

Bureau of Environmental Health
 8930 Stanford Boulevard, Columbia, MD 21045
 Main: 410-313-2640 | Fax: 410-313-2648
 TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
 Facebook: www.facebook.com/hocohealth

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

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

APPROVAL DATE: 7/21/17 **PERMIT: CONSTRUCTION** A _____

PROPERTY ADDRESS: 2038 Drovers Lane

SUBDIVISION: Vista Ridge LOT: 11 TAX ID: 04-595476

CONTRACTOR: _____ EMAIL: _____

CONTRACTOR ADDRESS: _____ PHONE: _____

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>234</u>	INLET DEPTH: <u>4'5"</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>6</u>

LOCATION: **PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**

NOTES: Install 4x59' trenches

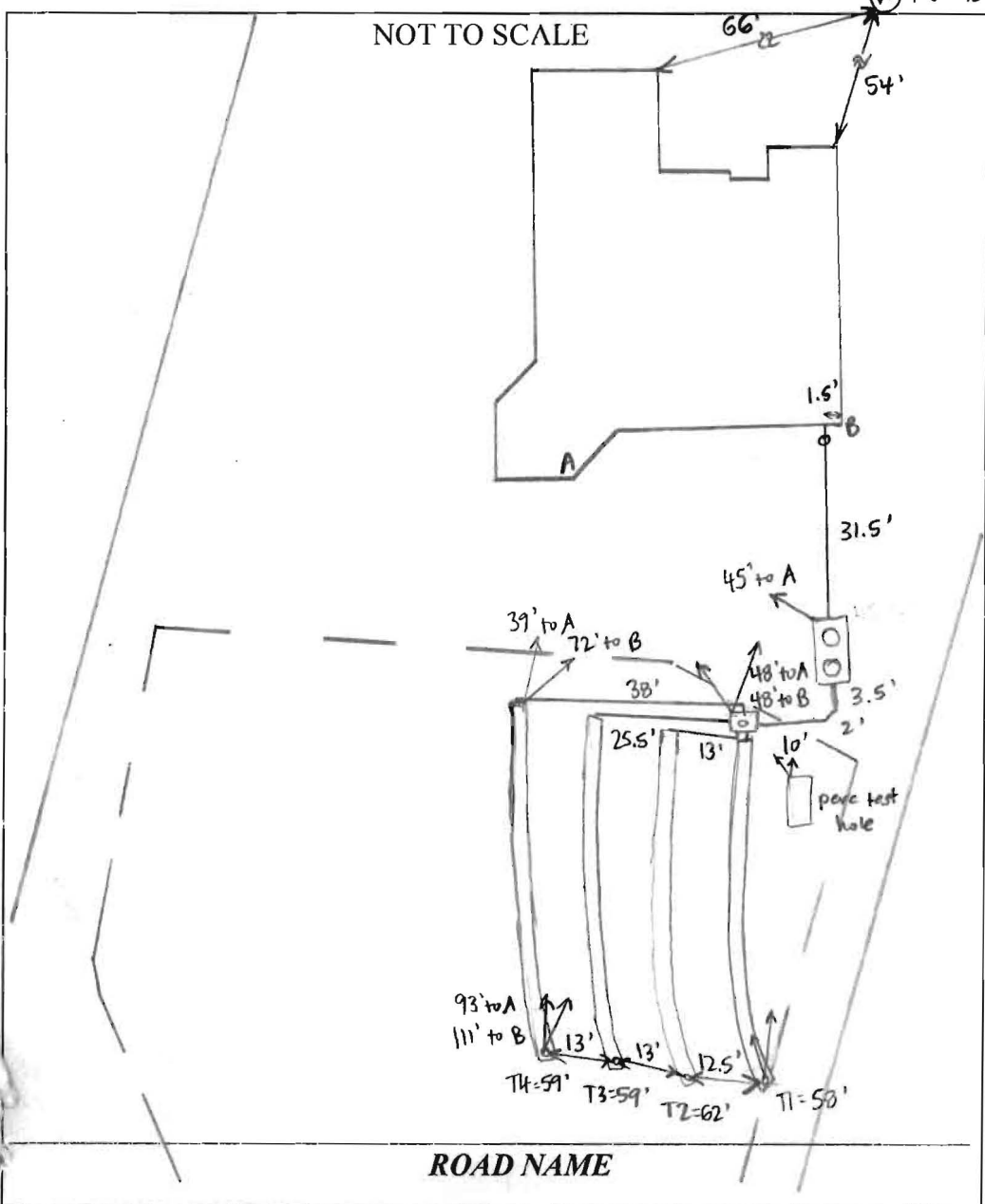
ISSUED BY: Robert Freemon ISSUE DATE: 3/23/17 EXPIRATION DATE: 3/23/18

- 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.**

W HO-95-2386

NOT TO SCALE



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	4.5-5'	8
NUMBER OF TRENCHES		4
TOTAL LENGTH		236'
ABSORPTION AREA		700' + SIDEWALL
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	2.5-3.5'
BAFFLES	
BAFFLE FILTER	NONE
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	YES
DATE ON LID	6-14-17

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:

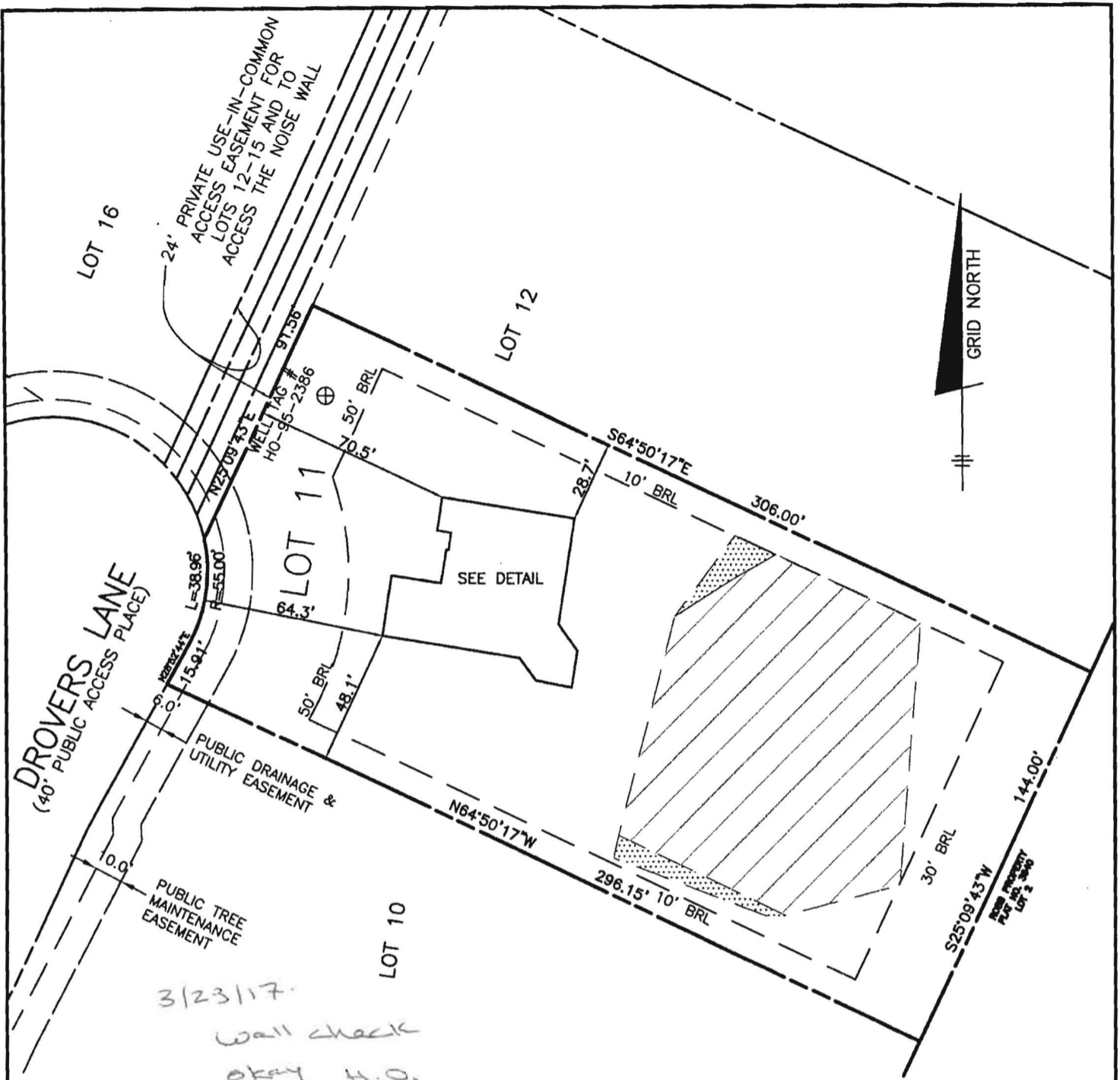
7/13/17 Met Fogle's + superintendant Jason on site for layout. SDA corners staked, tank not staked. Set tank location per plan - will need a traffic-bearing tank. Trees must be cleared in upper part of SDA prior to doing trench layout. OK to set tank. (SC)

7/18/17 Shot contour + laid out 4x59' trenches. Contour not as shown - trenches have less curvature. Dug a test hole in SDA above T1, little rock (see perc notes). Must use laser while digging trenches. (SC)

INSTALLATION: 7/17/17 Fogle's digging tank hole, hitting rock from surface to bottom. House connection made. (SC) 7/17/17 On site for setting tank - took some adjustments to get it level. NO obvious cracks on bottom or sides. (SC) 7/18/17 T1 dug, Fogle's adding stone, 3' wide, 5' inlet, 8' bottom. Little rock in spoil piles. (SC) 7/19/17 T2 + T3 complete + left open @ ends for inspections - 3' wide, 4-4.5' to stone. Fogle's digging T4 + using laser, 8' bottom. (SC)

7/20/17 T4 complete + left open for inspection. 3' wide, 4' to stone. Levelled speed levelers in D-box - outlet pipe to T4 is leaking. Other pipes backfilled @ box, couldn't tell if they leaked. Seal all with hydraulic cement, plus crack near T4 pipe, upper part. (SC) 7/21/17 D-box pipes sealed w/ hydraulic cement, crack sealed. Levelled speed levelers in D-box. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 7/21/17



3/23/17
 wall check
 okay H.O.

TOP OF FOUNDATION WALL = 635.8'
 OFFSET DIMENSIONS TO PROPERTY LINES ARE ± 0.1'

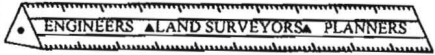
SURVEYOR'S CERTIFICATE

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 02/24/2017.

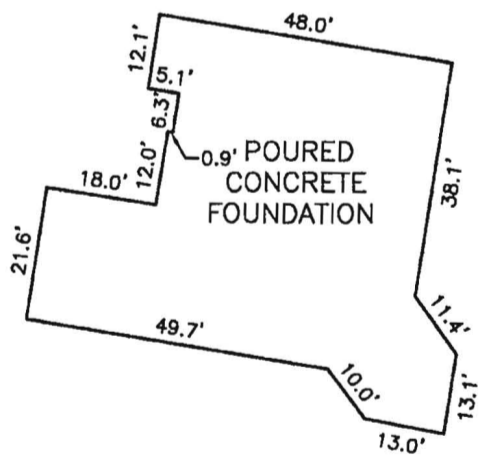


Donald A. Mason
 DONALD A. MASON
 PROFESSIONAL LAND SURVEYOR
 MARYLAND REG. No. 21320
 FEMA FIRM No. 24027C0035D
 ZONE: X
 DATED: 11/06/2013

BENCHMARK



ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 315
 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-8844
 WWW.BEI-CIVILENGINEERING.COM



FOUNDATION DETAIL
 SCALE: 1" = 30'

WALL CHECK

VISTA RIDGE
PLAT No.22432
LOT No.11

2038DROVERS LANE

4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FIELD OBS. BY PJ
 COMP. BY EWF
 DRAWN BY EWF
 SCALE: 1" = 50' DATE: 02/24/2017

Freemon, Robert

From: John Carney <jcarney@bei-civilengineering.com>
Sent: Wednesday, January 04, 2017 3:17 PM
To: Freemon, Robert
Subject: RE: Vista Ridge Lots 11,13,17

Robert, That note sounds fine. Thanks, John

From: Freemon, Robert [<mailto:rfreemon@howardcountymd.gov>]
Sent: Wednesday, January 04, 2017 3:12 PM
To: John Carney <jcarney@bei-civilengineering.com>
Subject: Vista Ridge Lots 11,13,17

Hey John,

On the OSDS plans for Vista Ridge Lots 11, 13 & 17 (2038, 2046, 2037 Drovers Lane) I would like to red line the note: "The maximum earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank". Would you be ok with this?

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

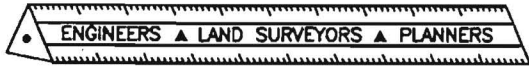
John Carney

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

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>12/21/16</u>	PROJECT No.	<u>1635</u>
ATTENTION	<u>Robert Freeman</u>		
RE:	<u>Vista Ridge</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>Revised Sptic Plan Lot 11</u>
<u>3</u>	<u>2</u>	<u>Revised Sptic Plan 1.4 13</u>
<u>3</u>	<u>2</u>	<u>Revised Sptic Plan 1.4 17</u>
<u>1</u>	<u>1</u>	<u>letter from owner requesting change to standard Sptic</u>

THESE ARE TRANSMITTED as checked below

- For Comment For your use For Approval
 For Review As requested Other _____

REMARKS:

COPY TO: AKMP

RECEIVED BY: AKMP

SIGNED: John Carney

FILE INQUIRY NOTES

DATE RESULTS OF REVIEW FOR FILE

Nov 23, 16

- Spoke with John Carney of Benchmark
to confirm statuses of Vista Ridge
Lots 11, 13, 15. Was told DR Horton
(property owner) is considering changing
the BAT Plans to conventional
septic tanks. This includes
Vista Ridge Lots 11, 13, 15.

- Spencer

↑
BP put on
Hold

Freemon, Robert

From: Freemon, Robert
Sent: Tuesday, November 22, 2016 10:49 AM
To: 'John Carney'
Subject: Vista Ridge Lot 11

The Perc Cert for 2038 Drovers Lane has been signed but I have not signed off on the BAT Plan yet. Let me know what your thoughts are. Thanks

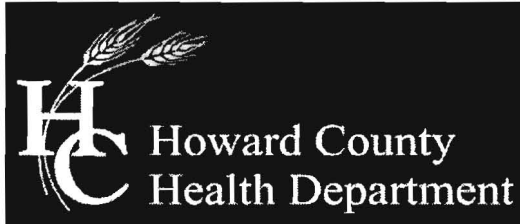
Robert Freemon
Howard County Health Department
8930 Stanford Blvd. Columbia, MD 21045
Well and Septic Program
Phone: 410-313-6357
Email: rfreemon@howardcountymd.gov
<https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic>

Freemon, Robert

From: Freemon, Robert
Sent: Tuesday, November 22, 2016 10:47 AM
To: 'John Carney'
Subject: BAT Unit REGS
Attachments: COMAR BAT revision memo.pdf; OSDS design plan requirements 11.21.16.pdf

Hey John,
Just as an FYI here are the regulation change guides. 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
<https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic>*



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Facebook: www.facebook.com/hocohealth

Twitter: [HowardCoHealthDep](https://twitter.com/HowardCoHealthDep)

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

MEMORANDUM

TO: Home Builders, Engineers

FROM: Jeff Williams
Program Manager, Well & Septic Program

RE: COMAR Revisions, 11/24/2016, BAT requirements

DATE: November 21, 2016

Effective November 24, 2016, COMAR 26.04.02.07 has been revised to no longer require BAT units for new construction or upgrades in the non-critical areas of the state. As all of Howard County is within the non-critical area, this regulation change applies to properties on which building permits for new construction or building improvements are proposed in the county. Please note that individual properties may still require a BAT unit as part of the system design for site specific reasons such as limited disposal area, reduced soil buffer, reduced setbacks, downgrade well variances, etc. This guidance document will outline the procedures and requirements for projects in Howard County after 11/24/2016.

PROCEDURE FOR PROPERTIES WITH AN APPROVED BUILDING PERMIT AND BAT PLAN

- If a property owner has already received building permit approval and BAT plan approval for a new building or addition and wishes to revise the system design to utilize a traditional septic tank, a written request signed by the homeowner must be submitted to the Health Department along with a revised system design plan or redlined approved plan replacing the BAT tank with an appropriately sized two compartment septic tank meeting all design and siting requirements. If a pumped system is indicated, an appropriately sized pump tank must be shown including all details of pump and dose design including float elevations and pump curve/pump selection.
- In addition to the above requirements, if a septic permit has already been issued for the system, the contractor must receive a revised septic permit before beginning installation. A revised septic permit will only be issued once a revised or redlines system design plan has been approved. A copy of that revised plan will be issued to the contractor with the revised permit.
- If an Operations and Maintenance Agreement has been recorded in Land Records, the homeowner may choose to record a document indicating that the agreement is null and void. The Health Department is in the process of drafting that document which will be signed by the homeowner and the Health Department representative prior to recordation.

PROCEDURE FOR PROPERTIES WITH BUILDING PERMIT AND BAT PLAN NOT YET APPROVED

- A separate guidance document listing the requirements for an onsite system design plan is attached. The requirements for a design plan are similar to the requirements for a BAT plan. A design plan must be submitted and approved by the Health Department prior to Health



Bureau of Environmental Health

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Facebook: www.facebook.com/hocohealth

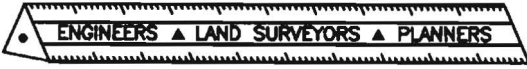
Twitter: HowardCoHealthDep

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

Onsite Sewage Disposal System Design Plan Requirements

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

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

DATE	<u>11/2/16</u>	PROJECT No.	<u>1635</u>
ATTENTION	<u>Robert Freeman</u>		
RE:	<u>Vista Ridge</u>		
	<u>Lot 11</u>		
	<u>BAT & Perc Cert</u>		
	<u>Revision</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</u>
<u>3</u>	<u>1</u>	<u>Revised Perc Cert</u>
<u>1</u>	<u>-</u>	<u>Architectural Plans</u>

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]

Freemon, Robert

From: John Carney <jcarney@bei-civilengineering.com>
Sent: Wednesday, November 16, 2016 11:24 AM
To: Freemon, Robert
Subject: RE: Vista Ridge Lot 11

Robert, that would be great if you could do that. The owner is DR Horton still. John

From: Freemon, Robert [<mailto:rfreemon@howardcountymd.gov>]
Sent: Wednesday, November 16, 2016 11:00 AM
To: John Carney <jcarney@bei-civilengineering.com>
Subject: Vista Ridge Lot 11

Hey John,

The BAT Plan and Floor Plans look good but the Perc Cert as two issues. The Purpose Statement (Note:9) references the wrong lot number. Purpose statement should reference lot 11 and not lot 16. Also the Owner/Developer information is missing. I am assuming the information is the same as on the BAT Plan. Let me know if you would like a us to redline these for you or if you would prefer to have it redone and submitted back to us. Thanks!

Robert Freemon

Howard County Health Department

8930 Stanford Blvd. Columbia, MD 21045

Well and Septic Program

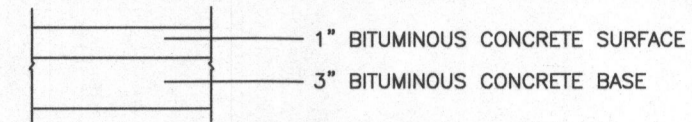
Phone: 410-313-6357

Email: rfreemon@howardcountymd.gov

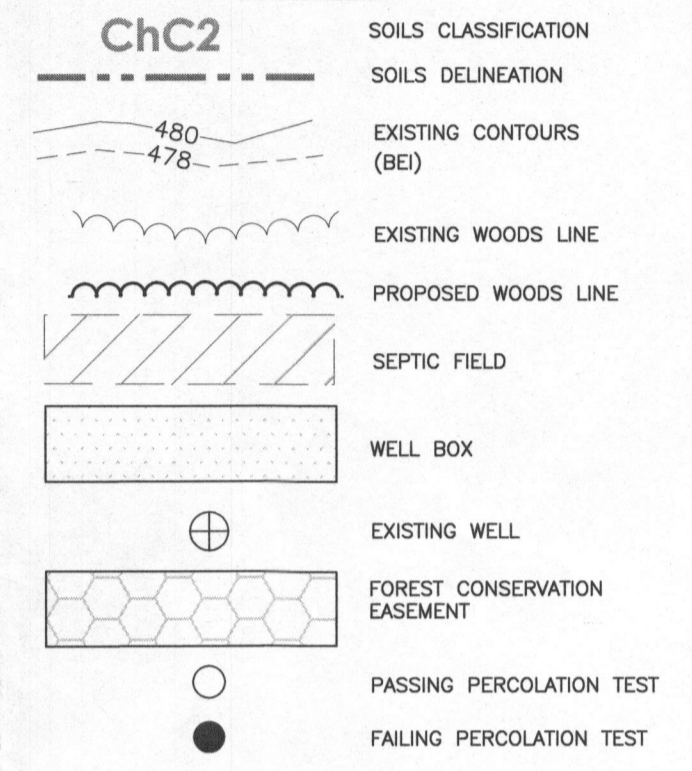
<https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic>

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
LEGEND



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 MICROPOND ED POND.
- THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2386, 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.

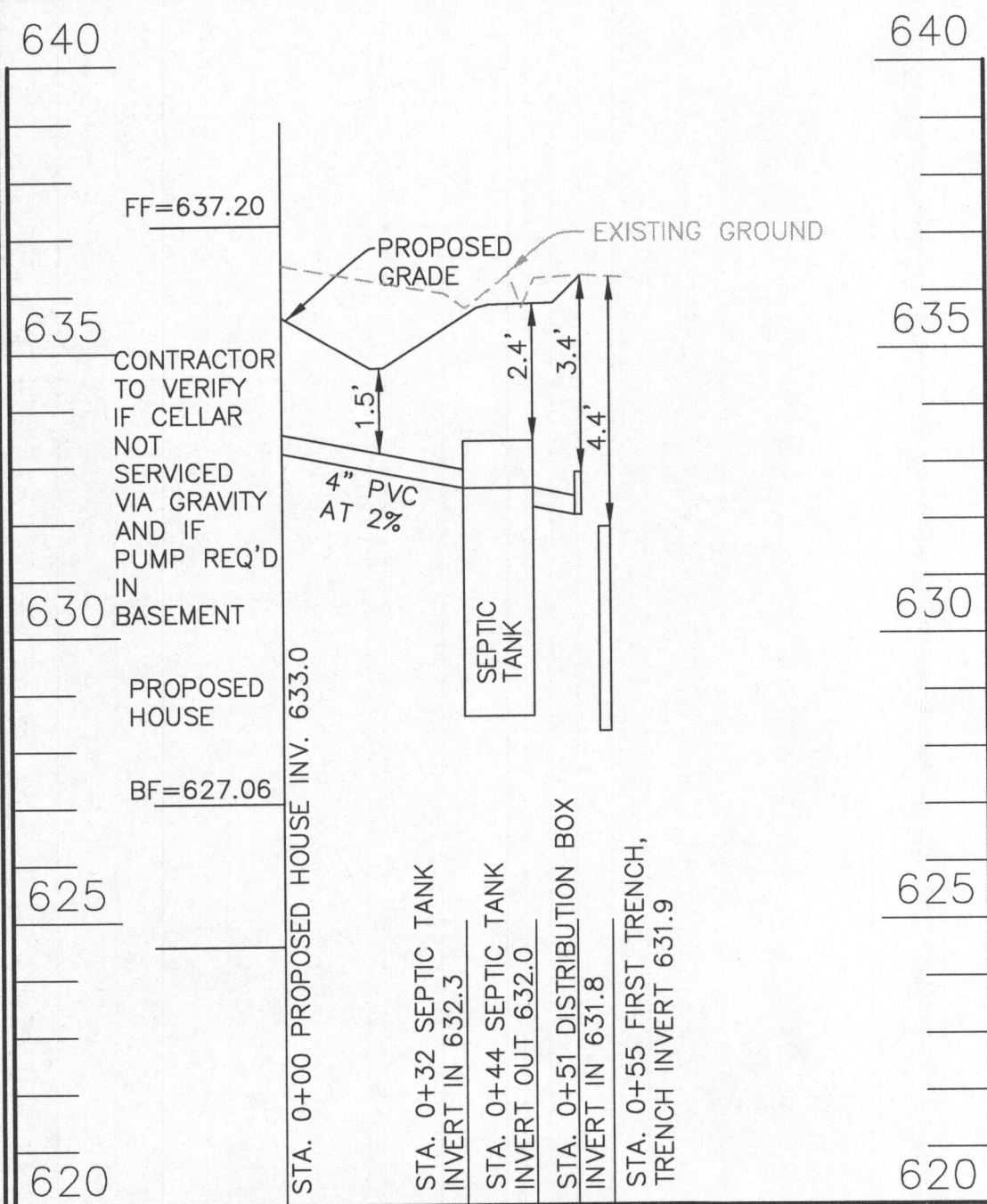
Approved Septic System Plan
Howard County Health Department
Paul [Signature] 1/5/2017
Signature Date
(Approved for 615R as per floor plans.)



PLAN VIEW
1" = 30'

<p align="center">BENCHMARK ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS ENGINEERING, INC.</p> <p align="center">8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 ▲ FAX: 410-465-6644 BEI@BEI-CIVLENGINEERING.COM</p>			
			<p>OWNER/BUILDER: DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 MCLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015</p>
DESIGN: JMC	DRAFT: JMC	SCALE: 1" = 30'	DRAWING 1 OF 2

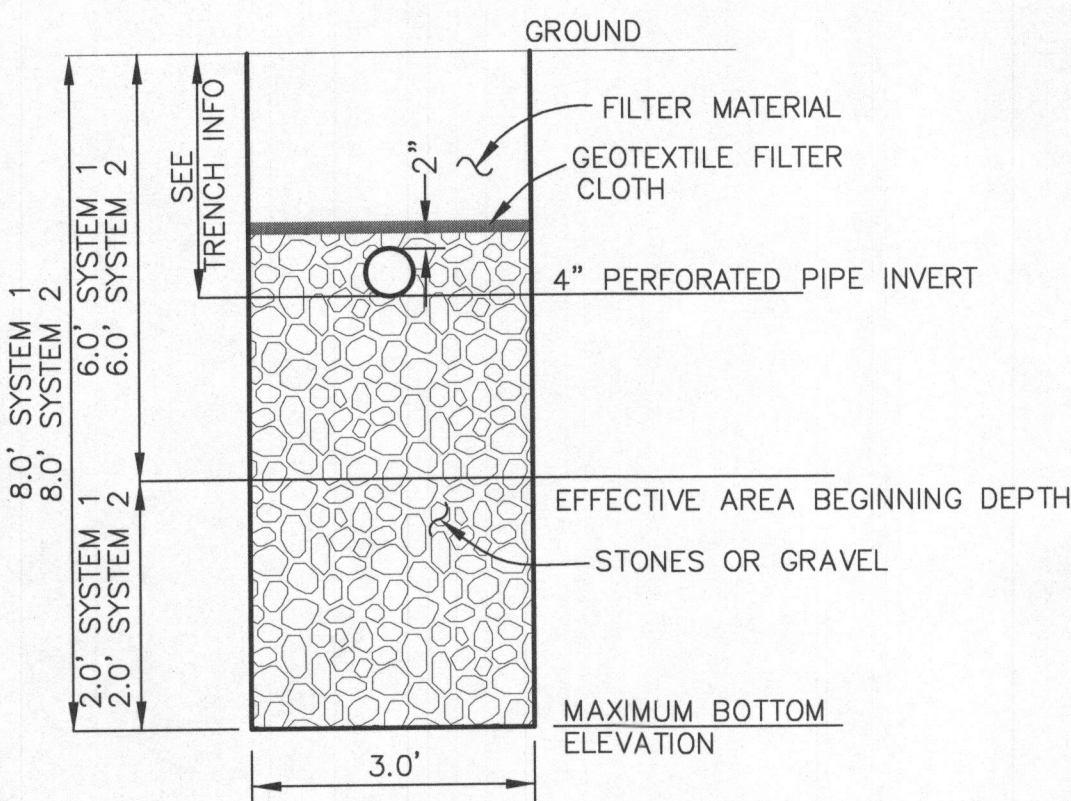
THIS PLAN IS FOR SEPTIC DESIGN ONLY



SEWER PROFILE - LOT 11
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

TRENCH INFORMATION

TRENCH	LENGTH	GROUND ELEVATION	INVERT ELEVATION	MAX. BOTTOM ELEV.
TRENCH 1-1	47 LF	636.3	631.9	628.3
TRENCH 1-2	47 LF	636.0	631.7	628.0
TRENCH 1-3	47 LF	635.5	631.5	627.5
TRENCH 1-4	47 LF	635.5	631.5	627.5
TRENCH 1-5	47 LF	635.0	631.3	627.0
TRENCH 2-1	47 LF	635.0	631.3	627.0
TRENCH 2-2	47 LF	634.5	631.2	626.5
TRENCH 2-3	47 LF	634.5	631.2	626.5
TRENCH 2-4	47 LF	634.1	631.0	626.1
TRENCH 2-5	47 LF	634.1	631.0	626.1
SYSTEM 3	TRENCH T1	47 LF		
	TRENCH T2	47 LF		
	TRENCH T3	47 LF		
	TRENCH T4	47 LF		
	TRENCH T5	47 LF		

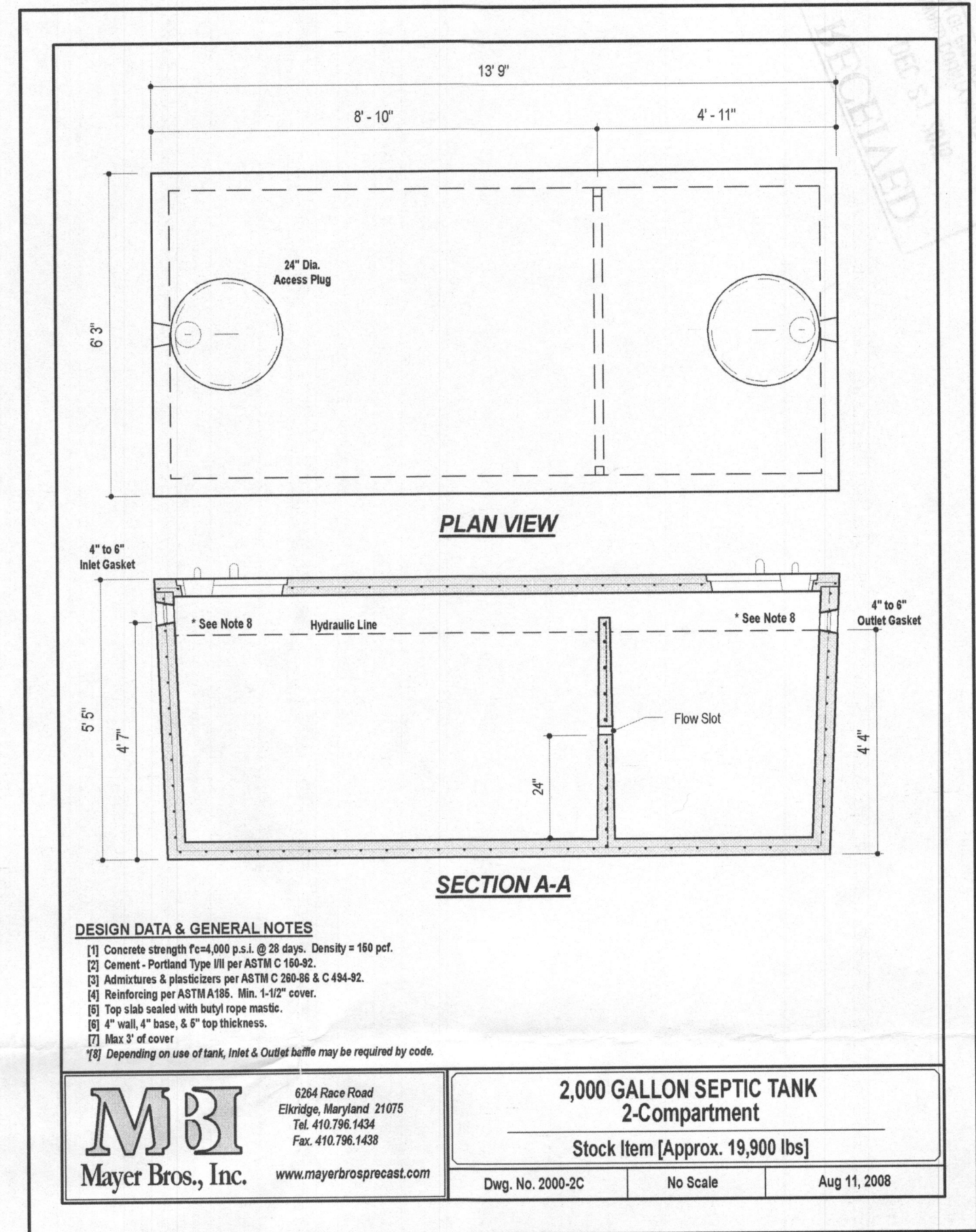


TYPICAL TRENCH DETAIL
NOT TO SCALE

INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

Approved Septic System Plan
Howard County Health Department
[Signature] 1/5/2017
Signature Date
(Approved for BSR as per Floor Plans)



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 A 108. Min. 1/2" cover.
- [5] Top slab sealed with butyl rope mastic.
- [6] 4" wall, 4" base, & 6" top thickness.
- [7] Max 3' of cover
- [8] Depending on use of tank, Inlet & Outlet baffles may be required by code.

MBI
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

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

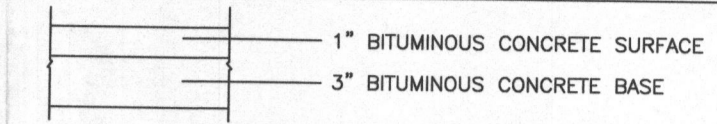
SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

<p>BENCHMARK ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS ENGINEERING, INC.</p> <p>8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLICOTT 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><i>[Signature]</i> 12/20/16</p>
OWNER/BUILDER:	PROJECT:	
DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	<p>VISTA RIDGE LOT 11</p>	
	LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
	TITLE:	SEPTIC PLAN
	HOUSE TYPE:	HIGHLAND PARK
DESIGN: JMC	DRAFT: JMC	DATE: OCTOBER, 2016 DECEMBER 20, 2016
	SCALE: 1" = 30'	PROJECT NO. 1635 DRAWING 2 OF 2

THIS PLAN IS FOR SEPTIC DESIGN ONLY

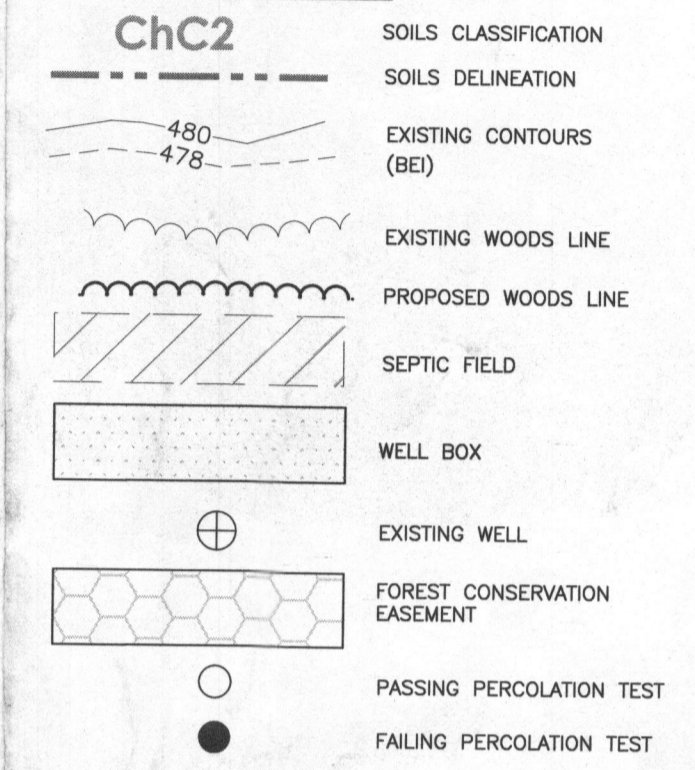
SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
-	-	-

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

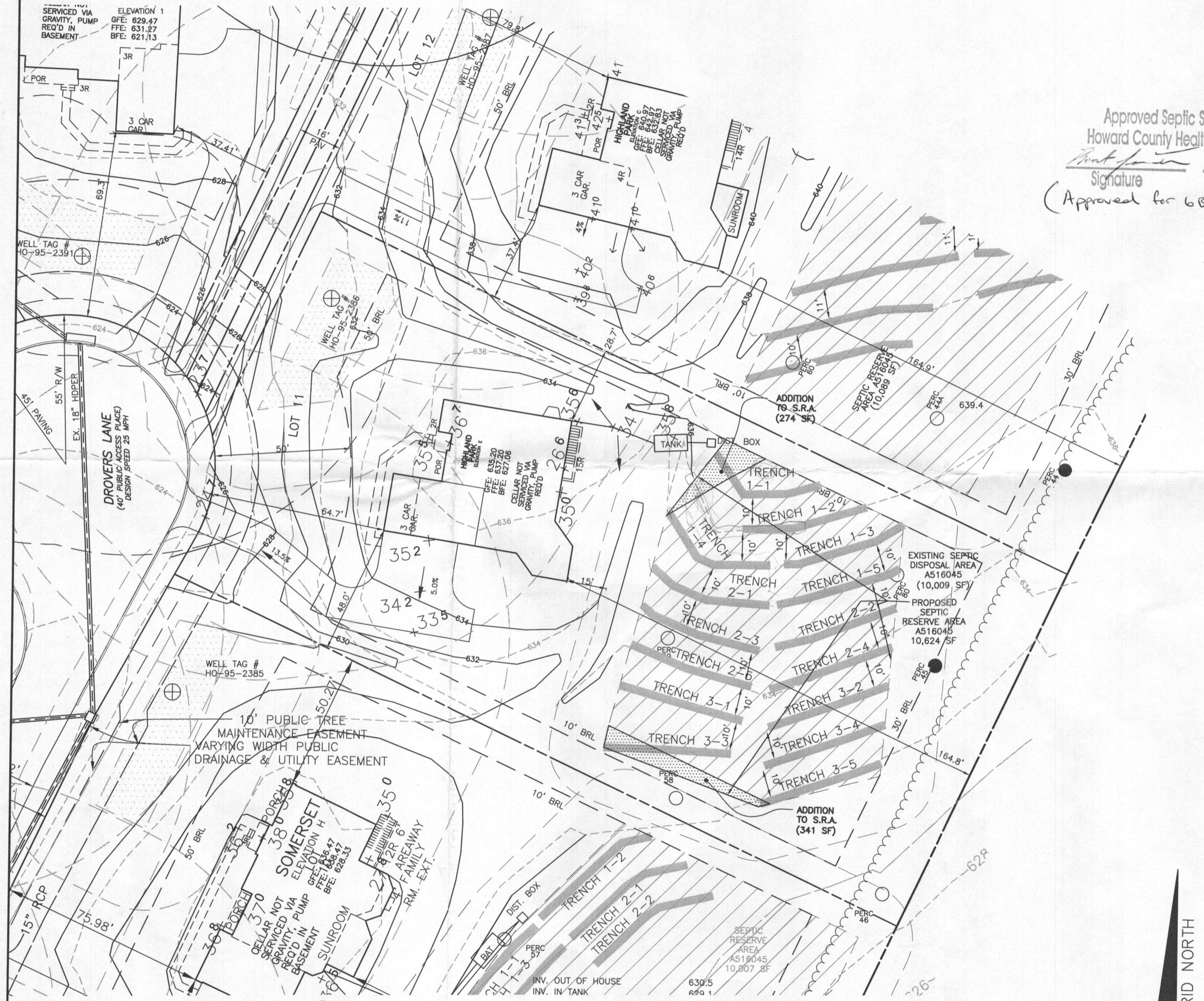


FULL DEPTH BITUMINOUS CONCRETE
PAVING SECTION
NOT TO SCALE

LEGEND



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



PLAN VIEW
1" = 30'

- 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 FEATURES 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 MICROPOND ED POND.
 - THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2386, 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.

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

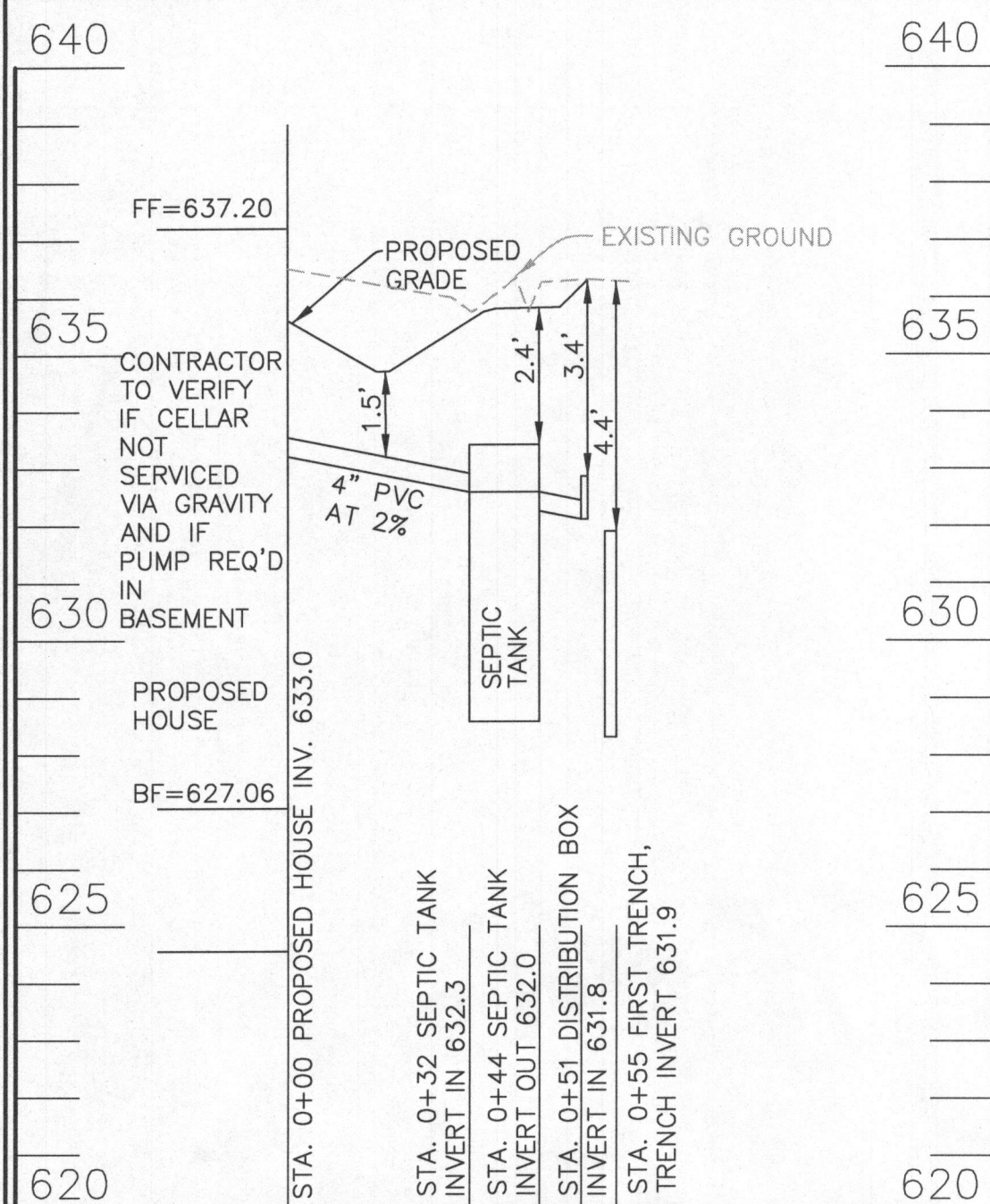
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 45577, Expiration Date: 06-08-2018.

12/20/16

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 11	
LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476	
TITLE:	SEPTIC SITE PLAN	
HOUSE TYPE:	HIGHLAND PARK	
DATE:	OCTOBER, 2016 DECEMBER 20, 2016	PROJECT NO. 1635
DESIGN:	JMC	DRAFT: JMC
SCALE:	1" = 30'	DRAWING 1 OF 2

THIS PLAN IS FOR SEPTIC DESIGN ONLY

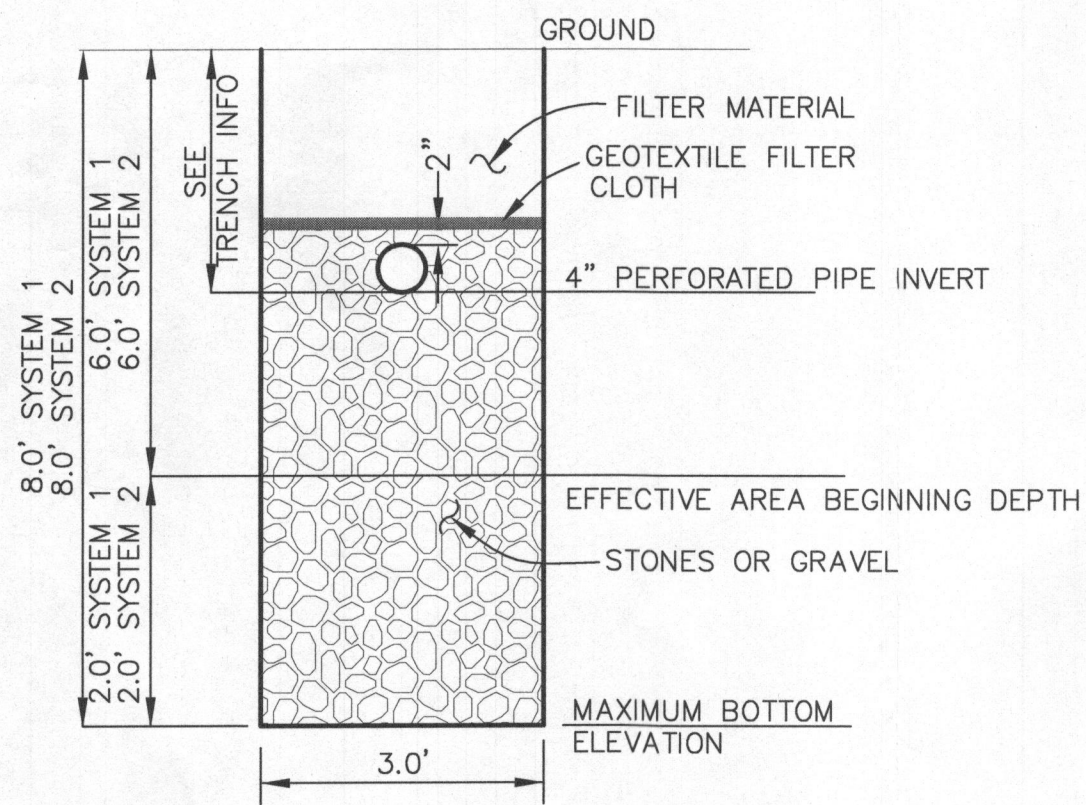




SEWER PROFILE - LOT 11
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

TRENCH INFORMATION

TRENCH	LENGTH	GROUND ELEVATION	INVERT ELEVATION	MAX. BOTTOM ELEV.
TRENCH 1-1	47 LF	636.3	631.9	628.3
TRENCH 1-2	47 LF	636.0	631.7	628.0
TRENCH 1-3	47 LF	635.5	631.5	627.5
TRENCH 1-4	47 LF	635.5	631.5	627.5
TRENCH 1-5	47 LF	635.0	631.3	627.0
TRENCH 2-1	47 LF	635.0	631.3	627.0
TRENCH 2-2	47 LF	634.5	631.2	626.5
TRENCH 2-3	47 LF	634.5	631.2	626.5
TRENCH 2-4	47 LF	634.1	631.0	626.1
TRENCH 2-5	47 LF	634.1	631.0	626.1
SYSTEM 3	TRENCH T1	47 LF		
	TRENCH T2	47 LF		
	TRENCH T3	47 LF		
	TRENCH T4	47 LF		
	TRENCH T5	47 LF		



TYPICAL TRENCH DETAIL
NOT TO SCALE

INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

Approved Septic System Plan
Howard County Health Department
Paul [Signature] 1/5/17
Signature Date
(Approved as per Floor Plans)
GBR

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 260-96 & 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.

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

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

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ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315
ELLCOTT CITY, MARYLAND 21043
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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: 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 11

LOCATION:
2038 DROVERS LANE
COOKSVILLE, MD 21723
TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176
4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
TAX ID NUMBER 04-595476

TITLE: SEPTIC PLAN

HOUSE TYPE: HIGHLAND PARK

DATE: OCTOBER, 2016
DECEMBER 20, 2016

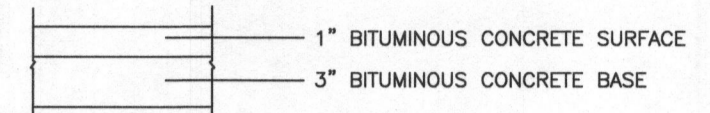
PROJECT NO.: 1635

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

THIS PLAN IS FOR SEPTIC DESIGN ONLY

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
-	-	-

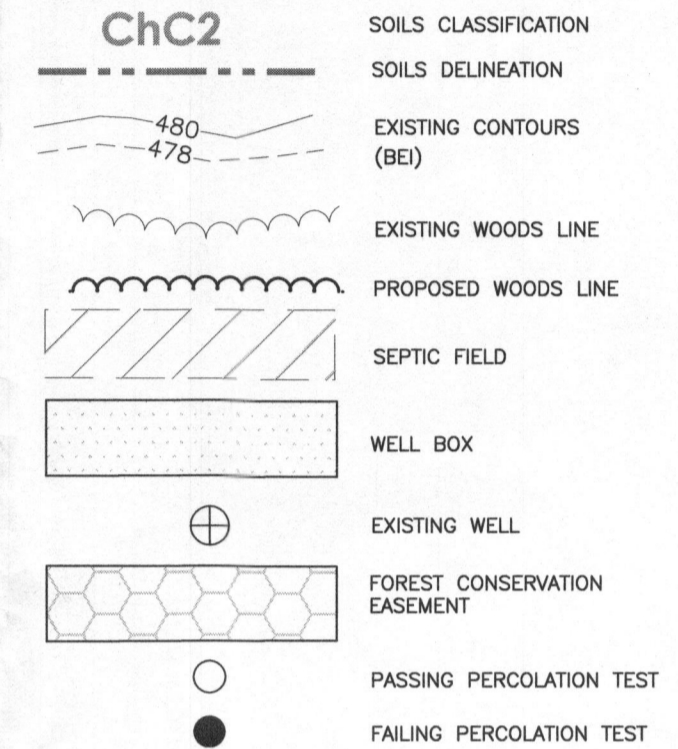
* INDICATES HYDRIC SOILS
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33



FULL DEPTH BITUMINOUS CONCRETE

PAVING SECTION
 NOT TO SCALE

LEGEND



BUILDING PERMIT PLAN NOTES:

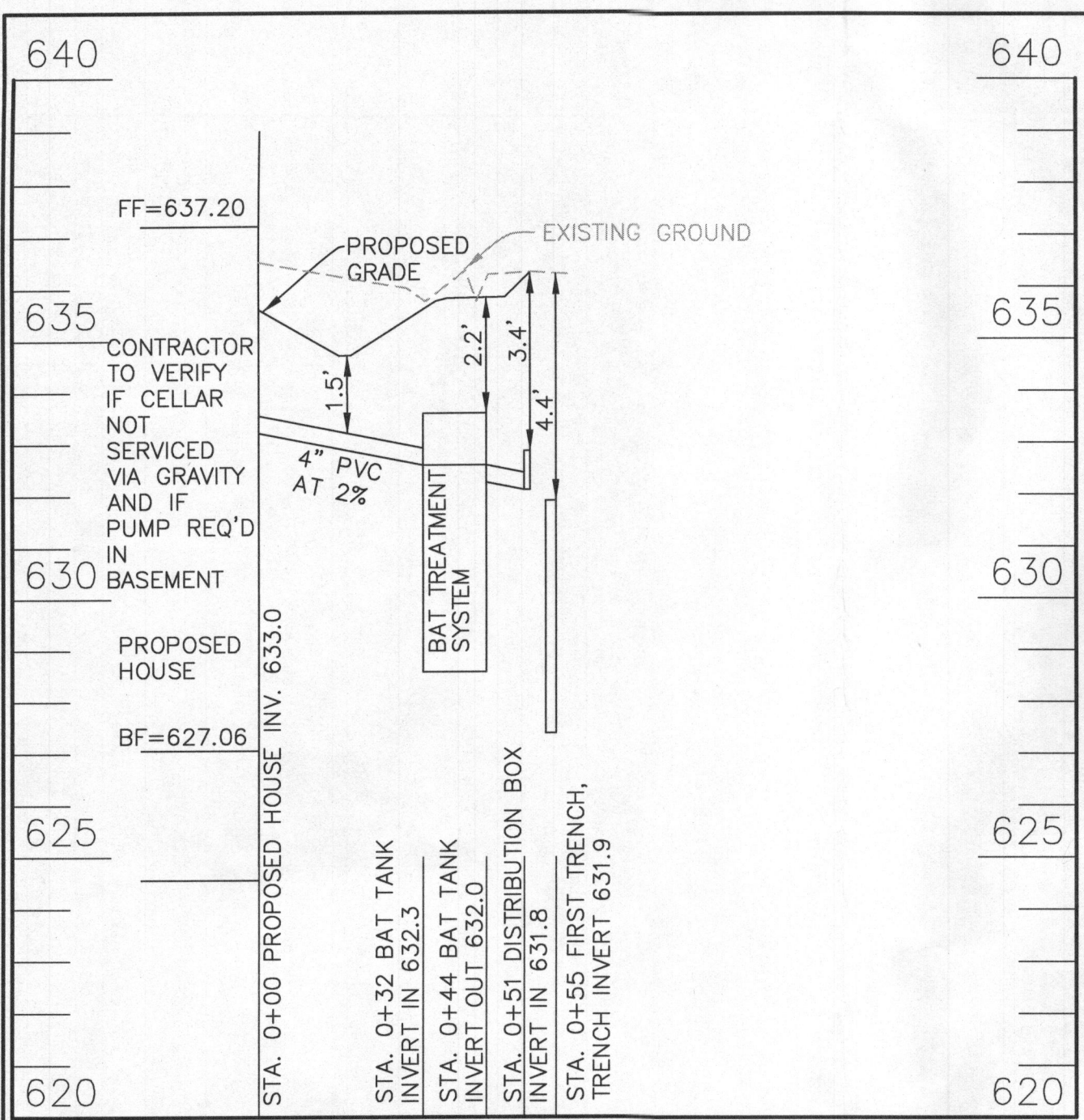
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2. SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC HOUSE.
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5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED 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-95-2386, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.



GRID NORTH

THIS PLAN IS FOR SEPTIC DESIGN ONLY

<p align="center">BENCHMARK ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS ENGINEERING, INC.</p> <p align="center">8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLICOTT 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 align="right">11/2/16</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: VISTA RIDGE LOT 11</p>	
<p>LOCATION: 2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476</p>		<p>TITLE: BAT SITE PLAN</p>	
<p>HOUSE TYPE: HIGHLAND PARK</p>		<p>DATE: <u>OCTOBER, 2016</u> PROJECT NO. <u>1635</u></p>	
DESIGN: JMC	DRAFT: JMC	SCALE: 1" = 30'	DRAWING <u>1</u> OF <u>2</u>

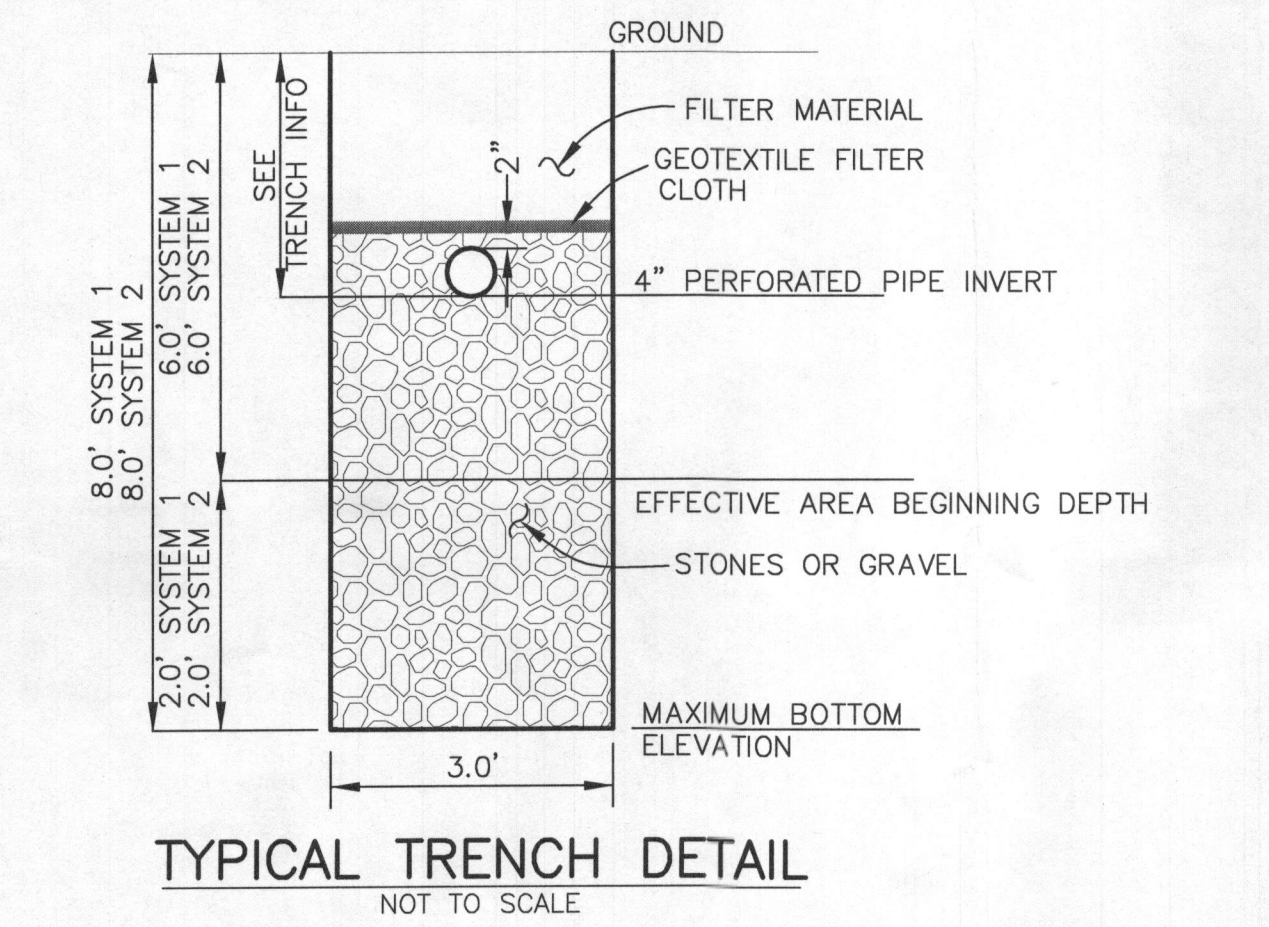


SEWER PROFILE - LOT 11
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

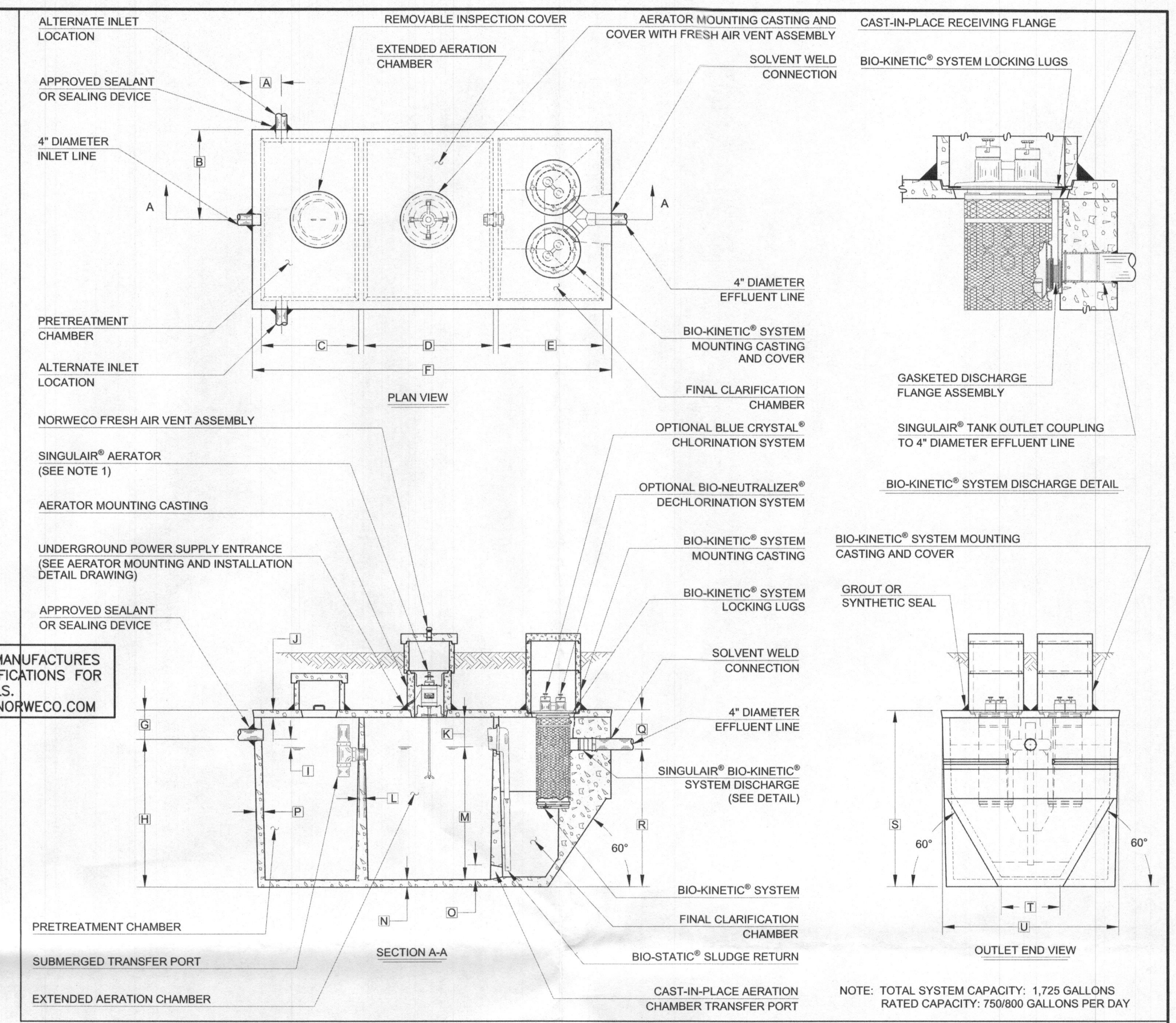
INITIAL SYSTEM			
Number of Bedrooms	6		
Application Rate	0.8	gpd/sf	
Effective Area Beginning Depth	6	ft	
Bottom Max Depth	8	ft	
Design Flow	900	gpd	
Drainage Field square footage	1125	sf	
Sidewall reduction credit	0.625		
Trench width	3		
Effective Area Depth	2		
Linear Length of trench Required	234	lf	

1st REPLACEMENT SYSTEM			
Number of Bedrooms	6		
Application Rate	0.8	gpd/sf	
Effective Area Beginning Depth	6	ft	
Bottom Max Depth	8	ft	
Design Flow	900	gpd	
Drainage Field square footage	1125	sf	
Sidewall reduction credit	0.625		
Trench width	3		
Effective Area Depth	2		
Linear Length of trench Required	234	lf	

TRENCH INFORMATION			
TRENCH 1-1	47 LF	TRENCH 2-1	47 LF
TRENCH LENGTH	47 LF	TRENCH LENGTH	47 LF
GROUND ELEVATION	636.3	GROUND ELEVATION	635.0
INVERT ELEVATION	631.9	INVERT ELEVATION	631.3
MAX. BOTTOM ELEV.	628.3	MAX. BOTTOM ELEV.	627.0
TRENCH 1-2	47 LF	TRENCH 2-2	47 LF
TRENCH LENGTH	47 LF	TRENCH LENGTH	47 LF
GROUND ELEVATION	636.0	GROUND ELEVATION	634.5
INVERT ELEVATION	631.7	INVERT ELEVATION	631.2
MAX. BOTTOM ELEV.	628.0	MAX. BOTTOM ELEV.	626.5
TRENCH 1-3	47 LF	TRENCH 2-3	47 LF
TRENCH LENGTH	47 LF	TRENCH LENGTH	47 LF
GROUND ELEVATION	635.5	GROUND ELEVATION	634.5
INVERT ELEVATION	631.5	INVERT ELEVATION	631.2
MAX. BOTTOM ELEV.	627.5	MAX. BOTTOM ELEV.	626.5
TRENCH 1-4	47 LF	TRENCH 2-4	47 LF
TRENCH LENGTH	47 LF	TRENCH LENGTH	47 LF
GROUND ELEVATION	635.5	GROUND ELEVATION	634.1
INVERT ELEVATION	631.5	INVERT ELEVATION	631.0
MAX. BOTTOM ELEV.	627.5	MAX. BOTTOM ELEV.	626.1
TRENCH 1-5	47 LF	TRENCH 2-5	47 LF
TRENCH LENGTH	47 LF	TRENCH LENGTH	47 LF
GROUND ELEVATION	635.0	GROUND ELEVATION	634.1
INVERT ELEVATION	631.3	INVERT ELEVATION	631.0
MAX. BOTTOM ELEV.	627.0	MAX. BOTTOM ELEV.	626.1



TYPICAL TRENCH DETAIL
NOT TO SCALE



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:

- 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.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.

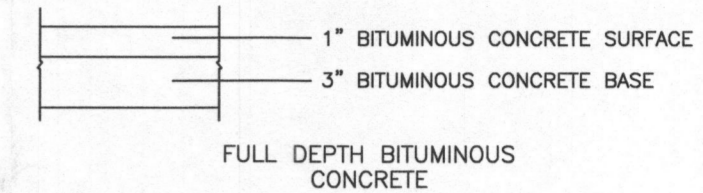
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DESIGN:	JMC	LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
DRAFT:	JMC	TITLE:	BAT PLAN
SCALE:	1" = 30'	HOUSE TYPE:	HIGHLAND PARK
		DATE:	OCTOBER, 2016
		PROJECT NO.:	1635
		DRAWING	2 OF 2

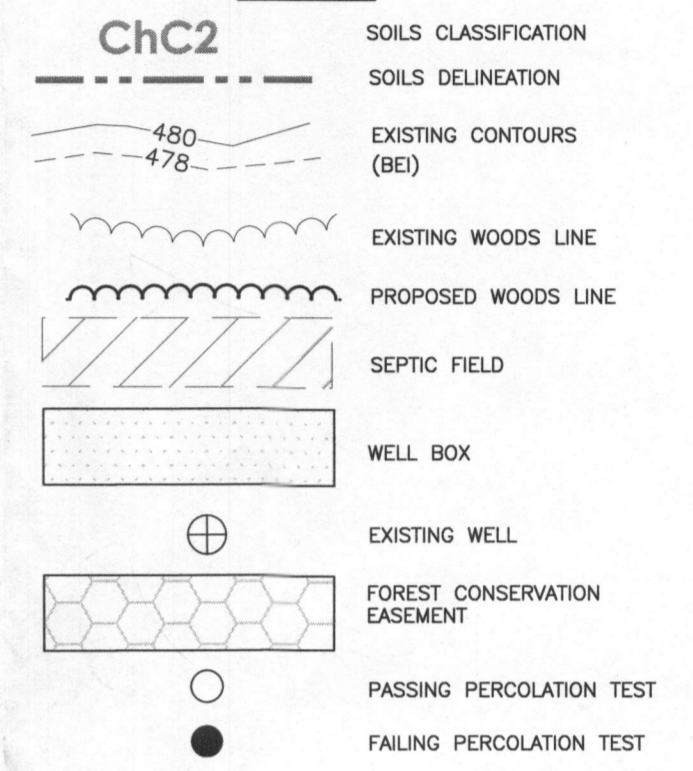
SOILS LEGEND		
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MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
-	-	-

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



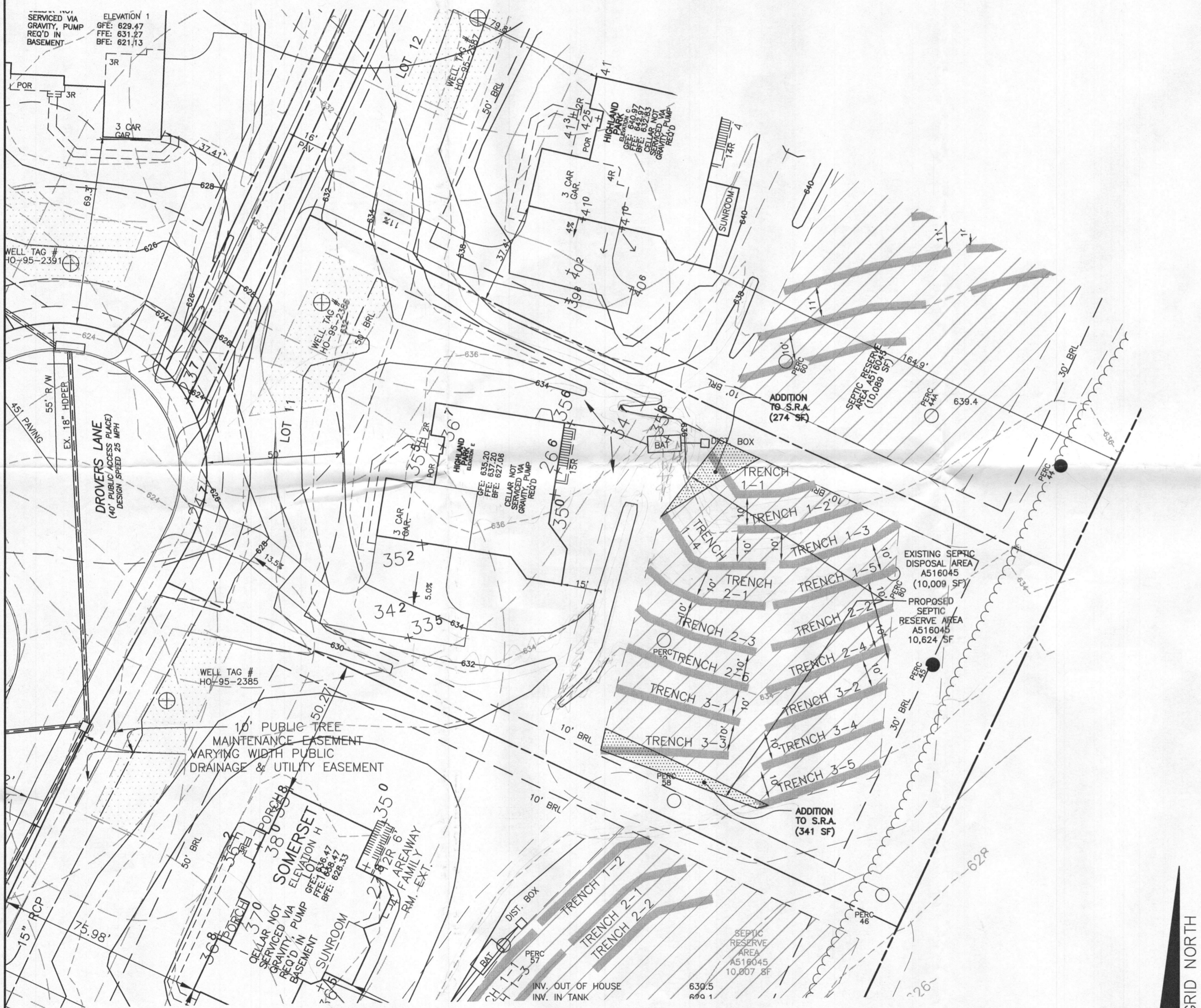
PAVING SECTION
 NOT TO SCALE

LEGEND



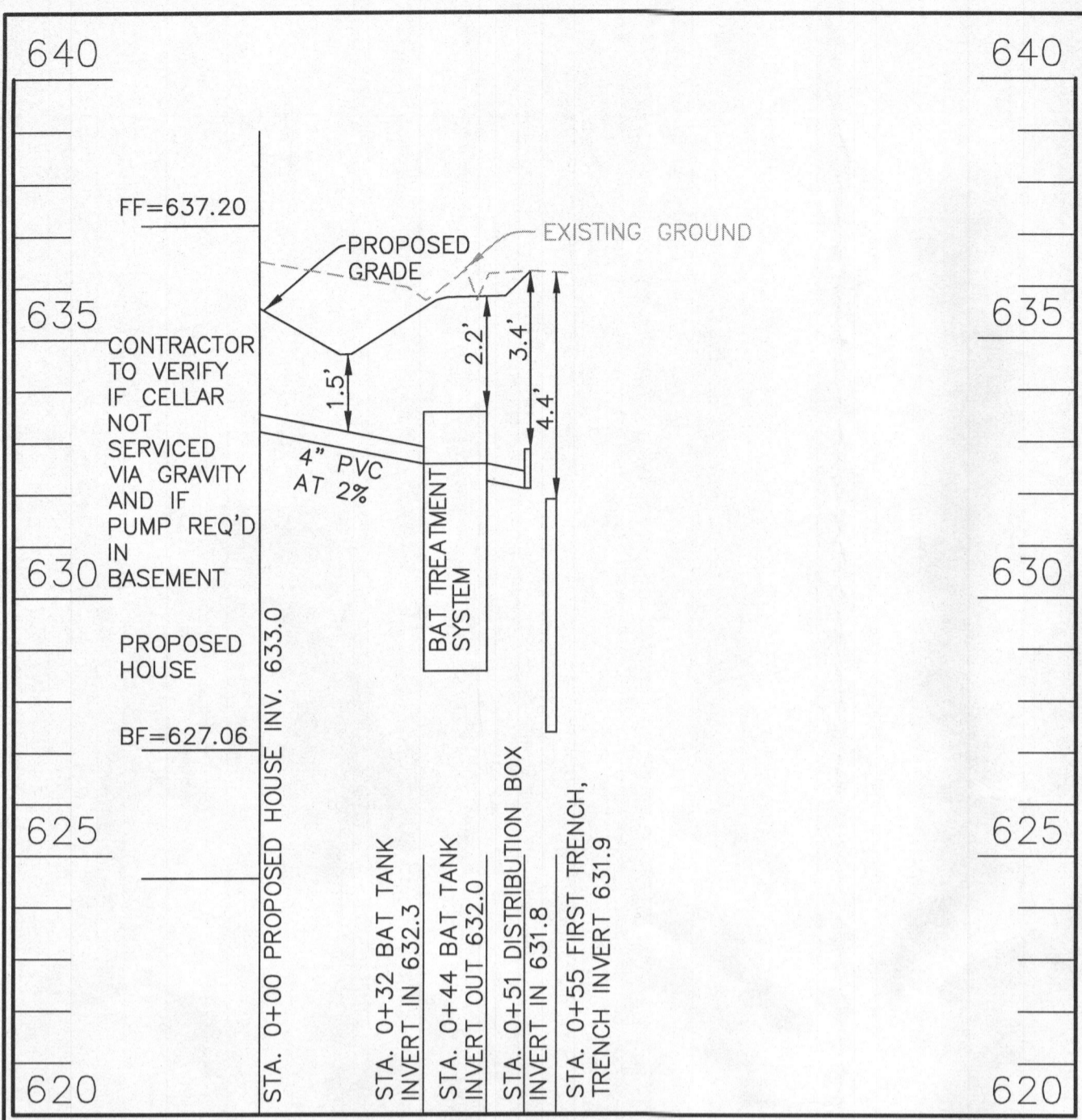
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4. ALL SEDIMENT AND EROSION CONTROL FEATURES USED ON THIS SITE SHALL COMPLY WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY 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 MICROPOND ED POND.
10. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-2386, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.



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. 11/2/16
OWNER/BUILDER:	PROJECT:	
DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 MCLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	VISTA RIDGE LOT 11	
	LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
	TITLE:	BAT SITE PLAN
	HOUSE TYPE:	HIGHLAND PARK
DESIGN: JMC	DRAFT: JMC	DATE: OCTOBER, 2016 PROJECT NO. 1635
	SCALE: 1" = 30'	DRAWING 1 OF 2

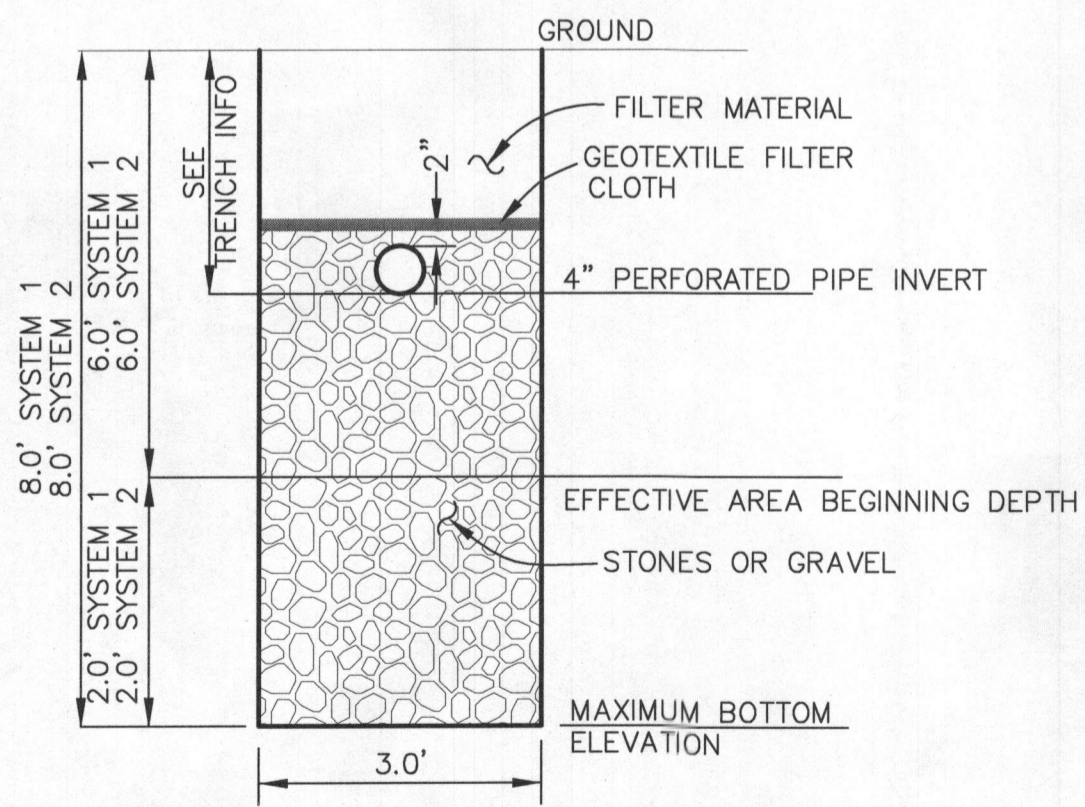


SEWER PROFILE - LOT 11
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

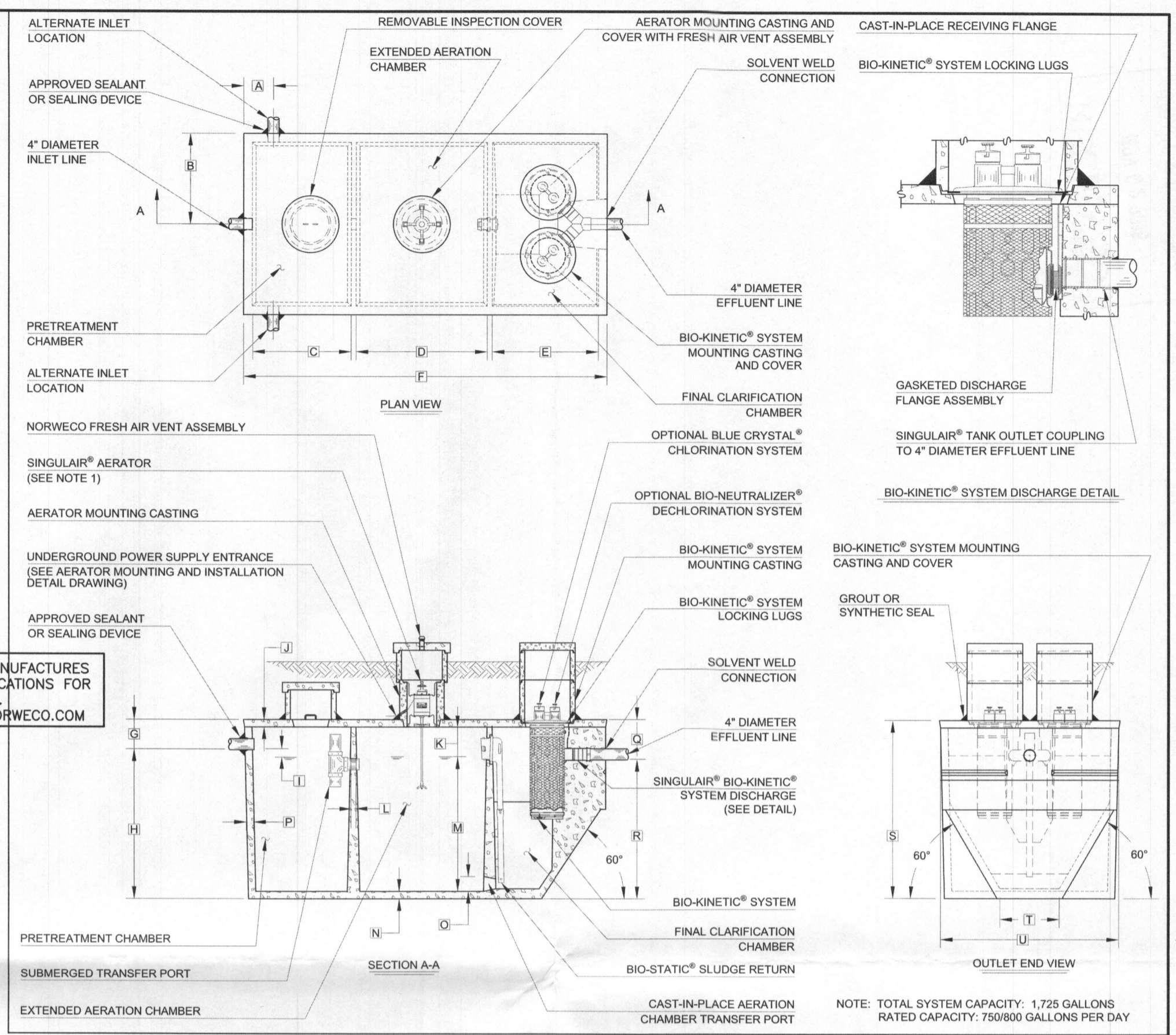
INITIAL SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	6	ft
Bottom Max Depth	8	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall reduction credit	0.625	
Trench width	3	
Effective Area Depth	2	
Linear Length of trench Required	234	lf

TRENCH INFORMATION		
TRENCH 1-1	TRENCH LENGTH 47 LF	TRENCH 2-1
GROUND ELEVATION 636.3	GROUND ELEVATION 635.0	TRENCH LENGTH 47 LF
INVERT ELEVATION 631.9	INVERT ELEVATION 631.3	TRENCH T1 47 LF
MAX. BOTTOM ELEV. 628.3	MAX. BOTTOM ELEV. 627.0	TRENCH T2 47 LF
TRENCH 1-2	TRENCH LENGTH 47 LF	TRENCH 2-2
GROUND ELEVATION 636.0	GROUND ELEVATION 634.5	TRENCH LENGTH 47 LF
INVERT ELEVATION 631.7	INVERT ELEVATION 631.2	TRENCH T3 47 LF
MAX. BOTTOM ELEV. 628.0	MAX. BOTTOM ELEV. 626.5	TRENCH T4 47 LF
TRENCH 1-3	TRENCH LENGTH 47 LF	TRENCH 2-3
GROUND ELEVATION 635.5	GROUND ELEVATION 634.1	TRENCH LENGTH 47 LF
INVERT ELEVATION 631.5	INVERT ELEVATION 631.0	TRENCH T5 47 LF
MAX. BOTTOM ELEV. 627.5	MAX. BOTTOM ELEV. 626.1	
TRENCH 1-4	TRENCH LENGTH 47 LF	TRENCH 2-4
GROUND ELEVATION 635.5	GROUND ELEVATION 634.1	TRENCH LENGTH 47 LF
INVERT ELEVATION 631.5	INVERT ELEVATION 631.0	TRENCH T1 47 LF
MAX. BOTTOM ELEV. 627.5	MAX. BOTTOM ELEV. 626.1	TRENCH T2 47 LF
TRENCH 1-5	TRENCH LENGTH 47 LF	TRENCH 2-5
GROUND ELEVATION 635.0	GROUND ELEVATION 634.1	TRENCH LENGTH 47 LF
INVERT ELEVATION 631.3	INVERT ELEVATION 631.0	TRENCH T3 47 LF
MAX. BOTTOM ELEV. 627.0	MAX. BOTTOM ELEV. 626.1	TRENCH T4 47 LF



TYPICAL TRENCH DETAIL
NOT TO SCALE



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.

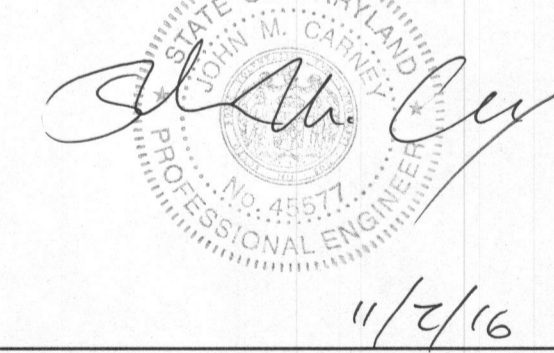
- TANK REINFORCED PER ACI STD. 318.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL, LICENSED SINGLAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

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

U.S. AND FOREIGN PATENTS PENDING
norweco
 LOW PROFILE SINGLAIR® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM
 MODEL: THTLP-790GPD
 4-25-2016
 NTS
 PC-5-7159

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

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.

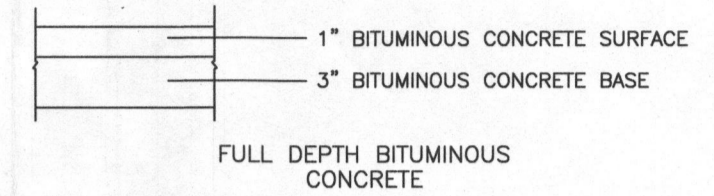


- Required BAT Site Plan Notes
- Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised sit plan may be required.
 - The maximum depth of the BAT shall be per the manufacturer's specification, 3.0'.
 - 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 11 LOCATION: 2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
DESIGN: JMC	DRAFT: JMC
DATE: OCTOBER, 2016	PROJECT NO. 1635
SCALE: 1" = 30'	DRAWING 2 OF 2

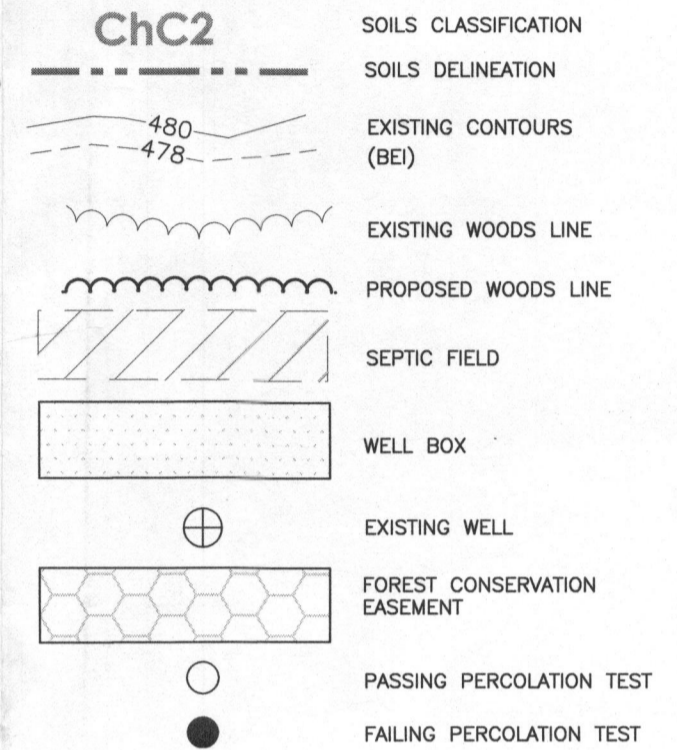
SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GnB2	C	GLENVILLE, SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
-	-	-

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



PAVING SECTION
 NOT TO SCALE

LEGEND



BUILDING PERMIT PLAN NOTES:

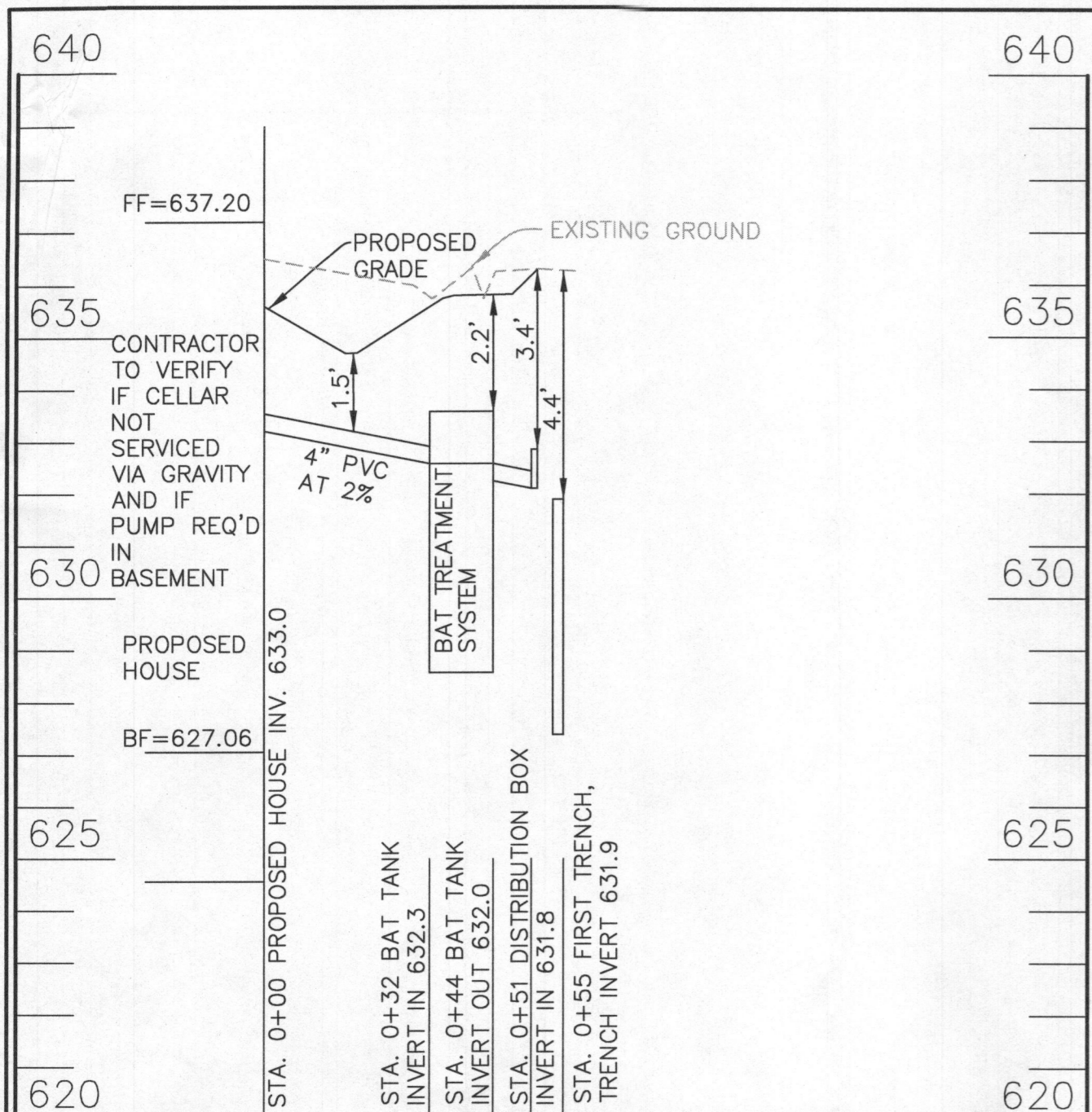
1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR VISTA RIDGE, PLAT Nos. 22430-22435. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
2. SEDIMENT AND EROSION CONTROLS WERE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT UNDER A GRADING PLAN AND MODIFIED FOR THIS SPECIFIC 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.
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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-95-2386, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.



GRID NORTH

THIS PLAN IS FOR SEPTIC DESIGN ONLY

<p>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</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>
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DR HORTON, INC. 1356 BEVERLY ROAD SUITE 300 McLEAN, VA 22101 PHONE: 571-723-0813 FAX: 800-551-5015	VISTA RIDGE LOT 11	
	LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
	TITLE:	BAT SITE PLAN
	HOUSE TYPE:	HIGHLAND PARK
DATE:	OCTOBER, 2016	PROJECT NO. 1635
DESIGN: JMC	DRAFT: JMC	SCALE: 1" = 30'
		DRAWING 1 OF 2

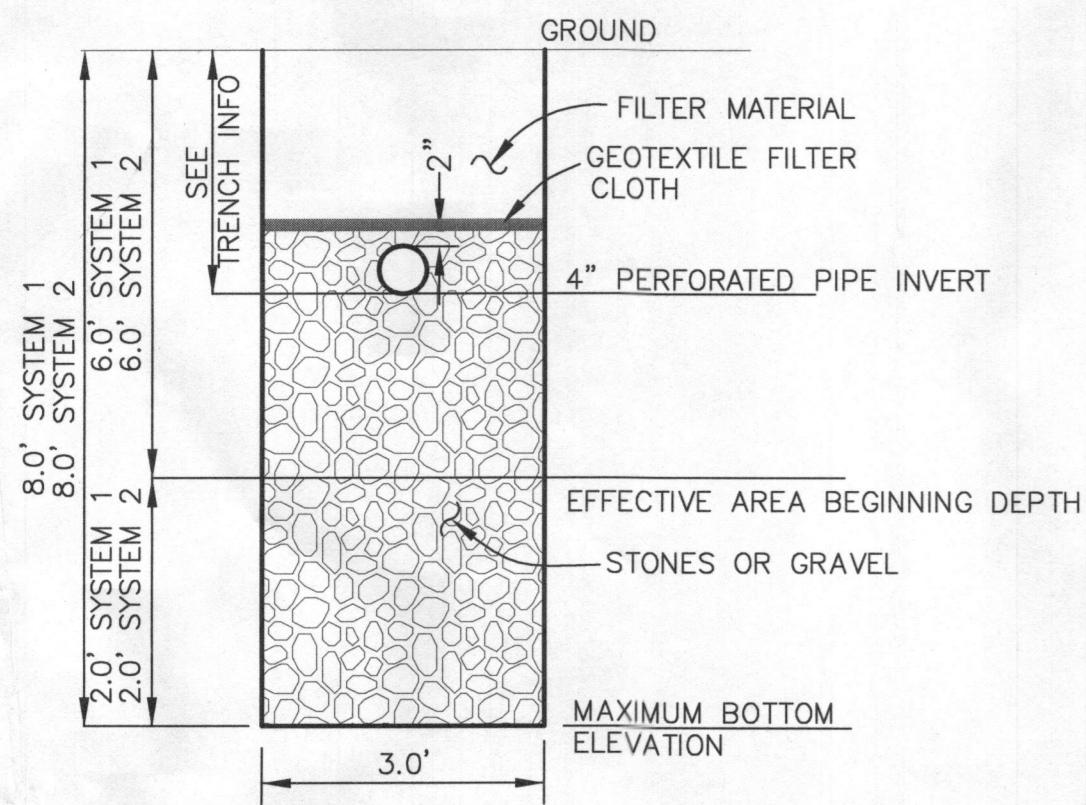


SEWER PROFILE - LOT 11
SCALE: VERTICAL 1"=3', HORIZONTAL 1"=30'

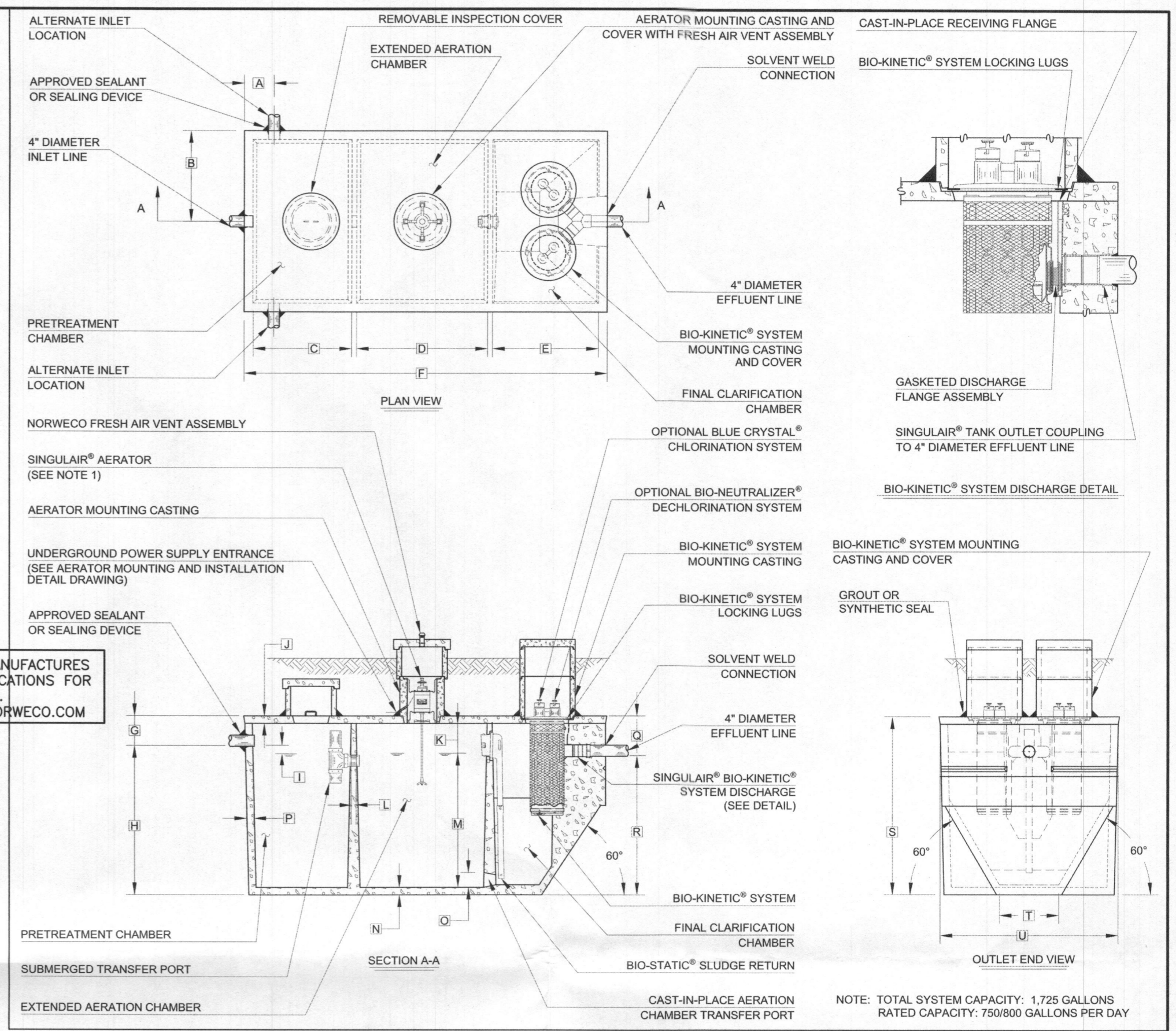
INITIAL SYSTEM			
Number of Bedrooms	6		
Application Rate	0.8	gpd/sf	
Effective Area Beginning Depth	6	ft	
Bottom Max Depth	8	ft	
Design Flow	900	gpd	
Drainage Field square footage	1125	sf	
Sidewall reduction credit	0.625		
Trench width	3		
Effective Area Depth	2		
Linear Length of trench Required	234	lf	

1st REPLACEMENT SYSTEM			
Number of Bedrooms	6		
Application Rate	0.8	gpd/sf	
Effective Area Beginning Depth	6	ft	
Bottom Max Depth	8	ft	
Design Flow	900	gpd	
Drainage Field square footage	1125	sf	
Sidewall reduction credit	0.625		
Trench width	3		
Effective Area Depth	2		
Linear Length of trench Required	234	lf	

TRENCH INFORMATION			
TRENCH 1-1	TRENCH LENGTH 47 LF	TRENCH 2-1	TRENCH LENGTH 47 LF
GROUND ELEVATION 636.3	GROUND ELEVATION 635.0	TRENCH T1	47 LF
INVERT ELEVATION 631.9	INVERT ELEVATION 631.3	TRENCH T2	47 LF
MAX. BOTTOM ELEV. 628.3	MAX. BOTTOM ELEV. 627.0	TRENCH T3	47 LF
TRENCH 1-2	TRENCH LENGTH 47 LF	TRENCH 2-2	TRENCH LENGTH 47 LF
GROUND ELEVATION 636.0	GROUND ELEVATION 634.5	GROUND ELEVATION 634.5	
INVERT ELEVATION 631.7	INVERT ELEVATION 631.2	INVERT ELEVATION 631.2	
MAX. BOTTOM ELEV. 628.0	MAX. BOTTOM ELEV. 626.5	MAX. BOTTOM ELEV. 626.5	
TRENCH 1-3	TRENCH LENGTH 47 LF	TRENCH 2-3	TRENCH LENGTH 47 LF
GROUND ELEVATION 635.5	GROUND ELEVATION 634.1	GROUND ELEVATION 634.1	
INVERT ELEVATION 631.5	INVERT ELEVATION 631.0	INVERT ELEVATION 631.0	
MAX. BOTTOM ELEV. 627.5	MAX. BOTTOM ELEV. 626.1	MAX. BOTTOM ELEV. 626.1	
TRENCH 1-4	TRENCH LENGTH 47 LF	TRENCH 2-4	TRENCH LENGTH 47 LF
GROUND ELEVATION 635.5	GROUND ELEVATION 634.1	GROUND ELEVATION 634.1	
INVERT ELEVATION 631.5	INVERT ELEVATION 631.0	INVERT ELEVATION 631.0	
MAX. BOTTOM ELEV. 627.5	MAX. BOTTOM ELEV. 626.1	MAX. BOTTOM ELEV. 626.1	
TRENCH 1-5	TRENCH LENGTH 47 LF	TRENCH 2-5	TRENCH LENGTH 47 LF
GROUND ELEVATION 635.0	GROUND ELEVATION 634.1	GROUND ELEVATION 634.1	
INVERT ELEVATION 631.3	INVERT ELEVATION 631.0	INVERT ELEVATION 631.0	
MAX. BOTTOM ELEV. 627.0	MAX. BOTTOM ELEV. 626.1	MAX. BOTTOM ELEV. 626.1	



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:

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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: 06-08-2018.

BENCHMARK
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ENGINEERING, INC.

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DESIGN:	JMC	LOCATION:	2038 DROVERS LANE COOKSVILLE, MD 21723 TAX MAP No. 8 - BLOCK No. 23 - PARCEL No. 176 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TAX ID NUMBER 04-595476
DRAFT:	JMC	TITLE:	BAT PLAN
DATE:	OCTOBER, 2016	HOUSE TYPE:	HIGHLAND PARK
SCALE:	1" = 30'	PROJECT NO.:	1635
		DRAWING	2 OF 2