

**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](http://www.hchealth.org)  
 Facebook: [www.facebook.com/hocohealth](http://www.facebook.com/hocohealth)

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

RECEIPT DATE: 3/23/17 **ONSITE SEWAGE DISPOSAL SYSTEM** P 560580-1

APPROVAL DATE: 5/26/17 **PERMIT: CONSTRUCTION** A \_\_\_\_\_

PROPERTY ADDRESS: 2046 Drovers Lane

SUBDIVISION: Vista Ridge LOT: 13 TAX ID: 04-595478

CONTRACTOR: Fogles Septic Clean Inc. EMAIL: \_\_\_\_\_

CONTRACTOR ADDRESS: \_\_\_\_\_ PHONE: 410.795.5670

PROPERTY OWNER: DR Horton, Inc. EMAIL: \_\_\_\_\_

OWNER ADDRESS: 1356 Beverly Road Suite 300, McLean, VA 22101 PHONE: 571-723-0813

SEPTIC TANK SIZE (GALLONS): 2000 TANK MANUFACTURER: Mayer Bro, Inc.

PUMP MODEL: N/A PUMP SIZE: N/A PUMP TANK CAPACITY: N/A

DISTRIBUTION SYSTEM:  GRAVITY  PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>208</u>	INLET DEPTH: <u>3</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>5.5</u>
LOCATION:	<b>PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.</b>	
NOTES:		

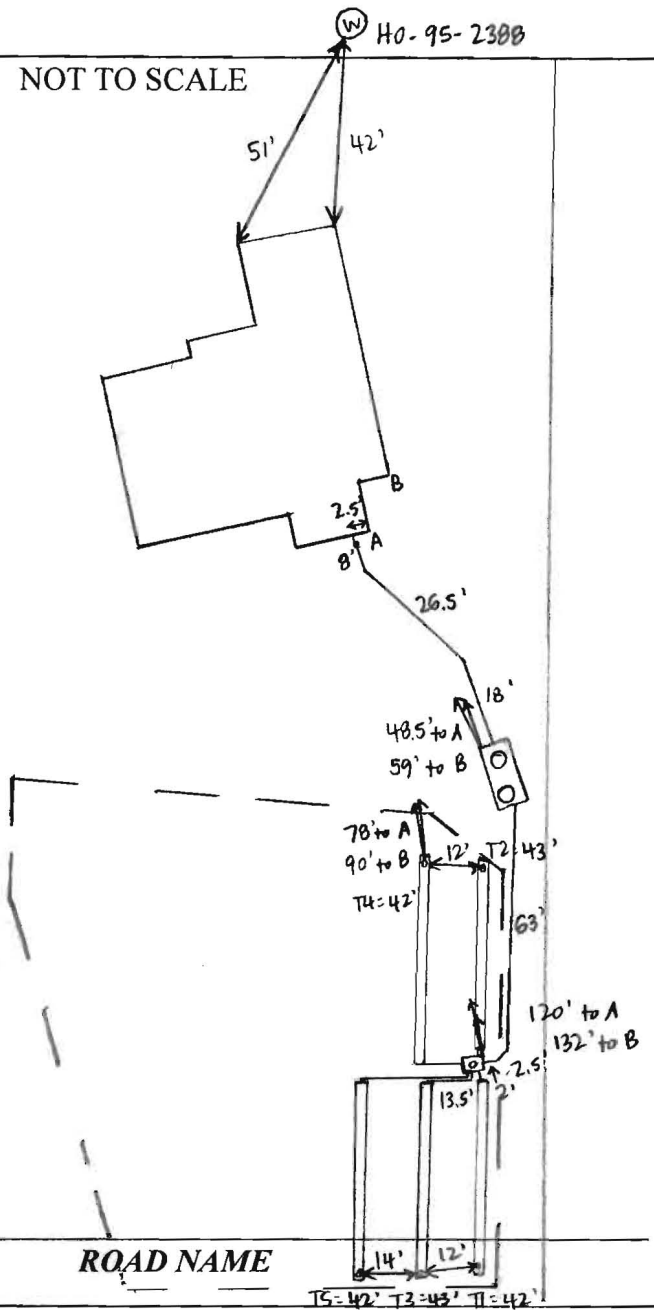
ISSUED BY: Robert Freemon / H.O. ISSUE DATE: 3/23/17 EXPIRATION DATE: 3/23/18

- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
- NOTE: WATERTIGHT TANKS REQUIRED
- NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM
- ELECTRICAL PERMIT ISSUED E \_\_\_\_\_
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM. PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT. CALL 410-313-1771 TO SCHEDULE INSPECTIONS.**

HO-95-2388

NOT TO SCALE



**TRENCH/DRAINFIELD DATA**

WIDTH	INLET	BOTTOM
3'	4.5'	8'
NUMBER OF TRENCHES		5
TOTAL LENGTH		211'
ABSORPTION AREA		633' + SIDEWALK
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		YES
DISTRIBUTION BOX PORT		YES

**SEPTIC TANK DATA**

SEPTIC TANK I LEVEL	YES
MANUFACTURER	BABYLON
CAPACITY	2000 GAL
SEAM LOC	TOP
TANK LID DEPTH	1-1.5'
BAFFLES	YES
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	YES
DATE ON LID	2-2-17

**PUMP/SEPTIC TANK LEVEL**

MANUFACTURER	
CAPACITY	GAL
SEAM LOC	
TANK LID DEPTH	
BAFFLES	
BAFFLE FILTER	
MANHOLE LOC	
6" PORT LOC	
WATERTIGHT TEST	
SLOTTED	
DATE ON LID	

**PRE-CONSTRUCTION:**

3/30/17 Met Fogle's on site for layout. All SDA stakes present. Shot contour + laid out 5x42' trenches on contour. (SC)

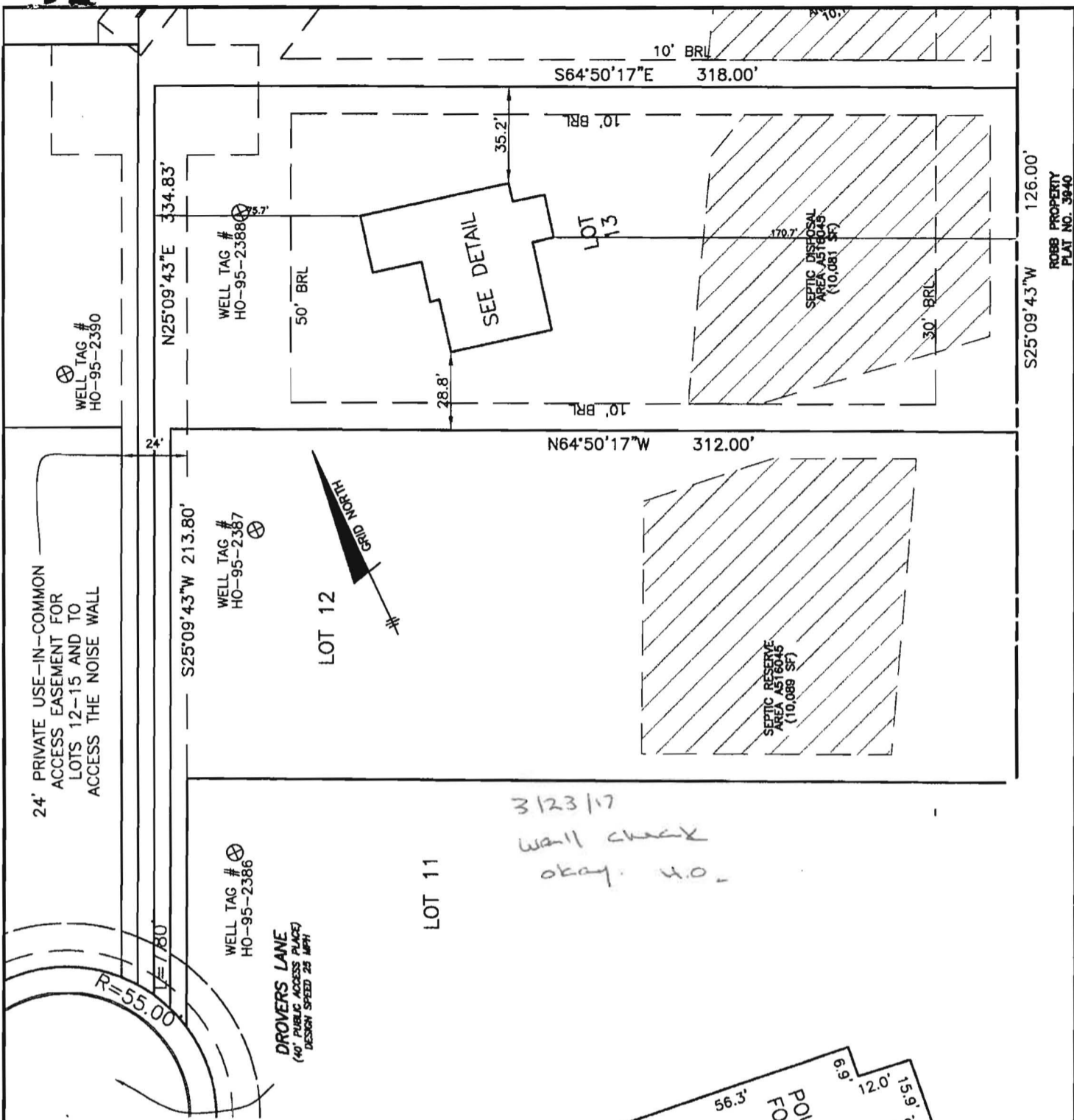
INSTALLATION: 4/3/17 Tank + D-box set, pipe laid from house to D-box. Need house connection. Fogle's could not make 3' inlet, okay to do 4' inlet and 8' bottom. (SC)

4/4/17 T1 finished + left open at ends, Fogle's adding stone to T3. 3' wide, 4' to stone. No laser used while digging trenches - they don't have access to one for today. I told them they need one on site. (SC)

4/5/17 Trenches complete - left open at ends. 3' wide, 4' to stone. Levelled speed levelers in D-box. Need house connection. (SC)

5/26/17 House connection complete. Settling around tank and at end of T3 - notified builder + final grading with fix next week. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 5/26/17



TOP OF FOUNDATION WALL = 646.1'  
 OFFSET DIMENSIONS TO PROPERTY LINES ARE ± 0.1'

**SURVEYOR'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS, WERE 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. 21320, EXPIRATION DATE 1-7-2019 AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, THAT THE DIMENSIONS OF THE BUILDING WALLS SHOWN HEREON ARE CORRECT; THAT THEY ARE BASED ON A FIELD RUN SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. ON 01/30/17.

*Donald A. Mason*  
 DONALD A. MASON  
 PROFESSIONAL LAND SURVEYOR  
 MARYLAND REG. No. 21320

FEMA FIRM No. 24027C0035D  
 ZONE: X  
 DATED: 11/6/2013

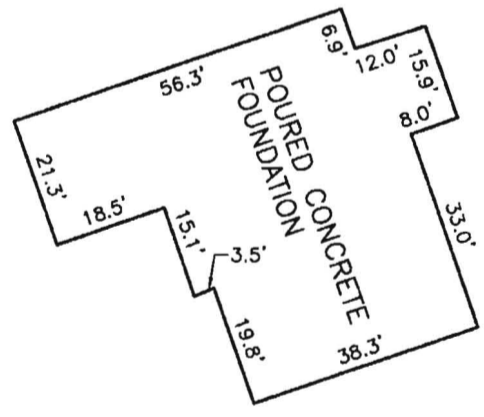
**BENCHMARK**

ENGINEERS LAND SURVEYORS PLANNERS

**ENGINEERING, INC.**

6480 BALTIMORE NATIONAL PIKE SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-8644

WWW.BEI-CIVILENGINEERING.COM



**FOUNDATION DETAIL**

SCALE: 1" = 30'

**WALL CHECK**

**VISTA RIDGE**

**A RESUBDIVISION OF LOTS 1-4,  
 CREATING LOTS 5 THRU 21, AND  
 PRESERVATION PARCELS "A"**

**THROUGH "D"**  
**PLAT No. 22432**

**LOT No. 13**

2046 DROVERS LANE

4TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

FIELD OBS. BY DAM  
 COMP. BY DAM  
 DRAWN BY ML

SCALE: 1" = 50' DATE: 1/30/2017

ROBB PROPERTY  
 PLAT NO. 3040



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Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

MEMORANDUM

TO: John Carney
BenchMark Engineering Inc.
8480 Baltimore National Pike
Ellicott City, Maryland 21043

Drovers Lane 10/11
2046 Lot 13

FROM: Robert Freemon RIF
Well & Septic Program

Emailed John Carney 10/25
- Memo BAT

RE: Vista Ridge Lot 13
2046 Drovers Lane
Cooksville, MD 21723
"BAT Plan & Site Plan"

DATE: 10/25/16

Here are my comments after reviewing the BAT Plan and Site Plan for Vista Ridge Lot 13.

- The engineer's seal and signature needs to be present on the 1st page as well as the 2nd page.
Approved Norweco BAT units appropriate for this plan could include the Singlair Model TNT 750 or the Singlair Model TNT1000. The Singlair Model 960LP-750 is not recognized as an approved unit.
The components of the septic system need to be repositioned in order to maximize space and soil filtration efficiency. The BAT unit can be shifted north east to the outside edge of the SDA away from the swale. The distribution box can also be shifted to the outside edge of the SDA. The initial trenching system could be divided into 5 x 42' length trenches and laid out along contour spanning the whole northern end of the SDA. The 2nd trenching system could be divided into 5 x 54' length trenches and laid out along contour below the first set of trenches.
A new site plan will need to be created and submitted to DILP as a Revised Site Plan.

Check
Accela

**Freemon, Robert**

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**From:** Freemon, Robert  
**Sent:** Tuesday, October 25, 2016 10:31 AM  
**To:** 'John Carney'  
**Subject:** Vista Ridge Lot 13  
**Attachments:** 2046 Drovers Lane.pdf

John,  
Attached are my comments for 2046 Drovers Lane Lot 13. If you have any questions let me know.

*Robert Freemon  
Howard County Health Department  
8930 Stanford Blvd. Columbia, MD 21045  
Well and Septic Program  
Phone: 410-313-6357  
Email: [rfreemon@howardcountymd.gov](mailto:rfreemon@howardcountymd.gov)*

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Friday, September 04, 2015 9:29 AM  
**To:** 'John Carney'  
**Subject:** RE: Vista Ridge\_Lot 13

John- We can assume 5 and I will follow-up with an email to the builder. To clarify revisions, there is a statement on the plan that conflicts with the size of the BAT unit TNTLP 600 GPD. The statement reads "Total system capacity: 1300 gallons Rated Capacity 750 GPD" The BAT unit should be sized according to the number of bedrooms. Also, the effective area beginning depth on initial system should be 5.5 not 3.5. The max bottom depth should be 8 feet to receive sidewall credit of 2.5. First replacement effective area beginning depth should be 6.5 not 5.5. the max bottom depth should be 8 not 8.5.

Hank

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**From:** John Carney [<mailto:jcarney@bei-civilengineering.com>]  
**Sent:** Friday, September 04, 2015 9:06 AM  
**To:** Oswald, Hank  
**Subject:** RE: Vista Ridge\_Lot 13

Hank, I got a clarification from the builder that they are only putting in a 5 bedroom house. I did spec the unit may have to change if the owner improves to add another bedroom. Any chance we can keep the 5 bedroom unit and address the changes in the future? I'll forward you the email from the builder. John

---

**From:** Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]  
**Sent:** Friday, September 04, 2015 8:54 AM  
**To:** John Carney ([jcarney@bei-civilengineering.com](mailto:jcarney@bei-civilengineering.com))  
**Subject:** Vista Ridge\_Lot 13

Hi John:

Attached, you will find the septic specs for Vista Ridge - Lot 13. Please revise the BAT plan calculations accordingly. The floor plan shows 6 bedrooms with all the options. Assuming 6 BRs, please show the septic tank specs for the Norweco Singulair Model 750 rated for 750 gallons/day on the plan.

Should you have any questions, please don't hesitate to ask.

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
410.313.1786

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Friday, September 04, 2015 8:54 AM  
**To:** John Carney (jcarney@bei-civilengineering.com)  
**Subject:** Vista Ridge\_Lot 13  
**Attachments:** Septic Specs\_Vista Ridge Lot 13.pdf

Hi John:

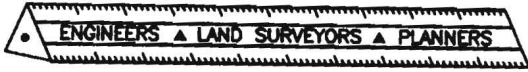
Attached, you will find the septic specs for Vista Ridge - Lot 13. Please revise the BAT plan calculations accordingly. The floor plan shows 6 bedrooms with all the options. Assuming 6 BRs, please show the septic tank specs for the Norweco Singlair Model 750 rated for 750 gallons/day on the plan.

Should you have any questions, please don't hesitate to ask.

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
410.313.1786

# BENCHMARK



## ENGINEERING, INC.

8480 Baltimore National Pike • Suite 315 • Ellicott City, Maryland 21043  
410-465-6105 410-465-6644 (Fax)

### LETTER OF TRANSMITTAL

TO: Health Dept.

DATE	<u>10/7/16</u>	PROJECT No.	<u>1635</u>
ATTENTION	<u>Robert Freeman</u>		
RE:	<u>Lots 13 &amp; 15</u>		
	<u>Vista Ridge</u>		
	<u>BAT Plans</u>		
	<u>2046 &amp; 2049 Drovers Ln</u>		

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items

- Photocopies       Prints       Originals       Samples  
 Specifications       Invoices       Change Order       Other \_\_\_\_\_

COPIES of	No. of SHEETS	DESCRIPTION
<u>3</u>	<u>2</u>	<u>BAT Plan Lot 13</u>
<u>1</u>	<u>-</u>	<u>Architectural Plans Lot 13</u>
<u>3</u>	<u>2</u>	<u>BAT Plan Lot 15</u>
<u>1</u>	<u>-</u>	<u>Architectural Plans Lot 15</u>

THESE ARE TRANSMITTED as checked below

- For Comment       For your use       For Approval  
 For Review       As requested       Other \_\_\_\_\_

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

COPY TO: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

SIGNED: \_\_\_\_\_

If enclosures are not as noted, kindly notify us at once.

# BENCHMARK



## ENGINEERING, INC.

8480 Baltimore National Pike • Suite 315 • Ellicott City, Maryland 21043  
 410-465-6105 410-465-6644 (Fax)

### LETTER OF TRANSMITTAL

DATE	10/20/16	PROJECT No.	1635
ATTENTION	Robert Freeman		
RE:	Vista Ridge Lot 13		
	2046 Drovers Lane		
	Revised BAT Plan		

TO: Health Dept.

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WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items

Photocopies     Prints     Originals     Samples  
 Specifications     Invoices     Change Order     Other \_\_\_\_\_

COPIES of	No. of SHEETS	DESCRIPTION
3	2	Revised BAT Plan

THESE ARE TRANSMITTED as checked below

For Comment     For your use     For Approval  
 For Review     As requested     Other \_\_\_\_\_

REMARKS: ① Seal & Signature added to sheet 1.  
 ② TMTLP-750 GPD tank specified.  
 ③ Components adjusted as required. Trench design is per your design. ④ Septic permit should be per this plan, no building permit plan/inspection changes so no new building permit plan necessary.

COPY TO: \_\_\_\_\_

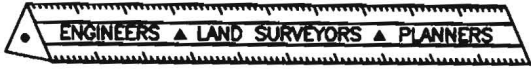
RECEIVED BY: [Signature]

SIGNED: John Carney

NOV 02 2016  
 HOWARD COUNTY HEALTH DEPT.  
 BUREAU OF ENVIRONMENTAL HEALTH

If enclosures are not as noted, kindly notify us at once.

# BENCHMARK



## ENGINEERING, INC.

8480 Baltimore National Pike • Suite 315 • Ellicott City, Maryland 21043  
 410-465-6105 410-465-6644 (Fax)

### LETTER OF TRANSMITTAL

DATE	12/21/16	PROJECT No.	1635
ATTENTION	Robert Freeman		
RE:	Vista Ridge		

TO: Health Dept

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items

Photocopies  Prints  Originals  Samples

Specifications  Invoices  Change Order  Other \_\_\_\_\_

COPIES of	No. of SHEETS	DESCRIPTION
3	2	Revised Septic Plan Lot 11
3	2	Revised Septic Plan Lot 13
3	2	Revised Septic Plan Lot 17
1	1	letter from owner requesting change to standard septic

THESE ARE TRANSMITTED as checked below

For Comment  For your use  For Approval

For Review  As requested  Other \_\_\_\_\_

REMARKS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

COPY TO: \_\_\_\_\_

RECEIVED BY: [Signature]

If enclosures are not as noted kindly notify us at once.

SIGNED: [Signature]

## John Carney

---

**From:** Michael A. Hickey <MAHickey@drhorton.com>  
**Sent:** Monday, December 19, 2016 9:08 AM  
**To:** jcarney@bei-civilengineering.com  
**Cc:** mdbldgpermits  
**Subject:** Septic systems

After talking to fogels we want to do standard systems on lots 11,13,17.

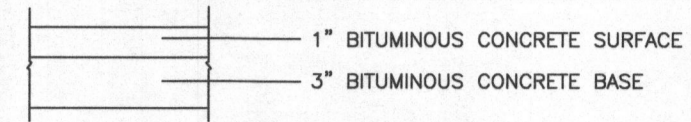
John can you call me 5714240863  
Sent from my Windows 10 phone



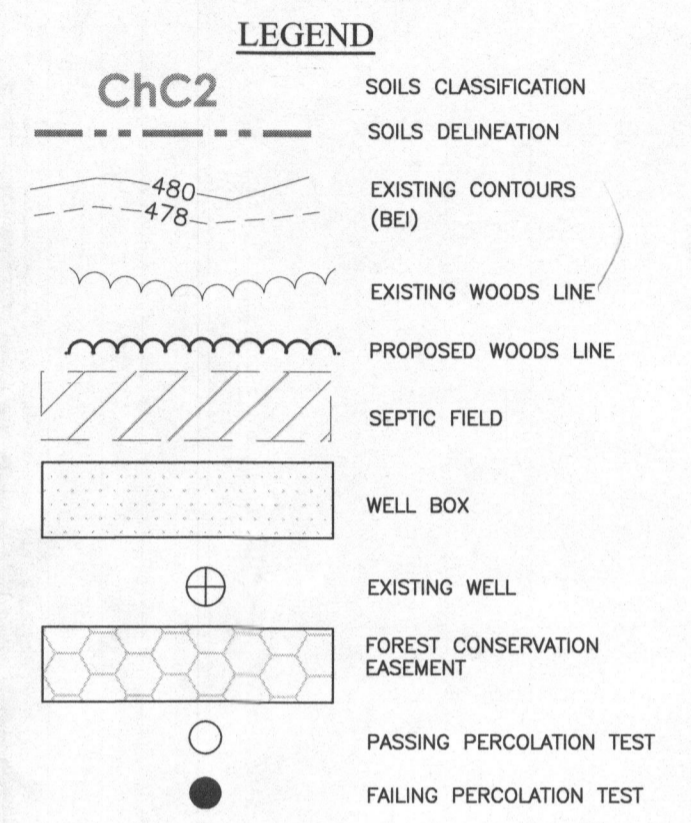


SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
-	-	-

\* INDICATES HYDRIC SOILS  
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



**PAVING SECTION**  
 NOT TO SCALE



- BUILDING PERMIT PLAN NOTES:**
- THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR VISTA RIDGE, PLAT Nos. 22430-22435. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
  - SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC HOUSE.
  - TOPOGRAPHY SHOWN HEREON IS TAKEN FROM THE APPROVED ROAD CONSTRUCTION PLANS AND TOPOGRAPHIC INFORMATION PROVIDED BY ACCUBID, INC., ON OR ABOUT JUNE 27, 2013.
  - 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.
  - ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
  - THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
  - ANY CHANGES TO A PRIVATE SEWAGE EASEMENT OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
  - STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED TO BE PROVIDED BY BOTH POND #1, A POCKET POND, AND IN POND #2, A MICROPOL ED POND.
  - THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2388, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.
  - EXACT LENGTH OF SEPTIC TRENCHES ARE BE DETERMINED BY THE HEALTH DEPARTMENT AT THE TIME OF TRENCH LAYOUT AND INSPECTION.
  - SPOIL FROM THE TRENCHING OF THE SEPTIC AREA IS TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION FOR EACH INDIVIDUAL LOT.
  - THE SEPTIC DISPOSAL SYSTEM FOR THIS LOT REQUIRES A SEPTIC TANK IN ACCORDANCE WITH COMAR REGULATIONS. TANK IS TO BE 2000 GALLON TWO COMPARTMENT TANK.
  - The maximum earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank.

**PLAN VIEW**  
 1" = 30'

Approved Septic System Plan  
 Howard County Health Department

*[Signature]* 11/5/2017  
 Signature Date

(Approved for 6BR as per Floor Plan)

**THIS PLAN IS FOR SEPTIC DESIGN ONLY**

**BENCHMARK**  
 ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
**ENGINEERING, INC.**

6480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
 BEI@BEI-CIVILENGINEERING.COM

OWNER/BUILDER: DR HORTON, INC.  
 1356 BEVERLY ROAD  
 SUITE 300  
 McLEAN, VA 22101  
 PHONE: 571-723-0813  
 FAX: 800-551-5015

PROJECT: **VISTA RIDGE LOT 13**

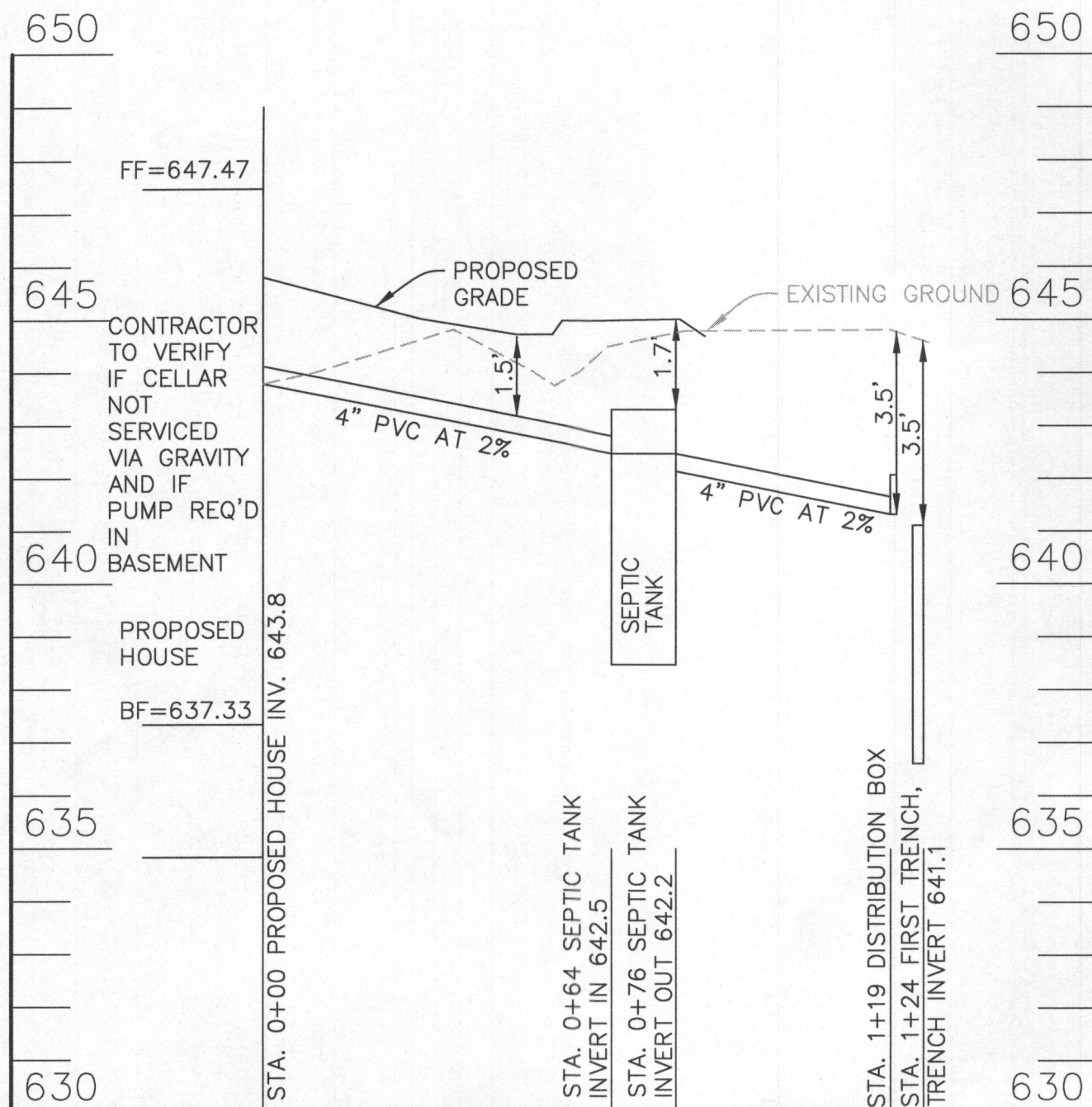
LOCATION: 2046 DROVERS LANE  
 COOKSVILLE, MD 21723  
 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176  
 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
 TAX ID NUMBER 04-595478

TITLE: SEPTIC PERMIT SITE PLAN

HOUSE TYPE: GLEN ABBEY

DATE: OCTOBER, 2016 PROJECT NO. 1635  
 DECEMBER, 2016

DESIGN: JMC DRAFT: JMC SCALE: 1" = 30' DRAWING 1 OF 2



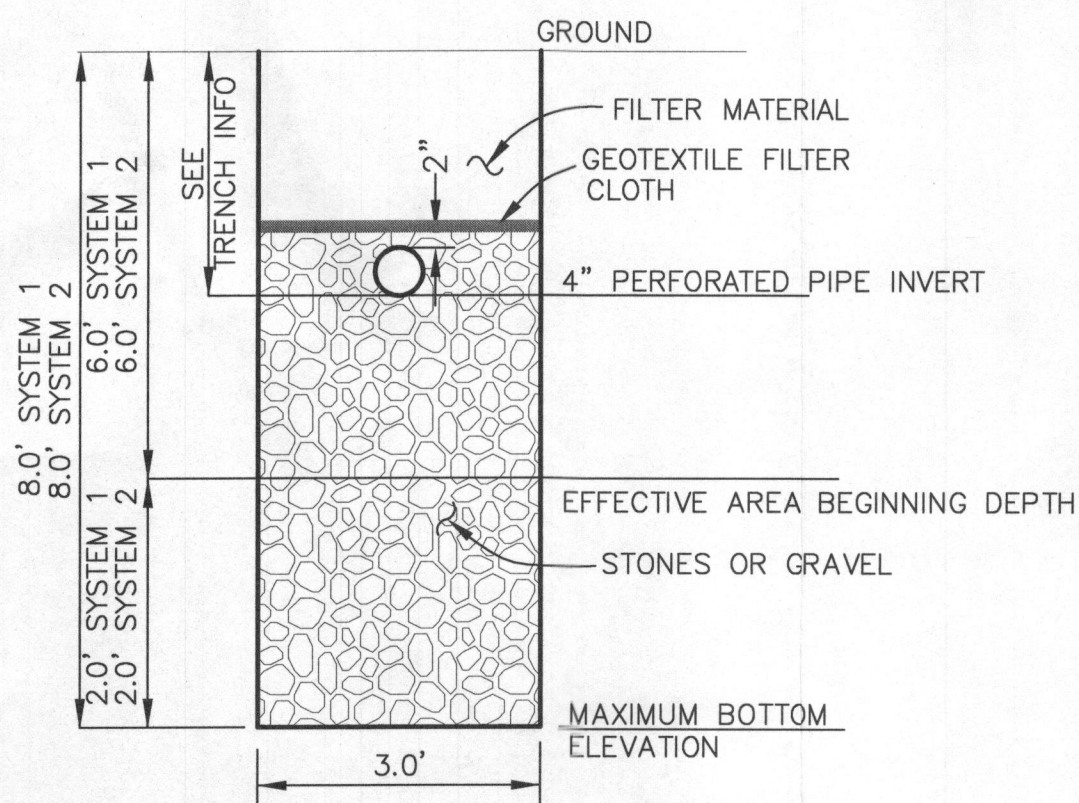
SEWER PROFILE - LOT 13  
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	5.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.56	
Trench width	3	
Effective Area Depth	2.5	
Linear Length of trench Required	208	lf

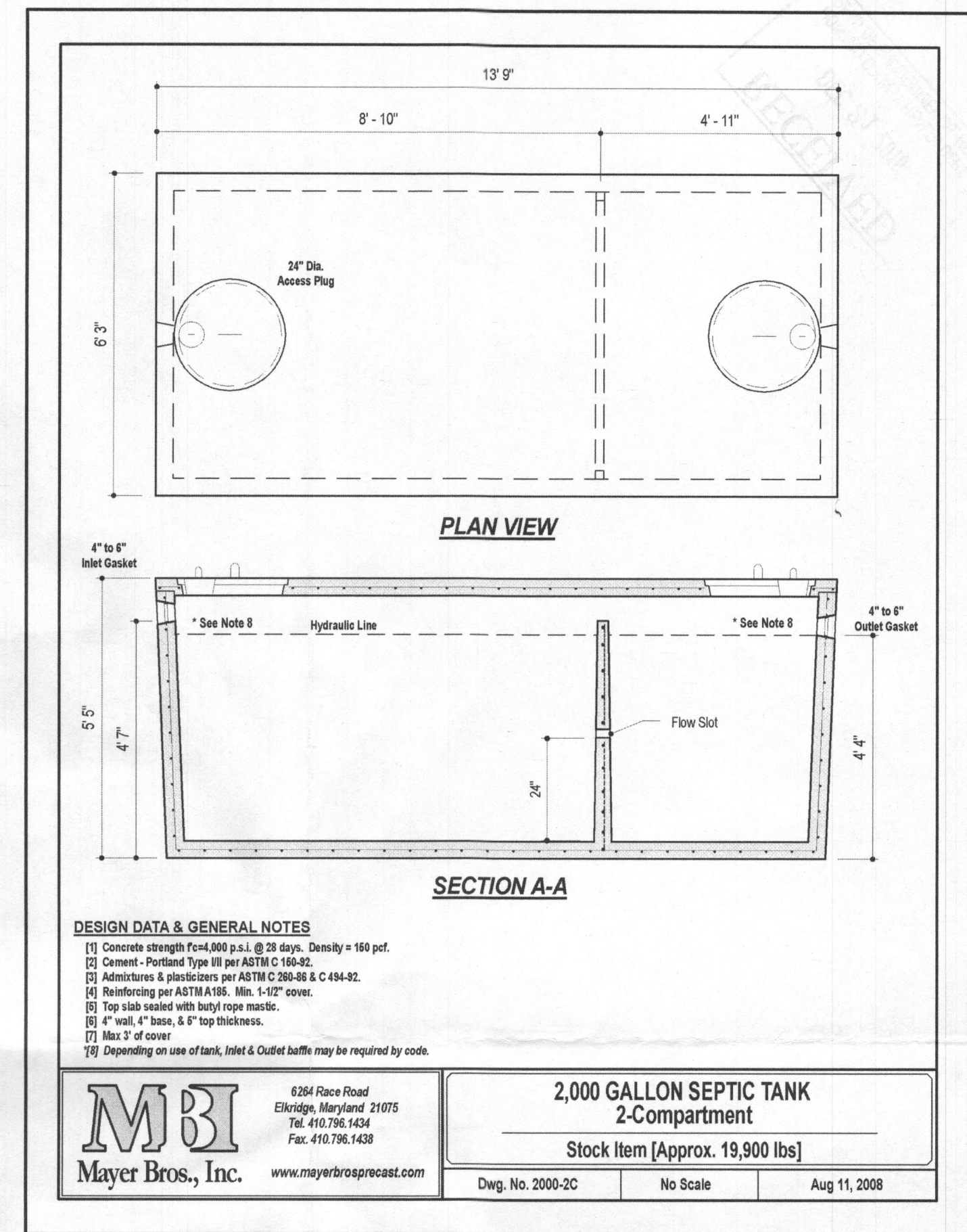
1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.71	
Trench width	3	
Effective Area Depth	1.5	
Linear Length of trench Required	268	lf

TRENCH INFORMATION

<b>TRENCH 1-1</b>	TRENCH LENGTH	42 LF	<b>TRENCH 2-1</b>	TRENCH LENGTH	54 LF
GROUND ELEVATION	644.6	GROUND ELEVATION	643.5	GROUND ELEVATION	643.5
INVERT ELEVATION	641.1	INVERT ELEVATION	640.5	INVERT ELEVATION	640.5
MAX. BOTTOM ELEV.	636.6	MAX. BOTTOM ELEV.	635.5	MAX. BOTTOM ELEV.	635.5
<b>TRENCH 1-2</b>	TRENCH LENGTH	42 LF	<b>TRENCH 2-2</b>	TRENCH LENGTH	54 LF
GROUND ELEVATION	644.4	GROUND ELEVATION	642.8	GROUND ELEVATION	642.8
INVERT ELEVATION	641.1	INVERT ELEVATION	639.8	INVERT ELEVATION	639.8
MAX. BOTTOM ELEV.	636.4	MAX. BOTTOM ELEV.	634.8	MAX. BOTTOM ELEV.	634.8
<b>TRENCH 1-3</b>	TRENCH LENGTH	42 LF	<b>TRENCH 2-3</b>	TRENCH LENGTH	54 LF
GROUND ELEVATION	644.3	GROUND ELEVATION	642.5	GROUND ELEVATION	642.5
INVERT ELEVATION	641.1	INVERT ELEVATION	639.5	INVERT ELEVATION	639.5
MAX. BOTTOM ELEV.	636.3	MAX. BOTTOM ELEV.	634.5	MAX. BOTTOM ELEV.	634.5
<b>TRENCH 1-4</b>	TRENCH LENGTH	42 LF	<b>TRENCH 2-4</b>	TRENCH LENGTH	54 LF
GROUND ELEVATION	644.1	GROUND ELEVATION	642.0	GROUND ELEVATION	642.0
INVERT ELEVATION	641.1	INVERT ELEVATION	639.0	INVERT ELEVATION	639.0
MAX. BOTTOM ELEV.	636.1	MAX. BOTTOM ELEV.	634.0	MAX. BOTTOM ELEV.	634.0
<b>TRENCH 1-5</b>	TRENCH LENGTH	42 LF	<b>TRENCH 2-5</b>	TRENCH LENGTH	54 LF
GROUND ELEVATION	643.3	GROUND ELEVATION	641.8	GROUND ELEVATION	641.8
INVERT ELEVATION	640.3	INVERT ELEVATION	638.8	INVERT ELEVATION	638.8
MAX. BOTTOM ELEV.	635.3	MAX. BOTTOM ELEV.	633.8	MAX. BOTTOM ELEV.	633.8



TYPICAL TRENCH DETAIL  
NOT TO SCALE



**DESIGN DATA & GENERAL NOTES**  
 [1] Concrete strength  $f'c=4,000$  p.s.i. @ 28 days. Density = 160 pcf.  
 [2] Cement - Portland Type III per ASTM C 150-92.  
 [3] Admixtures & plasticizers per ASTM C 260-98 & 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, & 8" top thickness.  
 [7] Max 3" of cover.  
 [8] Depending on use of tank, Inlet & Outlet baffles may be required by code.

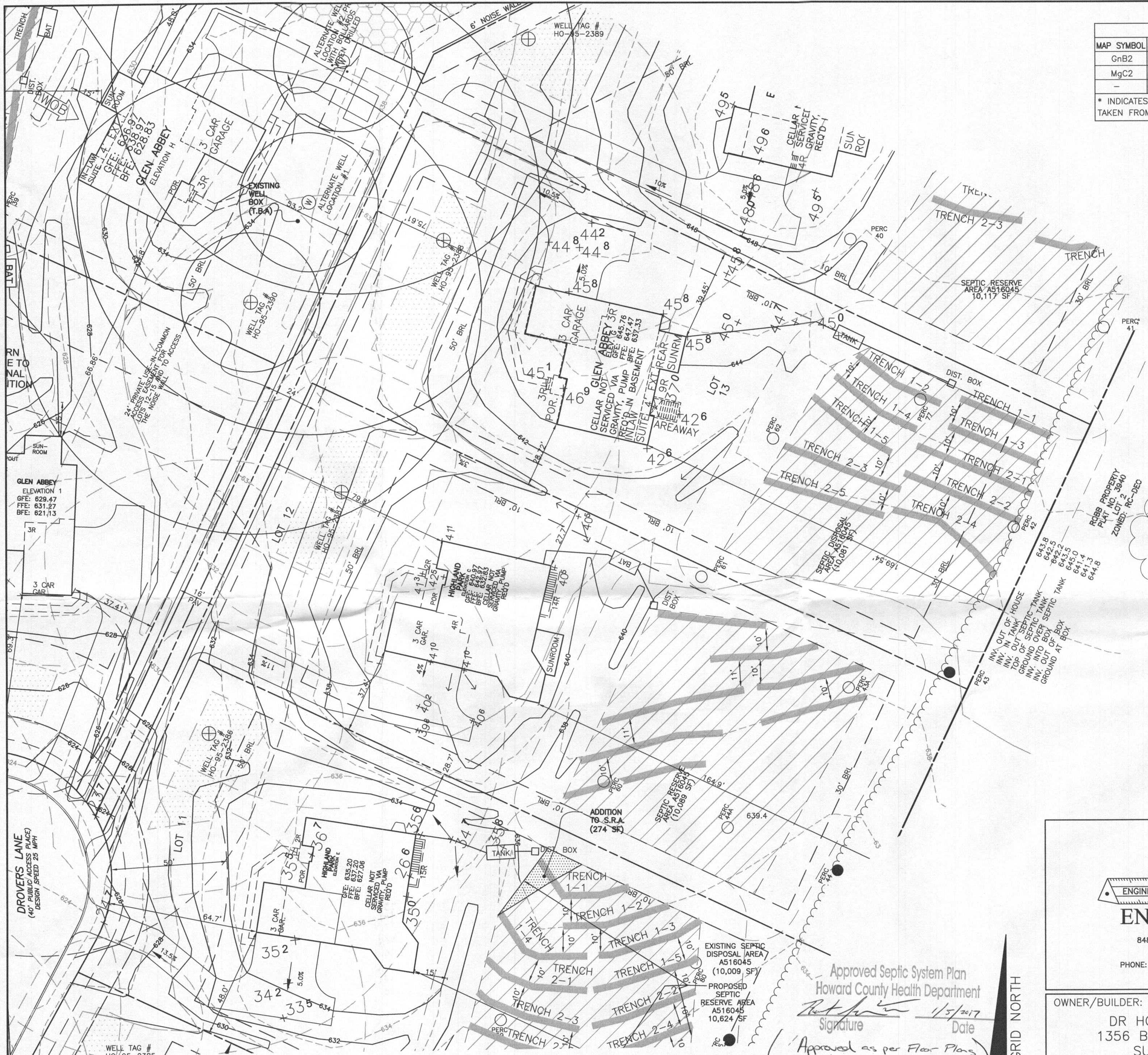
 Mayer Bros., Inc. 6264 Race Road Elkridge, Maryland, 21075 Tel. 410.796.1434 Fax. 410.796.1438 www.mayerbrosprecast.com	<b>2,000 GALLON SEPTIC TANK 2-Compartment</b> Stock Item [Approx. 19,900 lbs]	
	Dwg. No. 2000-2C	No Scale

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

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

 <b>BENCHMARK ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 ▲ FAX: 410-465-6644 BEI@BEI-CIVILENGINEERING.COM		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: 6-08-2018. 
OWNER/BUILDER: DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	PROJECT: <b>VISTA RIDGE LOT 13</b> LOCATION: 2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478	
DESIGN: JMC      DRAFT: JMC		TITLE: SEPTIC SITE PLAN HOUSE TYPE: GLEN ABBEY DATE: OCTOBER, 2016 DECEMBER 20, 2016 PROJECT NO. 1635 DRAWING 2 OF 2
THIS PLAN IS FOR SEPTIC DESIGN ONLY		SCALE: 1" = 30'

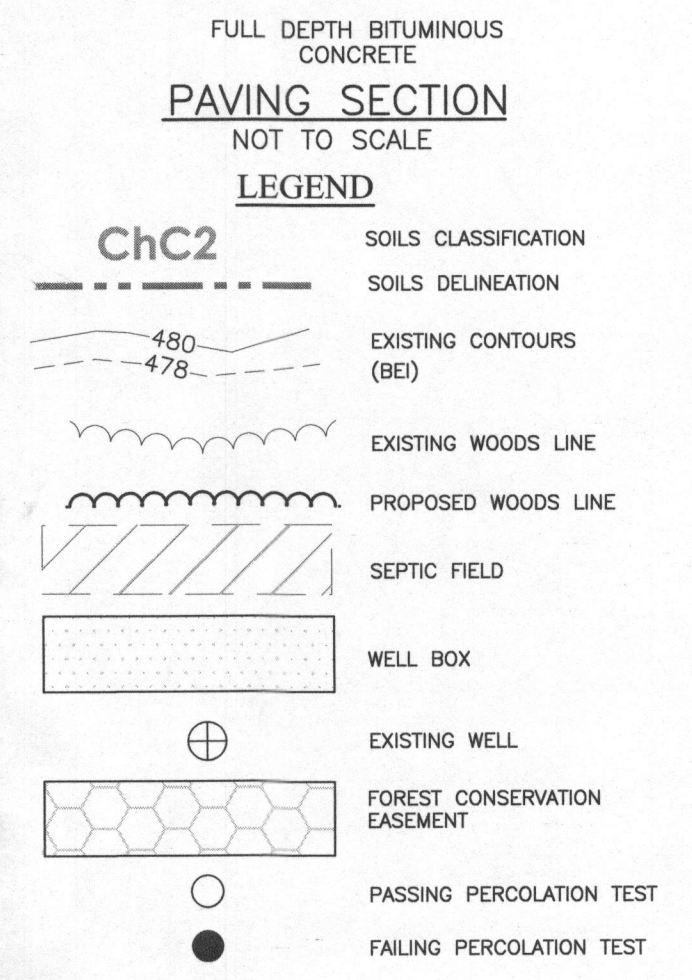
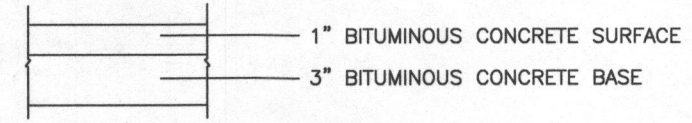
Approved Septic System Plan  
 Howard County Health Department  
*Signature*      1/5/2017  
 Date  
 (Approved for GISR as per Floor Plan)



PLAN VIEW  
1" = 30'

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

\* INDICATES HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



- BUILDING PERMIT PLAN NOTES:**
1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR VISTA RIDGE, PLAT Nos. 22430-22435. 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 ACCUBID, INC., ON OR ABOUT JUNE 27, 2013.
  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. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
  7. ANY CHANGES TO A PRIVATE SEWAGE EASEMENT OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
  8. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED TO BE PROVIDED BY BOTH POND #1, A POCKET POND, AND IN POND #2, A MICROPOL ED POND.
  9. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2388, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.
  10. EXACT LENGTH OF SEPTIC TRENCHES ARE BE DETERMINED BY THE HEALTH DEPARTMENT AT THE TIME OF TRENCH LAYOUT AND INSPECTION.
  11. SPOIL FROM THE TRENCHING OF THE SEPTIC AREA IS TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION FOR EACH INDIVIDUAL LOT.
  12. THE SEPTIC DISPOSAL SYSTEM FOR THIS LOT REQUIRES A SEPTIC TANK IN ACCORDANCE WITH COMAR REGULATIONS. TANK IS TO BE 2000 GALLON TWO COMPARTMENT TANK.
  13. The maximum earth cover over the tank is 3feet. Greater earth cover will require a heavy load bearing tank.

Approved Septic System Plan  
Howard County Health Department  
*[Signature]* 1/5/2017  
Signature Date  
(Approved as per Floor Plans)  
6/15/17

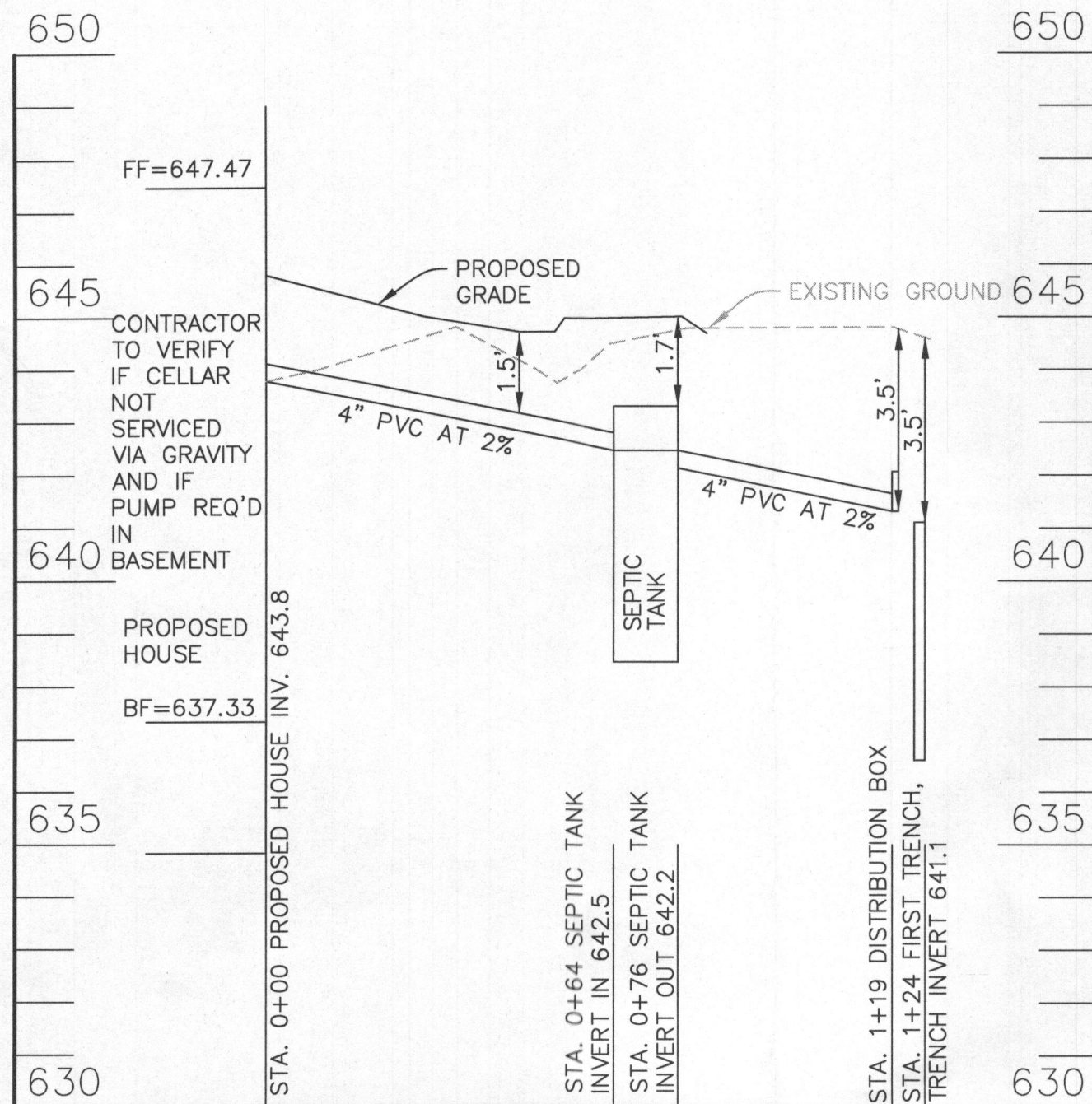
THIS PLAN IS FOR  
SEPTIC DESIGN ONLY

**BENCHMARK**  
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
BEI@BEI-CIVILENGINEERING.COM

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: 06-08-2018.

OWNER/BUILDER:	DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	
PROJECT:	VISTA RIDGE LOT 13	
LOCATION:	2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478	
TITLE:	SEPTIC PERMIT SITE PLAN	
HOUSE TYPE:	GLEN ABBEY	
DATE:	OCTOBER, 2016 DECEMBER, 2016	PROJECT NO. 1635
DESIGN:	JMC	DRAFT: JMC
SCALE:	1" = 30'	DRAWING 1 OF 2

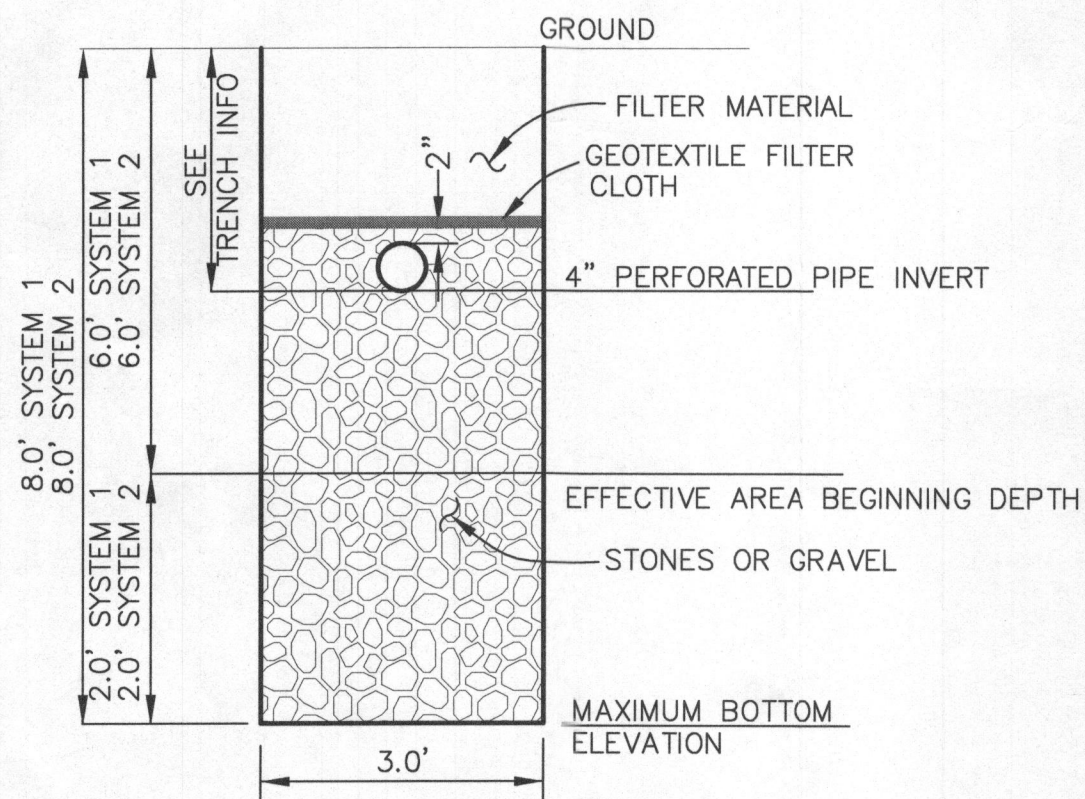


SEWER PROFILE - LOT 13  
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

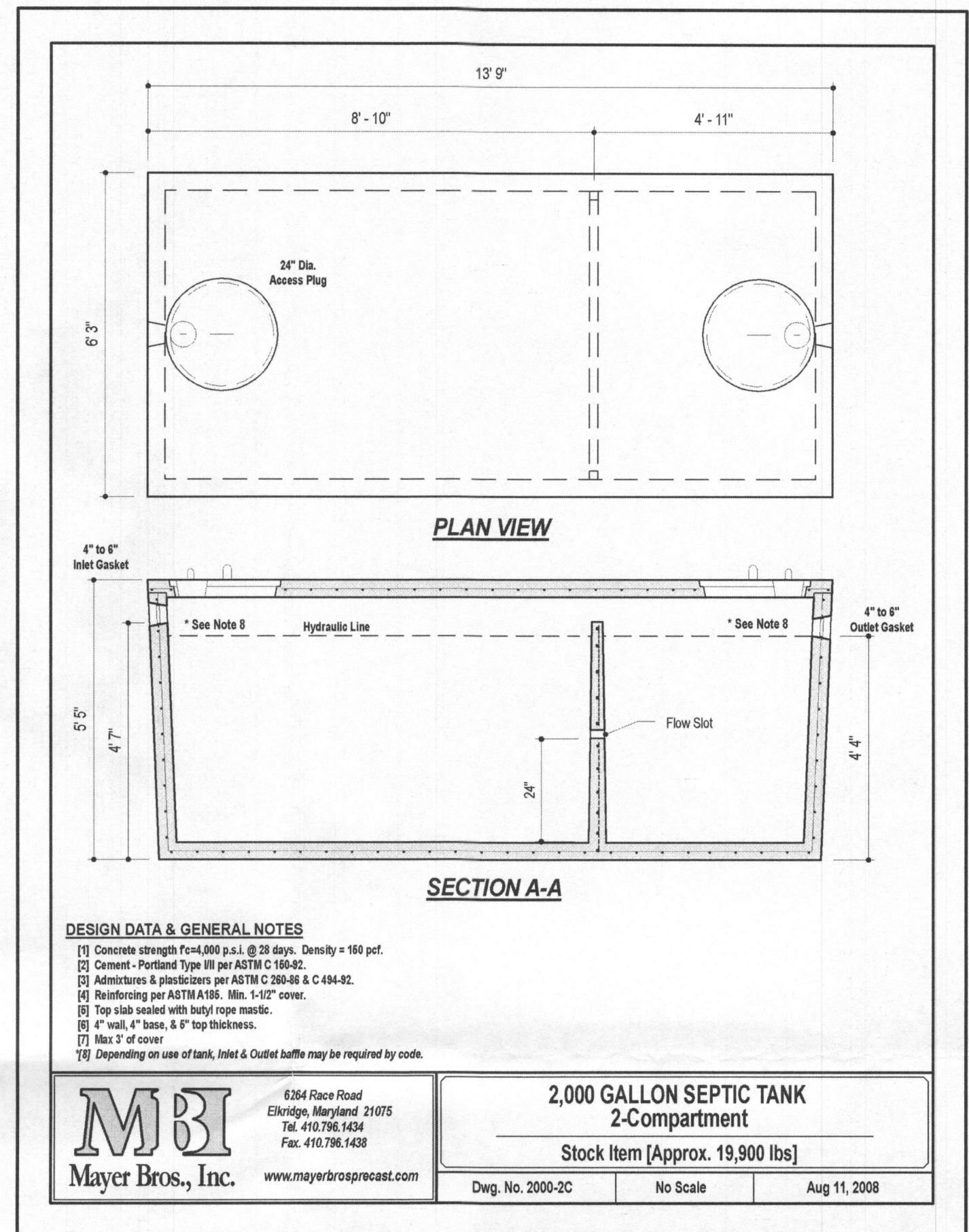
INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	5.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.56	
Trench width	3	
Effective Area Depth	2.5	
Linear Length of trench Required	208	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.71	
Trench width	3	
Effective Area Depth	1.5	
Linear Length of trench Required	268	lf

TRENCH INFORMATION		
<b>TRENCH 1-1</b>	TRENCH LENGTH	42 LF
	GROUND ELEVATION	644.6
	INVERT ELEVATION	641.1
	MAX. BOTTOM ELEV.	636.6
<b>TRENCH 1-2</b>	TRENCH LENGTH	42 LF
	GROUND ELEVATION	644.4
	INVERT ELEVATION	641.1
	MAX. BOTTOM ELEV.	636.4
<b>TRENCH 1-3</b>	TRENCH LENGTH	42 LF
	GROUND ELEVATION	644.3
	INVERT ELEVATION	641.1
	MAX. BOTTOM ELEV.	636.3
<b>TRENCH 1-4</b>	TRENCH LENGTH	42 LF
	GROUND ELEVATION	644.1
	INVERT ELEVATION	641.1
	MAX. BOTTOM ELEV.	636.1
<b>TRENCH 1-5</b>	TRENCH LENGTH	42 LF
	GROUND ELEVATION	643.3
	INVERT ELEVATION	640.3
	MAX. BOTTOM ELEV.	635.3
<b>TRENCH 2-1</b>	TRENCH LENGTH	54 LF
	GROUND ELEVATION	643.5
	INVERT ELEVATION	640.5
	MAX. BOTTOM ELEV.	635.5
<b>TRENCH 2-2</b>	TRENCH LENGTH	54 LF
	GROUND ELEVATION	642.8
	INVERT ELEVATION	639.8
	MAX. BOTTOM ELEV.	634.8
<b>TRENCH 2-3</b>	TRENCH LENGTH	54 LF
	GROUND ELEVATION	642.5
	INVERT ELEVATION	639.5
	MAX. BOTTOM ELEV.	634.5
<b>TRENCH 2-4</b>	TRENCH LENGTH	54 LF
	GROUND ELEVATION	642.0
	INVERT ELEVATION	639.0
	MAX. BOTTOM ELEV.	634.0
<b>TRENCH 2-5</b>	TRENCH LENGTH	54 LF
	GROUND ELEVATION	641.8
	INVERT ELEVATION	638.8
	MAX. BOTTOM ELEV.	633.8



TYPICAL TRENCH DETAIL  
NOT TO SCALE



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.

**MBI**  
Mayer Bros., Inc.  
6364 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

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

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

**BENCHMARK ENGINEERING, INC.**

ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS

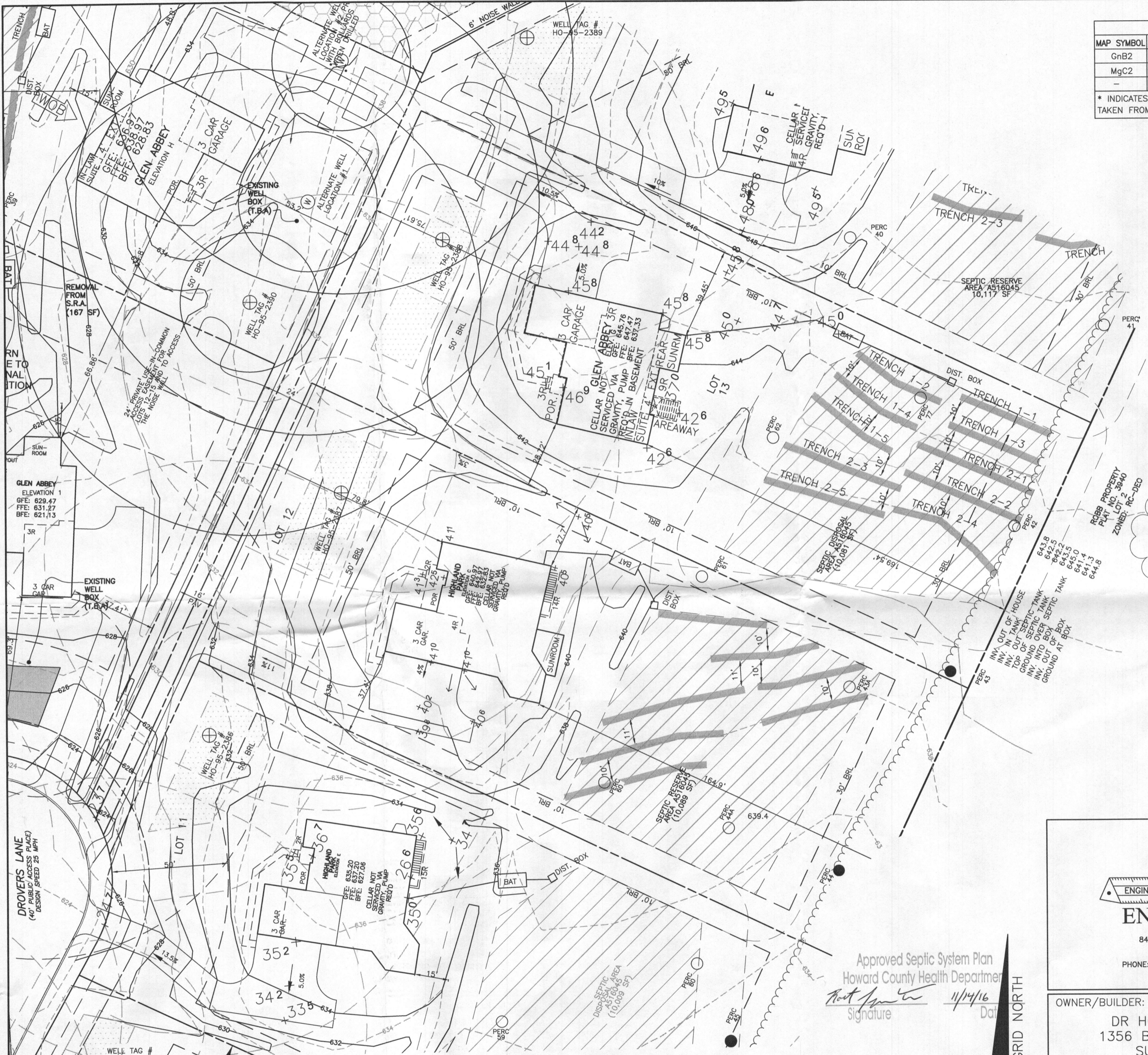
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
BEI@BEI-CIVILENGINEERING.COM

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: 6-08-2018.

Approved Septic System Plan  
Howard County Health Department  
*[Signature]* 1/5/2017  
Date  
(Approval for 65R as per Floor Plan)

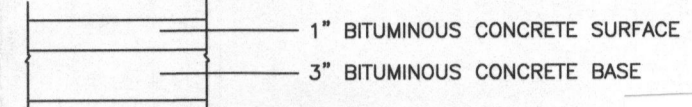
**THIS PLAN IS FOR SEPTIC DESIGN ONLY**

OWNER/BUILDER: DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	PROJECT: <b>VISTA RIDGE LOT 13</b>
LOCATION: 2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478	TITLE: SEPTIC SITE PLAN
HOUSE TYPE: GLEN ABBEY	DATE: OCTOBER, 2016 DECEMBER 20, 2016
DESIGN: JMC	DRAFT: JMC
SCALE: 1" = 30'	PROJECT NO. 1635 DRAWING 2 OF 2

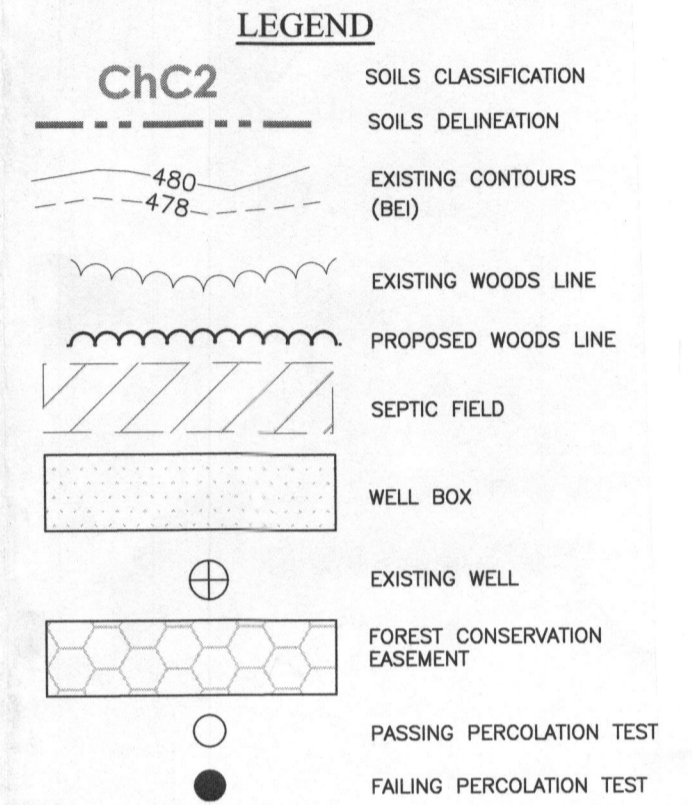


SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

\* INDICATES HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



PAVING SECTION  
NOT TO SCALE

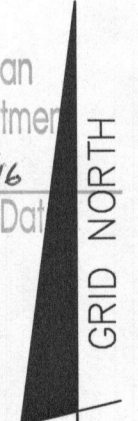


- BUILDING PERMIT PLAN NOTES:**
- THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR VISTA RIDGE, PLAT Nos. 22430-22435. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
  - SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC HOUSE.
  - TOPOGRAPHY SHOWN HEREON IS TAKEN FROM THE APPROVED ROAD CONSTRUCTION PLANS AND TOPOGRAPHIC INFORMATION PROVIDED BY ACCUBID, INC., ON OR ABOUT JUNE 27, 2013.
  - 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.
  - ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
  - THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
  - ANY CHANGES TO A PRIVATE SEWAGE EASEMENT OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
  - STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED TO BE PROVIDED BY BOTH POND #1, A POCKET POND, AND IN POND #2, A MICROPOL ED POND.
  - THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2388, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.

*Revised to a Regular Septic Tank*

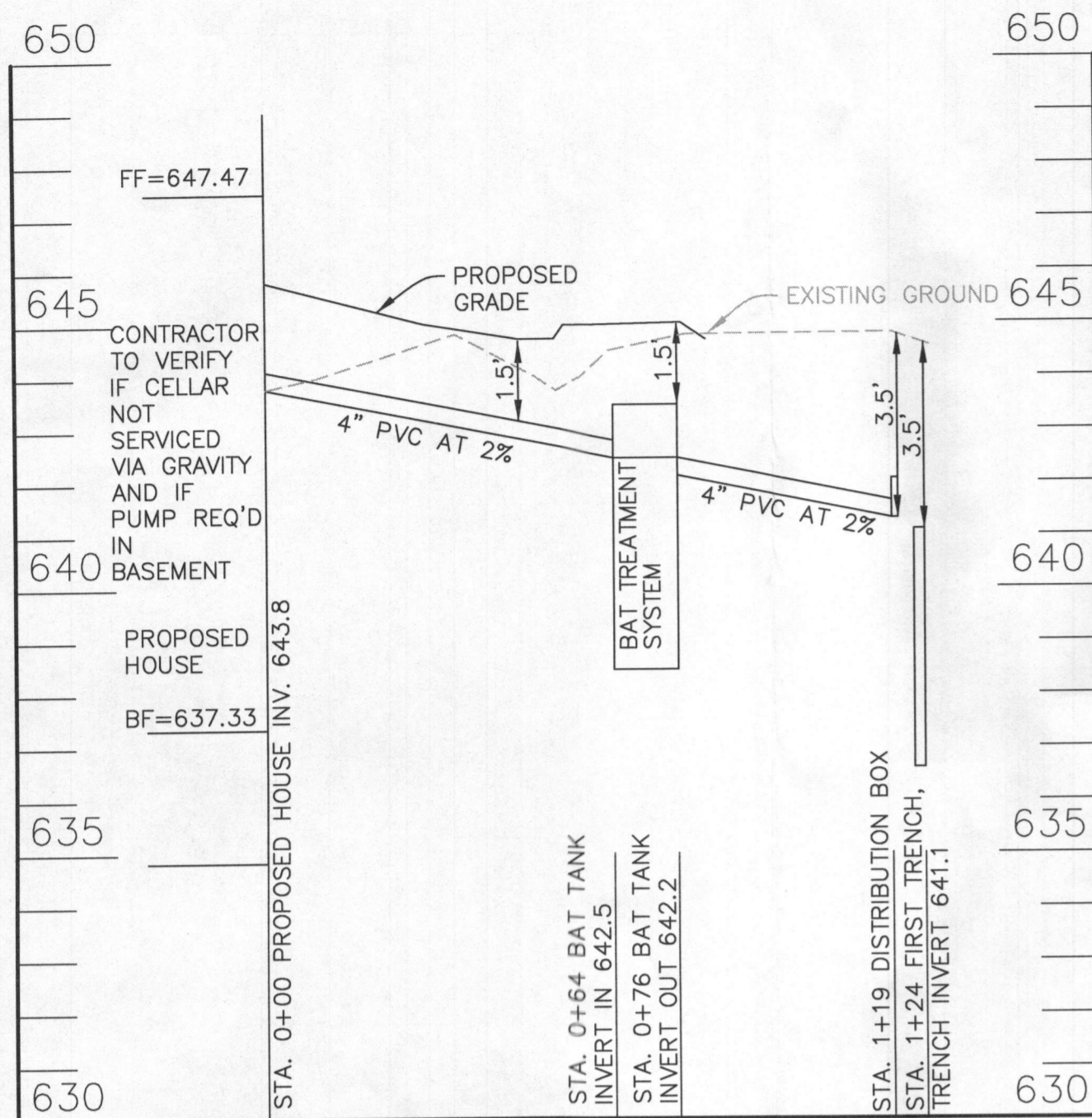
PLAN VIEW  
1" = 30'

Approved Septic System Plan  
Howard County Health Department  
*North* Signature 11/14/16 Date



THIS PLAN IS FOR SEPTIC DESIGN ONLY

<p align="center"><b>BENCHMARK</b> ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS <b>ENGINEERING, INC.</b></p> <p align="center">8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLCOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 ▲ FAX: 410-465-6644 BEI@BEI-CIVILENGINEERING.COM</p>		<p>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: 06-08-2018.</p>			
		<p>OWNER/BUILDER: DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015</p>		<p>PROJECT: <b>VISTA RIDGE LOT 13</b></p>	
<p>DATE: OCTOBER, 2016</p>		<p>TITLE: BAT SITE PLAN</p>		<p>LOCATION: 2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478</p>	
<p>HOUSE TYPE: GLEN ABBEY</p>		<p>HOUSE TYPE: GLEN ABBEY</p>		<p>DATE: OCTOBER, 2016</p>	
<p>DESIGN: JMC</p>		<p>DRAFT: JMC</p>		<p>SCALE: 1" = 30'</p>	
<p>PROJECT NO. 1635</p>		<p>DRAWING 1 OF 2</p>		<p>10/20/16</p>	



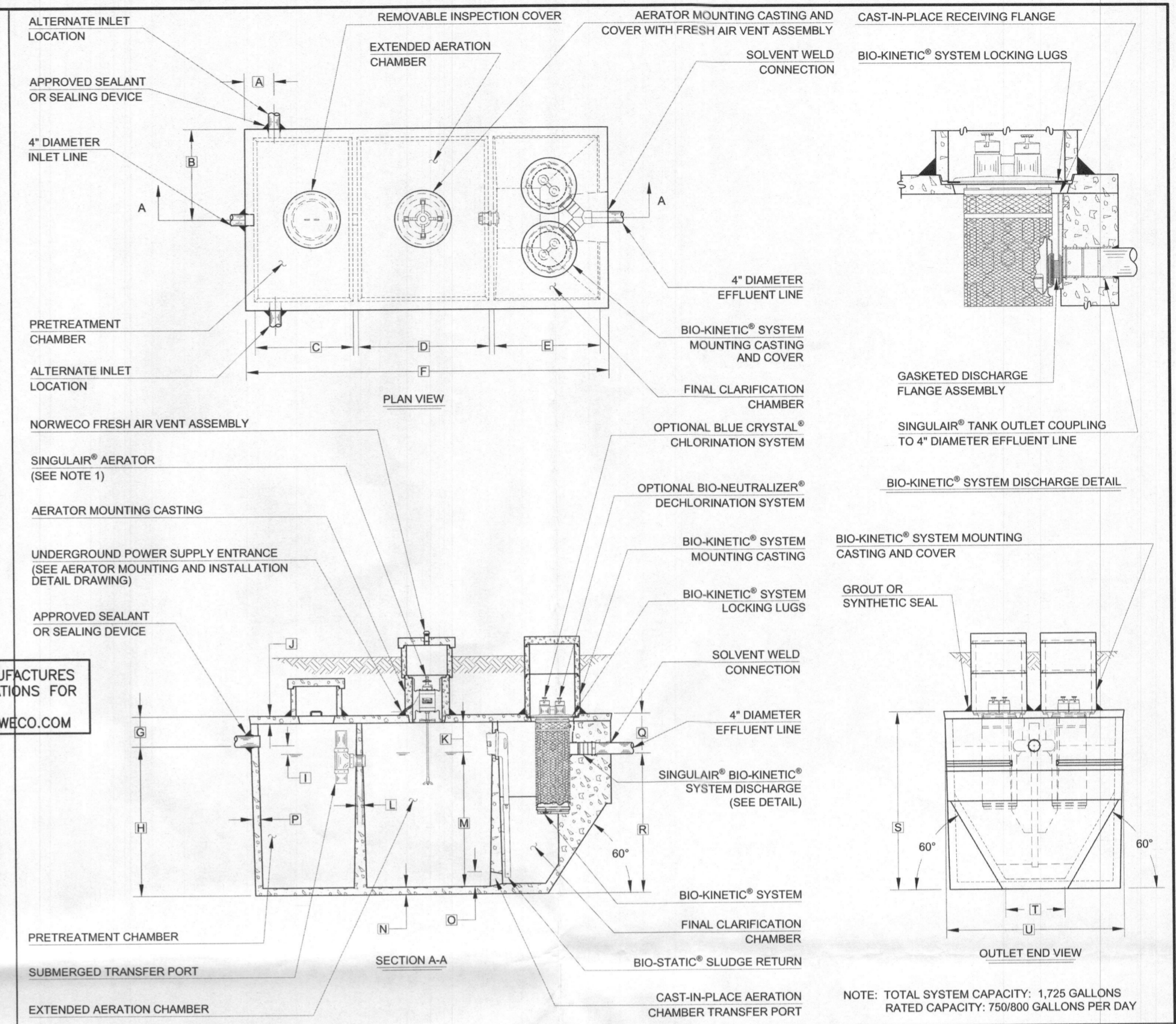
SEWER PROFILE - LOT 13  
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

**TRENCH INFORMATION**

TRENCH	LENGTH	GROUND ELEVATION	INVERT ELEVATION	MAX. BOTTOM ELEV.
TRENCH 1-1	42 LF	644.6	641.1	636.6
TRENCH 1-2	42 LF	644.4	641.1	636.4
TRENCH 1-3	42 LF	644.3	641.1	636.3
TRENCH 1-4	42 LF	644.1	641.1	636.1
TRENCH 1-5	42 LF	643.3	640.3	635.3
TRENCH 2-1	54 LF	643.5	640.5	635.5
TRENCH 2-2	54 LF	642.8	639.8	634.8
TRENCH 2-3	54 LF	642.5	639.5	634.5
TRENCH 2-4	54 LF	642.0	639.0	634.0
TRENCH 2-5	54 LF	641.8	638.8	633.8

INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	5.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.56	
Trench width	3	
Effective Area Depth	2.5	
Linear Length of trench Required	208	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.71	
Trench width	3	
Effective Area Depth	1.5	
Linear Length of trench Required	268	lf



SEE MANUFACTURERS SPECIFICATIONS FOR DETAILS. WWW.NORWECO.COM

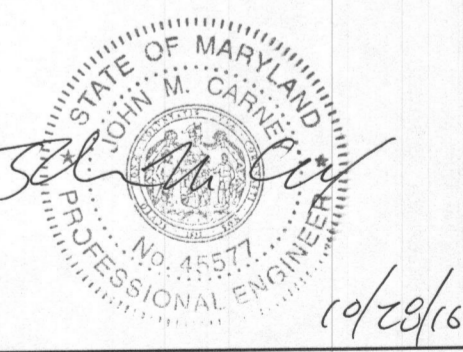
CRITICAL DIMENSIONS			
A 1'-0"	N 0'-3"		
B 3'-0"	O 0'-6"		
C 3'-4"	P 0'-3"		
D 4'-5"	Q 1'-4"		
E 3'-7"	R 4'-8"		
F 12'-2"	S 6'-0"		
G 1'-0"	T 2'-0"		
H 5'-0"	U 6'-0"		
I 0'-3"	V		
J 0'-3"	W		
K 1'-0"	X		
L 0'-2"	Y		
M 4'-6"	Z		

- GENERAL NOTES:**
- SINGLAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
  - FALL THROUGH SINGLAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
  - ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.

- TANK REINFORCED PER ACI STD. 318.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL, LICENSED SINGLAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, BAT 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: 6-08-2018.

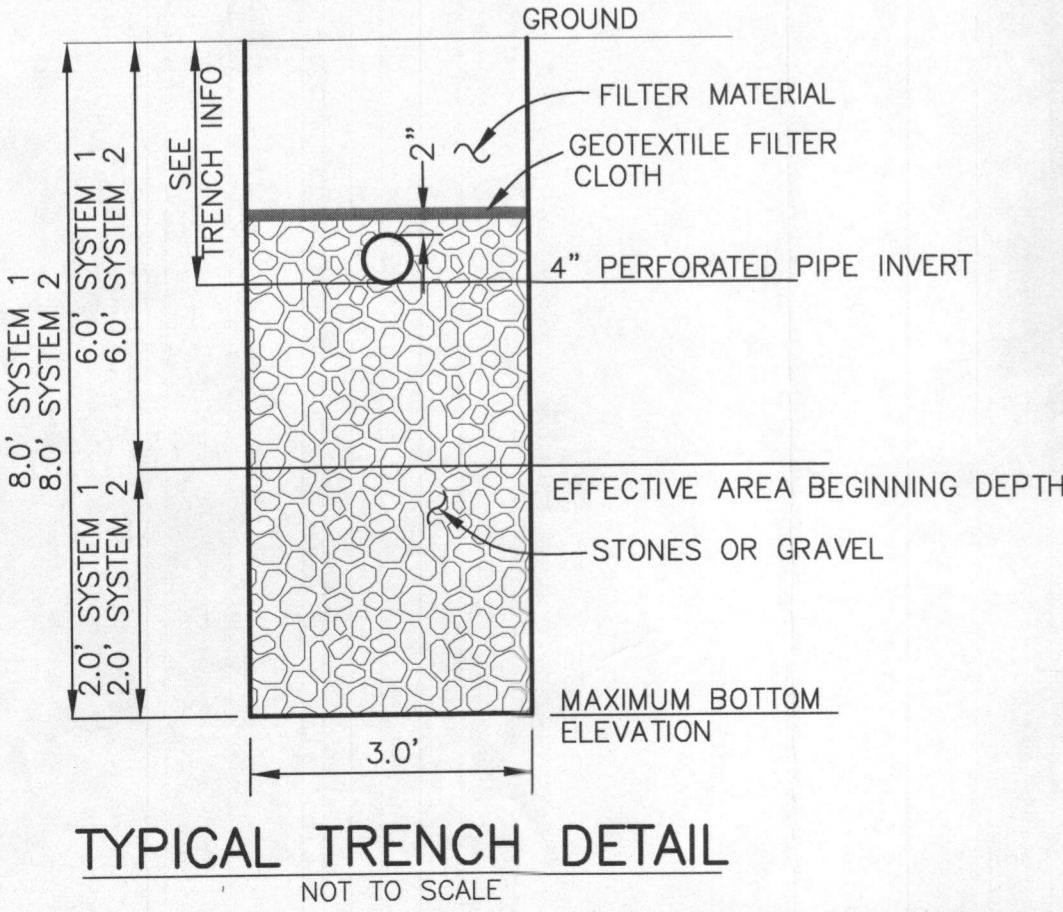


**BENCHMARK ENGINEERING, INC.**  
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
BEI@BEI-CIVILENGINEERING.COM

- Required BAT Site Plan Notes**
- Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised sit plan may be required.
  - The maximum depth of the BAT shall be per the manufacturer's specification, 3.0'.
  - The blower may not be located further from the tank than the manufacturer's specifications, 75'.
  - The BAT system shall be maintained and operated for the life of the system.
  - The BAT shall be operated by and maintained by a certified service provider.
  - Within one month of installation, a person installing the BAT system shall report to the Maryland Department of the Environment (MDE) in a manner acceptable to MDE, the address and date of completion of the BAT installation and the type of BAT installed.
  - Electrical work for the BAT installation must be performed by a licensed electrician.
  - An agreement and Easement must be completed and signed by all applicable parties, and recorded in Land Records of Howard County.
  - The Health Department requires documentation for the start-up certification from the manufacturer prior to final approval of the installation.

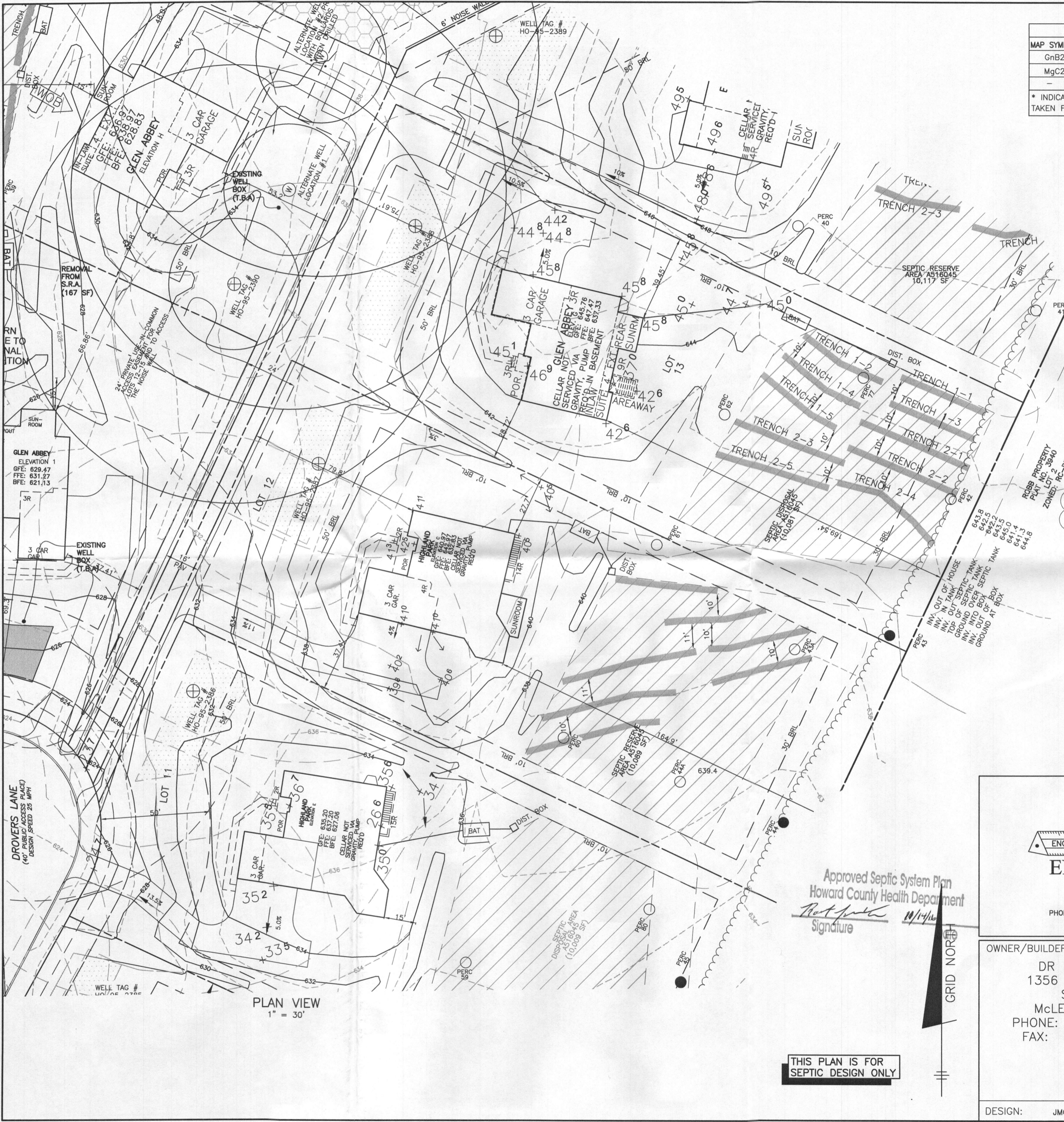
OWNER/BUILDER:  
DR HORTON, INC.  
1356 BEVERLY ROAD  
SUITE 300  
McLEAN, VA 22101  
PHONE: 571-723-0813  
FAX: 800-551-5015

PROJECT: **VISTA RIDGE LOT 13**  
LOCATION: 2046 DROVERS LANE, COOKSVILLE, MD 21723  
TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176  
4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
TAX ID NUMBER 04-595478  
TITLE: BUILDING PERMIT PLAN AND BAT SITE PLAN  
HOUSE TYPE: GLEN ABBEY  
DATE: OCTOBER, 2016 PROJECT NO. 1635  
SCALE: 1" = 30' DRAWING 2 OF 2



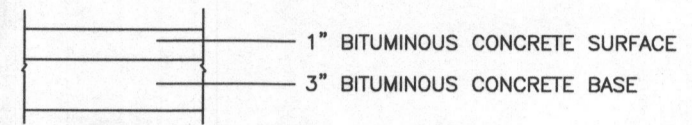
Approved Septic System Plan  
Howard County Health Department  
*Scott J. ...*  
Signature Date 11/14/16

TYPICAL TRENCH DETAIL  
NOT TO SCALE

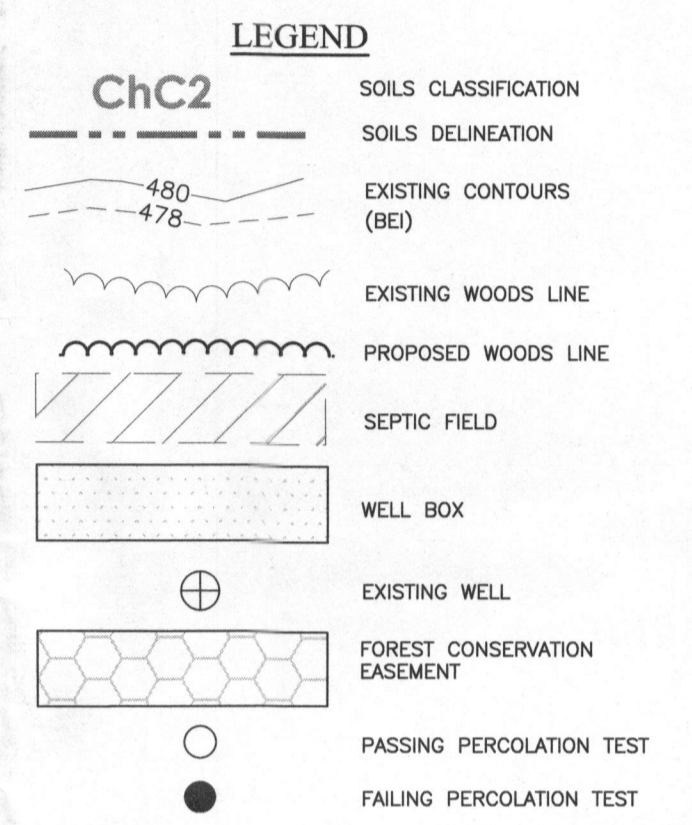


SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
-	-	-

\* INDICATES HYDRIC SOILS  
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



**PAVING SECTION**  
 NOT TO SCALE



- BUILDING PERMIT PLAN NOTES:**
1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR VISTA RIDGE, PLAT Nos. 22430-22435. 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 ACCUBID, INC., ON OR ABOUT JUNE 27, 2013.
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  5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
  6. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
  7. ANY CHANGES TO A PRIVATE SEWAGE EASEMENT OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
  8. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED TO BE PROVIDED BY BOTH POND #1, A POCKET POND, AND IN POND #2, A MICROPOL ED POND.
  10. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2388, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.

PLAN VIEW  
 1" = 30'

Approved Septic System Plan  
 Howard County Health Department  
*Not for Signature* 10/17/16

**BENCHMARK**  
 ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
**ENGINEERING, INC.**

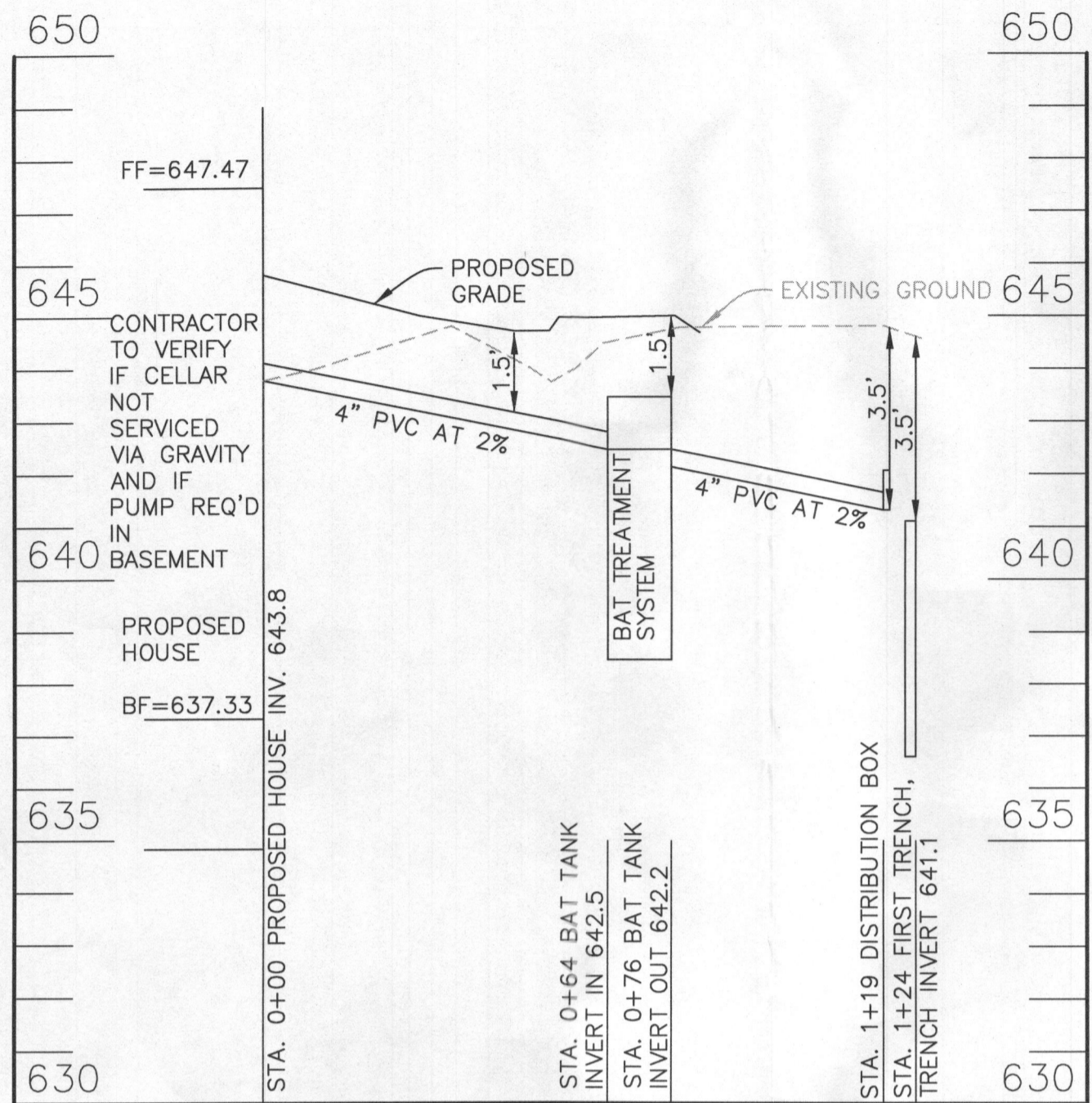
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
 BEI@BEI-CIVILENGINEERING.COM

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: 06-08-2018.

10/28/16

OWNER/BUILDER: DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	PROJECT: <b>VISTA RIDGE LOT 13</b>
DESIGN: JMC	DRAFT: JMC
DATE: OCTOBER, 2016	PROJECT NO. 1635
SCALE: 1" = 30'	DRAWING 1 OF 2
LOCATION: 2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478	
TITLE: <b>BAT SITE PLAN</b>	
HOUSE TYPE: <b>GLEN ABBEY</b>	

**THIS PLAN IS FOR SEPTIC DESIGN ONLY**



SEWER PROFILE - LOT 13  
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

**TRENCH INFORMATION**

TRENCH	TRENCH LENGTH	GROUND ELEVATION	INVERT ELEVATION	MAX. BOTTOM ELEV.
TRENCH 1-1	42 LF	644.6	641.1	636.6
TRENCH 1-2	42 LF	644.4	641.1	636.4
TRENCH 1-3	42 LF	644.3	641.1	636.3
TRENCH 1-4	42 LF	644.1	641.1	636.1
TRENCH 1-5	42 LF	643.3	640.3	635.3
TRENCH 2-1	54 LF	643.5	640.5	635.5
TRENCH 2-2	54 LF	642.8	639.8	634.8
TRENCH 2-3	54 LF	642.5	639.5	634.5
TRENCH 2-4	54 LF	642.0	639.0	634.0
TRENCH 2-5	54 LF	641.8	638.8	633.8

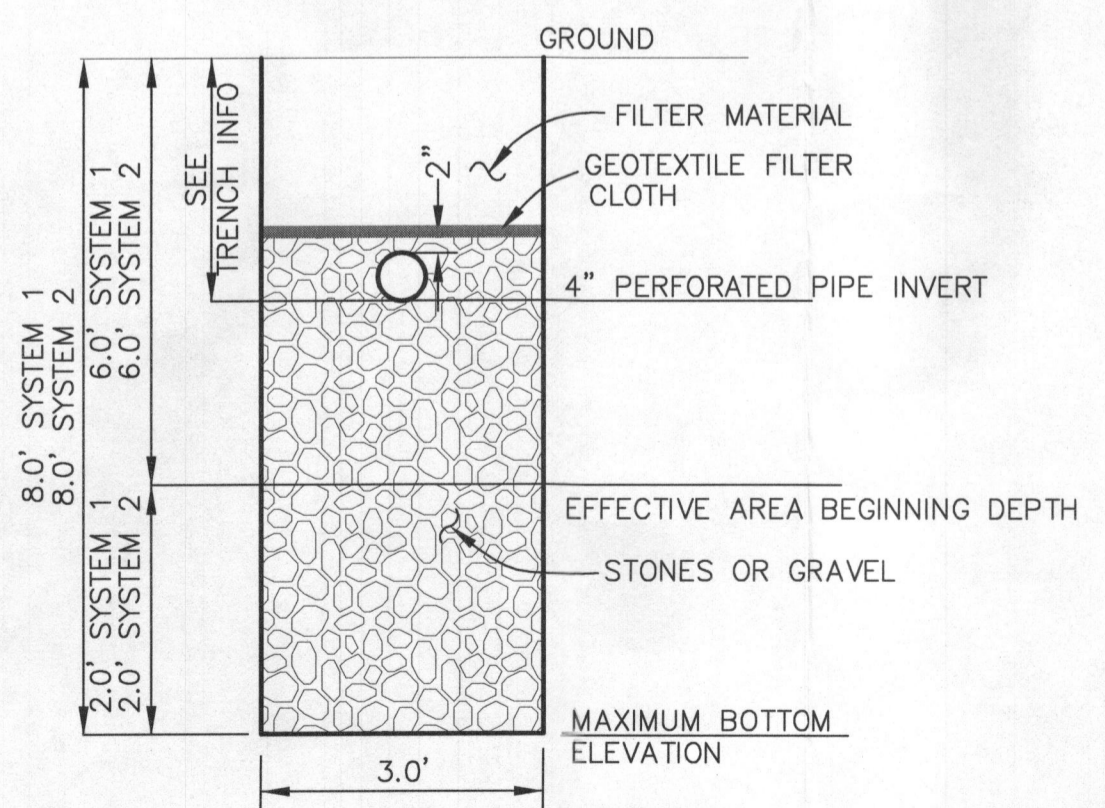
**INITIAL SYSTEM**

Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	5.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.56	
Trench width	3	
Effective Area Depth	2.5	
<b>Linear Length of trench Required</b>	<b>208</b>	<b>lf</b>

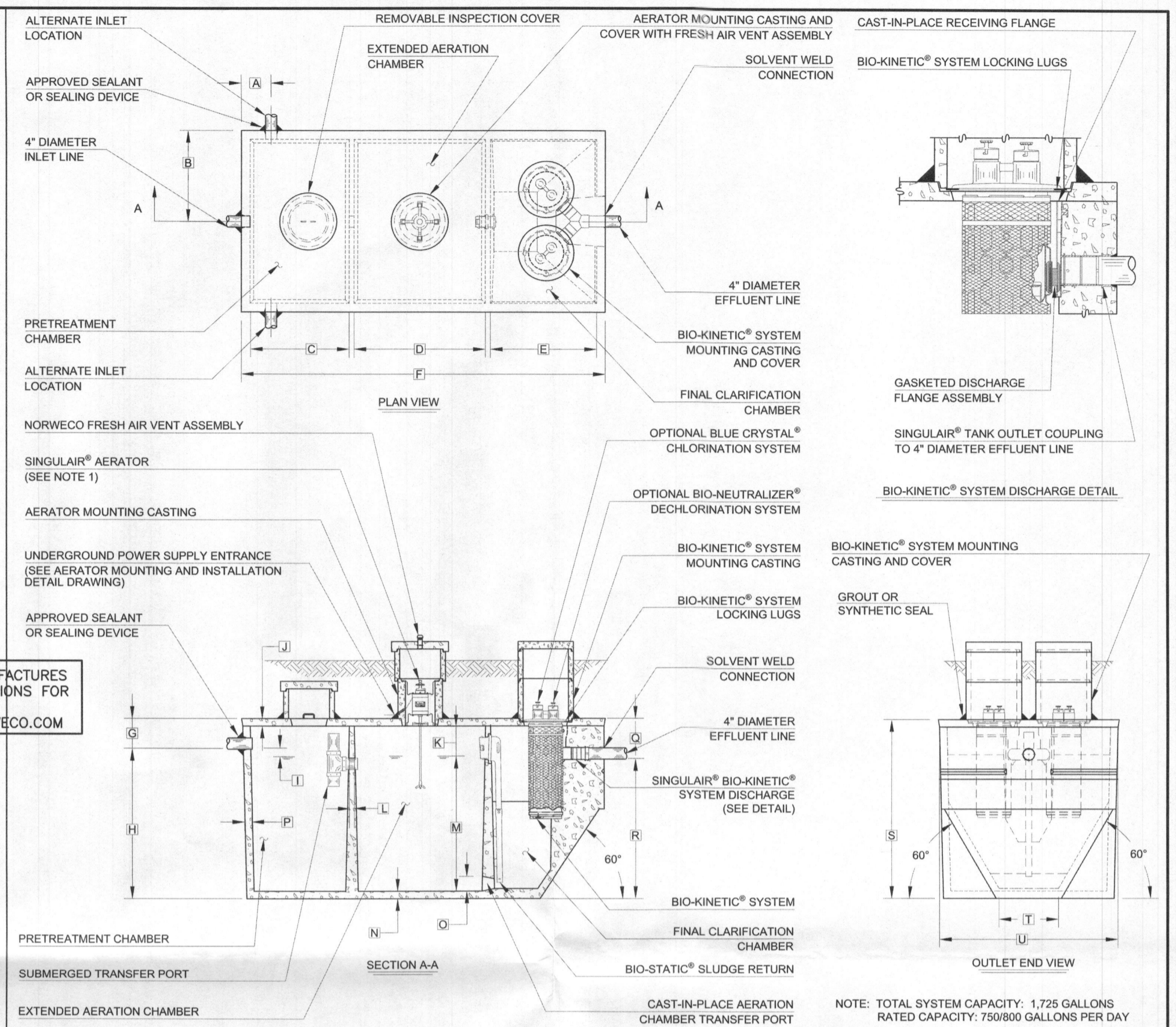
**1st REPLACEMENT SYSTEM**

Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6.5	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.71	
Trench width	3	
Effective Area Depth	1.5	
<b>Linear Length of trench Required</b>	<b>268</b>	<b>lf</b>

Approved Septic System Plan  
Howard County Health Department  
*Signature*  
Date 11/14/16



TYPICAL TRENCH DETAIL  
NOT TO SCALE



SEE MANUFACTURER SPECIFICATIONS FOR DETAILS.  
WWW.NORWECO.COM

**CRITICAL DIMENSIONS**

A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	4'-8"
F	12'-2"	S	6'-0"
G	1'-0"	T	2'-0"
H	5'-0"	U	6'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
M	4'-6"	Z	

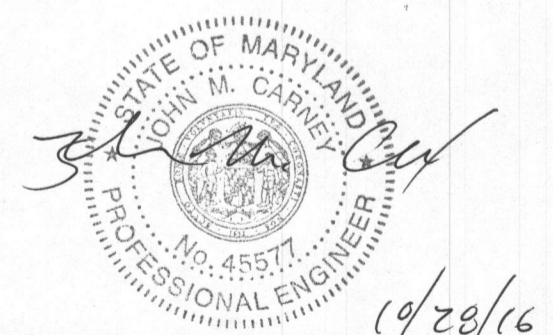
- GENERAL NOTES:**
- SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
  - FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
  - ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.

- TANK REINFORCED PER ACI STD. 318.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL, LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

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

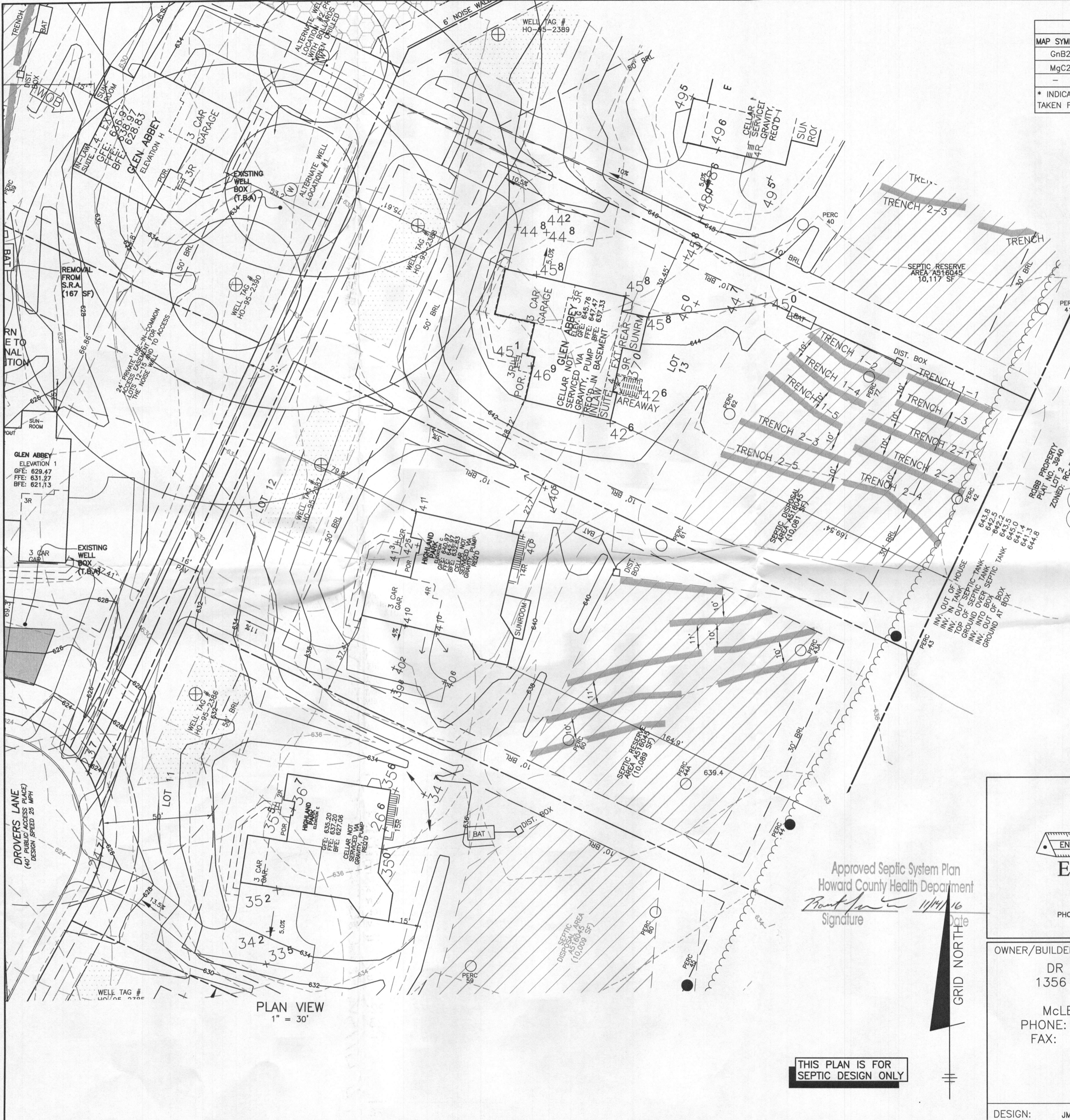
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 45577, Expiration Date: 6-08-2018.

**BENCHMARK ENGINEERS, INC.**  
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
BEI@BEI-CIVILENGINEERING.COM



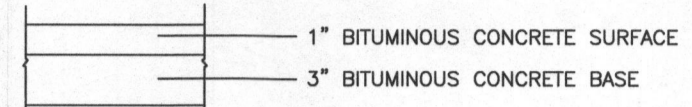
- Required BAT Site Plan Notes**
- Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised sit plan may be required.
  - The maximum depth of the BAT shall be per the manufacturer's specification, 3.0'.
  - The blower may not be located further from the tank than the manufacturer's specifications, 75'.
  - The BAT system shall be maintained and operated for the life of the system.
  - The BAT shall be operated by and maintained by a certified service provider.
  - Within one month of installation, a person installing the BAT system shall report to the Maryland Department of the Environment (MDE) in a manner acceptable to MDE, the address and date of completion of the BAT installation and the type of BAT installed.
  - Electrical work for the BAT installation must be performed by a licensed electrician.
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LOCATION: 2046 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595478	TITLE: BUILDING PERMIT PLAN AND BAT SITE PLAN
HOUSE TYPE: GLEN ABBEY	DATE: OCTOBER, 2016
DESIGN: JMC	DRAFT: JMC
SCALE: 1" = 30'	PROJECT NO. 1635 DRAWING 2 OF 2

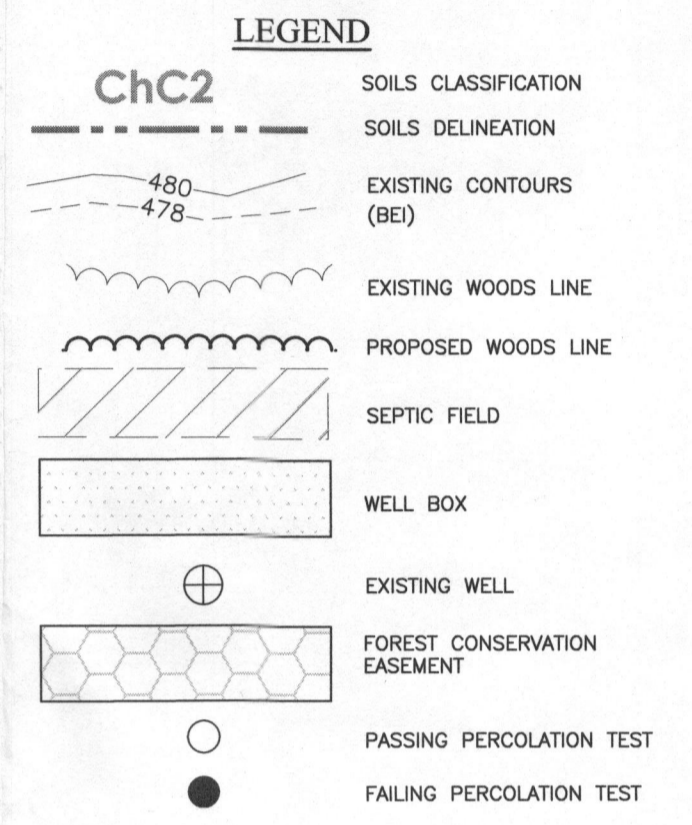


SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

\* INDICATES HYDRIC SOILS  
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



FULL DEPTH BITUMINOUS CONCRETE  
**PAVING SECTION**  
 NOT TO SCALE



- BUILDING PERMIT PLAN NOTES:**
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PLAN VIEW  
 1" = 30'

Approved Septic System Plan  
 Howard County Health Department  
*Monte...* 11/11/16  
 Signature Date

GRID NORTH

THIS PLAN IS FOR SEPTIC DESIGN ONLY

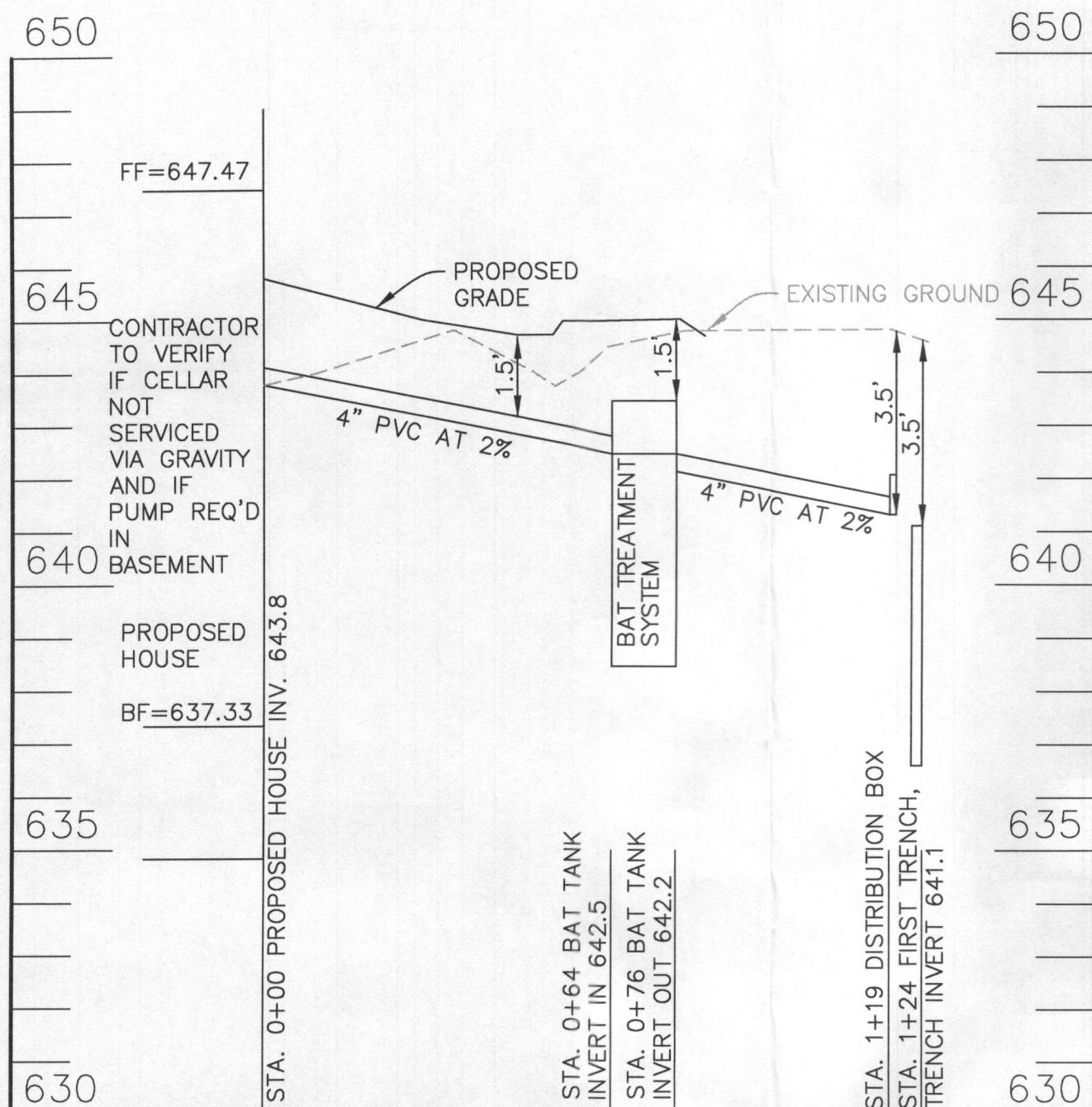
**BENCHMARK**  
 ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 ▲ FAX: 410-465-6644  
 BEI@BEI-CIVLENGINEERING.COM

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: 06-08-2018.

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HOUSE TYPE: <b>GLEN ABBEY</b>	DATE: <u>OCTOBER, 2016</u> PROJECT NO. 1635
DESIGN: JMC DRAFT: JMC	SCALE: 1" = 30' DRAWING <u>1</u> OF <u>2</u>



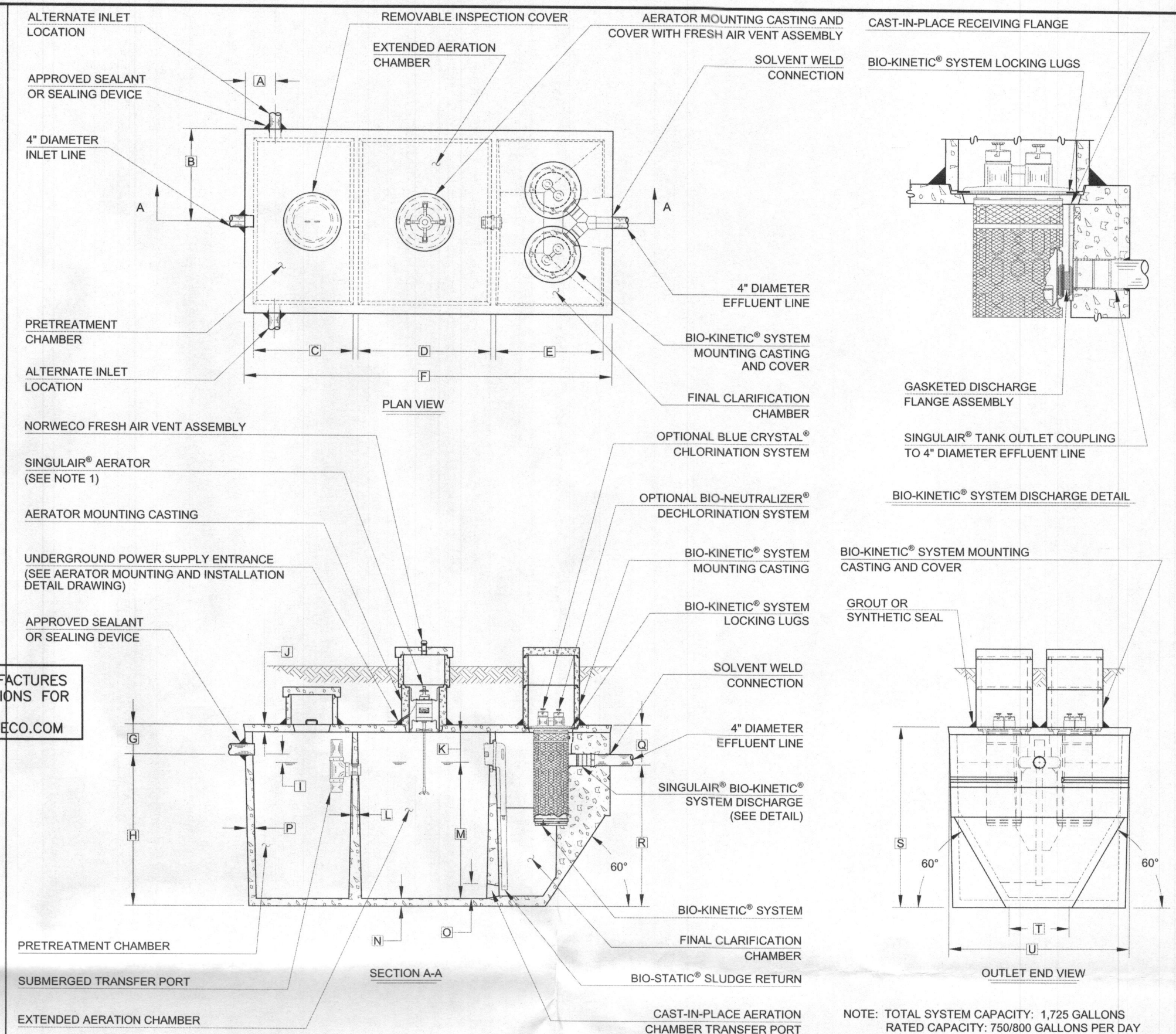
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TRENCH 2-5	54 LF	641.8	638.8	633.8

INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	5.5	ft
Bottom Max Depth	8	ft
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Drainage Field square footage	1125	sf
Sidewall reduction credit	0.56	
Trench width	3	
Effective Area Depth	2.5	
<b>Linear Length of trench Required</b>	<b>208</b>	<b>lf</b>

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Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
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SEE MANUFACTURER SPECIFICATIONS FOR DETAILS.  
WWW.NORWECO.COM

CRITICAL DIMENSIONS			
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I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
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- GENERAL NOTES:**
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  - FALL THROUGH SINGLAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
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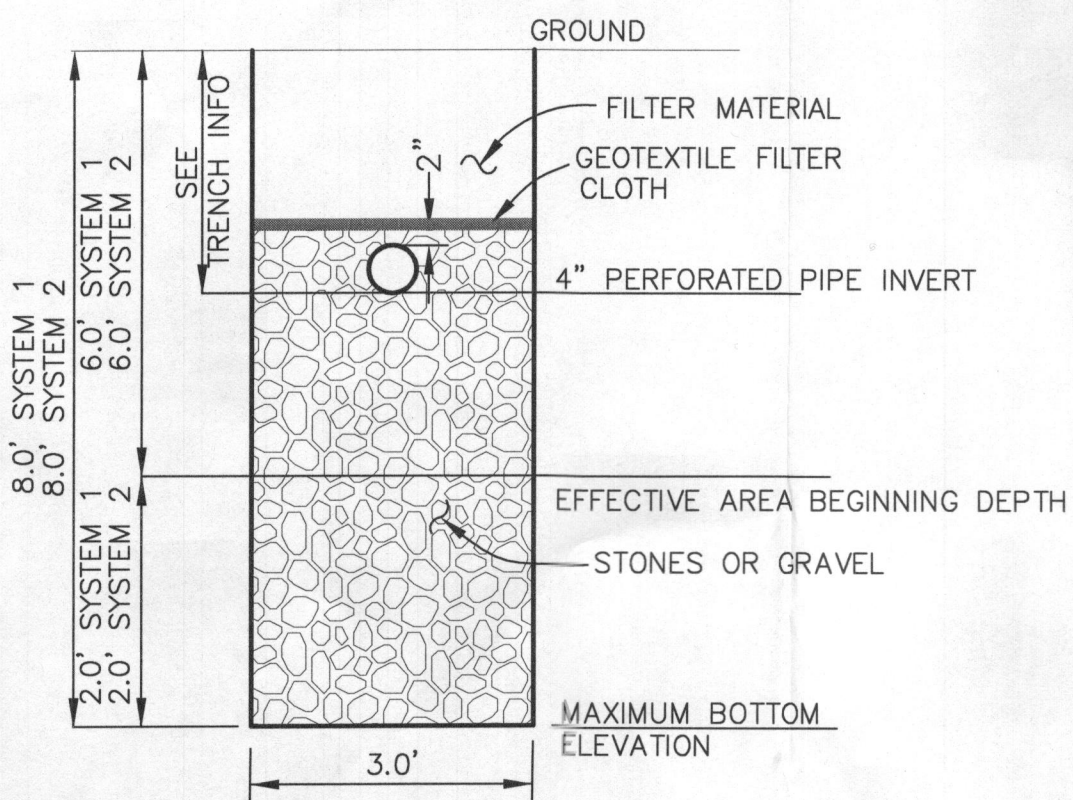
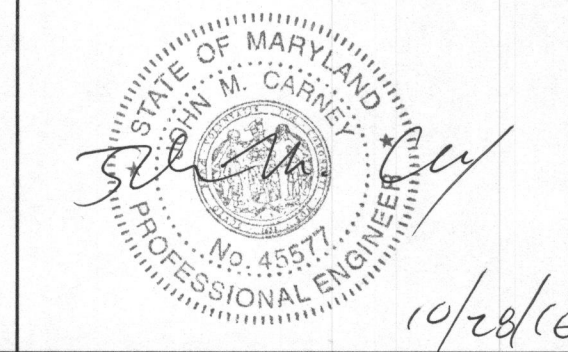
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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 45577, Expiration Date: 6-08-2018.

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TYPICAL TRENCH DETAIL  
NOT TO SCALE

Approved Septic System Plan  
Howard County Health Department  
*Signature*  
11/14/16  
Date

**Required BAT Site Plan Notes**

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**OWNER/BUILDER:**

DR HORTON, INC.  
1356 BEVERLY ROAD  
SUITE 300  
McLEAN, VA 22101  
PHONE: 571-723-0813  
FAX: 800-551-5015

**PROJECT:**

VISTA RIDGE  
LOT 13

LOCATION: 2046 DROVERS LANE  
COOKSVILLE, MD 21723  
TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176  
4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
TAX ID NUMBER 04-595478

TITLE: BUILDING PERMIT PLAN AND BAT SITE PLAN

HOUSE TYPE: GLEN ABBEY

DATE: OCTOBER, 2016 PROJECT NO. 1635

DESIGN: JMC

DRAFT: JMC

SCALE: 1" = 30'

DRAWING 2 OF 2