

- DESIGN DATA & GENERAL NOTES**
- [1] Concrete strength $f_c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
 - [2] Cement - Portland Type VII per ASTM C 150-92.
 - [3] Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
 - [4] Reinforcing per ASTM A195. Min. 1-1/2" cover.
 - [5] Top slab sealed with butyl rope mastic.
 - [6] 4" wall, 4" base, & 5" top thickness.
 - [7] Max. 3" of cover
 - [8] Depending on use of tank, Inlet & Outlet baffle may be required by code.

MB
Mayer Bros., Inc.
6264 Race Road
Elkridge, Maryland 21075
Tel. 410.796.1434
Fax. 410.796.1438
www.mayerbrosprecast.com

2,000 GALLON SEPTIC TANK
2-Compartment
Stock Item [Approx. 19,900 lbs]
Dwg. No. 2000-2C No Scale Aug 11, 2008

SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

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. 45577, Expiration Date: 06-08-2020.



THIS PLAN IS FOR SEPTIC DESIGN ONLY

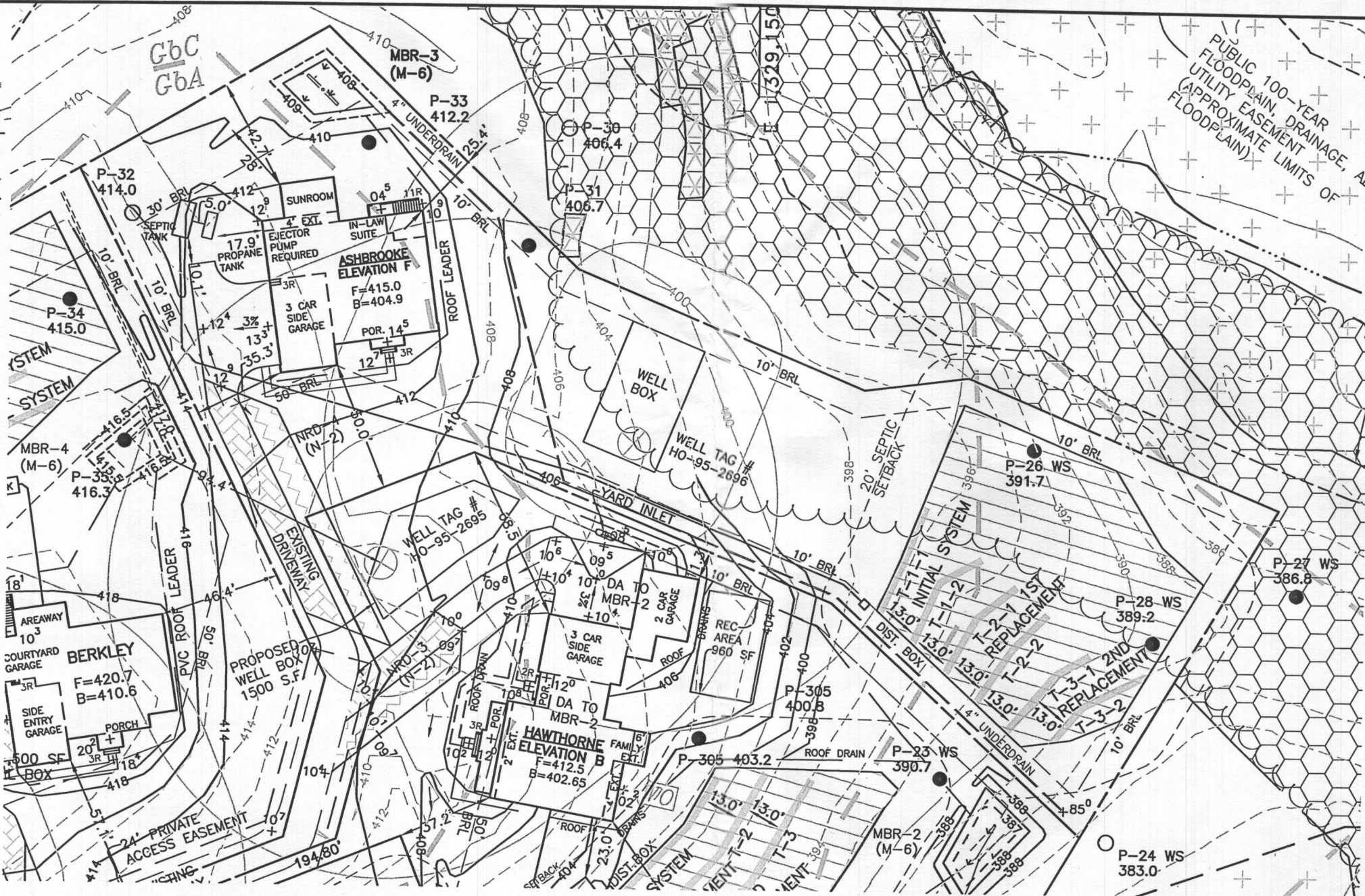
SEE MANUFACTURES SPECIFICATIONS FOR DETAILS.
WWW.MAYERPRECAST.COM
EQUIVALENT FROM OTHER MANUFACTURERS CAN BE SUBSTITUTED.

OWNER/BUILDER:	BENCHMARK ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CMLENGINEERING.COM	
PROJECT:	REGAN PROPERTY LOT 4	
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING <u>3</u> OF <u>3</u>

LEGEND

- SOILS CLASSIFICATION *ChB2*
- SOILS DELINEATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMIT OF WETLANDS
- 25' WETLANDS BUFFER
- CENTERLINE OF STREAM
- STREAM BUFFER
- PROPOSED STRUCTURE
- SEPTIC RESERVE AREA

INITIAL SYSTEM - LOT 4	
Number of Bedrooms	6
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	3.0 ft
Bottom Max Depth	8.0 ft
Design Flow	900 gpd
Drainage Field square footage	750 sf
Sidewall Reduction Credit	0.36
Trench width	3 ft
Effective Area Depth	5 ft
Trench Spacing	13 ft
Linear Length of trench Required	89 lf
1st REPLACEMENT SYSTEM	
Number of Bedrooms	6
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	3.0 ft
Bottom Max Depth	8.0 ft
Design Flow	900 gpd
Drainage Field square footage	750 sf
Sidewall Reduction Credit	0.36
Trench width	3 ft
Effective Area Depth	5 ft
Trench Spacing	13 ft
Linear Length of trench Required	89 lf
2nd REPLACEMENT SYSTEM	
Number of Bedrooms	6
Application Rate	1.2 gpd/sf
Effective Area Beginning Depth	3.0 ft
Bottom Max Depth	8.0 ft
Design Flow	900 gpd
Drainage Field square footage	750 sf
Sidewall Reduction Credit	0.36
Trench width	3 ft
Effective Area Depth	5 ft
Trench Spacing	13 ft
Linear Length of trench Required	89 lf



GENERAL NOTES:

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR REGAN PROPERTY, PLAT Nos. 23063-23074. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
2. SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC HOUSE.
3. TOPOGRAPHY SHOWN HEREON IS TAKEN FROM THE APPROVED ROAD CONSTRUCTION PLANS AND TOPOGRAPHIC INFORMATION PROVIDED BY BENCHMARK ENGINEERING, INC., ON OR ABOUT JANUARY, 2012.
4. ALL SEDIMENT AND EROSION CONTROL FEATURES USED ON THIS SITE SHALL COMPLY WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
6. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2697, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.
7. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
8. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
9. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED AND PROVIDED BY ONE MICRO-BIORETENTION FACILITY (MDE M-6), DRY WELL FACILITY (MDE M-5) AND ONE NON-ROOFTOP DISCONNECTION (MDE N-2).
10. MICRO-BIORETENTION SHALL HAVE EITHER A 4" OR 6" ROOF LEADER DEPENDING ON ROOF-TOP AREA.
11. DUE TO THE LANDSCAPE LOCATION OF THE MICRO-BIORETENTION FACILITY ON LOT 5, MBR-6 DOES NOT REQUIRE A LINER PER THE HEALTH DEPARTMENT.

SEPTIC INVERT CHART - LOT 4	
INV @ HOUSE	408.9
GROUND @ HOUSE	412.9
INV IN TANK	408.2
INV OUT TANK	407.8
TOP OF TANK	409.0
GROUND OVER TANK	412.0
INV IN DIST BOX	394.7
INV OUT DIST BOX	394.6
GROUND AT DIST BOX	396.7

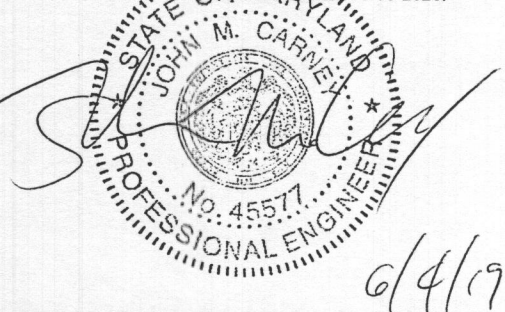
HEALTH DEPARTMENT SPEC SHEET INFORMATION			
System	Application Rate	Effective Depth	Bottom Depth
Initial	1.2	3.0	8.0
1st Replacement	1.2	3.0	8.0
2nd Replacement	1.2	3.0	8.0

PLAN VIEW
1" = 50'



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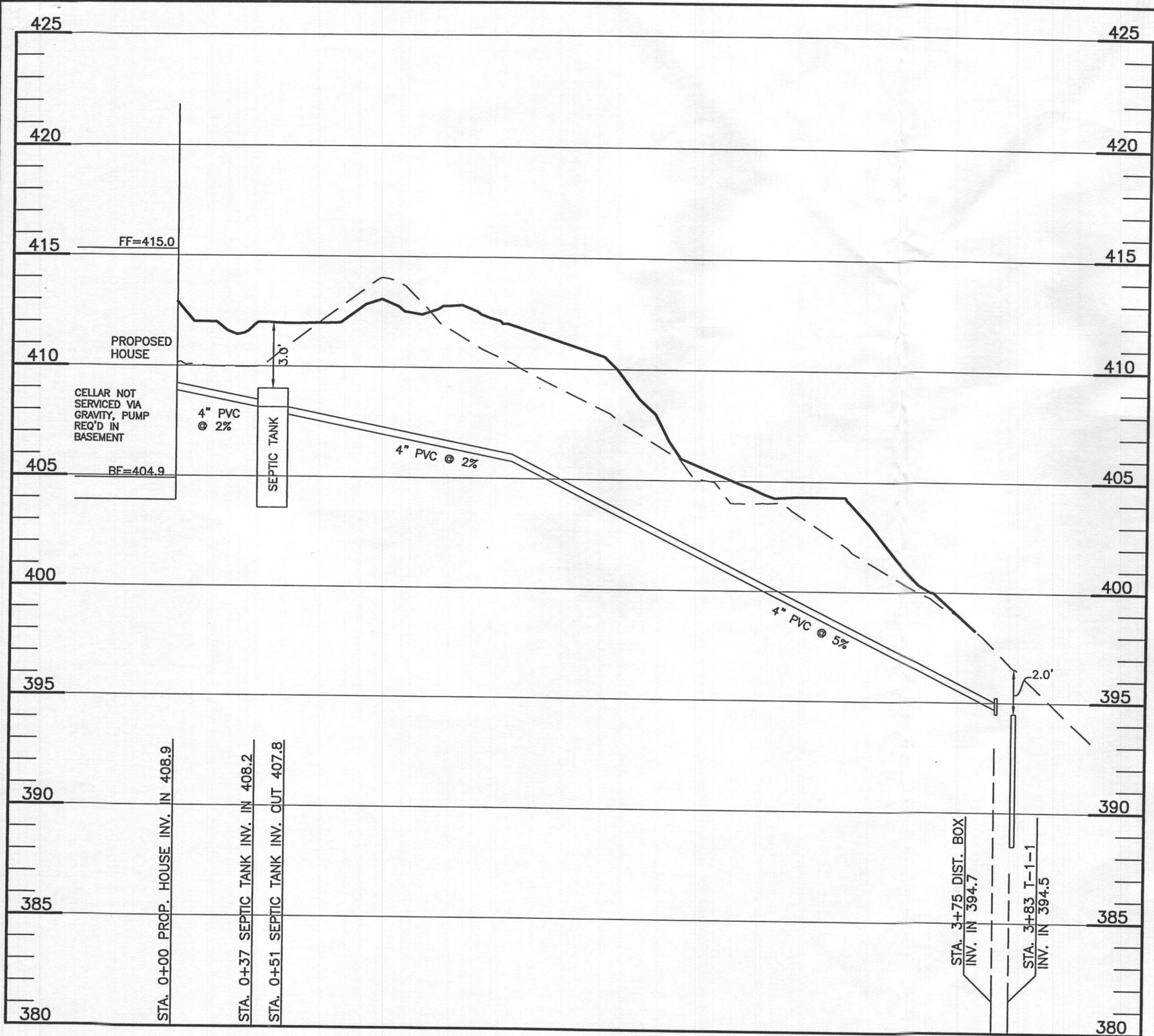


TRENCH DATA - LOT 4					
INITIAL SYSTEM		FIRST REPLACEMENT		SECOND REPLACEMENT	
TRENCH 1-1	LENGTH 44.7 ft	TRENCH 2-1	LENGTH 44.7 ft	TRENCH 3-1	LENGTH 44.7 ft
	GROUND ELEVATION 396.4		GROUND ELEVATION 393.2		GROUND ELEVATION 390.1
	INVERT ELEVATION 394.4		INVERT ELEVATION 391.2		INVERT ELEVATION 388.1
	MAX BOTTOM ELEVATION 388.4		MAX BOTTOM ELEVATION 385.2		MAX BOTTOM ELEVATION 382.1
TRENCH 1-2	LENGTH 44.7 ft	TRENCH 2-2	LENGTH 44.7 ft	TRENCH 3-2	LENGTH 44.7 ft
	GROUND ELEVATION 394.8		GROUND ELEVATION 391.7		GROUND ELEVATION 387.9
	INVERT ELEVATION 392.8		INVERT ELEVATION 389.7		INVERT ELEVATION 385.9
	MAX BOTTOM ELEVATION 386.8		MAX BOTTOM ELEVATION 383.7		MAX BOTTOM ELEVATION 379.9

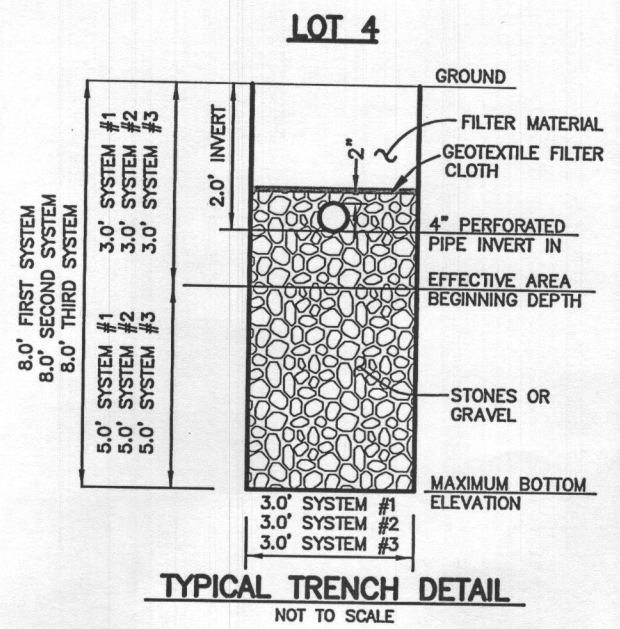
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PROJECT:	REGAN PROPERTY LOT 4	
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING 1 OF 3



Lot 4 Septic Profile
SCALE: 1"=50' HORIZ., 1"=5' VERT.



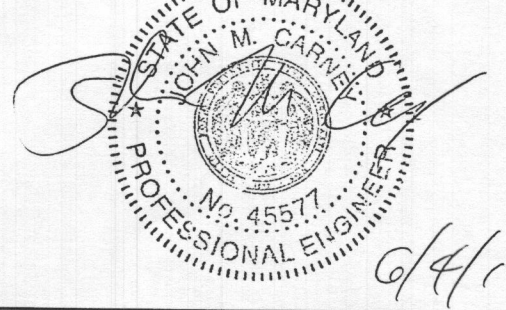
TYPICAL TRENCH DETAIL
 NOT TO SCALE

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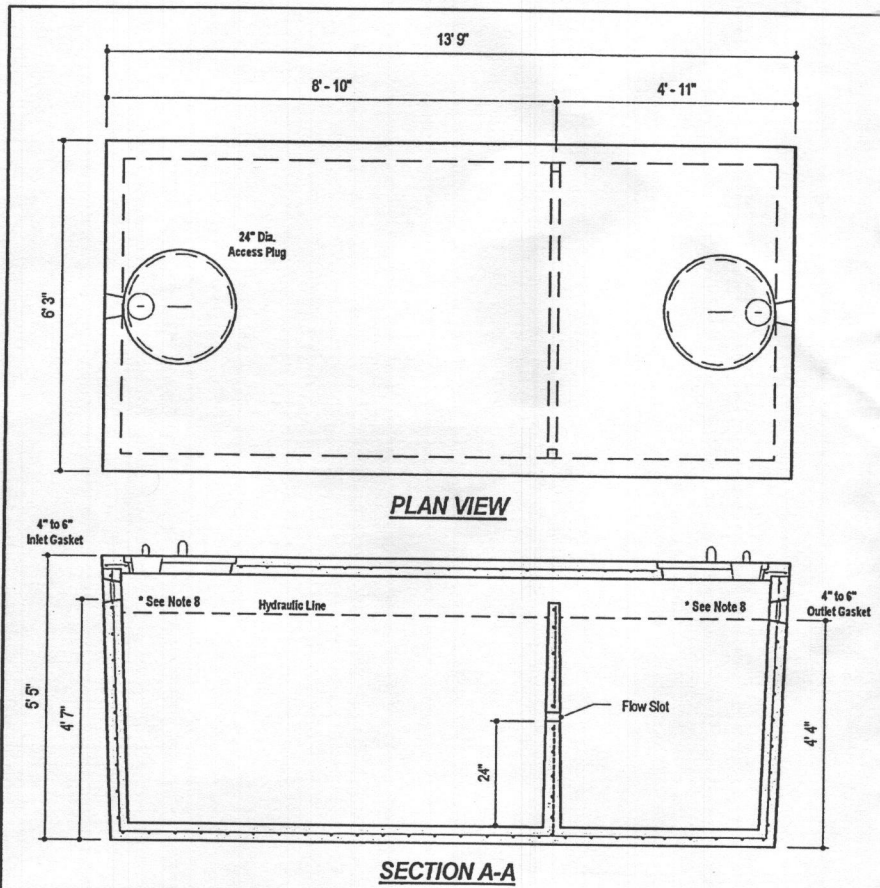
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PROJECT:	REGAN PROPERTY LOT 4	
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING 2 OF 3

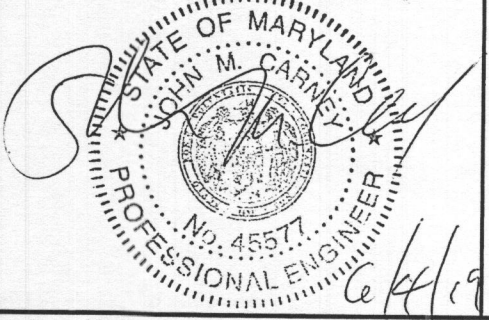


- DESIGN DATA & GENERAL NOTES**
- [1] Concrete strength $f_c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
 - [2] Cement - Portland Type III per ASTM C 150-92.
 - [3] Admixtures & plasticizers per ASTM C 260-96 & C 494-92.
 - [4] Reinforcing per ASTM A185. Min. 1-1/2" cover.
 - [5] Top slab sealed with butyl rope mastic.
 - [6] 4" wall, 4" base, & 5" top thickness.
 - [7] Max 3" of cover.
 - [8] Depending on use of tank, Inlet & Outlet baffle may be required by code.

<p>Mayer Bros., Inc. www.mayerbrosprecast.com</p>	6264 Race Road Elkridge, Maryland 21075 Tel. 410.796.1434 Fax. 410.796.1438	<p>2,000 GALLON SEPTIC TANK 2-Compartment</p> <p>Stock Item [Approx. 19,900 lbs]</p>
	Dwg. No. 2000-2C No Scale Aug 11, 2008	

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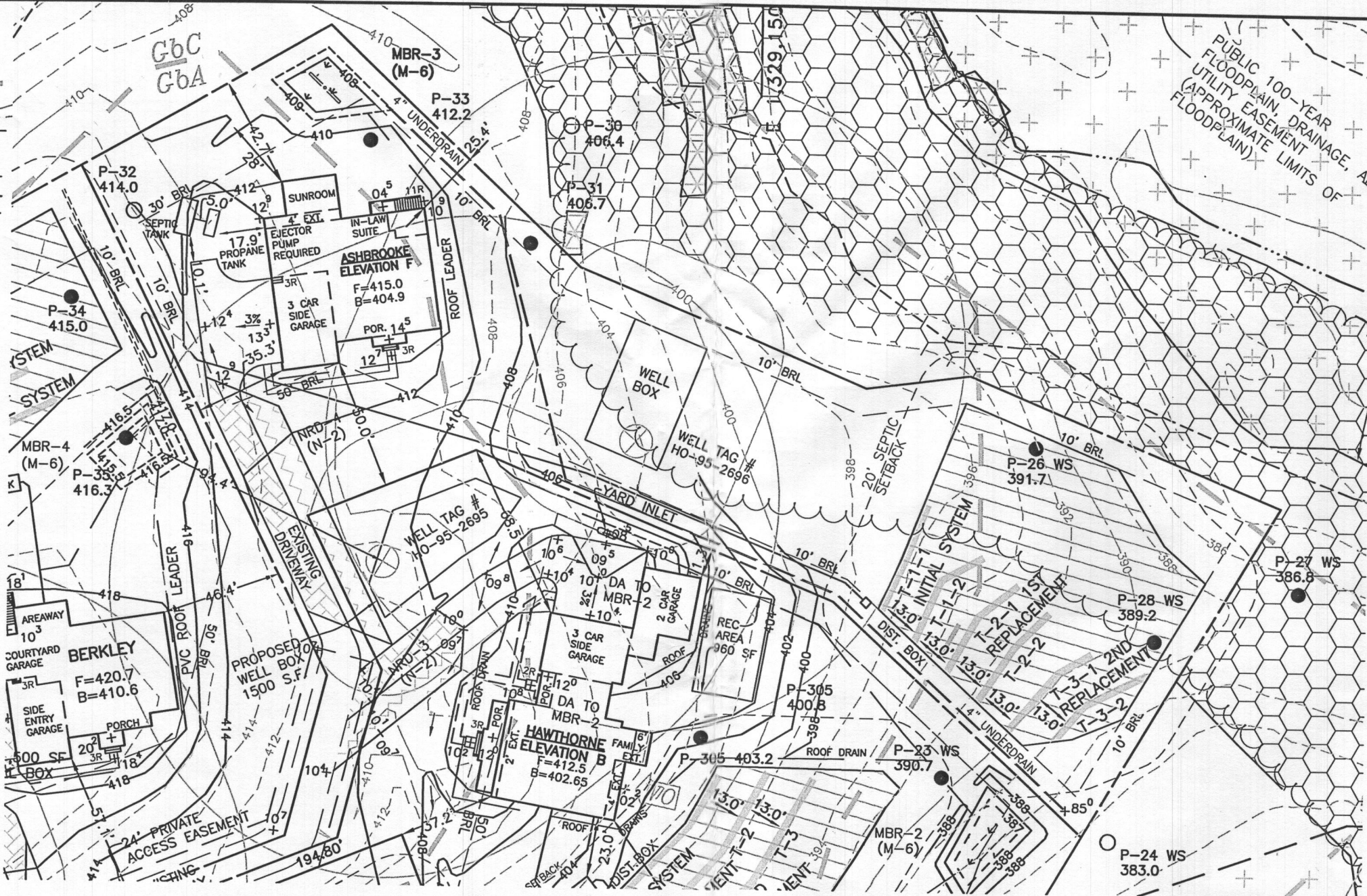
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OWNER/BUILDER: MB HIGHLAND RESERVE, LLC 1686 EAST GUDE DRIVE ROCKVILLE, MD 20850 301-762-9511	<p>BENCHMARK</p> <p style="font-size: small;">ENGINEERS LAND SURVEYORS PLANNERS</p> <p>ENGINEERING, INC.</p> <p style="font-size: x-small;">8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 ▲ (F) 410-465-6644</p> <p style="font-size: x-small;">WWW.BEI-CIVLENGINEERING.COM</p>
PROJECT: REGAN PROPERTY LOT 4	
LOCATION: 12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE: ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE: ASHBROOKE - ELEVATION F	
DATE: JUNE, 2019	PROJECT NO. 2171
SCALE: AS SHOWN	DRAWING 3 OF 3

LEGEND

- SOILS CLASSIFICATION *Ch.B2*
- SOILS DELINEATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMIT OF WETLANDS
- 25' WETLANDS BUFFER
- CENTERLINE OF STREAM
- STREAM BUFFER
- PROPOSED STRUCTURE
- SEPTIC RESERVE AREA

INITIAL SYSTEM - LOT 4		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf
1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf
2nd REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf



GENERAL NOTES:

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7. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
8. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
9. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED AND PROVIDED BY ONE MICRO-BIORETENTION FACILITY (MDE M-6), DRY WELL FACILITY (MDE M-5) AND ONE NON-ROOFTOP DISCONNECTION (MDE N-2).
10. MICRO-BIORETENTION SHALL HAVE EITHER A 4" OR 6" ROOF LEADER DEPENDING ON ROOF-TOP AREA.
11. DUE TO THE LANDSCAPE LOCATION OF THE MICRO-BIORETENTION FACILITY ON LOT 5, MBR-6 DOES NOT REQUIRE A LINER PER THE HEALTH DEPARTMENT.

INV @ HOUSE	408.9
GROUND @ HOUSE	412.9
INV IN TANK	408.2
INV OUT TANK	407.8
TOP OF TANK	409.0
GROUND OVER TANK	412.0
INV IN DIST BOX	394.7
INV OUT DIST BOX	394.6
GROUND AT DIST BOX	396.7

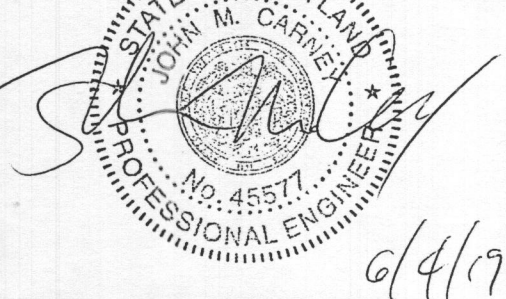
System	Application Rate	Effective Depth	Bottom Depth
Initial	1.2	3.0	8.0
1st Replacement	1.2	3.0	8.0
2nd Replacement	1.2	3.0	8.0

PLAN VIEW
1" = 50'



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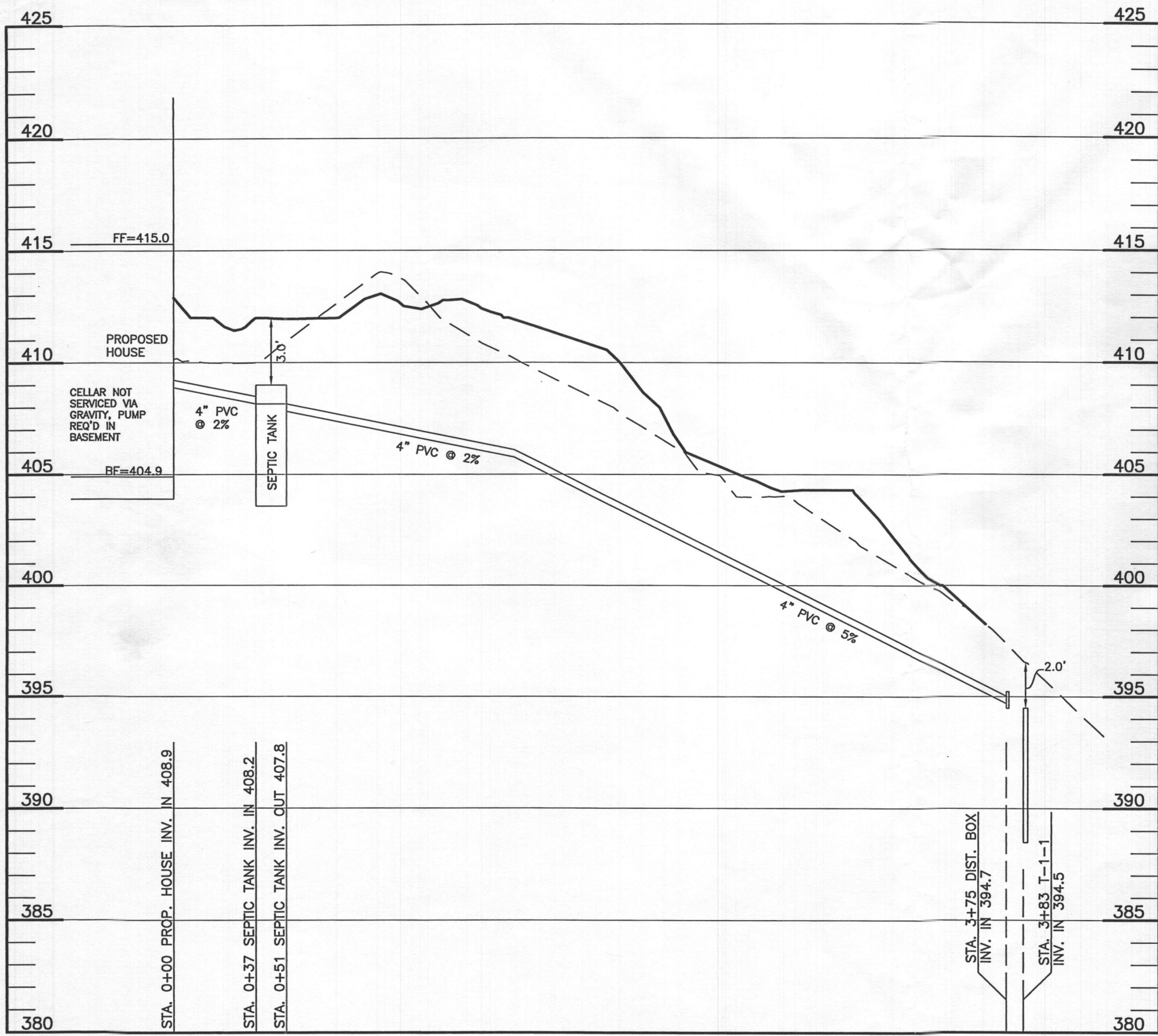


INITIAL SYSTEM		FIRST REPLACEMENT		SECOND REPLACEMENT	
TRENCH 1-1	LENGTH 44.7 ft	TRENCH 2-1	LENGTH 44.7 ft	TRENCH 3-1	LENGTH 44.7 ft
	GROUND ELEVATION 396.4		GROUND ELEVATION 393.2		GROUND ELEVATION 390.1
	INVERT ELEVATION 394.4		INVERT ELEVATION 391.2		INVERT ELEVATION 388.1
	MAX BOTTOM ELEVATION 388.4		MAX BOTTOM ELEVATION 385.2		MAX BOTTOM ELEVATION 382.1
TRENCH 1-2	LENGTH 44.7 ft	TRENCH 2-2	LENGTH 44.7 ft	TRENCH 3-2	LENGTH 44.7 ft
	GROUND ELEVATION 394.8		GROUND ELEVATION 391.7		GROUND ELEVATION 387.9
	INVERT ELEVATION 392.8		INVERT ELEVATION 389.7		INVERT ELEVATION 385.9
	MAX BOTTOM ELEVATION 386.8		MAX BOTTOM ELEVATION 383.7		MAX BOTTOM ELEVATION 379.9

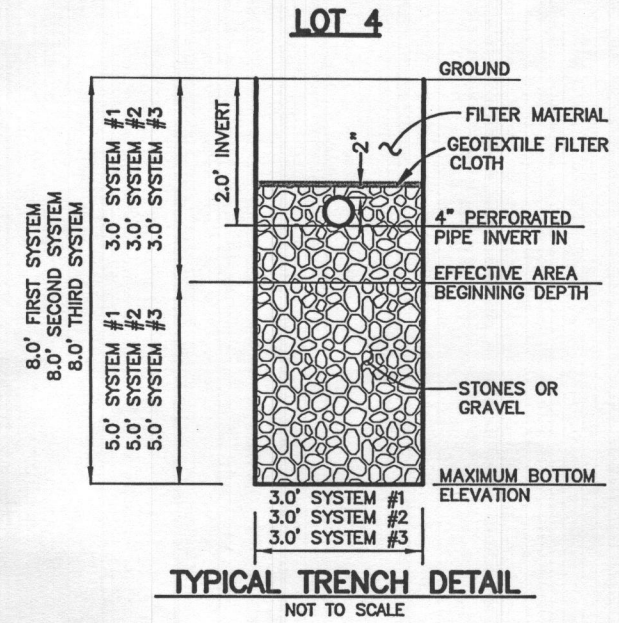
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PROJECT:	REGAN PROPERTY LOT 4	
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING 1 OF 3



Lot 4 Septic Profile
SCALE: 1"=50' HORIZ., 1"=5' VERT.

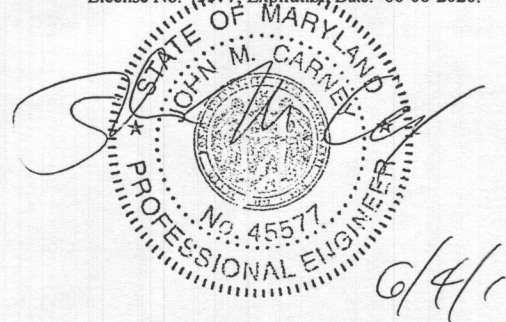


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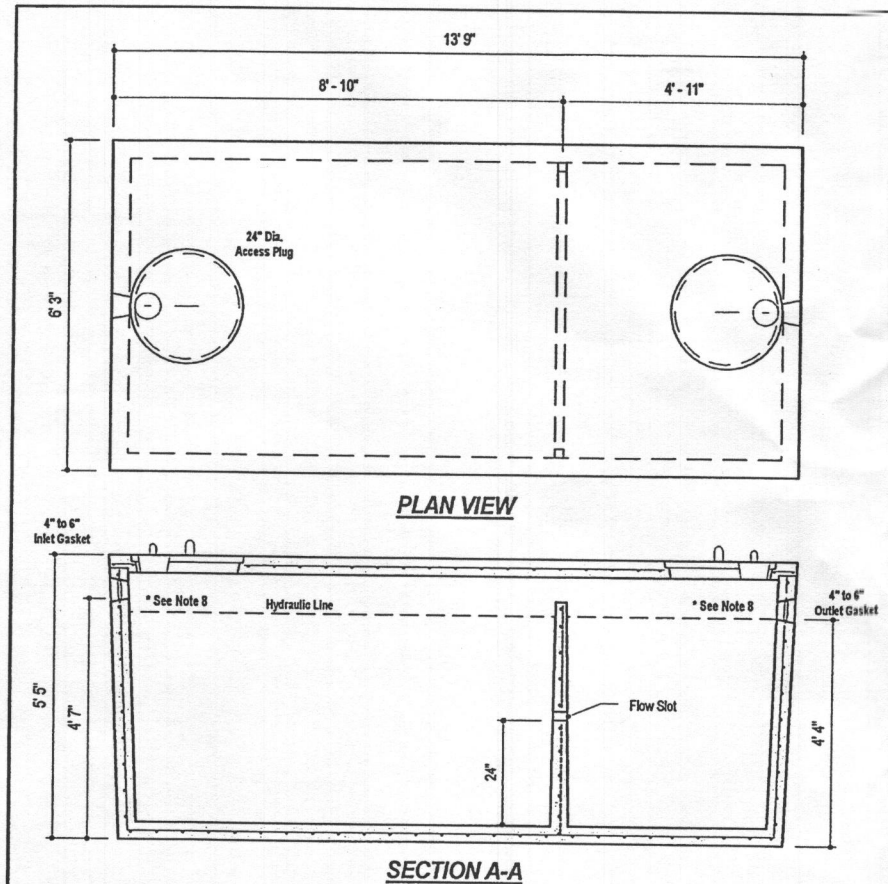
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TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING 2 OF 3



DESIGN DATA & GENERAL NOTES

- [1] Concrete strength $f_c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
- [2] Cement - Portland Type VII per ASTM C 150-92.
- [3] Admixtures & plasticizers per ASTM C 260-96 & C 494-92.
- [4] Reinforcing per ASTM A185. Min. 1-1/2" cover.
- [5] Top slab sealed with butyl rope mastic.
- [6] 4" wall, 4" base, & 5" top thickness.
- [7] Max. 3" of cover
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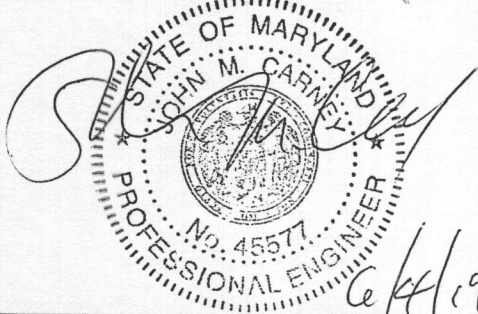
**2,000 GALLON SEPTIC TANK
2-Compartment**

Stock Item [Approx. 19,900 lbs]

Dwg. No. 2000-2C No Scale Aug 11, 2008

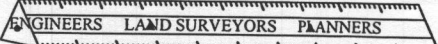
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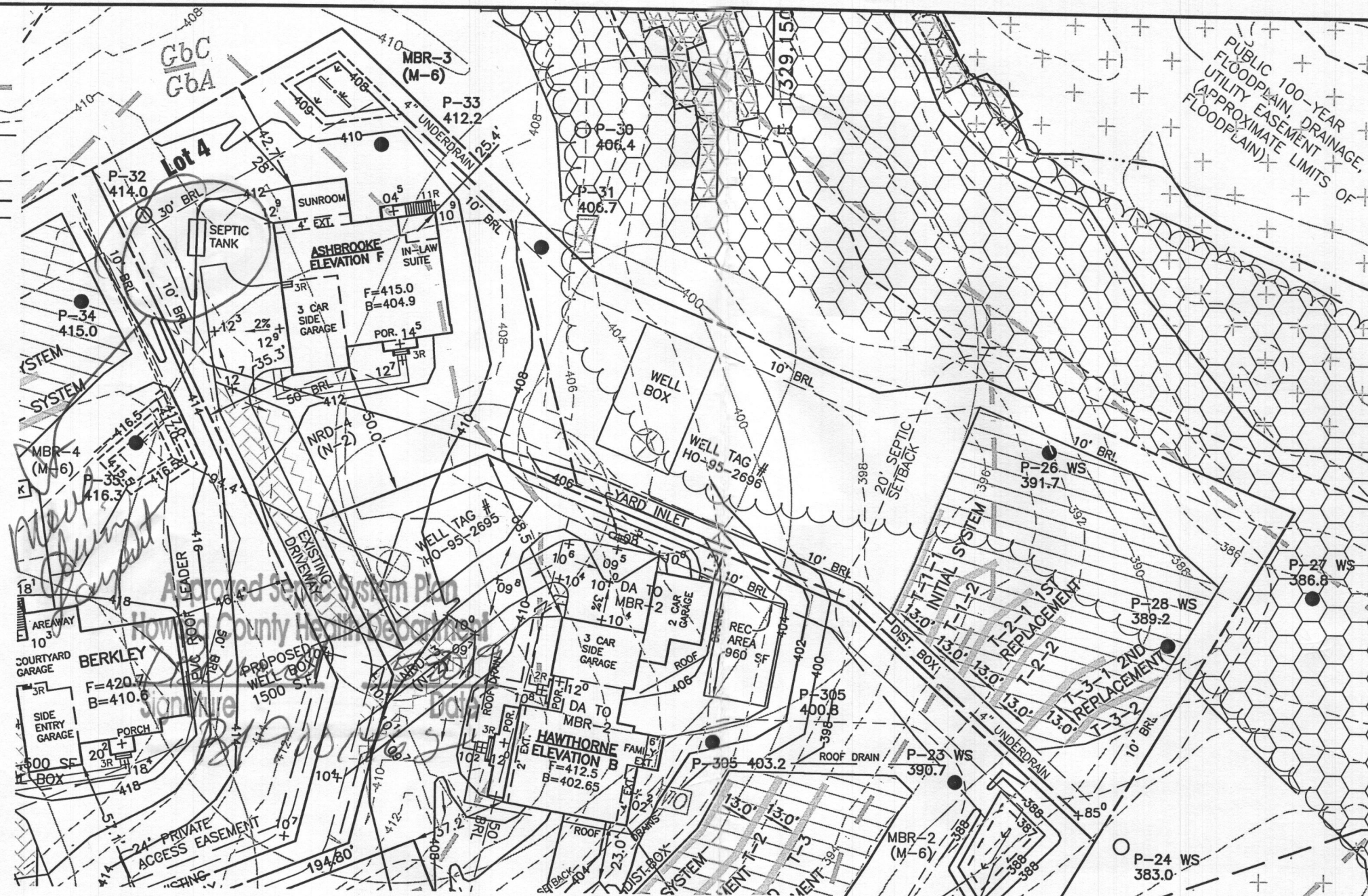
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WWW.MAYERPRECAST.COM
EQUIVALENT FROM OTHER MANUFACTURERS CAN BE SUBSTITUTED.

OWNER/BUILDER:	BENCHMARK  ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 ▲ (F) 410-465-6644 WWW.BEI-CMENGINEERING.COM	
PROJECT:	REGAN PROPERTY LOT 4	
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437	
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN	
HOUSE TYPE:	ASHBROOKE - ELEVATION F	
DATE:	JUNE, 2019	PROJECT NO. 2171
SCALE:	AS SHOWN	DRAWING <u>3</u> OF <u>3</u>

LEGEND

- SOILS CLASSIFICATION *ChB2*
- SOILS DELINEATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMIT OF WETLANDS
- 25' WETLANDS BUFFER
- CENTERLINE OF STREAM
- STREAM BUFFER
- PROPOSED STRUCTURE
- SEPTIC RESERVE AREA

INITIAL SYSTEM - LOT 4		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf
1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf
2nd REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.0	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.36	
Trench width	3	ft
Effective Area Depth	5	ft
Trench Spacing	13	ft
Linear Length of trench Required	89	lf



GENERAL NOTES:

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR REGAN PROPERTY, PLAT Nos. 23063-23074. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
2. SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC HOUSE.
3. TOPOGRAPHY SHOWN HEREON IS TAKEN FROM THE APPROVED ROAD CONSTRUCTION PLANS AND TOPOGRAPHIC INFORMATION PROVIDED BY BENCHMARK ENGINEERING, INC., ON OR ABOUT JANUARY, 2012.
4. ALL SEDIMENT AND EROSION CONTROL FEATURES USED ON THIS SITE SHALL COMPLY WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
6. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2697, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.
7. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
8. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
9. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED AND PROVIDED BY ONE MICRO-BIORETENTION FACILITY (MDE M-6), DRY WELL FACILITY (MDE M-5) AND ONE NON-ROOFTOP DISCONNECTION (MDE N-2).
10. MICRO-BIORETENTION SHALL HAVE EITHER A 4" OR 6" ROOF LEADER DEPENDING ON ROOF-TOP AREA.
11. DUE TO THE LANDSCAPE LOCATION OF THE MICRO-BIORETENTION FACILITY ON LOT 5, MBR-6 DOES NOT REQUIRE A LINER PER THE HEALTH DEPARTMENT.

SEPTIC INVERT CHART - LOT 4	
INV @ HOUSE	408.9
GROUND @ HOUSE	412.9
INV IN TANK	408.2
INV OUT TANK	407.8
TOP OF TANK	409.0
GROUND OVER TANK	412.0
INV IN DIST BOX	394.5
INV OUT DIST BOX	394.4
GROUND AT DIST BOX	396.7

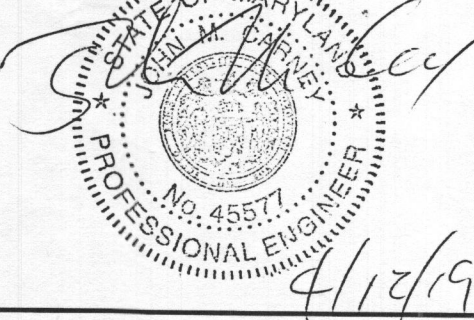
HEALTH DEPARTMENT SPEC SHEET INFORMATION			
System	Application Rate	Effective Depth	Bottom Depth
Initial	1.2	3.0	8.0
1st Replacement	1.2	3.0	8.0
2nd Replacement	1.2	3.0	8.0

PLAN VIEW
1" = 50'



SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

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. 45577, Expiration Date: 06-08-2020.



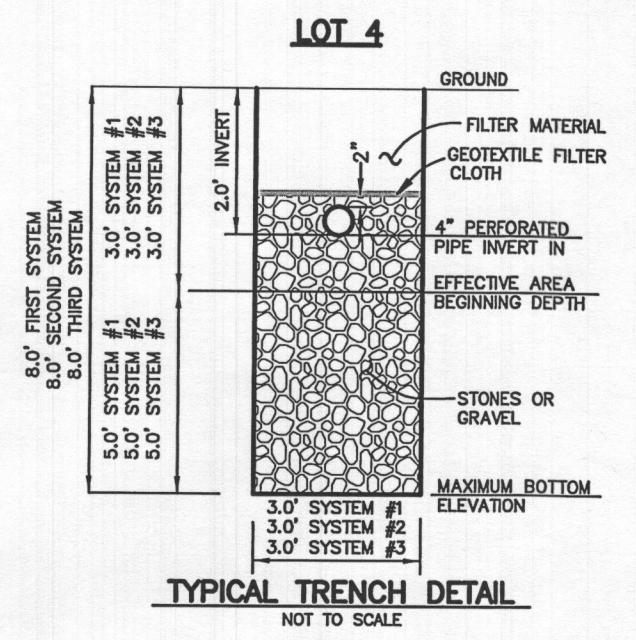
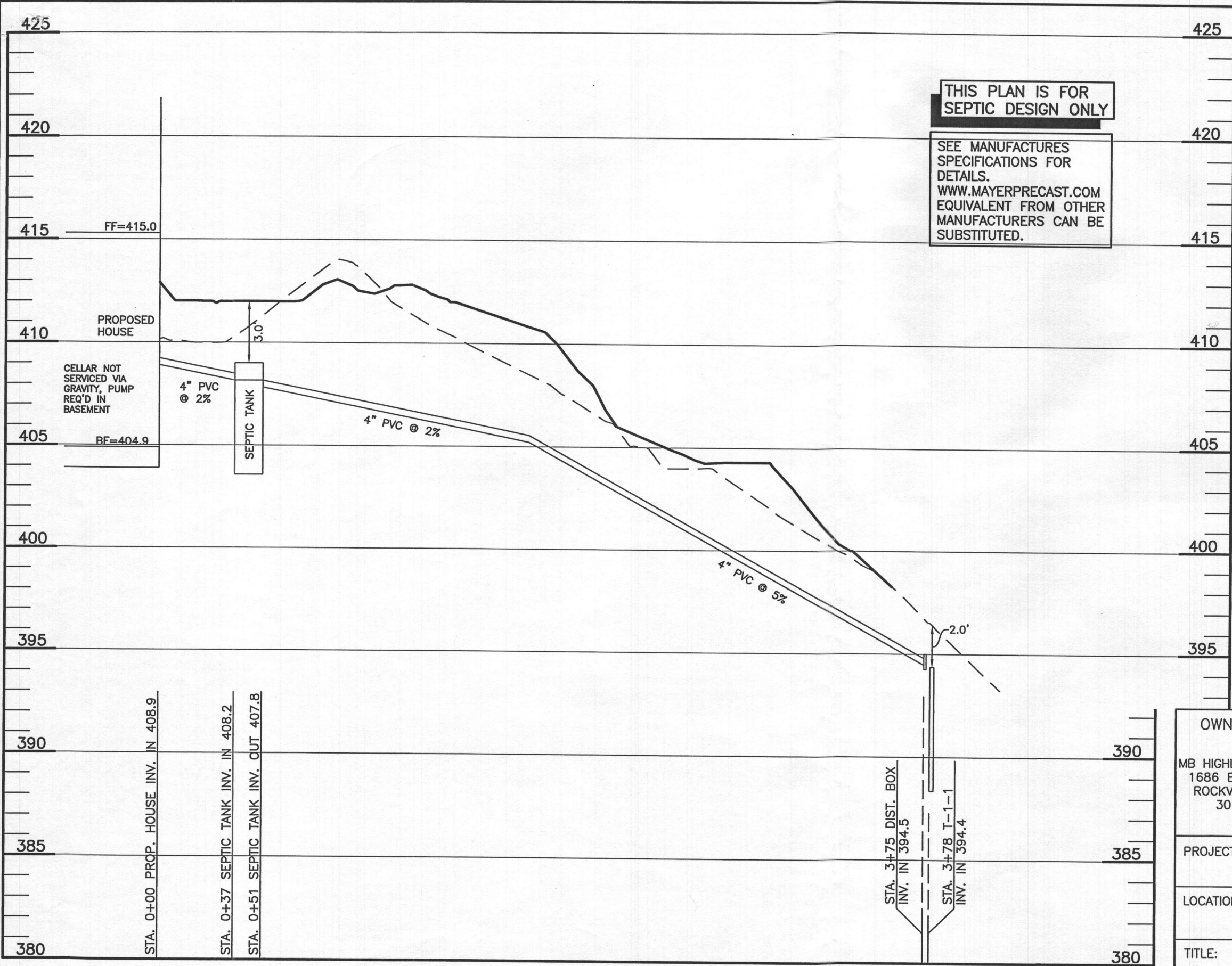
TRENCH DATA - LOT 4					
INITIAL SYSTEM		FIRST REPLACEMENT		SECOND REPLACEMENT	
TRENCH 1-1	LENGTH 44.7 ft	TRENCH 2-1	LENGTH 44.7 ft	TRENCH 3-1	LENGTH 44.7 ft
	GROUND ELEVATION 396.4		GROUND ELEVATION 393.2		GROUND ELEVATION 390.1
	INVERT ELEVATION 394.4		INVERT ELEVATION 391.2		INVERT ELEVATION 388.1
	MAX BOTTOM ELEVATION 388.4		MAX BOTTOM ELEVATION 385.2		MAX BOTTOM ELEVATION 382.1
TRENCH 1-2	LENGTH 44.7 ft	TRENCH 2-2	LENGTH 44.7 ft	TRENCH 3-2	LENGTH 44.7 ft
	GROUND ELEVATION 394.8		GROUND ELEVATION 391.7		GROUND ELEVATION 387.9
	INVERT ELEVATION 392.8		INVERT ELEVATION 389.7		INVERT ELEVATION 385.9
	MAX BOTTOM ELEVATION 386.8		MAX BOTTOM ELEVATION 383.7		MAX BOTTOM ELEVATION 379.9

THIS PLAN IS FOR SEPTIC DESIGN ONLY

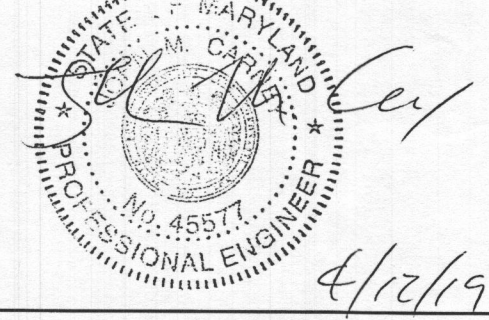
SEE MANUFACTURERS SPECIFICATIONS FOR DETAILS. WWW.MAYERPRECAST.COM EQUIVALENT FROM OTHER MANUFACTURERS CAN BE SUBSTITUTED.

OWNER/BUILDER: MB HIGHLAND RESERVE, LLC 1686 EAST GUDE DRIVE ROCKVILLE, MD 20850 301-762-9511	BENCHMARK ENGINEERS AND SURVEYORS PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLCOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CMLENGINEERING.COM
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PROJECT:	REGAN PROPERTY LOT 4		
LOCATION:	12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437		
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN		
HOUSE TYPE:	ASHBROOKE - ELEVATION F		
DATE:	APRIL, 2019	PROJECT NO.	2171
SCALE:	AS SHOWN	DRAWING	1 OF 2



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 45577, Expiration Date: 06-08-2020.



SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

OWNER/BUILDER:		BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS	
MB HIGHLAND RESERVE, LLC 1686 EAST GUDE DRIVE ROCKVILLE, MD 20850 301-762-9511		ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM	
PROJECT: REGAN PROPERTY LOT 4			
LOCATION: 12344 POINT RIDGE DRIVE HIGHLAND, MD 20777 TAX MAP No. 34 - BLOCK No. 24 - PARCEL No. 200 5TH ELECTION DISTRICT, TAX ID NUMBER: 05 597437			
TITLE: ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN			
HOUSE TYPE: ASHBROOKE - ELEVATION F			
DATE:	APRIL, 2019	PROJECT NO.	2171
SCALE:	AS SHOWN	DRAWING	2 OF 2

Lot 4 Septic Profile
SCALE: 1"=50' HORIZ., 1"=5' VERT.

I. General Requirements

- A. The term "work" as used in these notes shall include all provisions as drawn or specified in these documents as well as all other provisions specifically included by the Owner in the form of drawings, specifications, and written instructions and approved by the Architect.
- B. Contractor shall visit the site to verify all plan and existing dimensions and conditions and shall notify the Architect in writing, of any discrepancies before proceeding with the work or shall be responsible for same.
- C. Contractor shall be familiar with provisions of all applicable codes and shall insure compliance of work to those codes.
- D. These documents do not include the necessary components for construction safety. Safety, care of adjacent properties during construction, compliance with state and federal regulations specified in the Owner/Contractor contract is, and shall be, the Contractor's responsibility.
- E. Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, techniques, and safety procedures and for coordinating all portions of the work.
- F. If in the event of conflict between local, state, and national codes, the more stringent shall govern.
- G. AIA General Conditions of the Contract for Construction are a part of this project.
- H. All construction is to be in compliance with the following code:
International Residential Code For One & Two Family Dwellings, 2015 Edition
(As Amended By Howard County, MD)
- I. This project is an Owner/Builder project wherein the Owner is performing as the Contractor. The Owner is responsible for all construction means and methods as well as all compliance with building codes and other applicable laws, ordinances and regulations. The Architect is available to the Owner, however, all questions regarding this project must be directed to the Owner. The Architect assumes no responsibility for the means and methods of construction of the project, inasmuch as the Owner/Builder has full control and has assumed full responsibility.
- J. Use of these documents without written permission of the Architect is forbidden.
© Copyright 2016 Sutton Yantis Associates Architects, P.C.
- K. Any and all drawings and specifications for sitework, plumbing supply or waste, electrical circuiting, and heating, ventilation, and air conditioning systems not contained in the "list of drawings" listed on this page are not a part of the professional services provided to the Owner by the Architect under their Agreement. Any discrepancies with these documents by any of the above listed services shown in documents by others should be indicated in writing to Architect immediately.
- L. Contractor shall be responsible for all noise attenuation requirements.

II. Structural Specifications

A. General Requirements

1. The conditions and assumptions stated in these specifications shall be verified by the Contractor for conformance to local codes and conditions. In the event of a discrepancy between these specifications and local codes or conditions, the Contractor shall notify the Architect in writing of the discrepancy and special engineering requirements shall be applied to insure the building's structural integrity.
 2. These requirements may be superceded by more stringent information contained within the drawings. The more stringent shall be followed.
 3. Soil conditions shall conform to the following conditions:
Bearing capacity: Min. 2000 pcf, field verify, under all footings and slab.
Water Table: Min. 2'-0" below bottom of all concrete slabs and footings.
Footings, foundations, walls and slabs shall not be placed on or in Marine Clay, Peat and other organic materials.
 4. Bottom of all footings shall extend to below frost line of the locality or to a minimum of 2'-6" below grade.
 5. Free draining granular backfill shall be used against foundation walls. Equivalent fluid pressure of backfill not to exceed 30 pcf. If backfill pressures exceed 30 pcf then foundation walls must be designed for actual equivalent fluid pressure.
 6. All backfill under slabs and footings shall be clean, porous soil compacted in 8" layers to 95% density. Where distance from edge of foundation wall exceeds 16", but is less than 4'-0", provide backfill as described above or reinforce with #4 rebar @ 2'-0" o.c., 1'-0" beyond edge of undisturbed soil and 1'-0" into foundation wall.
- B. Concrete
1. All concrete shall attain the following 28 day compressive strengths:
-Foundation Walls, Footings, Piers and Interior Slabs . . . 3000 psi
-All other slabs on grade (including garage slabs) . . . 3500 psi.
 2. Reinforcing steel shall conform to ASTM A-615, new billet, grade 60.
 3. Welded wire mesh shall conform to ASTM A-185, with minimum laps of 8".
 4. Maximum slump 5".
 5. All exposed exterior concrete shall be 6+/-1% air entrained or shall conform to ASTM C250.
 6. Walls with lateral earth pressures shall be shored or floor/roof construction shall be in place prior to backfilling.
 7. All concrete work shall be in accordance with ACI 318.
- C. Steel
1. All structural steel specified in these documents shall conform to ASTM A-36.
 2. Steel pipe shall conform to ASTM A-53.
 3. All welds shall comply with AWS standards.
 4. All bolts in bolted steel connections shall conform to ASTM A-325.
 5. All required steel anchor bolts, nails, caps, joist hangers shall be constructed of code approved galvanized or stainless steel. All metal nails, hangers, straps & bolts that are in direct contact with pressure treated lumber shall be fabricated from stainless steel or other non-corrosive metal approved by the Building Official.
 6. All connections shall conform to AISC standards.
 7. Fitch Beams: Unless noted otherwise, all steel fitch beams shall be assembled with 2 rows of 1/2" bolts @ 12" o.c. top and bottom, stagger rows 6". There shall be a bolt top and bottom 8" from each end.

II. STRUCTURAL SPECIFICATIONS (continued)

D. Wood

1. All structural wood joists and headers shall be stressed graded #2 Hem Fir 19% M.C. in accordance with NDS by NFA, unless noted. All wood shall comply to the following minimum specifications:

#2 Hem Fir, 19% M.C.

F _b min:	980 psi repetitive use 850 psi single member use
E min:	1,300,000 psi
F _v min:	75 psi
F _c min:	1,250 psi
F _{cL} min:	405 psi

#2 Spruce Pine Fir 19% M.C. (#2 S.P.F.)

F _b min:	1,005 psi repetitive use 875 psi single member use
E min:	1,400,000 psi
F _v min:	70 psi
F _c min:	1,100 psi
F _{cL} min:	425 psi

#2 Southern Pine, 19% M.C. (#2 S.Y.P.)

F _b min:	1,120 psi repetitive use 975 psi single use
E min:	1,600,000 psi

To: Health Department
Re: 12344 Point Ridge Drive (Regan Property)
Fulton, MD 20759
6 Bedroom Septic - (Basement/1st floor In-law suite/4 Bedrooms upstairs)

b/c psi single use

E min:	1,200,000 psi
F _v min:	70 psi
F _c min:	675 psi
F _{cL} min:	425 psi

2. All manufactured wood trusses and truss headers shall be designed by manufacturer according to Truss Plate Institute (TPI) and other requirements specified by local building authority. Manufacturer shall submit to Architect, shop drawings and calculations sealed by a Professional Engineer registered in the governing jurisdiction. Erection shall be in accordance with TPI "Building Component Safety Information (BCSI) Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses." Roof trusses and all bridging and/or lateral bracing required for structural integrity of roof truss system is to be designed by Manufacturer's drawings.
3. All structural wood exposed to outside unprotected or bearing directly on concrete shall be pressure treated with approved materials to resist decay and infestation by termites and moisture.
4. All wall sill plates shall be min. 2x4 and shall be anchored into foundation walls with 1/2" diameter anchor bolts min. 7" into poured in place concrete and 15" into grouted cmu. Minimum 2 anchors per section of plate and anchors shall be placed 12" from end of each plate. Maximum spacing of anchors 6'-0" on center for one and two story buildings and 4'-0" on center for buildings more than two stories in height or as required per local code.
5. All exterior wood framework supported on approved foundation walls shall be minimum 8" above finish grade.
6. All wood framed exterior corners shall be laterally braced 4'-0" each direction from the corner with 1/2" exterior plywood or other code approved structural method.
7. Provide continuous double top plate at all bearing stud walls.
8. Provide blocking between all joists, 2 x 12 or greater, at intervals not to exceed 8'-0".
9. All structural wood posts under beams and headers over 4'-0" span shall be min. 2-2x4 unless noted otherwise.
10. All bearing partitions shall be 2x4 studs at 16" o.c. or as noted.
11. Provide solid blocking at 4'-0" o.c. between rim joist and first interior parallel joist.
12. All framing shall be detailed and installed in accordance with AF&PA Details for Conventional Wood Frame Construction
13. All ceramic tile shall be installed per Tile Council of North America as specified in the Handbook for Ceramic Tile Installation. Contractor is responsible for providing sufficient movement joints, as per Tile Council of North America specifications, for all floor tile. Movement joint locations and details are not a part of these documents.
14. Plywood subfloors shall be glued and nailed to Floor Joists with APA approved elastomeric structural adhesive and bd common nails spaced at 6" o.c. at panel edges and 12" o.c. at intermediate supports.
15. All wood posts labeled continuous (cont.) shall be continuous from under side of beam to concrete or steel bearing.

II. STRUCTURAL SPECIFICATIONS (continued)

16. Manufactured Floor Trusses: Unless otherwise noted manufactured floor trusses shall be installed in accordance with manufacturers specifications and details.
17. All plywood roof, floor and wall sheathing shall be APA approved.

E. Masonry

1. Materials
Mortar: Type "S" ASTM C270
Hollow CMU: ASTM C-90
Face Brick: ASTM C-216
Grout Aggregated: ASTM C-404
2. All masonry shall be protected from freezing for not less than 48 hours after installation and shall not be constructed below 40 degrees F without precautions necessary to prevent freezing. No anti-freeze admixtures shall be added to the mortar.
3. Brick veneer shall be attached to wood frame with minimum #22 galvanized sheet gage corrosion-resistant corrugated metal ties min. 7/8" wide at vertical intervals max. 16" and horizontal intervals max 16". Provide weep holes at 2'-0" o.c. @ first course above grade and first course above steel lintels.
4. Provide horizontal joint reinforcement (Durowall) in all masonry walls @ 8" o.c. unless otherwise specified.
5. The top course of all masonry bearing walls shall be constructed of solid masonry units or grout filled hollow units or otherwise designed to insure adequate distribution of load.
6. All masonry work shall conform to the applicable requirements of BIA and NCMA.

III. Doors and Windows

1. Unless otherwise noted, window sizes define intended aesthetic size and type by indicating sash opening in feet and inches (i.e., 2856 DH denotes a 2'-8" wide by 5'-6" tall sash opening double hung window). Contractor shall verify that windows and doors (including overhead doors) to be installed comply with local code requirements for energy performance and weather resistance.

stone are used, 10 pound felt or paper shall be attached to the sheathing with flashing whenever necessary to prevent moisture penetration behind the veneer. Approved water resistant sheathing may be substituted for building paper.

V. Other

1. In locations required by local code, window opening limiting devices are to be installed by window manufacturer in compliance with code section R312.2.2.
2. Residential Energy Efficiency compliance is per the Total UA Alternative Method per the 2015 International Energy Conservation Code for climate zone 4A. Refer to REScheck Compliance Certificate
3. Whole house ventilation system to be installed (by others).
4. House to be sprinklered per local code.

Area Calculations

Area Calculations include gross floor area to exterior face of wall for all conditioned spaces and exclude upper levels of multi-story spaces.

	LOWER	UPPER	FIN. BASEMENT
BASE HOUSE	2,071 SF	2,216 SF	
OPT. FINISHED BASEMENT			+1,881 SF
ELEV. F	+54 SF	+54 SF	+26 SF
ELEV. I	+32 SF	+28 SF	-5 SF
ELEV. J	+22 SF	+28 SF	-5 SF
OPT. 2' FRONT EXTENSION	+80 SF	+54 SF	+54 SF
OPT. 4' REAR EXTENSION	+119 SF	+136 SF	+119 SF
OPT. SUNROOM	+272 SF		+272 SF
OPT. GUEST BEDROOM	+139 SF		+139 SF
OPT. DORMER @ BEDROOM #3		+44 SF	
OPT. BAY WINDOW	+19 SF		

Symbols

	Duplex Outlet		One Way Switch
	Duplex Outlet, Weather Proof on GFI circuit		Three Way Switch
	Duplex Outlet, Floor Mounted		Four Way Switch
	Duplex Outlet, Switch Operated		Switch w/ Rheostat
	Range Outlet		Smoke Detector
	Gas Outlet		Chime
	Ceiling Mounted Incandescent		Bathroom Exhaust Fan
	Junction Box		Television Outlet
	Eyeball Light		Telephone Outlet
	Wall Washer Light (Recessed)		Medicine Cabinet
	Recessed Light		Frost Proof Hose Bib
	2" Fluorescent Light		Recessed Waterproof Light
	4" Fluorescent Light		Dedicated Circuit Outlet
	Exterior Flood Lights		Steel Angle (Lintel)
	Wall Mounted Incandescent		Structural Post
	Pull Switch Light		Smoke/Carbon Monoxide Detector
			Fan/Light

List of Abbreviations

ADJ.	Adjustable	MC	Medicine Cabinet
A.S.F.	Above Subfloor	MFG.	Manufacturing
BF	Bifold	O.A.	Overall
BM	Beam	O.C.	On Center
B.O.J.	Bottom of Joist	OPT.	Optional
B.W.L.	Braced Wall Line	PART.	Partial
CLG	Ceiling	PLYWD	Plywood
CMU	Concrete Masonry Unit	P.T.	Pressure Treated
C.O.	Cased Opening	R/A	Return Air
COL.	Column	R.C.	Rough Cut
CONC.	Concrete	REF	Refrigerator
CONT.	Continuous	R/O	Range Oven
CS	Casement	SF	Square Feet
CVAC	Central Vacuum	SHWR	Shower
DBL	Double	SIM.	Similar
DES.	Design	S.L.	Sliding Door/Window
DH	Double Hung	STD.	Standard
DTL	Detail	STL	Steel
DW	Dishwasher	S&P	Shelf & Pole
FD	Floor Drain/French Door	S.V.B.	Solid Valley Blocking
F.P.	Fireplace	T&G	Tongue & Groove
FTG	Footing	T.B.D.	To Be Determined
GFI	Ground Fault Circuit Interrupter	T.O.S.	Top of Slab
GPDW	Gypsum Drywall	T.O.W.	Top of Wall
HD.HGHT	Window Head Height	TR	Trim
HDR	Header	TYP.	Typical
HFL	Heat/Fan/Light	V.I.F.	Verify In Field
HWH	Hot Water Heater	WD	Wood
INSUL	Insulation	W/O	Wall Oven
L.I.F.	Locate In Field	W.W.M.	Welded Wire Mesh
L.T.	Laundry Tub		

List of Drawings

1	General Notes & Specifications	25	Front Elevation & Partial Left Side Elevation w/ Elev. "F"
D1	Foundation/Framing Details	26	Front Elevation & Partial Left Side Elevation w/ Elev. "I"
D2	Foundation/Framing Details	27	Front Elevation & Partial Left Side Elevation w/ Elev. "J"
D3	Masonry Details	28	Lower Floor Framing Plans w/ Elev. A
AW1	Arway Details	29	Upper Floor Framing Plans w/ Elev. A
AW2	Arway Details	30	Roof Framing Plans w/ Elev. A
SD	Structural Slab Details	31	Roof Framing Plans "Hip Roof" w/ Elev. A
DK1	Deck/Patio Details	32	Partial Framing Plans w/ Opt. Rear Sunroom, & 3-Car Sideload Garage
DK2	Deck/Patio Details	32A	Partial Framing Plans w/ Opt. Rear Porch
TR1	Trim Details	33	Partial Framing Plans w/ Elev. F
TR2	Trim Details	34	Partial Framing Plans w/ Elev. I
TR3	Trim Details	35	Partial Framing Plans w/ Elev. J
TR4	Trim Details	T1	Truss Joist Details
2	Foundation/Basement Plan	S-1	Wall Bracing Details
3	Lower Floor Plan	S-2	Wall Bracing Details
4	Upper Floor Plan & Opt. Bedroom #5 & Opt. Dormer	S-3	Wall Bracing Details
5	Partial Floor Plans w/ Opt. 4'-0" Rear Extension	S-4	Wall Bracing Details
6	Partial Floor Plans w/ Opt. Guest Bedroom	S-5	Lower Floor Wall Bracing Diagrams
7	Partial Floor Plans w/ Opt. Sunroom	S-6	Partial Lower Floor Bracing Diagrams w/ 3-Car Sideload Garage & Rear Sunroom
8	Partial Floor Plans w/ Opt. Rear Porch	S-7	Upper Floor Wall Bracing Diagrams
9	Partial Floor Plans w/ Opt. 3-Car Sideload Garage	S-8	Partial Lower & Upper Floor Bracing Diagrams w/ Elev. F
10	Partial Floor Plans w/ Elev. F	S-9	Partial Lower & Upper Floor Bracing Diagrams w/ Elev. I
11	Partial Floor Plans w/ Elev. I	S-10	Partial Lower & Upper Floor Bracing Diagrams w/ Elev. J
12	Partial Floor Plans w/ Elev. J	E1	Basement Electrical Plans
13	Building Section "A"	E2	Lower Floor Electrical Plans
14	Partial Building Section "B" & "C"	E3	Upper Floor Electrical Plans
15	Partial Building Sections "D", "E" & "F"	E4	Partial Electrical Plans w/ 4'-0" Rear Extension
16	Building Section "G"	E5	Partial Electrical Plans w/ Guest Bedroom
17	Front Elevation "A"	E6	Partial Electrical Plans w/ Opt. Sideload Garage
18	Rear Elevation & Partial Rear Opt. 4'-0" Rear Ext.	E7	Partial Right Side Elevation w/ 3-Car Sideload Garage
19	Right and Left Side Elevations "A"		
20	Partial Side & Rear Elevations w/ Opt. Guest Bedroom		
21	Partial Side & Rear Elevations w/ Opt. Rear Sunroom		
22	Partial Right Side & Rear Elevations w/ Opt. Rear Porch		
23	Partial Front Elevation w/ 3-Car Sideload Garage		
24	Partial Right Side Elevation w/ 3-Car Sideload Garage		

Date	10/26/2016
Project No.	1607140
Client	ASHBROOKE MITCHELL BEST HOMES
Architect	SUTTON YANTIS ASSOCIATES ARCHITECTS

Project Number: 1607140
ASHBROOKE MITCHELL BEST HOMES

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