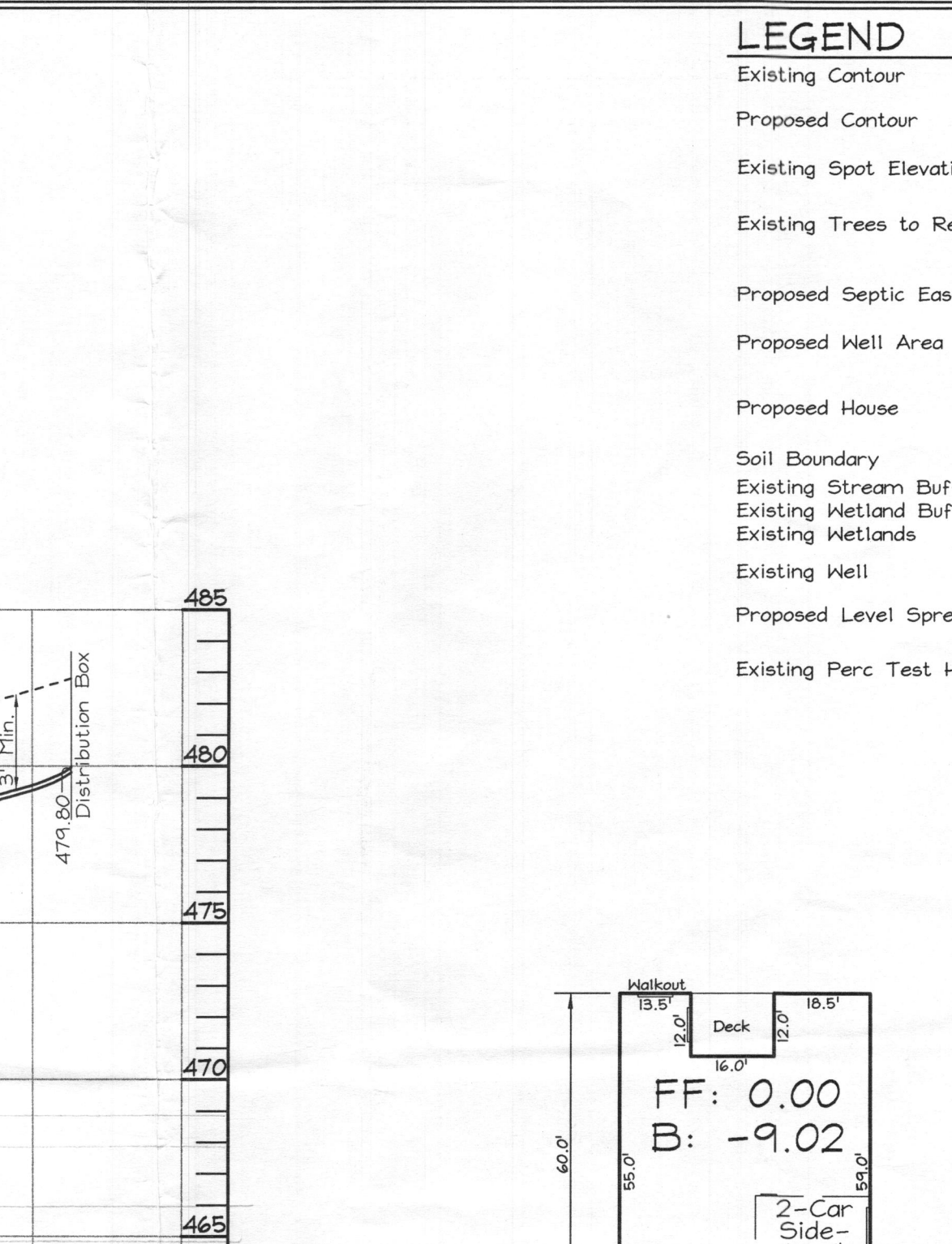
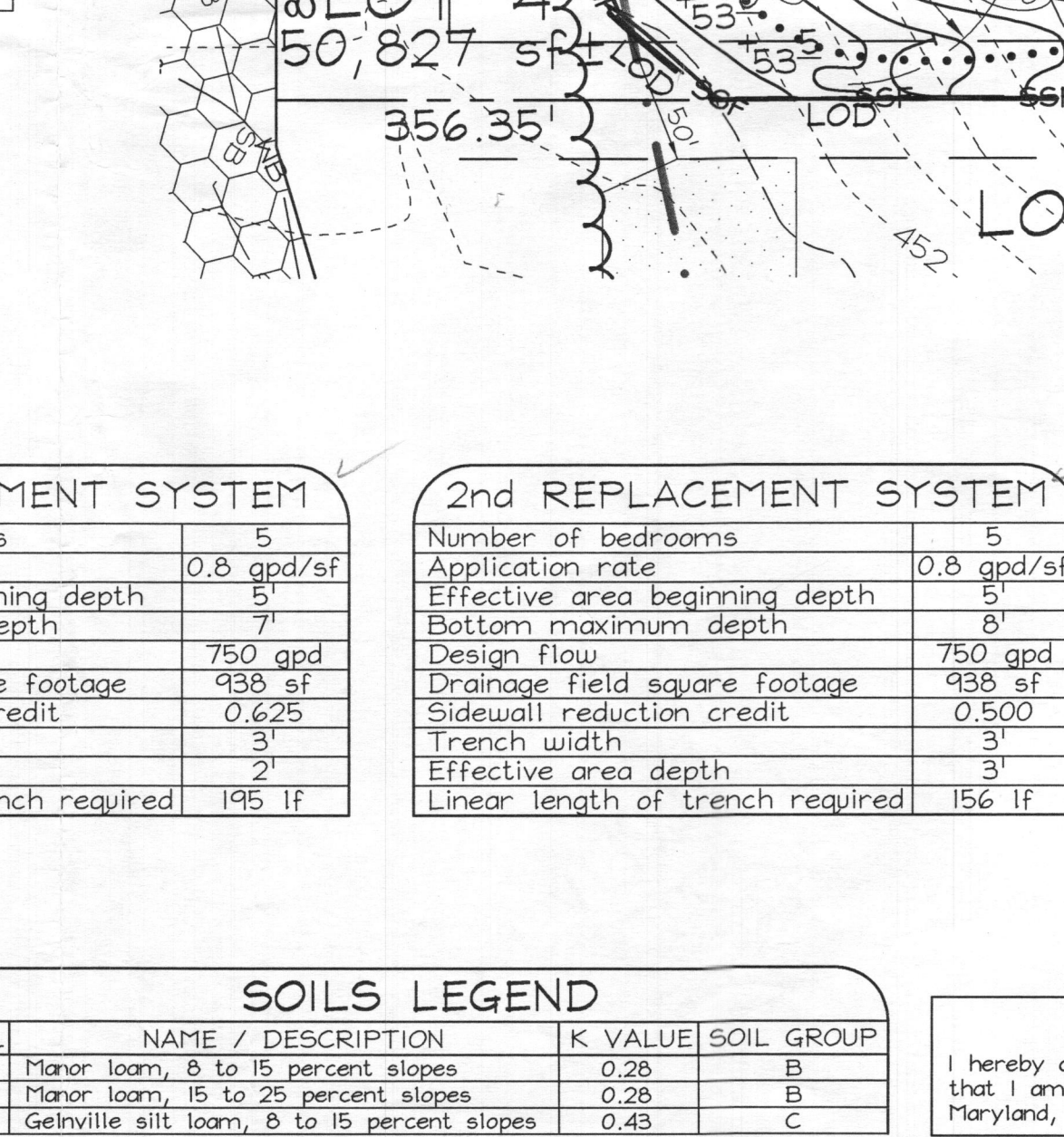
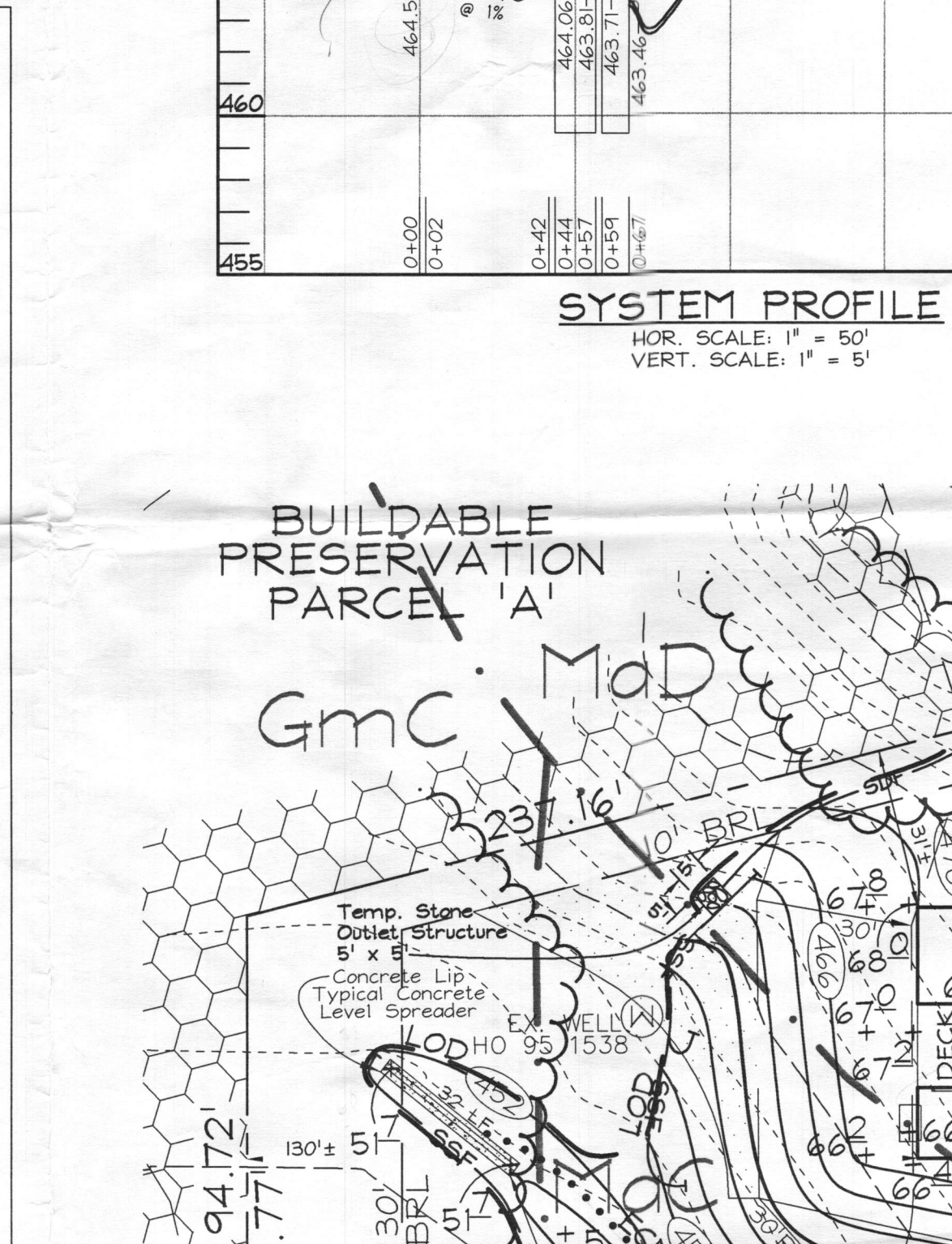
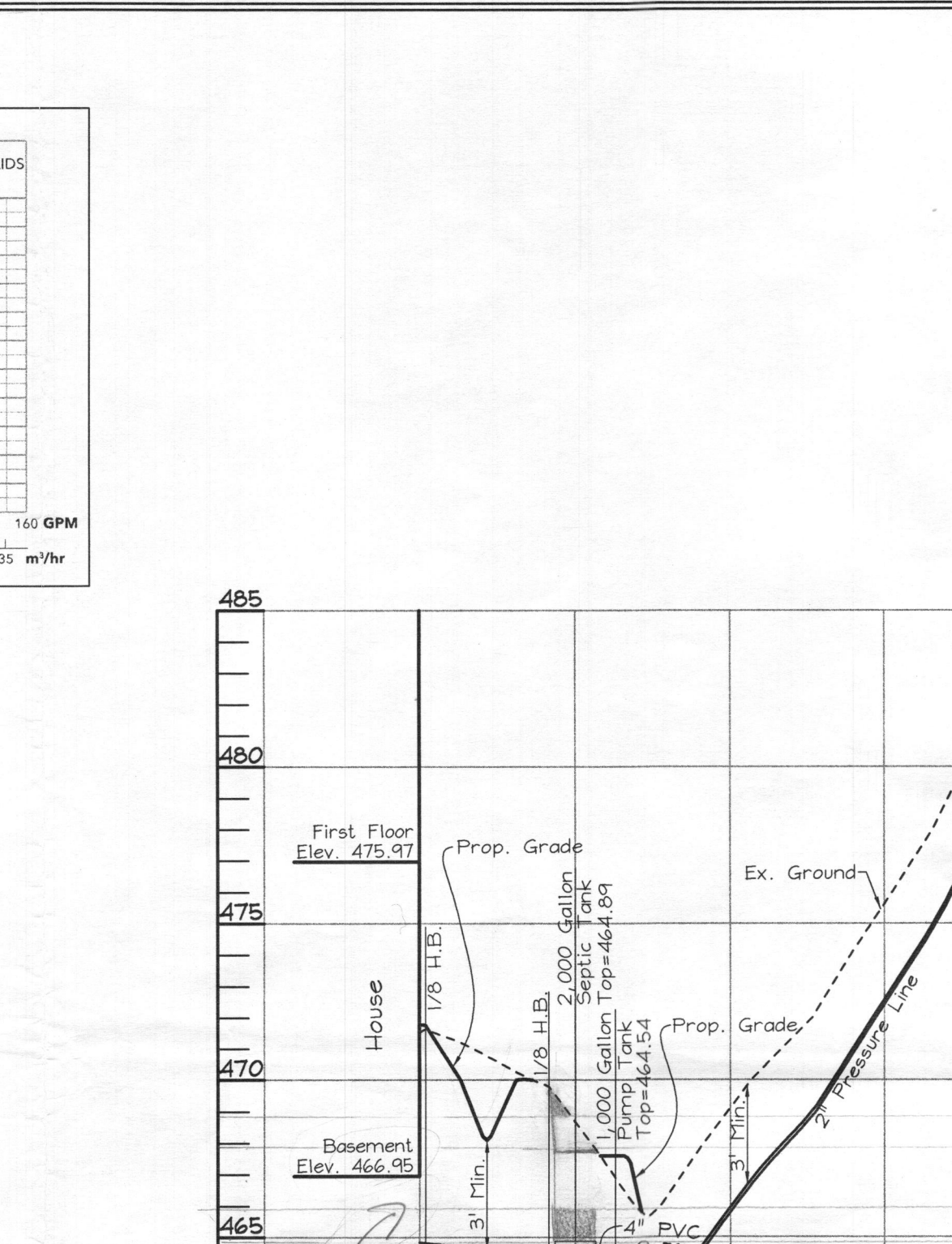
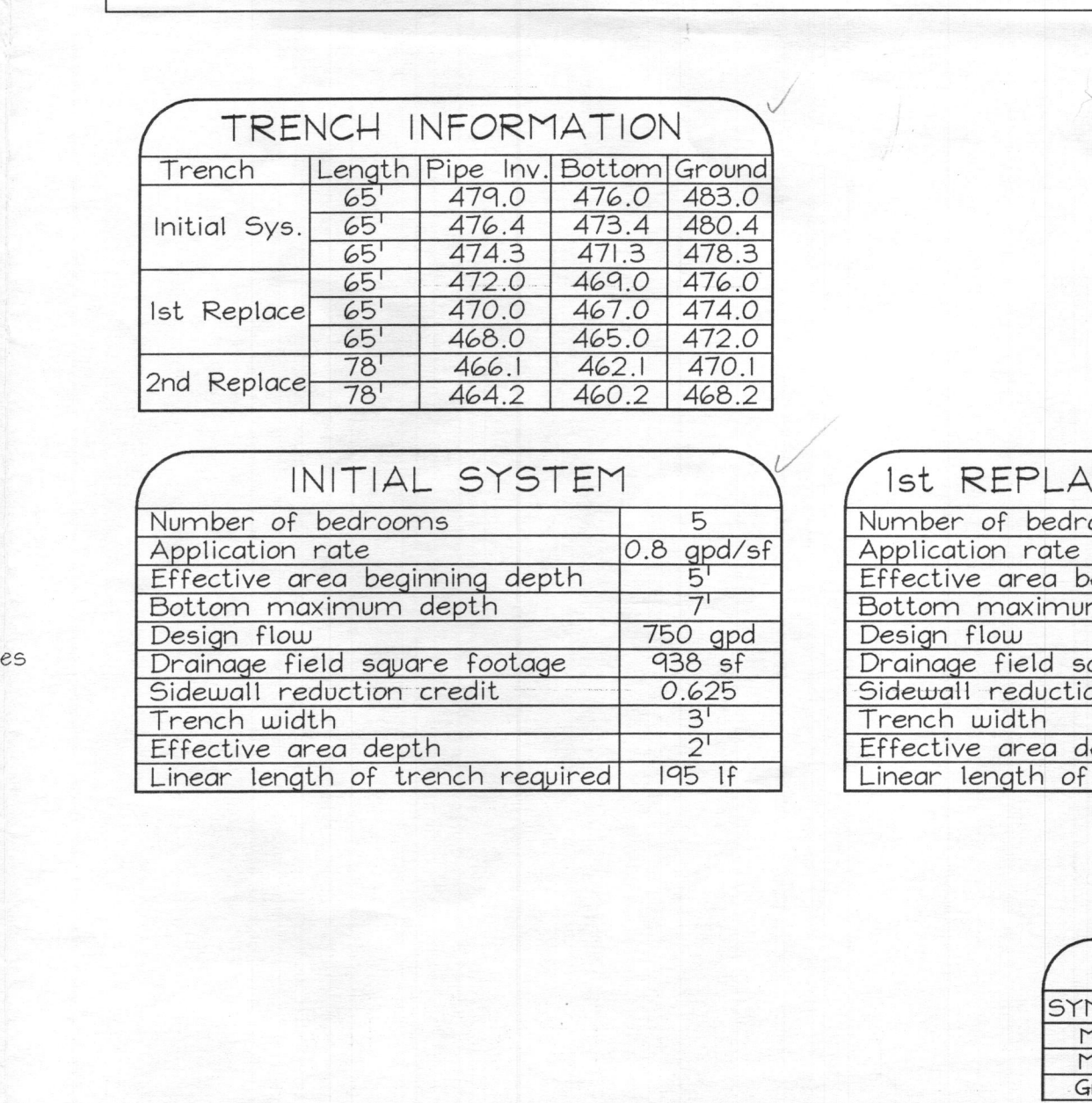
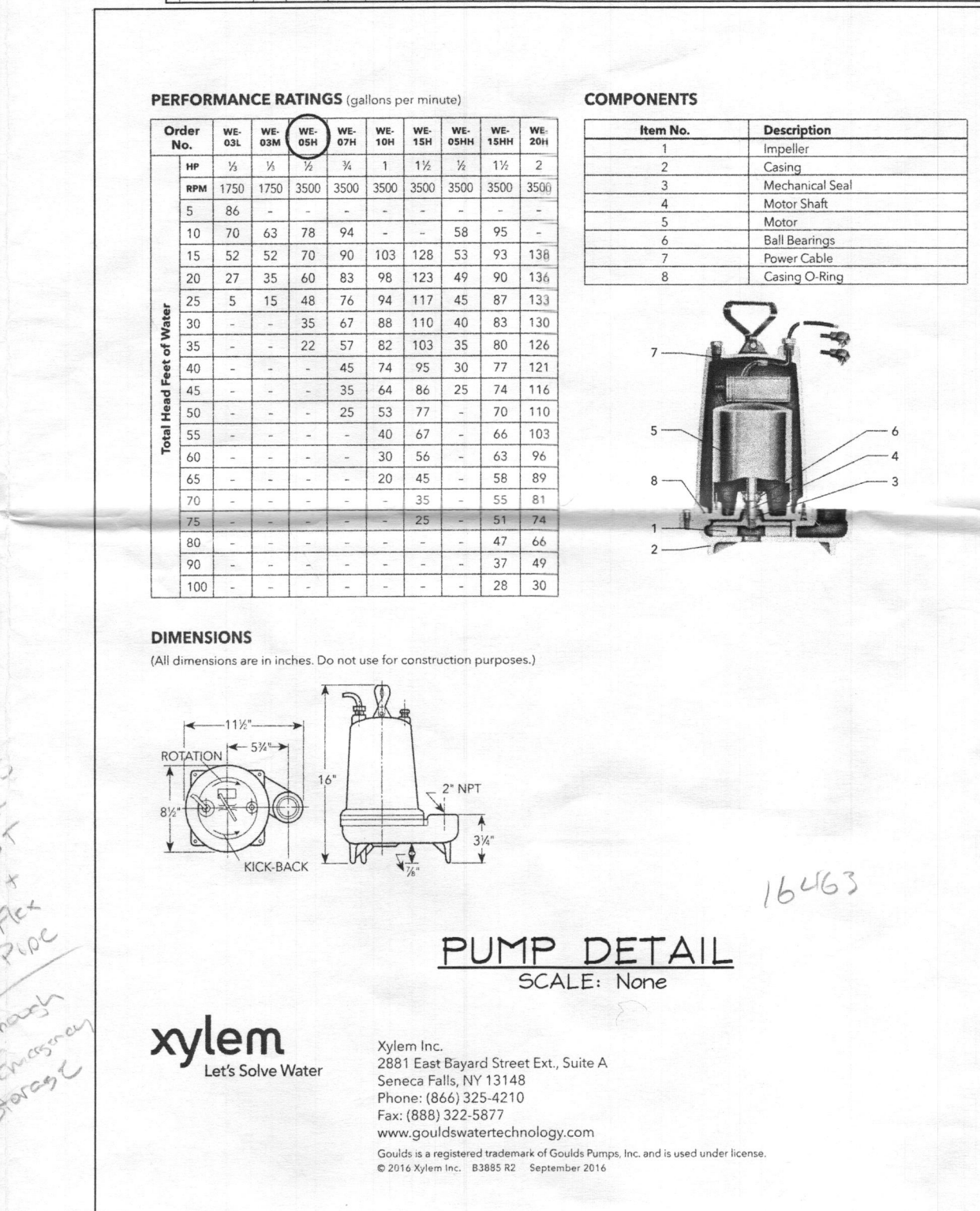
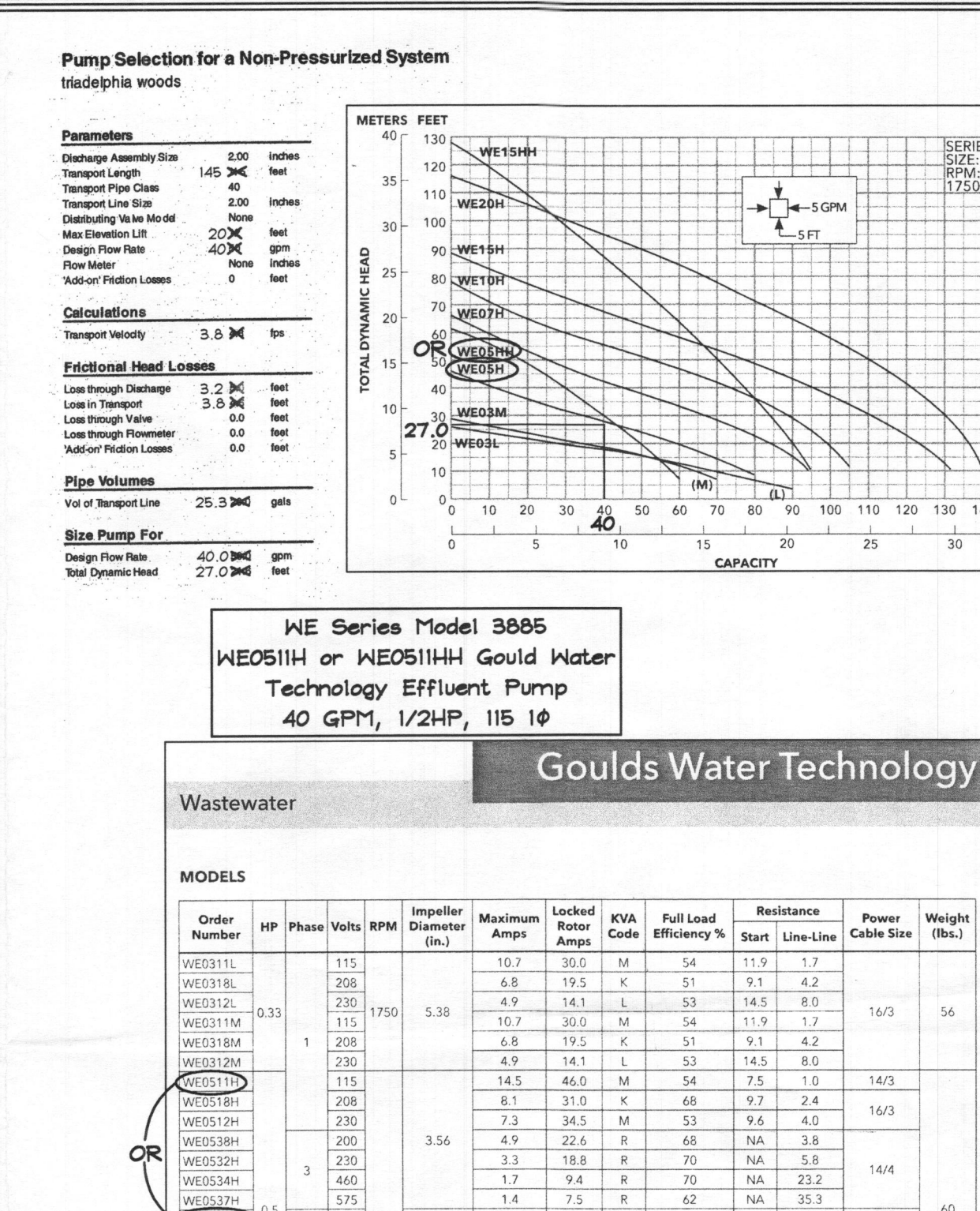
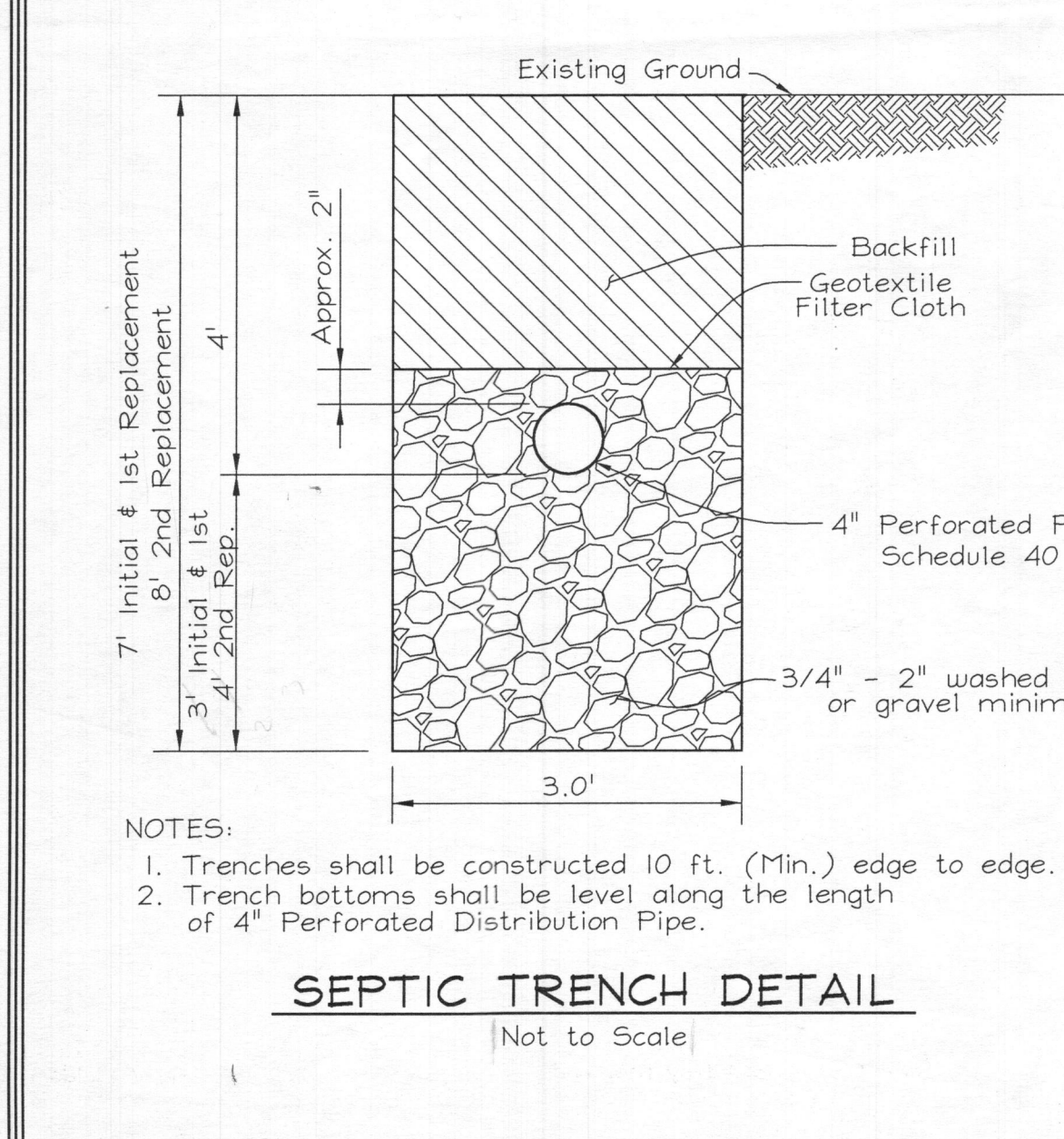
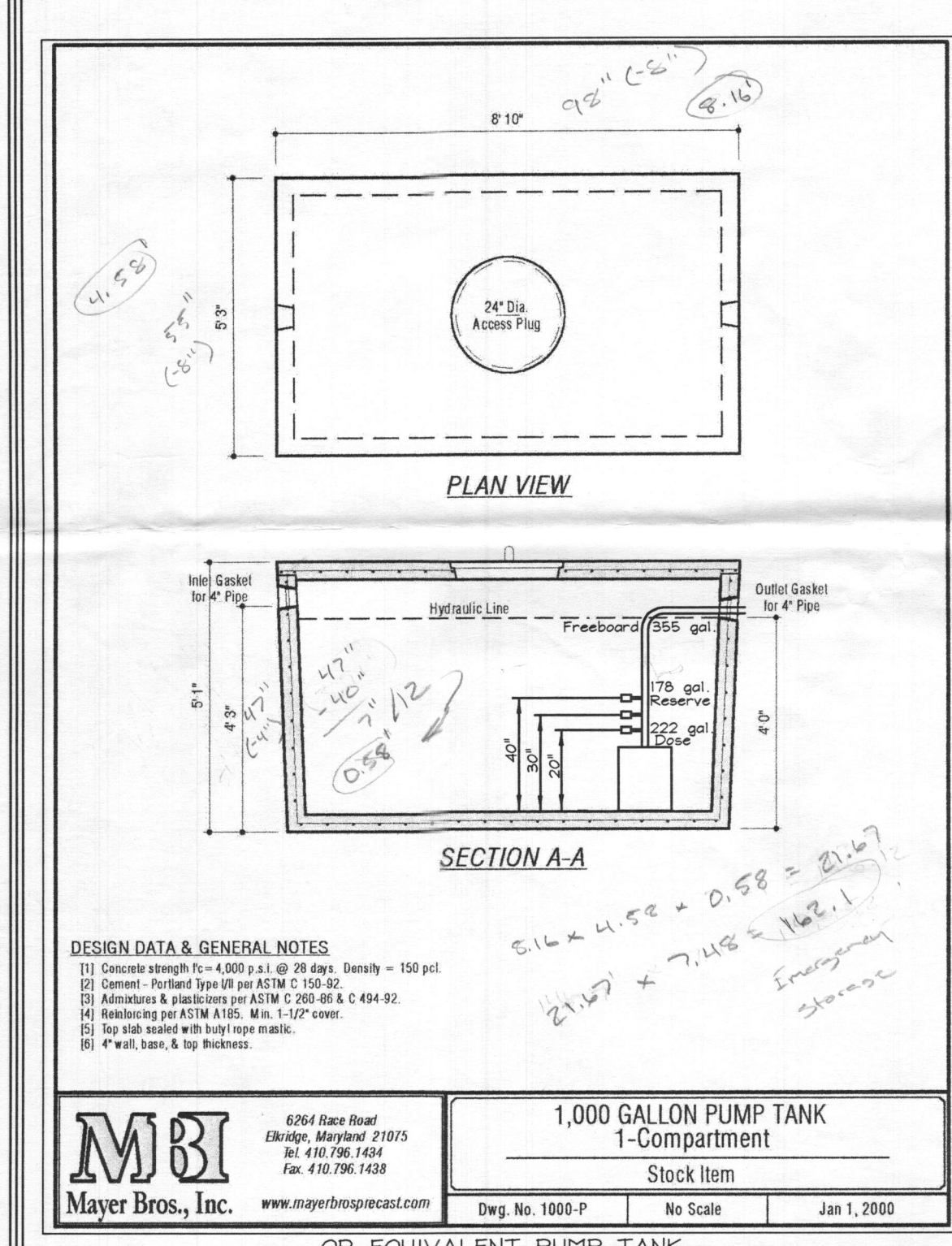
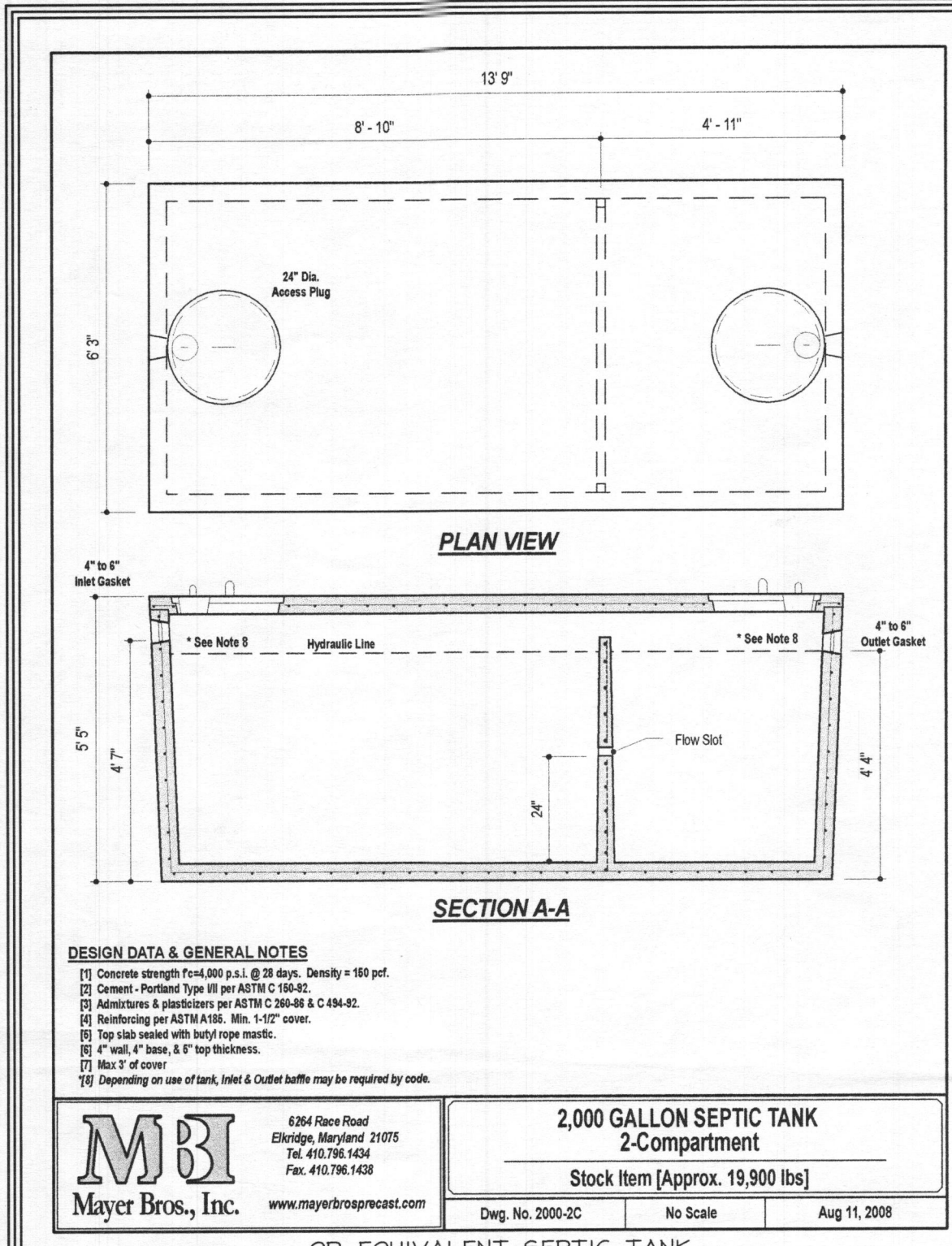
SCALE: As Shown

DATE: Sep. 18, 201

W.O. No.: 4038

SHEET No.: 1 OF

[illegible]



**COMPLETE THIS FORM WHEN DROPPING OFF ANY
CORRESPONDENCE AND/OR PLANS TO THE HOWARD COUNTY
DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS COUNTER:**

Date: 9/27/17
To: DILP
(Person's Name and Division)
From: Envision Builders LLC (410) 652-5785
(Your Name, Company Name and Telephone Number)
Subject: Project name Woods at Triadelphia lot 4
Project site address 12502 Triadelphia Road
Permit # B17003006 SDP # _____
Other information pertinent to this project _____

☒ Please check the attachments below that you are submitting with this transmittal:

- ____ Letter of response to address plan review comment letter
____ Revised plans and/or revised details: When submitting for a complete re-review, duplicate sets shall be submitted.
____ Letter Summarizing Changes
____ Energy conservation calculations
☒ Copies of revised Plot Plan (be specific).
____ ☒ Health Department Request _____ DPZ/ DED Request _____ Applicant's Request
____ Two sets of single family dwelling model plans to be placed on permanent file: Model name and/or # _____
____ Other Health Dept wanted level spreader moved - all else remained the same

Contact Person Information: (Required)

Bill HoFherr
Please Print Name

Telephone No: 410-652-5785

E-Mail Address: bhofherr@envision
build.net

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RECEIVED

Received by _____

SEP 27 2017

Freemon, Robert

From: Williams, Jeffrey
Sent: Thursday, September 14, 2017 8:17 AM
To: Freemon, Robert
Subject: FW: The woods at Triadelphia lot 4.
Attachments: 20170913140407393.pdf

Please print out this email chain and put it in the file. Thanks

From: Williams, Jeffrey
Sent: Thursday, September 14, 2017 8:16 AM
To: 'Zach Fisch'
Subject: RE: The woods at Triadelphia lot 4.

After reviewing the plan, I concur with Spencer that the tank is far too close to the graded swale. It should be 25' away from a swale, same as the sewage disposal area. We will allow you to get it around 15' away if you move the tanks just to the inside of the sewage disposal area.

Regarding the level spreader: see the attachment, which is the most recently approved perc certification plan signed in January 2008 that you prepared. The level spreader is farther away from the well box on that plan than it is on this plan. That plan was completed at the time of the subdivision plat and the level spreaders were shown on that plan to match their location on the plat supplemental. The location you show on this plan is too close to the well box. We will allow it to be closer than 50' as long as it is in the same location as it was shown on the perc cert and the plat supplemental.

From: Zach Fisch [<mailto:z.fisch@fsheri.com>]
Sent: Tuesday, September 12, 2017 4:06 PM
To: Williams, Jeffrey
Subject: The woods at Triadelphia lot 4.

Jeff

Attached please find the septic design plan for lot 4 and the septic design plan for the already built for lot 3.

Also I am attaching the comments associated with lot 4.

As I mentioned in our tell conversation, the level spreaders that are concrete level spreaders do not infiltrate. As you can see the flow off the level spreader on lot 4 will bypass the well box on lot 3 and it does not discharge directly onto it. Also, the existing well on lot 3 is about 52 feet away from the level spreader. When lot 3 septic design plan was prepared we showed the level spreader for lot 4.

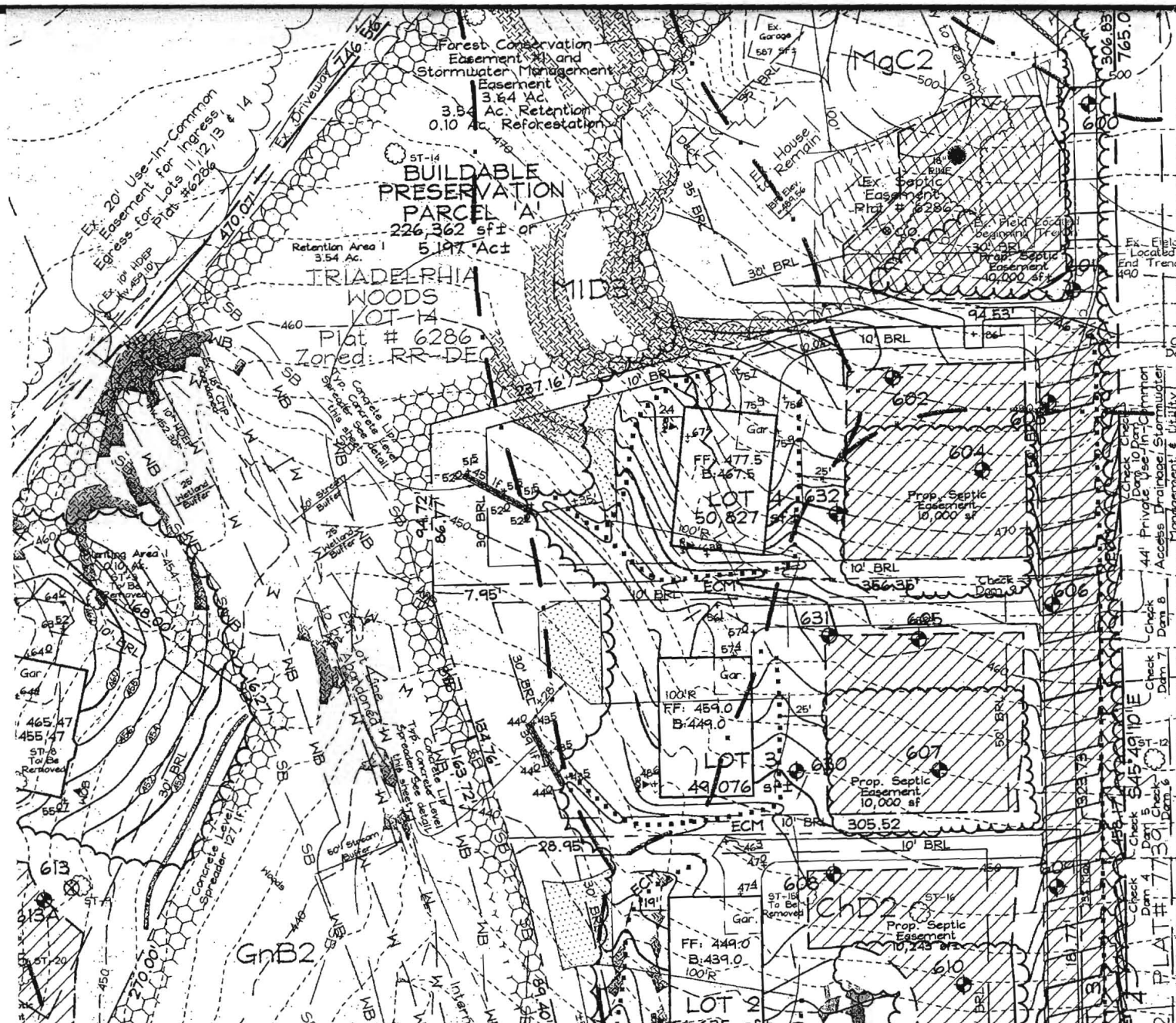
This is the last house in a row of 3 lots on this side of the subdivision.

We addressed the rest of the drafting comments except the weep hole in the pump tank or showing the valves and fittings for the pump. Before we were not required to go to this level of design detail.

Thanks for your help.

Zacharia Y. Fisch P.E., Principal
FSH ASSOCIATES LLC
6339 Howard Lane
Elkridge MD 21075
Tel. (410)567-5200 EXT.230
Fax.(410)796-1562
E-mail z.fisch@fsheri.com

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Freemon, Robert

From: Williams, Jeffrey
Sent: Thursday, August 31, 2017 1:23 PM
To: Freemon, Robert
Subject: FW: Willow pond lot 10

Where are we on this?

From: Zach Fisch [<mailto:z.fisch@fsheri.com>]
Sent: Thursday, August 31, 2017 10:33 AM
To: Williams, Jeffrey
Subject: Willow pond lot 10

Hi Jeff

Are we good with the revised plans that I brought in yesterday? The owner needs the building permit for next week to start work.

Zacharia Y. Fisch P.E , Principal
FSH ASSOCIATES LLC
6339 Howard Lane
Elkridge MD 21075
Tel. (410)567-5200 EXT.230
Fax.(410)796-1562
E-mail z.fisch@fsheri.com

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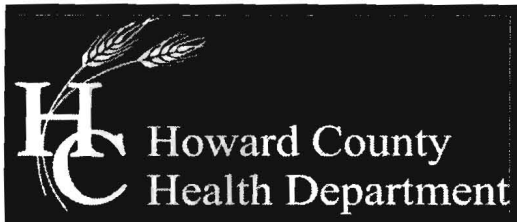
Sent 8/28

Freemon, Robert

To: info@fsheri.com
Subject: Woods at Tridelphia, Lot 4
Attachments: 12502 Triadelphia Rd..docx.pdf; OSDS Req.pdf

Hi,
Attached are my comments for 12502 Triadelphia Lot 4. I need to know the details about this "Temp. Stone Outlet Structure". How long is it going to be there? What direction is the water being channeled? etc... If you have any questions let me know. Thanks.

Robert Freemon
Howard County Health Department
8930 Stanford Blvd. Columbia, MD 21045
Well and Septic Program
Bureau of Environmental Health
Phone: 410-313-6357
Email: rfreemon@howardcountymd.gov
<https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic>



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

MEMORANDUM

TO: FSH Associates
6339 Howard Lane
Elkridge, MD 21075

FROM: Robert Freemon *RF*
Well & Septic Program

RE: Woods at Triadelphia, Lot 4
12502 Triadelphia Rd.
Ellicott City, MD 21042

DATE: 8/28/17

I have reviewed the septic plan for Woods at Triadelphia Lot 4 and here are my comments.

Electrical Note

*2erc Cert
Jeff*

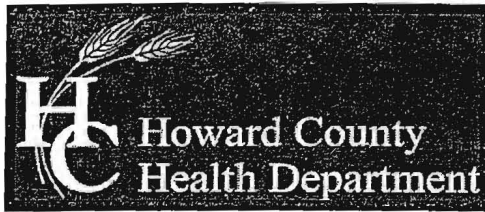
*Could be
drawn in
if only problem.
Jeff*

- ✓ The address on the plan needs to be corrected along with the parcel number.
- ✗ Add the notes stated on the attached Conventional On-site Sewage Disposal Design Plan Requirements sheet.
- ✓ There needs to be a 30ft and 100ft arch around the well and well box.
- ✓ Elevations at each perc hole must be labeled.
- ✗ The septic tank cannot have more than 3' of earth cover over it. If more than three feet is necessary a heavy load bearing tank will be required.
- ✗ The concrete level spreader must stay at least 50' from the well box.
- ✓ The proposed level spreader in the legend does not match what is shown on the plan.
- ✗ A weep hole needs to be present in the pump tank.
- ✗ All valves and fittings to be installed on the pump tank need to be shown if not already.
- ✓ The dimensions on the pump tank need to be corrected. The inside of the tank is shown to be larger than the outside dimensions.
- ✓ The septic tank needs to be further away from the swale. The extra space in the SDA (not used by replacement trenches) may be used for the septic tank and pump tank.

- LOD/SSF Recommend Adjusting Location

- Never answered question in email

OSDS



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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

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

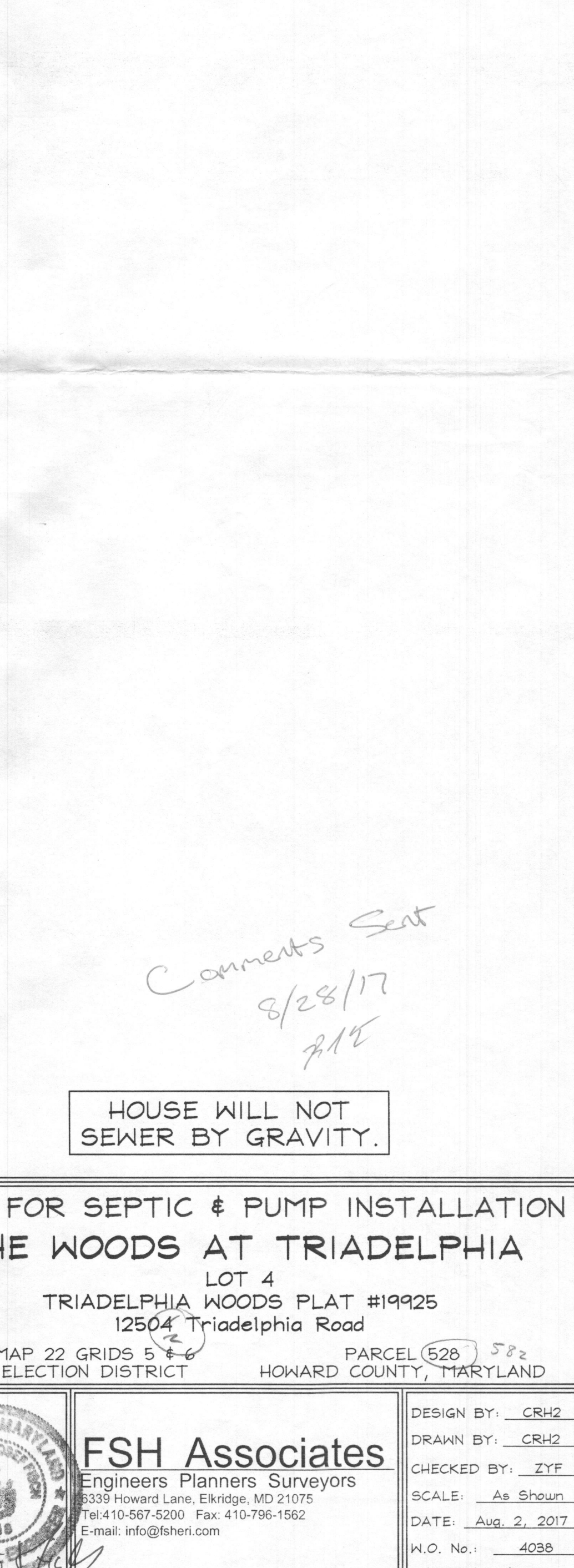
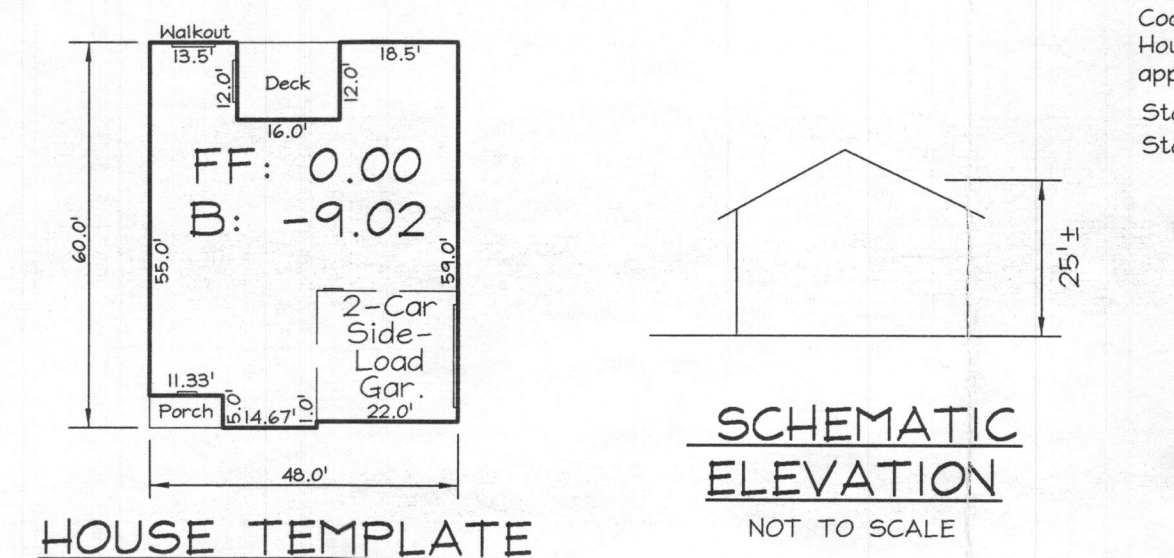
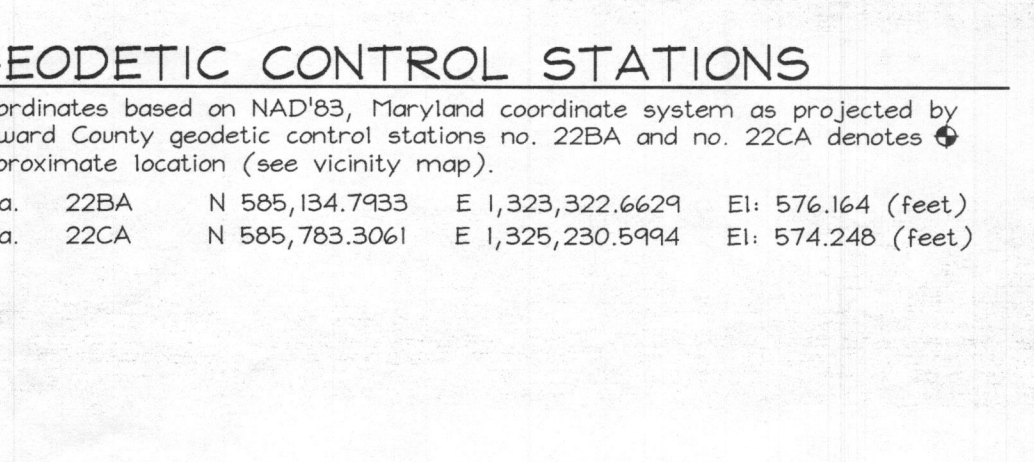
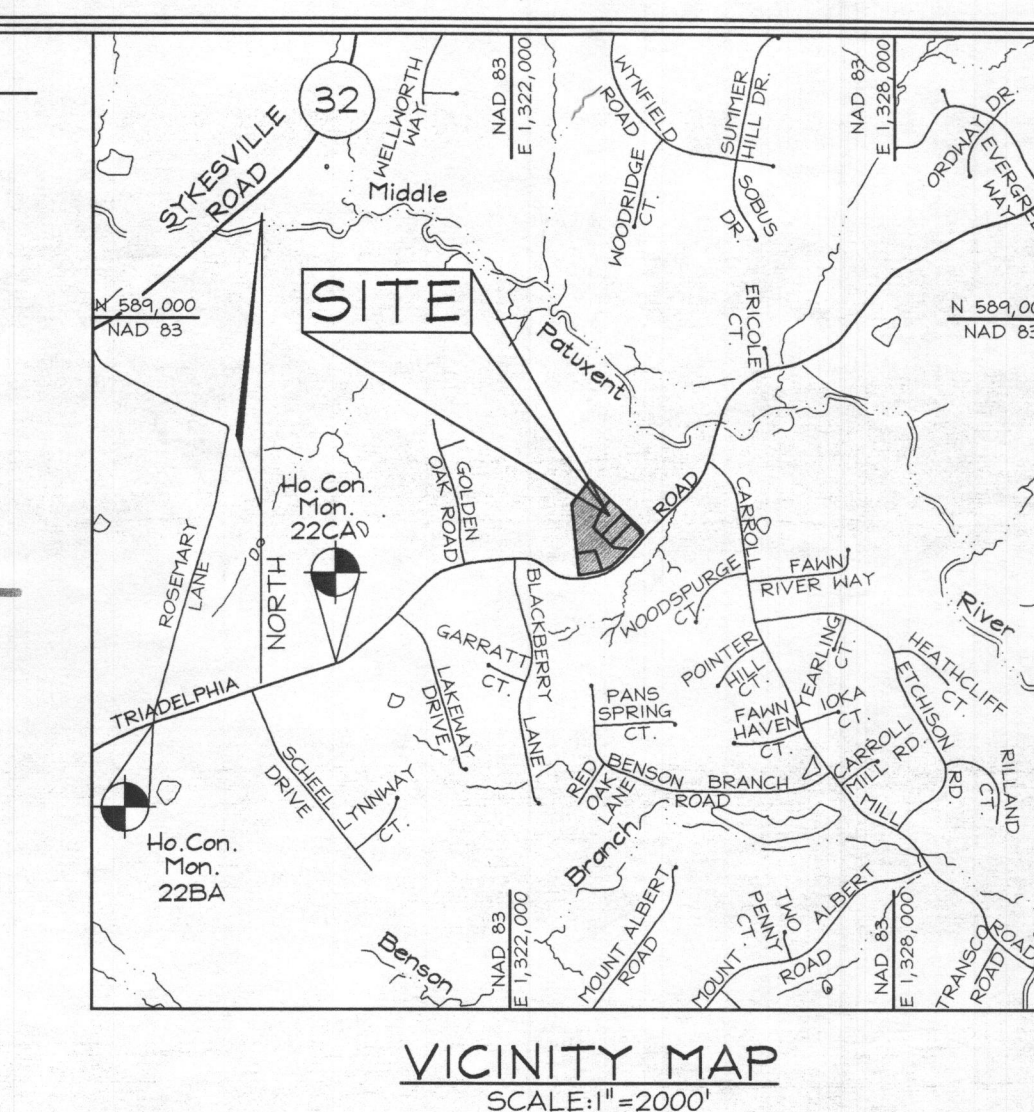
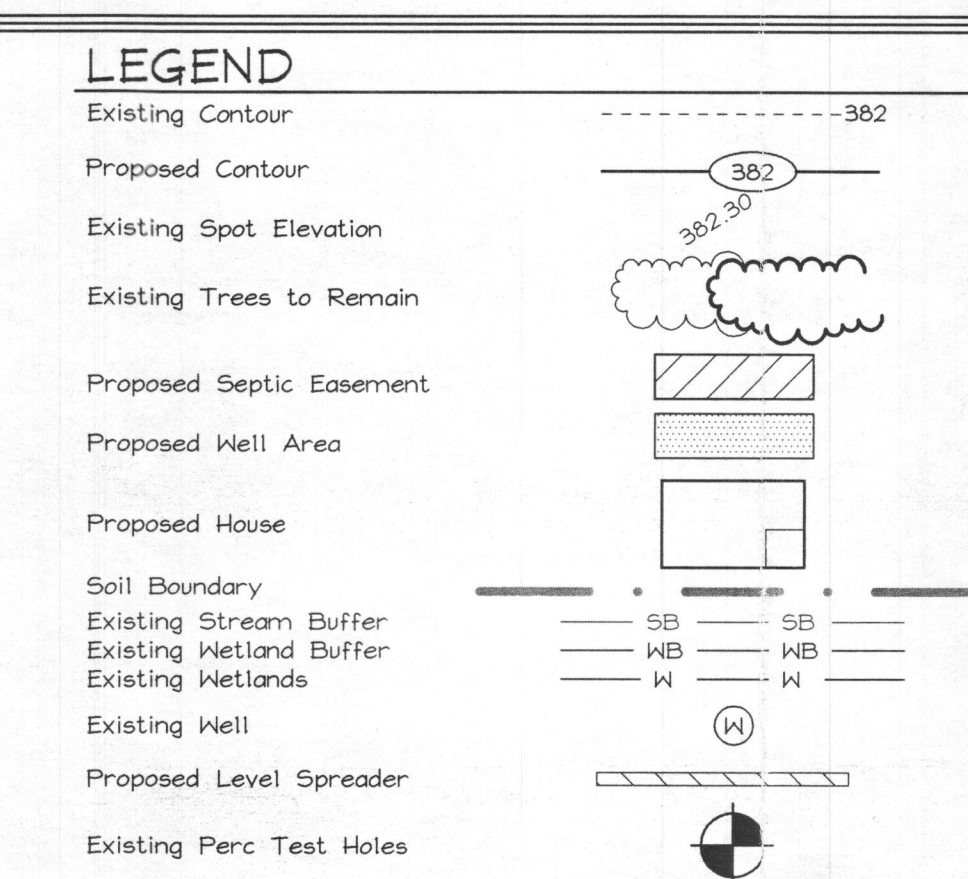
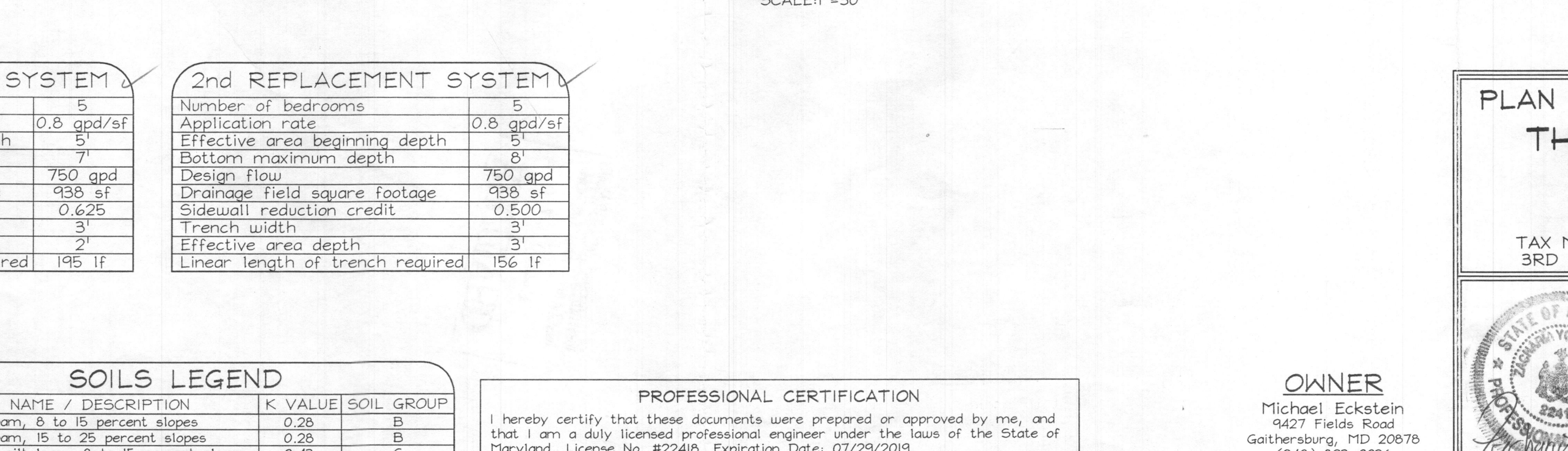
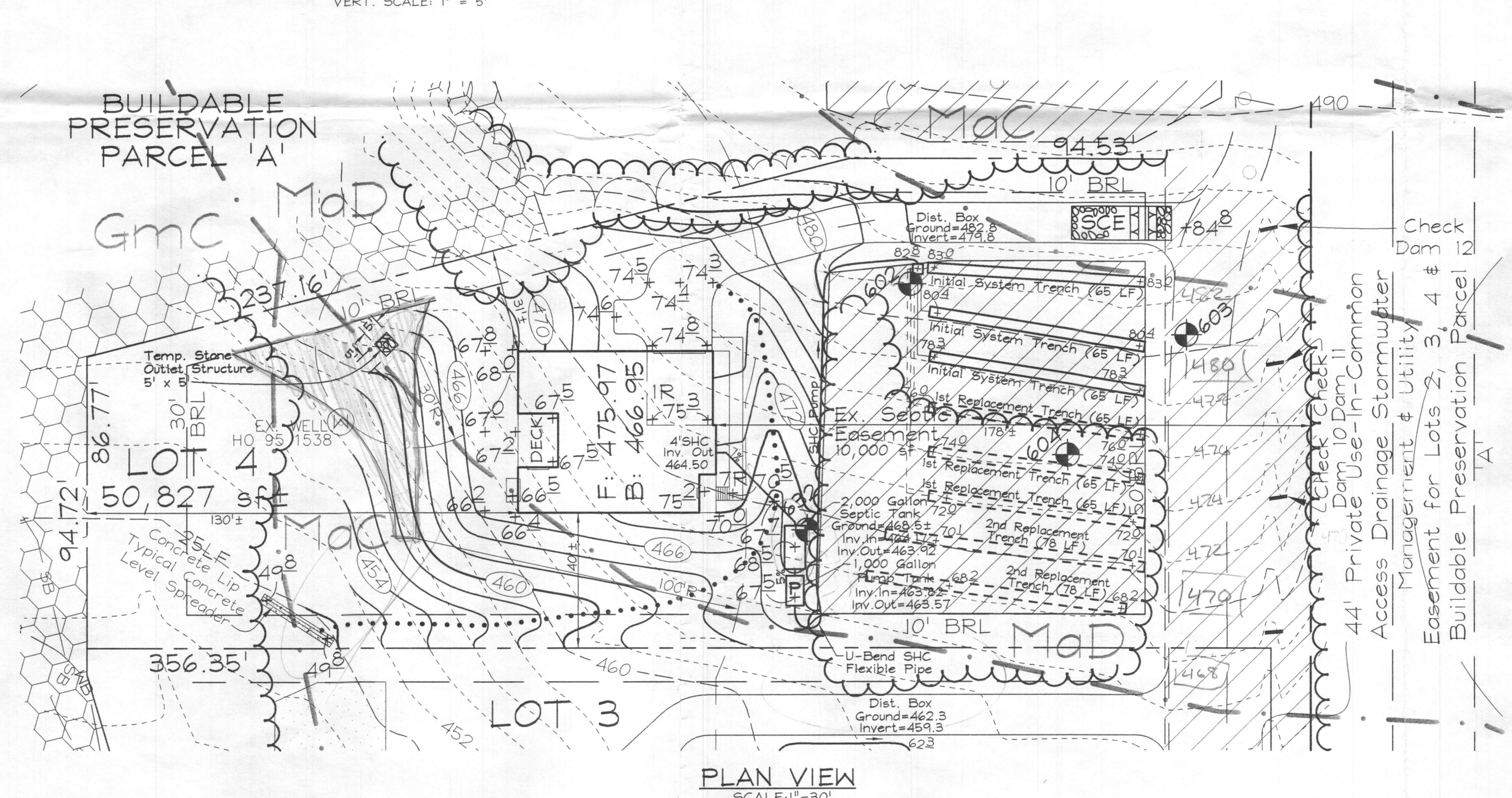
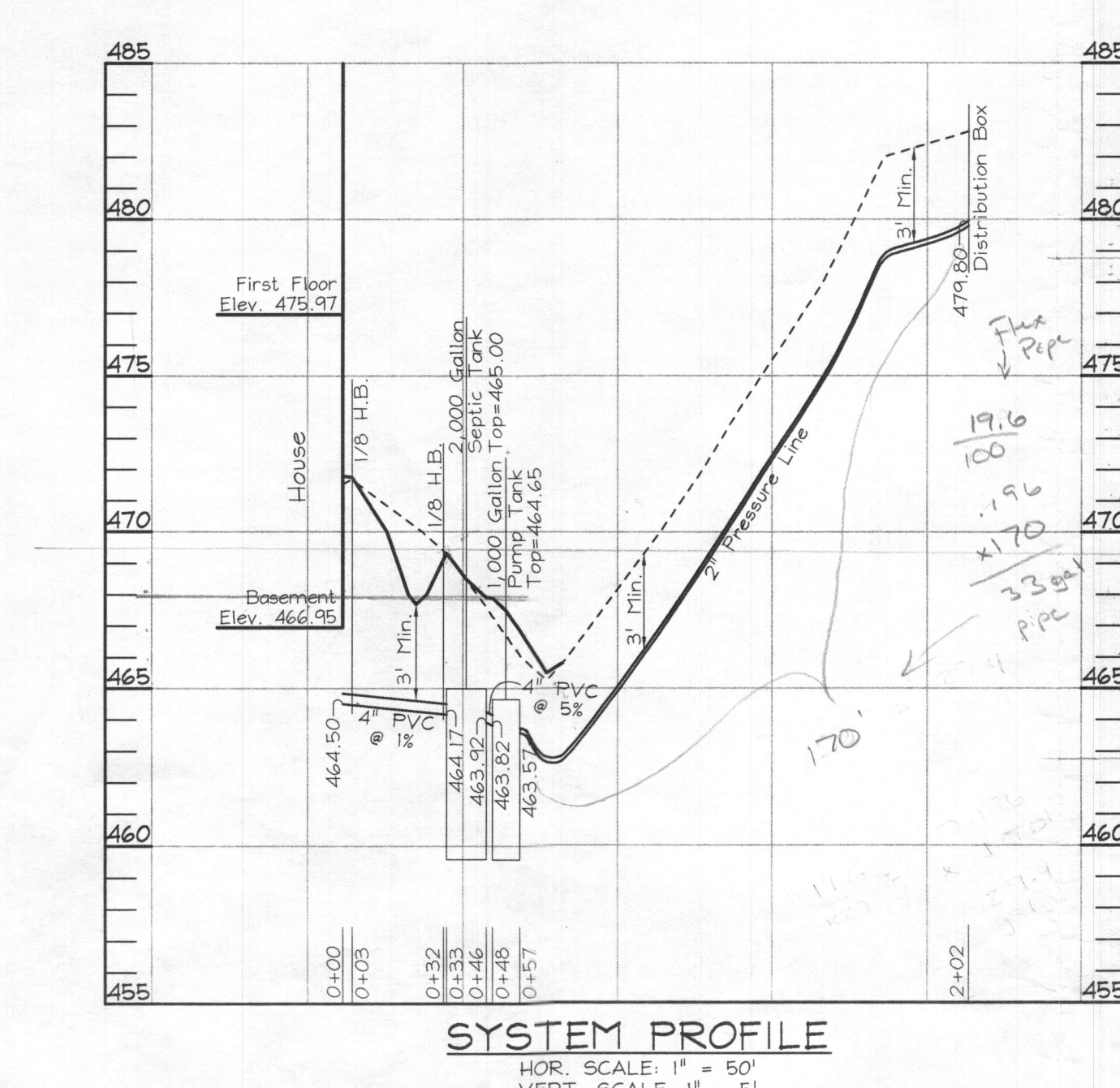
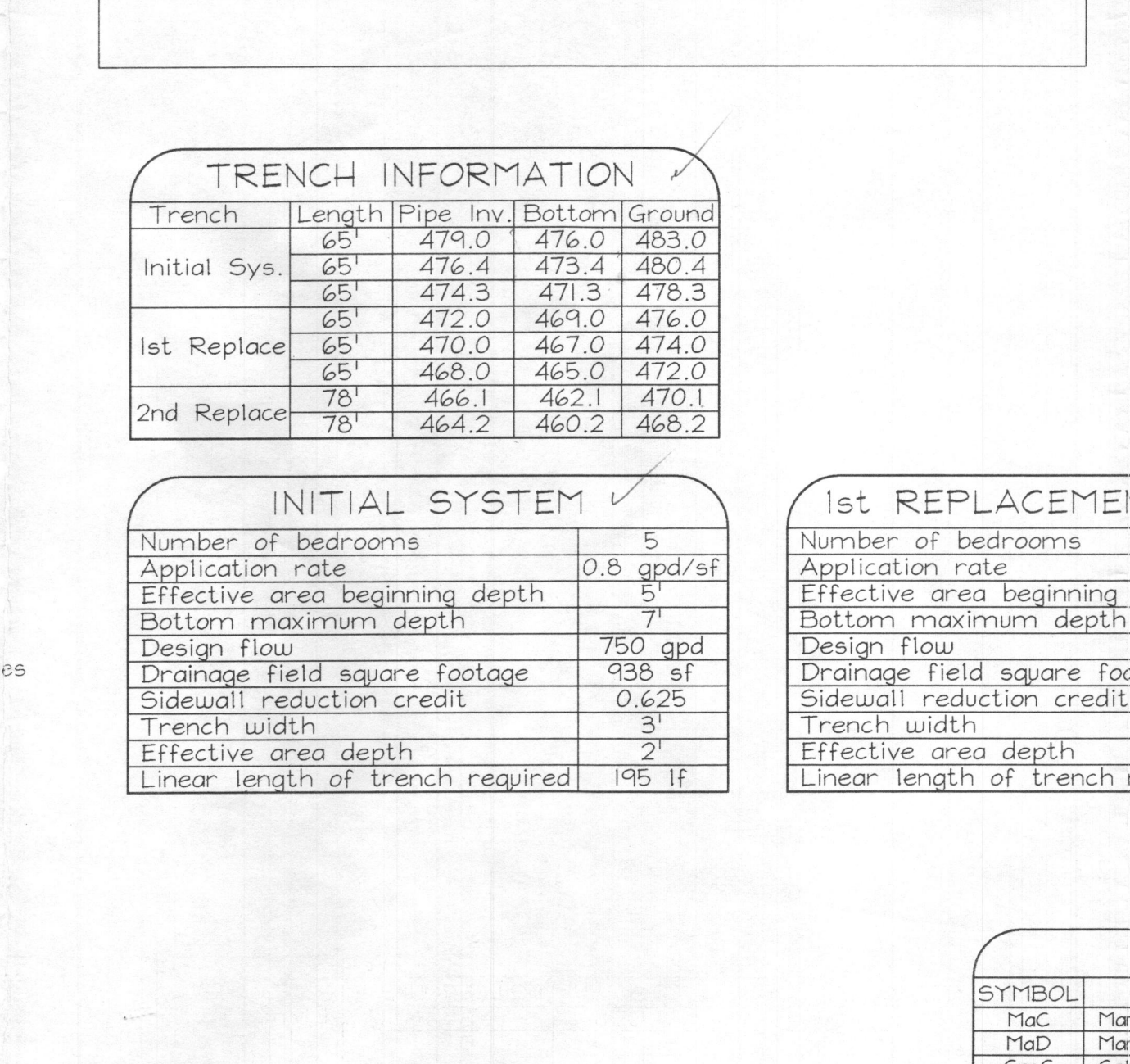
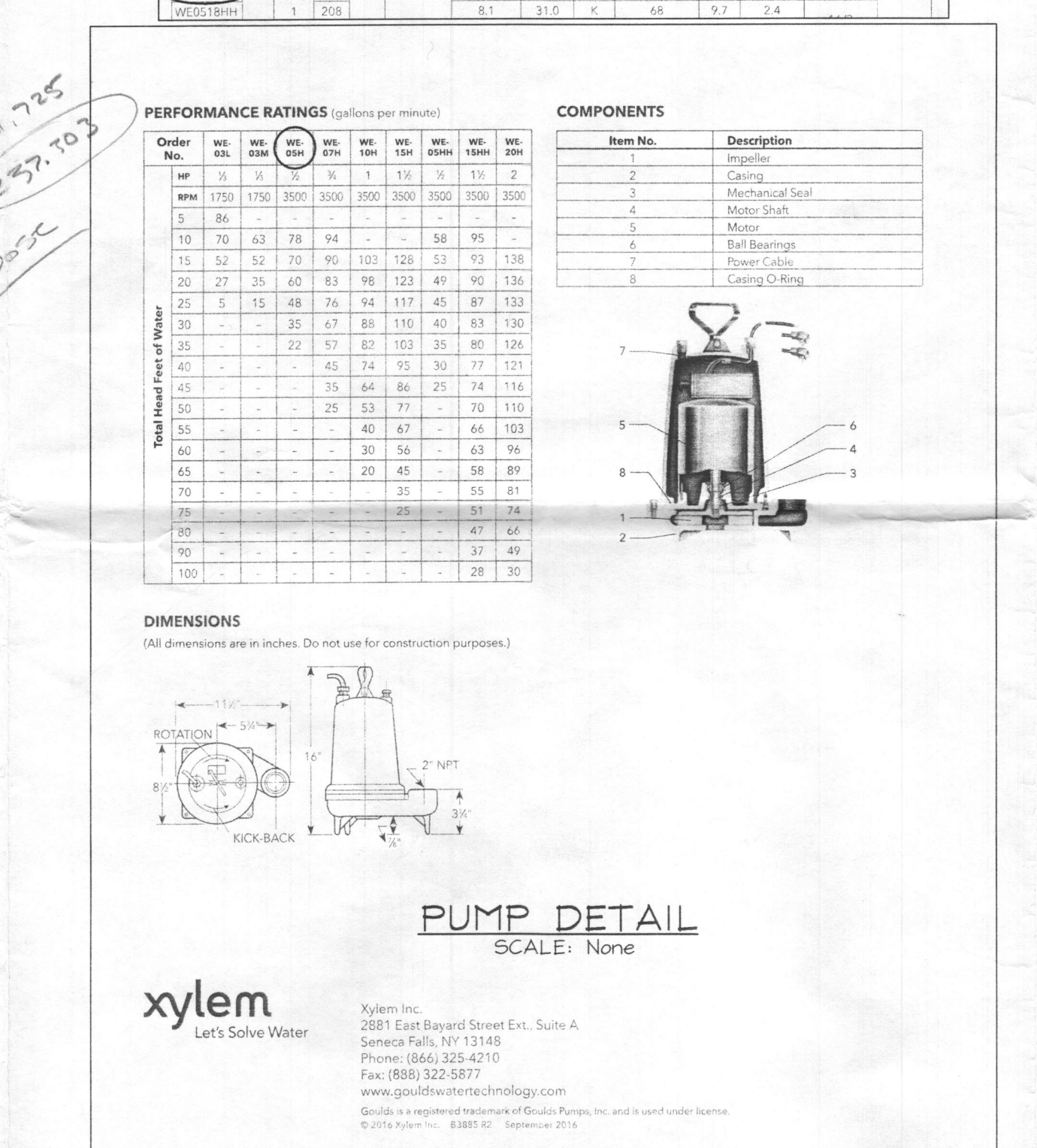
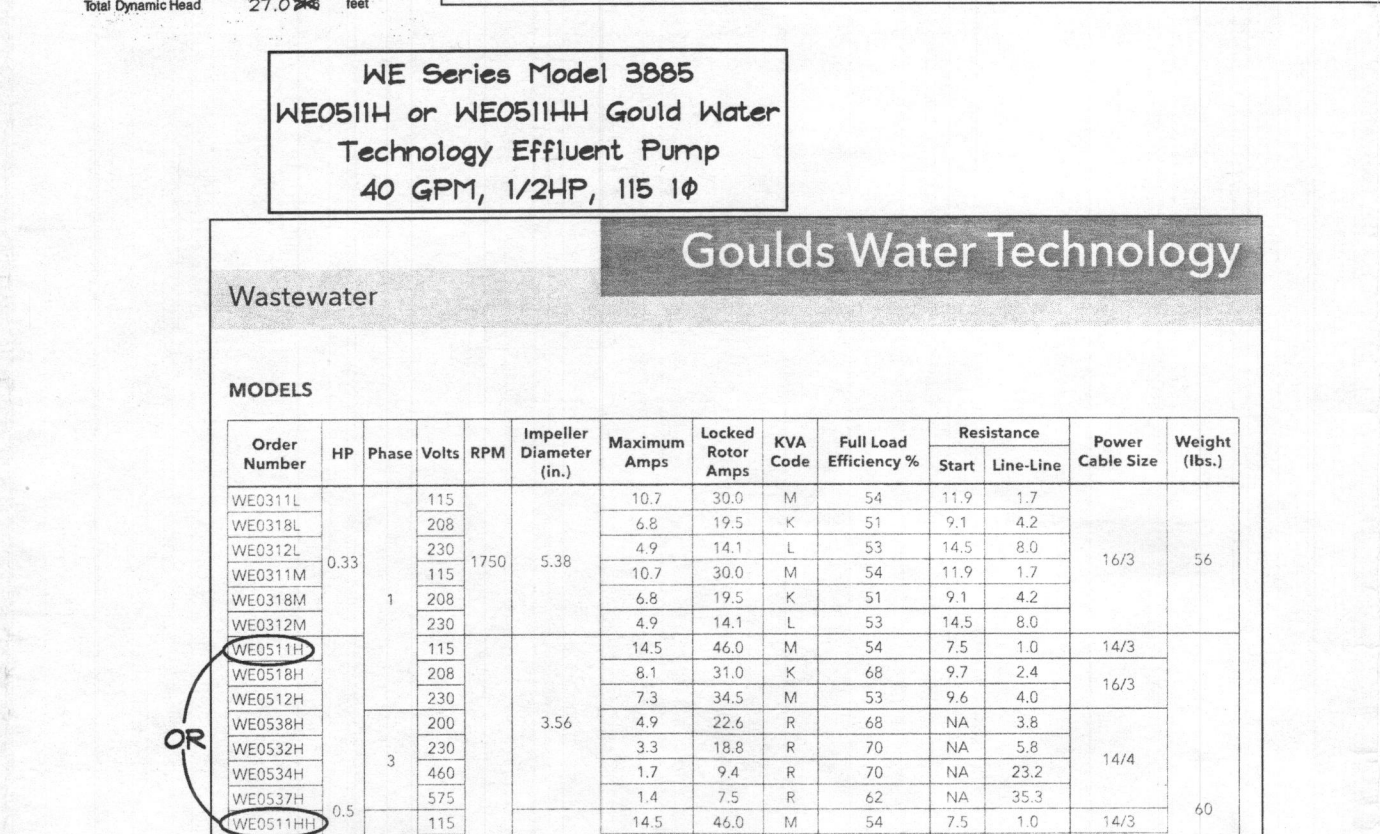
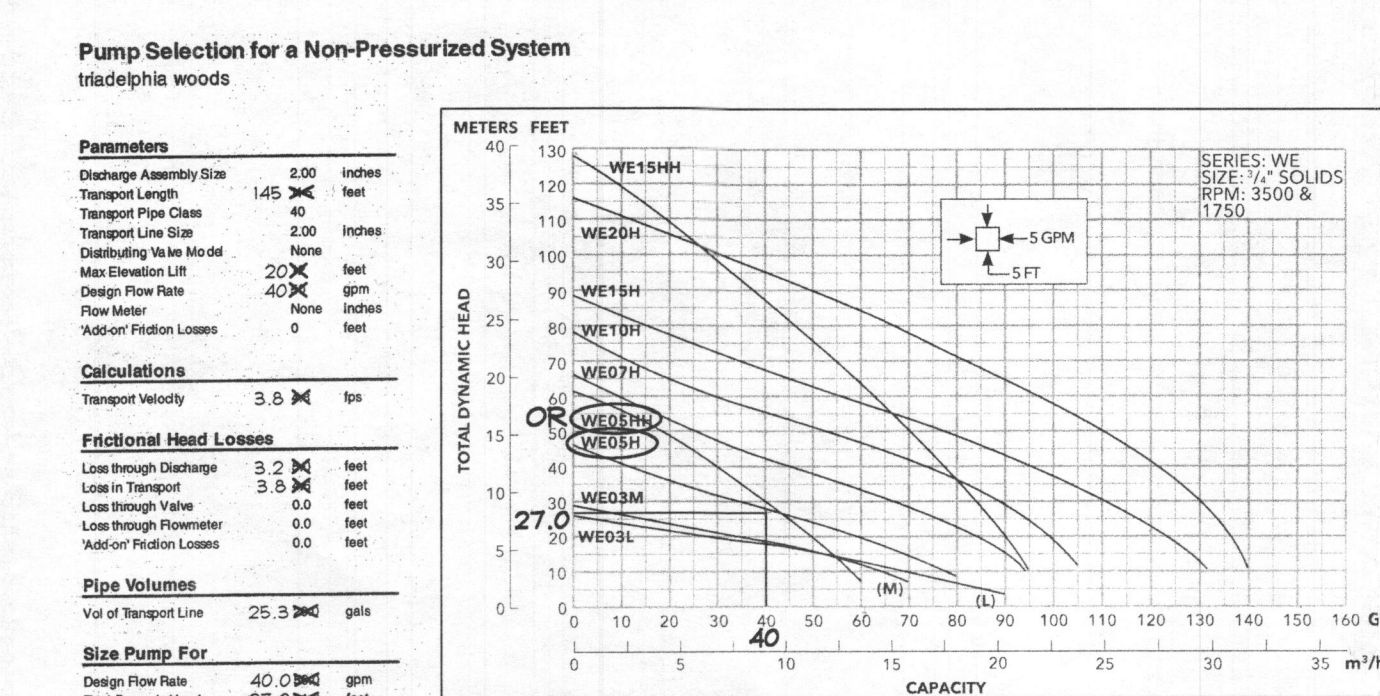
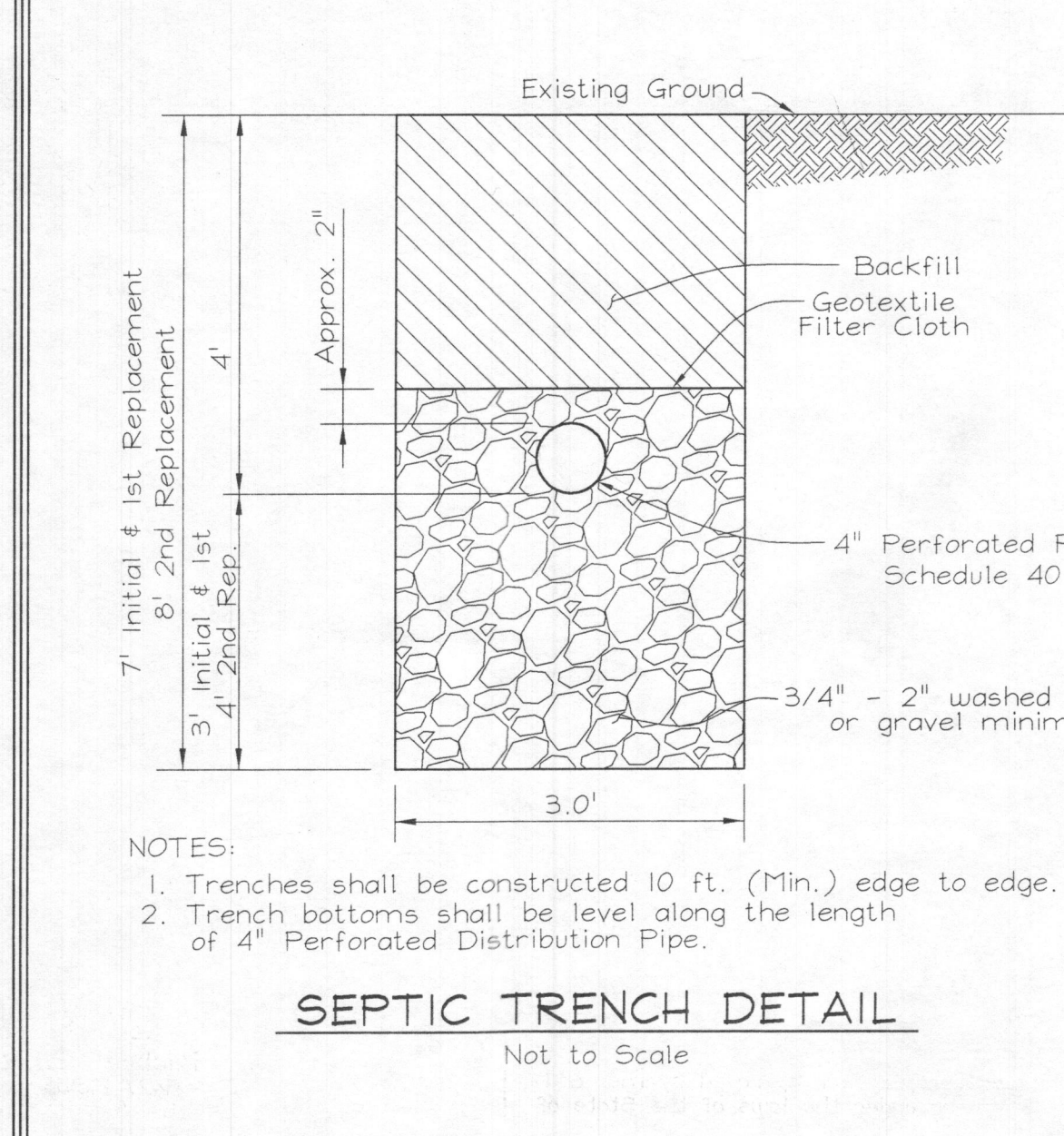
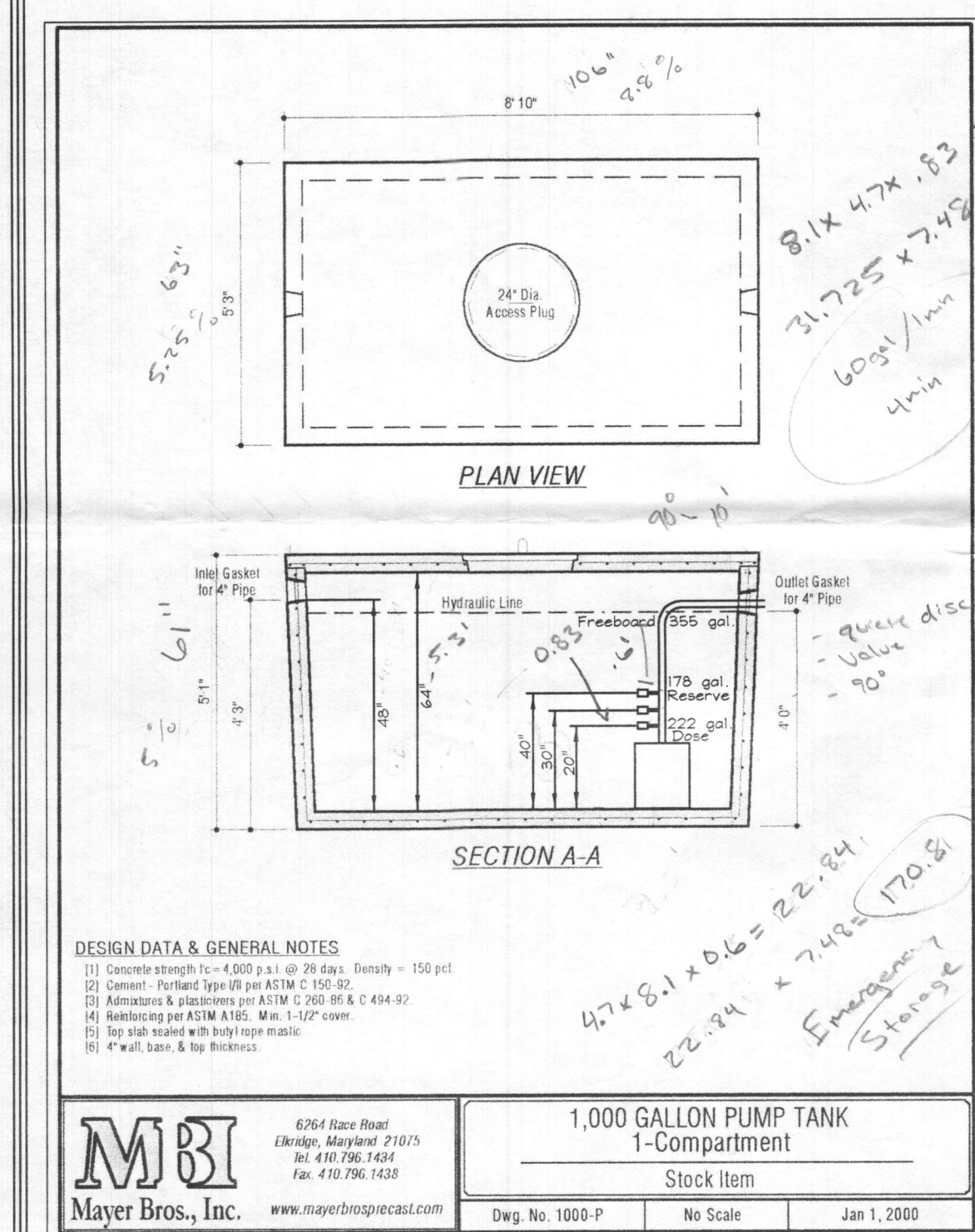
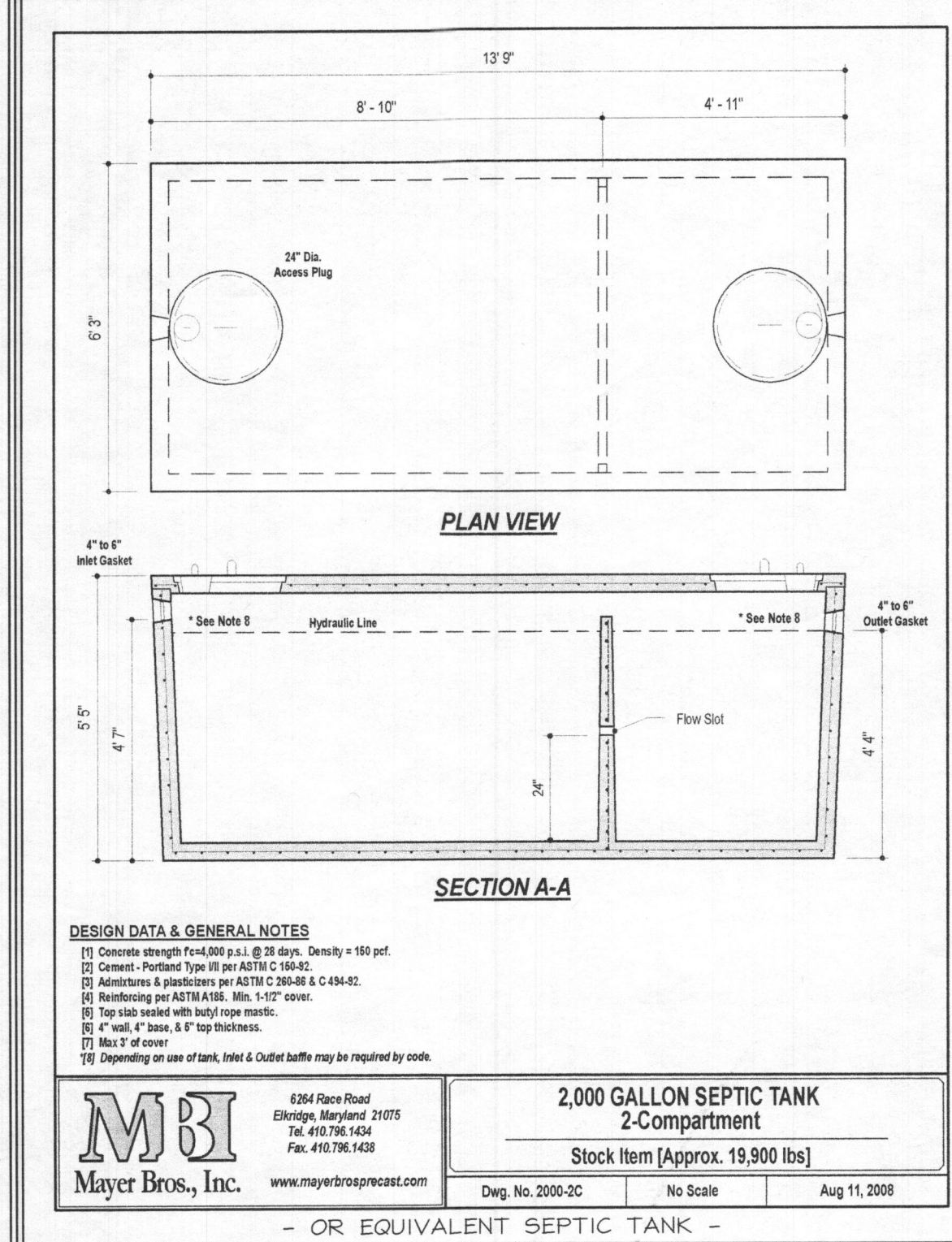
Conventional Onsite Sewage Disposal System Design Plan Requirements

1. Title box with the following title, *Onsite Sewage Disposal System Design Plan*.
The title box shall also include the street address, tax identification number, and subdivision name or property owner name(s).
2. The name, address, and telephone number of the owner, developer, and the person preparing the plan.
3. The date the plan was drawn, the plan scale (1:30 – 1:40), and a scaled vicinity map. Scales larger than 1:40 (examples 1:50, 1:100) require scale approval prior to plan submittal.
4. All property lines and dimensions.
5. Show all existing and proposed structures including stormwater management features.
6. All percolation test holes (pass or fail with corresponding test number or letter) and the approved sewage disposal area (SDA).
7. Field run topography at two-foot intervals. One-foot intervals are required for mound systems and systems with pipe depth less than two feet.
8. Illustrate the three (3) proposed well sites or 1500 sq. ft. well box with elliptical radius of 100 feet around each of the three (3) wells or the well box.
9. Illustrate streams, ponds, floodplains, 25% and greater slopes, and any other pertinent land features.
10. Illustrate the locations of all Onsite Sewage Disposal System (OSDS) components on the site Plan.
11. Include a cross section and details of all treatment tanks and pump tanks.
12. Include a profile drawing with all invert elevations necessary for installation of the initial system.

13. Show the location of the initial absorption system and two replacements with perforated pipe elevations.
14. The designing Professional Engineer or other qualified designer must sign the plan.
15. Low pressured dosed systems or other pumped systems must include pump station details including:
 - a. Total dynamic head calculations
 - b. Pump curve
 - c. Pump on, pump off, and alarm elevations
16. Low pressure dosed systems, including sand mounds and at-grade mounds must show all details necessary for installation of the lateral network and mound.

Required Plan 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 (tag # _____) 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.



Pump Selection for a Non-Pressurized System

Woods

Parameters

Discharge Assembly Size	2.00
Transport Length	145
Transport Pipe Class	40
Transport Line Size	1.00
Distributing Valve Model	None
Max. Discharge Lift	20.0
Design Flow Rate	40.0
Flow Rate	40.0
Additional Friction Losses	0.0

Calculations

Transport Velocity	3.8
--------------------	-----

Friction Head Losses

Loss through Discharge	3.2
Loss in Transport	3.8
Loss through Valve	0.0
Loss through Fittings	0.0
Additional Friction Losses	0.0

Pipe Volumes

Vol. of Transport Line	25.3
------------------------	------

Size Pump For

Design Flow Rate	40.0
Static Dynamic Head	27.0

WE Series Model 3805
WE0511H or WE0511HH Gould Water
Technology Effluent Pump
40 GPM, 1/2HP, 115 10

Goulds Water Technology

Wastewater

MODELS

Order Number	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance Start Line-Line	Power Cable Size	Weight (lbs.)
WE0511H	115	3	208	1750	5.38	10.7	30.0	M	54	11.9	1.7	56
WE0511HH	208					6.8	19.5	K	51	9.1	4.2	
WE0511M	208					4.9	14.1	L	53	14.5	0.0	16/3
WE0511MH	115	3	208	1750	5.38	10.7	30.0	M	54	11.9	1.7	56
WE0511MH	208					6.8	19.5	K	51	9.1	4.2	
WE0511M	208					4.9	14.1	L	53	14.5	0.0	16/3
WE0511H	115	3	208	1750	5.38	14.5	46.0	M	54	7.5	1.0	14/3
WE0511HH	208					6.1	31.0	K	68	9.7	2.4	16/3
WE0511M	208					7.3	34.5	M	53	9.6	4.0	
WE0511MH	115	3	208	1750	5.38	4.9	22.6	R	68	NA	3.8	14/4
WE0511HH	208					3.3	18.8	R	70	NA	5.8	14/4
WE0511M	208					1.7	9.4	R	70	NA	23.2	
WE0511MH	115	3	208	1750	5.38	1.4	7.5	R	62	NA	35.3	
WE0511HH	208					14.5	46.0	M	54	7.5	1.0	14/3
WE0511H	115	3	208	1750	5.38	8.1	31.0	K	68	9.7	2.4	16/3

PERFORMANCE RATINGS (gallons per minute)

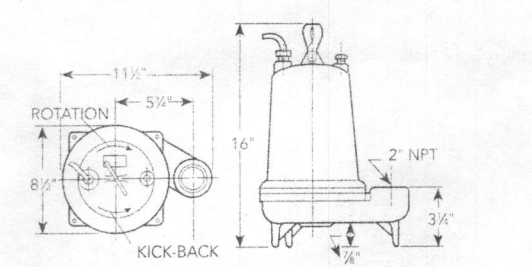
Order No.	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance Start Line-Line	Power Cable Size	Weight (lbs.)
10	70	63	78	94	-	58	95	-	-	-	-	-
15	52	52	70	90	103	128	23	93	138			
20	27	25	40	83	96	123	40	90	130			
25	15	15	40	76	94	117	45	87	133			
30	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	-	-	-	-
65	-	-	-	-	-	-	-	-	-	-	-	-
70	-	-	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	-	-	-	-
90	-	-	-	-	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-

COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing Chiming

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



PUMP DETAIL

SCALE: None

xylem
Let's Solve Water

Xylem Inc.
2881 East Bayview Street Ext. Suite A
Seneca Falls, NY 13156
Phone: (866) 325-4210
Fax: (866) 322-5877
www.gouldswatertechnology.com
Goulds is a registered trademark of Goulds Pumps, Inc. and is used under license.
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TRENCH INFORMATION

Trench	Length	Pipe Inv.	Bottom	Ground
Initial Sys.	65'	479.0	476.0	483.0
	65'	476.4	473.4	480.4
	65'	474.3	471.3	478.3
1st Replace	65'	472.0	469.0	476.0
	65'	470.0	467.0	474.0
	65'	468.0	465.0	472.0
2nd Replace	78'	466.1	462.1	470.1
	78'	464.2	460.2	468.2

INITIAL SYSTEM

Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5'
Bottom maximum depth	5'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

1st REPLACEMENT SYSTEM

Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5'
Bottom maximum depth	5'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.625
Trench width	3'
Effective area depth	2'
Linear length of trench required	195 lf

2nd REPLACEMENT SYSTEM

Number of bedrooms	5
Application rate	0.8 gpd/sf
Effective area beginning depth	5'
Bottom maximum depth	5'
Design flow	750 gpd
Drainage field square footage	938 sf
Sidewall reduction credit	0.500
Trench width	3'
Effective area depth	3'
Linear length of trench required	156 lf

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	K VALUE	SOIL GROUP
Mac	Major loam, 8 to 15 percent slopes	0.28	B
MaD	Major loam, 15 to 25 percent slopes	0.28	B
GmC	Gehville silt loam, 8 to 15 percent slopes	0.43	C

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. #22416, Expiration Date: 07/29/2019.

OWNER

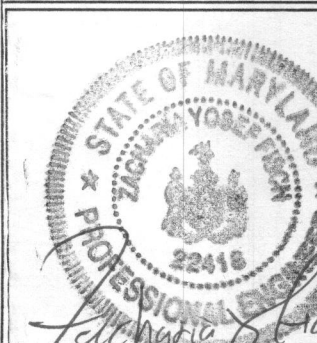
Michael Eckstein
9427 Fields Road
Gaithersburg, MD 20878
(240) 845-0036

PLAN FOR SEPTIC & PUMP INSTALLATION

THE WOODS AT TRIADELPHIA

LOT 4
TRIADLPHIA WOODS PLAT #19925
12504 Triadelphia Road

TAX MAP 22 GRIDS 5 & 6 PARCEL 528
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



FSH Associates

Engineers Planners Surveyors
339 Howard Lane, Ellicott City, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fshen.com

DESIGN BY: CRH2

DRAWN BY: CRH2

CHECKED BY: ZYP

SCALE: As Shown

DATE: Aug. 2, 2017

N.O. No.: 4038

SHEET No.: 1 OF 1

LEGEND

Existing Contour

Proposed Contour

Existing Spot Elevation

Existing Trees to Remain

Proposed Septic Easement

Proposed Well Area

Proposed House

Soil Boundary

Existing Stream Buffer

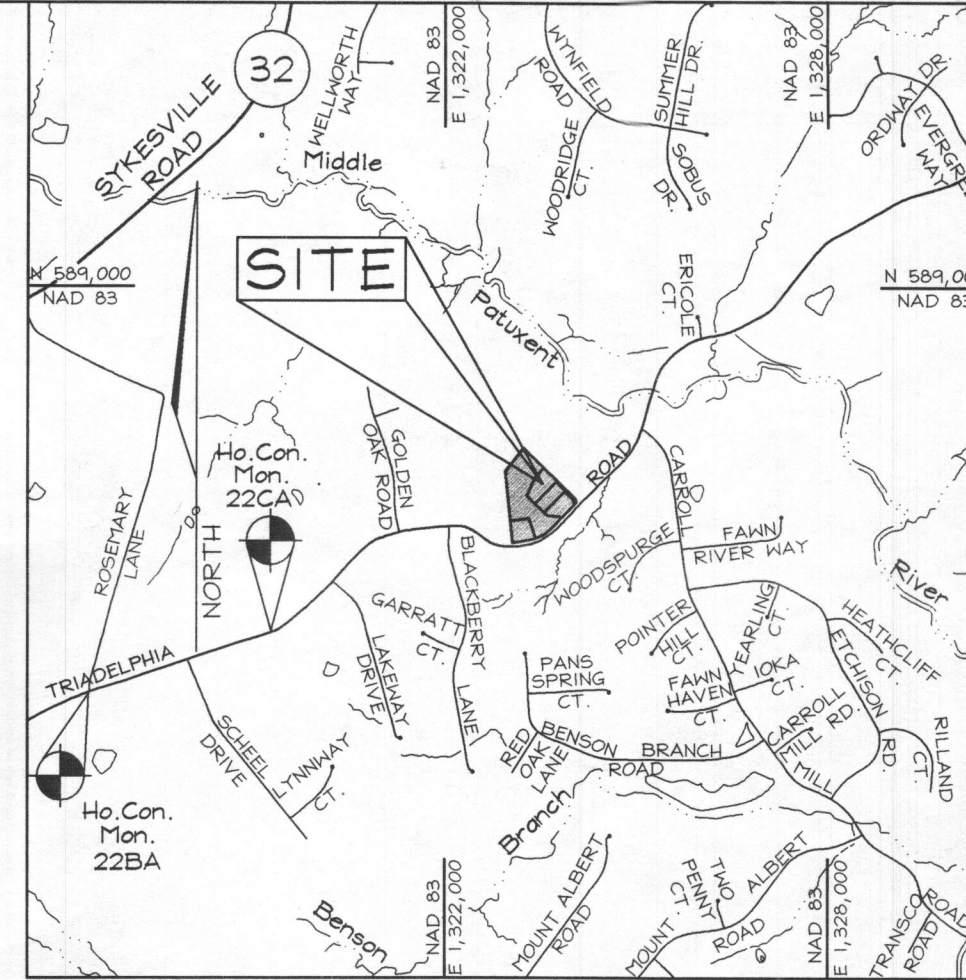
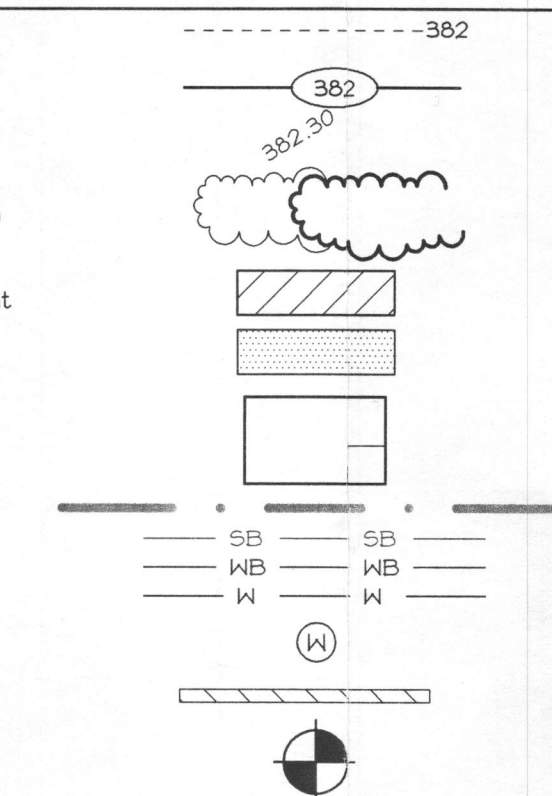
Existing Wetland Buffer

Existing Wetlands

Existing Well

Proposed Level Spreader

Existing Perc Test Holes



VICINITY MAP

SCALE: 1"=2000'

GEODETIC CONTROL STATIONS

Coordinates based on NAD'83, Maryland coordinate system as projected by Howard County geodetic control stations no. 22BA and no. 22CA denotes approximate location (see vicinity map).

Sta. 22BA N 585,134.7433 E 1,323,322.6629 El: 576.164 (feet)
Sta. 22CA N 585,783.3061 E 1,325,230.5994 El: 574.246 (feet)

SCHEMATIC ELEVATION

NOT TO SCALE

HOUSE TEMPLATE

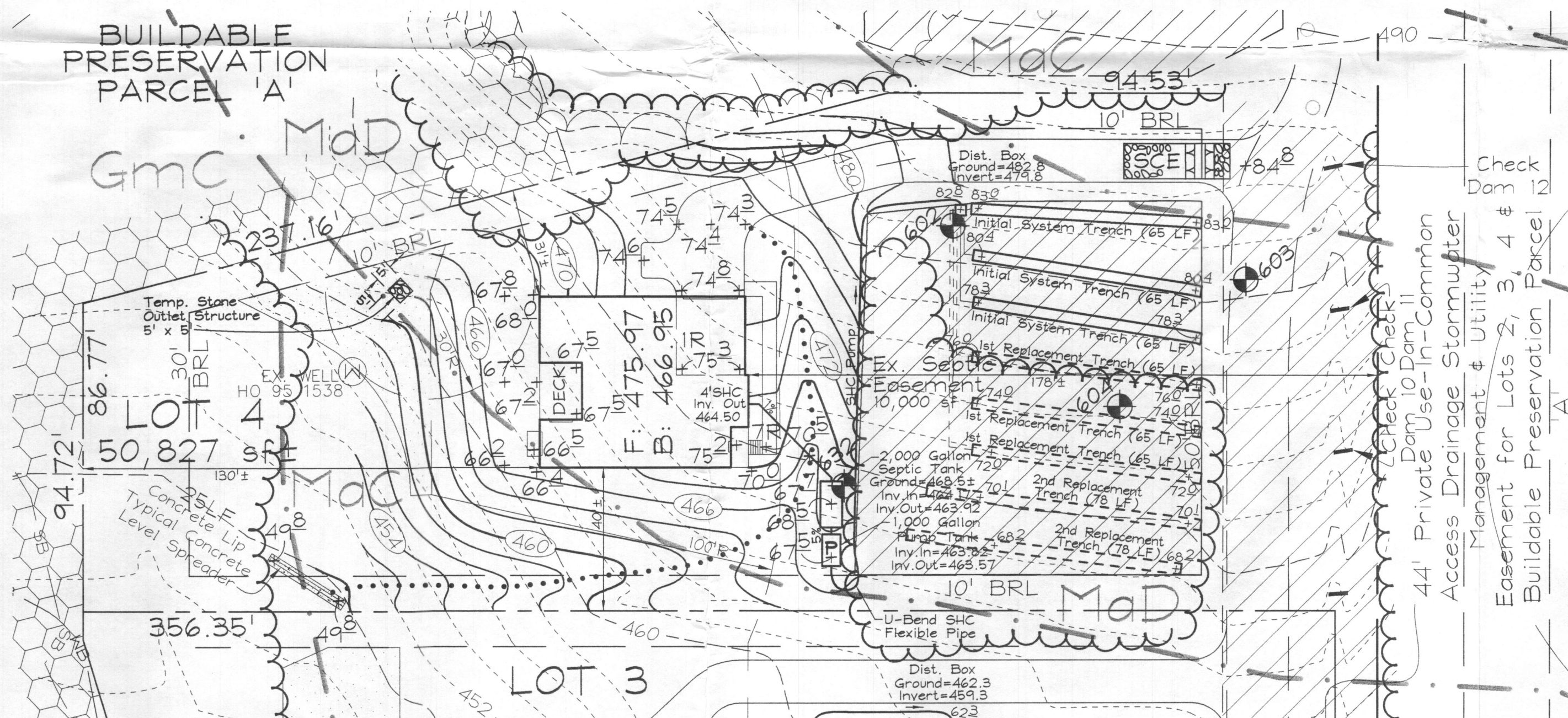
Scale: 1"=30'

SYSTEM PROFILE

HOR. SCALE: 1"=50'

VERT. SCALE: 1"=5'

BUILDABLE PRESERVATION PARCEL 'A'



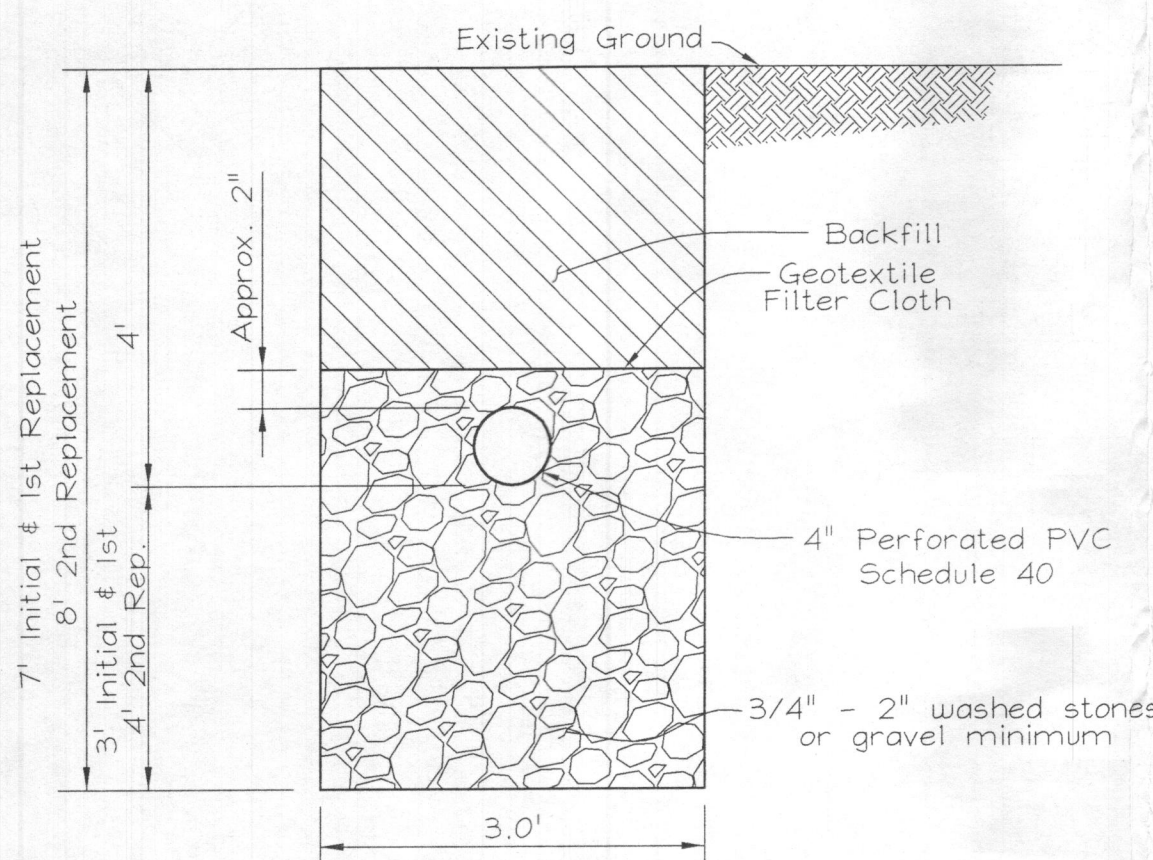
PLAN VIEW

SCALE: 1"=30'

HOUSE WILL NOT SEWER BY GRAVITY.

SEPTIC TRENCH DETAIL

Not to Scale



- NOTES:
- Trenches shall be constructed 10 ft. (Min.) edge to edge.
 - Trench bottoms shall be level along the length of 4" Perforated Distribution Pipe.