**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.orgFacebook: www.facebook.com/hocohealth

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

RECEIPT DATE: 11/15/16**ONSITE SEWAGE DISPOSAL SYSTEM**P 559841APPROVAL DATE: 3/1/17 SEC**PERMIT:****CONSTRUCTION**

A

PROPERTY ADDRESS: 12504 Triadelphia RoadSUBDIVISION: The Woods at TriadelphiaLOT: 3TAX ID: 03-352269CONTRACTOR: P H Dymond

EMAIL: _____

CONTRACTOR ADDRESS: 14631 Red Lion DrivePHONE: 410-442-5774

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:



MDE



MANUFACTURER:

PROPERTY OWNER: The Wood at Triadelphia

EMAIL: _____

OWNER ADDRESS: 2300 w. Joppa Road, 21204PHONE: 410-616-9631~~BAT~~ UNIT MODEL: 2000 galPUMP SIZE: 1/2 hpPUMP TANK CAPACITY: 1000 gal

OPERATION & MAINTENANCE AGREEMENT

DATE SIGNED: 10/17/16DATE RECORDED: 10/25/16

DISTRIBUTION SYSTEM:



GRAVITY



PRESSURE DOSED

BEDROOMS: 4APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>125</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</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	Plans formerly required BAT - new plans approved 1/11/17 for 2000-gal conventional tank and 1000-gal pump chamber.	

ISSUED BY: Robert FreemonISSUE DATE: 11/15/16EXPIRATION DATE: 11/15/17**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 SEPTIC 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 16004326**NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.****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.**

69' 22' HO-95-1537

NOT TO SCALE

electro line
installed 4'
off tank
corner,
2-3' deep

A 20'

Garage

B

27' to A
63' to B
24' to A
51' to B
23'
2-45° bends

~120' 2" pressure line

93' to A
60' to B
1.5' 4" PVC

1.5' 13'

126' to A
120' to B
T2=63' 13'

141' to A
126' to B
T1=63'

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	3'	8'
NUMBER OF TRENCHES	2	
TOTAL LENGTH	126'	
ABSORPTION AREA	378' + SIDEWALL	
DISTRIBUTION BOX LEVEL	YES	
DISTRIBUTION BOX BAFFLE	YES	
DISTRIBUTION BOX PORT	YES	

SEPTIC TANK DATA

SEPTIC TANK I LEVEL	YES
MANUFACTURER	BABILON
CAPACITY	2000 GAL
SEAM LOC	TOP
TANK LID DEPTH	2-2.5'
BAFFLES	YES
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	YES
DATE ON LID	12-3-16

PUMP/SEPTIC TANK LEVEL

PUMP/SEPTIC TANK LEVEL	YES
MANUFACTURER	BABILON
CAPACITY	1000 GAL
SEAM LOC	TOP
TANK LID DEPTH	1-1.5'
BAFFLES	NO
BAFFLE FILTER	NO
MANHOLE LOC	REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	12-9-16

Pump: WE0511 H (1/2 hp)

PRE-CONSTRUCTION: 12/6/16 On site for layout. No SDA, tank, or trench stakes. Must stake before layout. (SC) 1/12/17 Met Paul Dymond on site for layout. Tank stakes present. No SDA stakes; trench ends/starts are staked. No transit - must check elevations before trench install. OK to set tanks. (SC) 1/18/17 Shot contour - starts + ends of trenches close in elevation. OK to dig trenches. (SC)

INSTALLATION: 1/18/17 Pump tank set. Dymond digging hole for septic tank. (SC) 1/18/17 Septic tank set. (SC) 1/19/17 Dymond digging T2. 3' wide, 8' bottom at end. 6" deeper @ start. Told contractors to use a laser transit while digging + they set one up while I was on site. House connection made. (SC) 1/19/17 T1 finished + left open. 3' wide, 8' bottom. T2 left open at ends - 3.5' to stone. Dymond using laser to check depth of stone in T1. (SC) 1/31/17 Force main run from pump tank to D-box. SDR 9 250 psi 2" pressure line. Need 4" block under pump and pump + alarm test. (SC) 3/1/17 On site for pump + alarm test. Alarm sounds, pump pumps effluent to D-box. 4" block installed under pump. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 3/1/17

Clerk of the Circuit Court for
Howard County
Land Records/Licensing

The Thomas Dorsey Building
9250 Bendix Road
Columbia, MD 21045
410-313-5850

=====

LR - Agreement Recording Fee		
1x	20.00	20.00

Grantor/Grantee Name: baker
Reference/Control #: 169

LR - Agreement Surcharge

1x	40.00	40.00
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SubTotal:	60.00
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Total:	60.00
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=====

CRD-Credit	60.00
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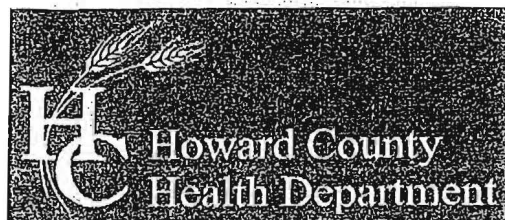
Credit Card Confirmation : 3317c

10/25/2016 13:16

CC13-LS

#7172771 /1247/109

~ Thank you for visiting us today~



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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

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

OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this 17th day of October, among Woods at
Triadelphia - Baker LLC, hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
12504 Triadelphia Road, in the 5th Election District of Howard
County, Maryland, and the deed and subdivision plat of the property is recorded among the Land
Records of Howard County, Maryland, Tax Map # 0022 Block # 6, Parcel # 0582, Deed
Reference # 15436/0038 and Tax Account # 03-352269 ("the Property").

WHEREAS, The Property is suitable for the installation of a conventional on-site sewage
disposal system with an advanced pre-treatment system, utilizing best available technology to
perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07,
effective January 1, 2013. The pre-treatment device being installed is

Advan-tek AY-20

NOW, THEREFORE, the parties hereto agree as follows:

A. Owner hereby grants to the County the right to enter upon the Property at any reasonable time
with prior notice for access to the system to make periodic inspections and the Owner agrees to
provide any information and data in Owner's possession reasonably requested and needed by the
County.

B. Owner acknowledges and agrees that neither the County nor any of its agents or employees,
either officially or individually, underwrites the operation of any system approved by them.

C. The Owner will devote reasonable care and effort to the operation and maintenance of the
system in perpetuity or until a public sewer connection is made so that a system malfunction is
not the result of poor maintenance, faulty operation, or neglect.

D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County
with a private entity to operate and maintain on a regularly scheduled basis an approved
advanced pre-treatment system. The owner shall supply a copy of the contract to the County
when it is renewed or altered.

E. This agreement shall run with the land and upon Owner's taking title to the Property shall bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as long as the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Property that the system shall require maintenance or other attention. Upon taking title to the Property, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

G. This agreement may be voided at any time at the discretion of the County.

H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.

Michael J. Davis 10/20/16
Howard County Health Department

Doug J. Baker 10/17/16
Owner #1 Signature Date

George Louis Baker, III
Owner #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

Buyer #1 Signature Date

Buyer #1 Print Name

Buyer #2 Signature Date

Buyer #2 Print Name

11-13-13

Justin Brendel from Level Land Inc. called to follow-up on a conversation the last time he was in our office regarding the policy for grandfathered septic permits. He wanted to install systems for 3 lots before the expiration date on the septic permits but the houses were not ready to be built as of yet. These lots include Triadelphia Woods Lots 1 & 2 and a lot for Harbin Acres on Rt. 99. I told Justin I would confirm our policy and let him know if he could install the systems prior to the wall check being submitted.

11-19-13

Received voicemail from Justin regarding previous discussion; wants to know if he can pick up septic permits. A second voicemail was also left on 11-18 while I was off.

11-21-13

After discussing with Mike Davis I called Justin to confirm our policy on the grandfathered permits. I explained the system could be installed prior to the building permit/wall check as long as they were installed prior to the date on the original permit.

11-22-13

I called Justin to find out the number of bedrooms for Lots 1 & 2 at Triadelphia Woods. The number of bedrooms were needed to write accurate septic specs. Justin said he did not know this information offhand but that he would get in touch with the builder to find out and get back to me. This was the last communication I received.

Justin Brendel

DATE	RESULTS OF REVIEW FOR FILE

FILE NOTES

FSH ASSOCIATES — TRANSMITTAL OF MATERIALS

TO:	Howard county health Department Bureau of Environmental health Well and Septic program 8930 Stanford Blvd Columbia, MD 21045		DATE:		1/5/2017	
			FSH JOB #:		3383	
			JOB NAME:		The woods at Triadelphia lot 3	
			REGARDING:		Septic system design The woods at Triadelphia lot 3 12504 Triadelphia road	
ATTENTION:		Mr. Geoff Williams		FROM:		Zacharia Y. Fisch P.E.
<input type="checkbox"/>	FOR YOUR INFORMATION AND/OR USE			<input type="checkbox"/>	FOR YOUR PICK-UP FROM FSH	
<input type="checkbox"/>	AS PER YOUR REQUEST			<input type="checkbox"/>	HAND DELIVERED TO YOU	
<input type="checkbox"/>	FOR YOUR REVIEW AND/OR COMMENT			<input type="checkbox"/>	FAXED TO YOU	
<input checked="" type="checkbox"/>	FOR YOUR APPROVAL AND/OR SIGNATURE			<input type="checkbox"/>	EMAILED TO YOU	
<input type="checkbox"/>	WHEN DONE, PLEASE RETURN THIS TO FSH			<input type="checkbox"/>	MAILED TO YOU	
<input type="checkbox"/>				<input type="checkbox"/>	SENT TO YOU OVERNIGHT / NEXT-DAY	
IMPORTANT REMARKS:		Revised plans reflecting revised septic system design removing the BAT system from the design				
DEPT. / AGENCY	MEDIA / OBJECT	SETS	SHEETS (ITEMS)	DATE	ITEM DESCRIPTION	
	Prints	2			2 prints septic system design.	
<i>"I attest to receiving all the materials listed above. I am the intended recipient, or I will forward these materials to the intended recipient(s)."</i>			RECEIVING PERSON'S ACKNOWLEDGEMENT			
			Signature Confirming Statement to Left		Date Received	Company / Agency
			<input checked="" type="checkbox"/>			

Oswald, Hank

From: Zach Fisch <zfish@FSHERI.COM>
Sent: Wednesday, March 02, 2016 12:09 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Hank

I truly respect the regulation and I also see your point.

For the level spreader to function properly, it has to be placed on contour and on stable existing ground. In this case, the level spreader directs the flow away from lot 2 well box.

As you can see grading is already as tight as can be for a rear yard of this lot.

This specific kind of level spreader is really nothing more than a landscape feature to assure un-concentrated flow entering the environmental buffer. As I stated before, it is no different than a sidewalk would be. It does not retain water and for all intend and purpose would have zero impact on the wells.

Having to further tighten the grades in the back yard of this house will have a long lasting negative effect on the home owner while leaving the level spreader at its proposed location will not have any negative impact on the wells.

I hope we can keep it as is.

Thank you.

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

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From: Oswald, Hank [mailto:hoswald@howardcountymd.gov]
Sent: Tuesday, March 01, 2016 1:45 PM
To: Zach Fisch <zfish@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

These are non-infiltrative SWM devices with a 50' setback. We are willing to be less than 50' because they were approved originally at a lesser distance, but we want to get them in a spot that maximizes their distance to all the wells involved.

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Friday, February 26, 2016 9:31 AM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Hank

Is it really that critical?

The concrete level spreaders are impervious and are no different than a concrete sidewalk or pad. We tweaked the location to work better with the lot grading .in principal the locations should be considered just about the same . As you can tell, at perc certification plan and final plan stage the lot grading was based on a generic house box . Now that we have a real house plan and associated grading , there are always minor tweaks. I would say that the spirit and intent of the general location for the level spreaders has been kept. Wouldn't you agree?

I hope we can leave it as is.

Thanks

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

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From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Friday, February 26, 2016 9:15 AM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

Zach:

According to the Percolation Certification Plan signed 1/16/2008, the concrete level spreaders are not in the same locations (See Attachment - Spreaders Highlighted In Green). We suggest moving them to new locations highlighted in yellow.

Hank

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Thursday, February 25, 2016 12:01 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

This is a concrete level spreader which was approved by the health department under the percolation certification plan and the final plan review.

Zacharia Y. Fisch P.E , Principal
FSH ASSOCIATES LLC
6339 Howard Lane
Elkridge MD 21075
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From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Thursday, February 25, 2016 11:40 AM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

Hi Zach:

What is the rectangular box on back side of house? Please see attachment.

Tx

Hank

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Wednesday, February 17, 2016 12:08 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Thank you.

We will put on the plan and send it back to you for approval.

Zacharia Y. Fisch P.E , Principal
FSH ASSOCIATES LLC
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From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Wednesday, February 17, 2016 12:05 PM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

Hi Zach:

Based on the information provided, it appears that the real output will be where the 2 lines intersect (approximately 66 gallons/minute). This would still be okay since its only pumping up to a d-box and gravity fed from there.

Hank

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Tuesday, February 16, 2016 3:21 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Hank

Can you please take a look at this proposed pump and tank design. If this looks good we will place on plan and resubmit.

Thank you.

Zacharia Y. Fisch P.E , Principal
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Elkridge MD 21075
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Fax.(410)796-1562
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From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Tuesday, February 09, 2016 4:12 PM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

Typically, we'd like to see the pump runtime right around 2 minutes at 40 – 50 gpm.

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Tuesday, February 09, 2016 3:18 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Hank

Is there a maximum flow that a standard distribution can receive? I want to make sure that not too much effluent reaches the septic distribution box.

Thanks

Zacharia Y. Fisch P.E , Principal
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From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Tuesday, February 09, 2016 2:09 PM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

Zach

I checked with Jeff on this. The pump unit configuration must be presented on the plan as well as in the profile. The pump unit must be capable of handling 24 hour of emergency storage. The pump make and model along with the pump curve etc. should also be included.

Thanks,

Hank

From: Zach Fisch [<mailto:zfisch@FSHERI.COM>]
Sent: Tuesday, February 09, 2016 12:56 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Hank

This BAT system is discharging by gravity into the pump chamber who is not part of the BAT system. Normally in a case like this we didn't need to provide the pump info because it's not part of the BAT.
So unless something changed I hope you can approve as submitted.

Thanks

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

From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Tuesday, February 09, 2016 8:36 AM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: BAT Plan_12504 Triadelphia Road

Hi Zach:

Please forward you the pump curve and head loss calculations for this pump/BAT plan. In addition, what is the run time and gpm for this system?

Thanks

Hank

Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
410.313.2648 (Fax)

PRESERVATION

PARCEL 'A'

226,362 sq± or

5.197 Ac±

Area I
Ac.

PHILADELPHIA

WOODS

LOT-14

Plot # 6286

ed: RR-DEO

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

Concrete Lip
Level
See detail

MIDB

35' BRL

30' BRL

Ex. Septic
Easement
Plot # 6286

Ex. Field Location
beginning Trench
30' BRL
Prop. Septic
Easement
10,000 sf±

Ex. Field
Located
End Trench
490

495

N 587.550
490

94.53'

10' BRL

Check
Dam 12

44' Private Use In-Channel
Access Drainage Stormwater
Management & Utility
Easement for Lots 2, 3, 4 & Parcel
Buildable Preservation Parcel
'A'

Ex. We

475

470 100'R

FF: 477.5
B: 467.5

LOT 4 632

50,827 sq±

Prop. Septic
Easement
10,000 sf

10' BRL

Check
Dam 9

ECM

10' BRL

Gar.

FF: 459.0
B: 449.0

LOT 3 630

49,076 sq±

Prop. Septic
Easement
10,000 sf

305.52

10' BRL

ECM

Gar.

FF: 449.0

Prop. Septic
Easement

chD2

ST-15
To Be
Removed

ST-16

ST-12

Check
Dam 5

Check
Dam 6

Check
Dam 4

Check
Dam 3

Check
Dam 2

Check
Dam 1

Check
Dam 0

Check
Dam -1

Check
Dam -2

Original location

Newly proposed
location

450

445

Oswald, Hank

From: Oswald, Hank
Sent: Thursday, February 25, 2016 11:40 AM
To: 'Zach Fisch'
Subject: RE: BAT Plan_12504 Triadelphia Road
Attachments: Lot 3.pdf

Hi Zach:

What is the rectangular box on back side of house? Please see attachment.

Tx

Hank

From: Zach Fisch [mailto:zfisch@FSHERI.COM]
Sent: Wednesday, February 17, 2016 12:08 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

Thank you.

We will put on the plan and send it back to you for approval.

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

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From: Oswald, Hank [mailto:hoswald@howardcountymd.gov]
Sent: Wednesday, February 17, 2016 12:05 PM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: RE: BAT Plan_12504 Triadelphia Road

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Subject: RE: BAT Plan_12504 Triadelphia Road

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Thanks

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Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
410.313.2648 (Fax)

Oswald, Hank

From: Zach Fisch <zfisch@FSHERI.COM>
Sent: Thursday, February 25, 2016 12:01 PM
To: Oswald, Hank
Subject: RE: BAT Plan_12504 Triadelphia Road

This is a concrete level spreader which was approved by the health department under the percolation certification plan and the final plan review.

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410.313.1786 (Office)
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FSH ASSOCIATES — TRANSMITTAL OF MATERIALS

[illegible]

Pump Selection for a Non-Pressurized System

triadelphia woods

Parameters

Discharge Assembly Size	2.00	inches
Transport Length	115	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	None	
Max Elevation Lift	12	feet
Design Flow Rate	50	gpm
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Transport Velocity	4.8	fps
--------------------	-----	-----

Frictional Head Losses

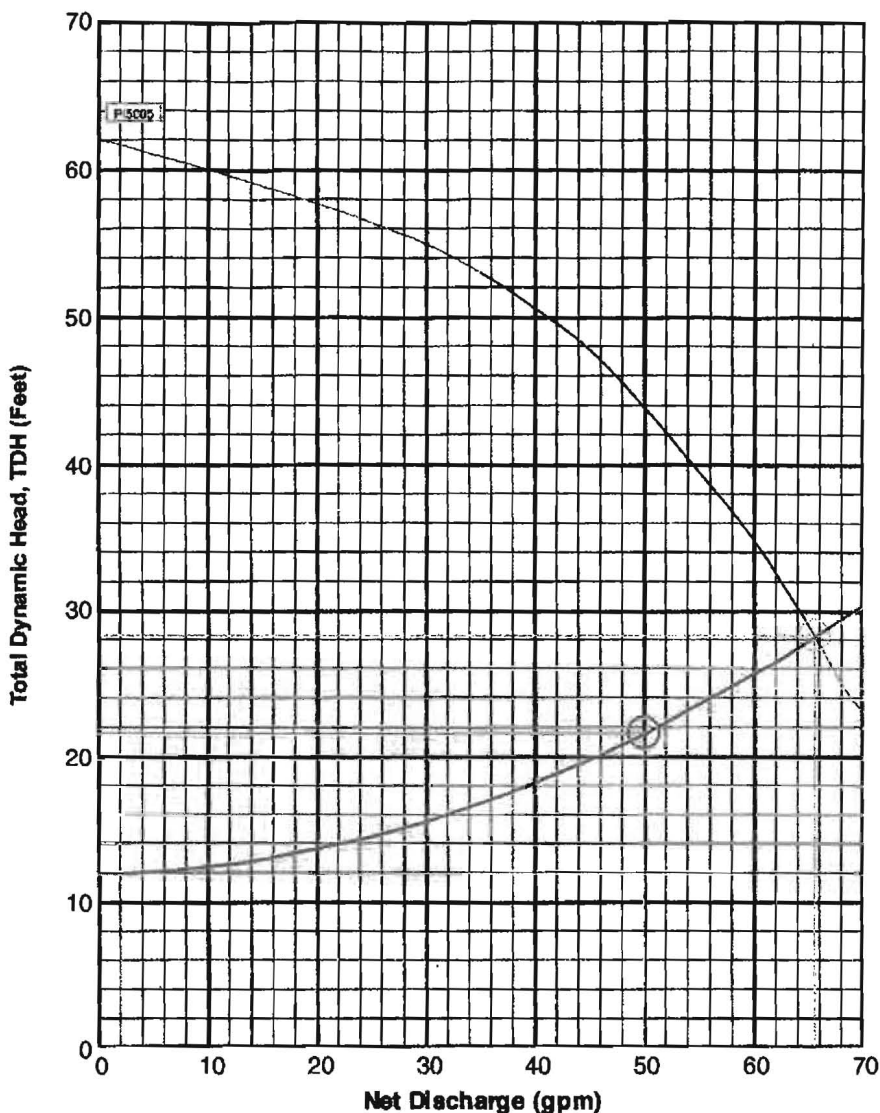
Loss through Discharge	5.0	feet
Loss in Transport	4.6	feet
Loss through Valve	0.0	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	20.0	gals
-----------------------	------	------

Size Pump For

Design Flow Rate	50.0	gpm
Total Dynamic Head	21.6	feet



PumpData

PI5005 High Head Effluent Pump
50 GPM
1/2HP, 115 1Ø

Legend

System Curve:	—
Pump Curve:	- - -
Pump Optimal Range:	—
Curve Intersection:	○
Design Point:	○



Oreco Systems
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World Uses Technology

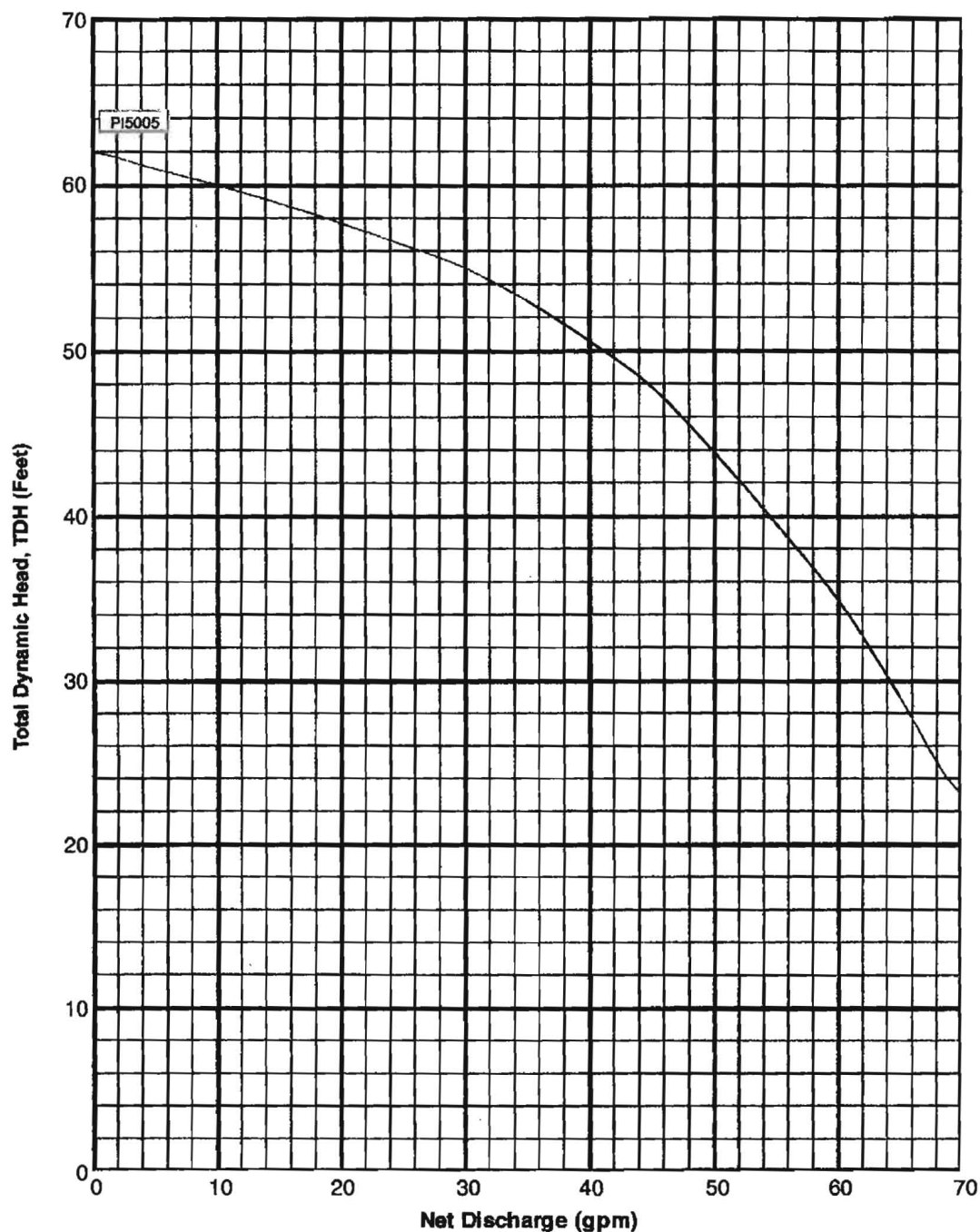
Pump Curve

for PI5005



Oreco Systems®
Incorporated

*Changing the Way the
World Does Wastewater®*



Package Selection for an EasyPak System

triadelphia woods



Oreco Systems[®]
Incorporated

*Changing the Way the
World Does Wastewater[®]*

Package

Model: **BEP50DD-CW**
Non-Pressurized System
Demand Dose
Cold Weather w/Kit

Flows

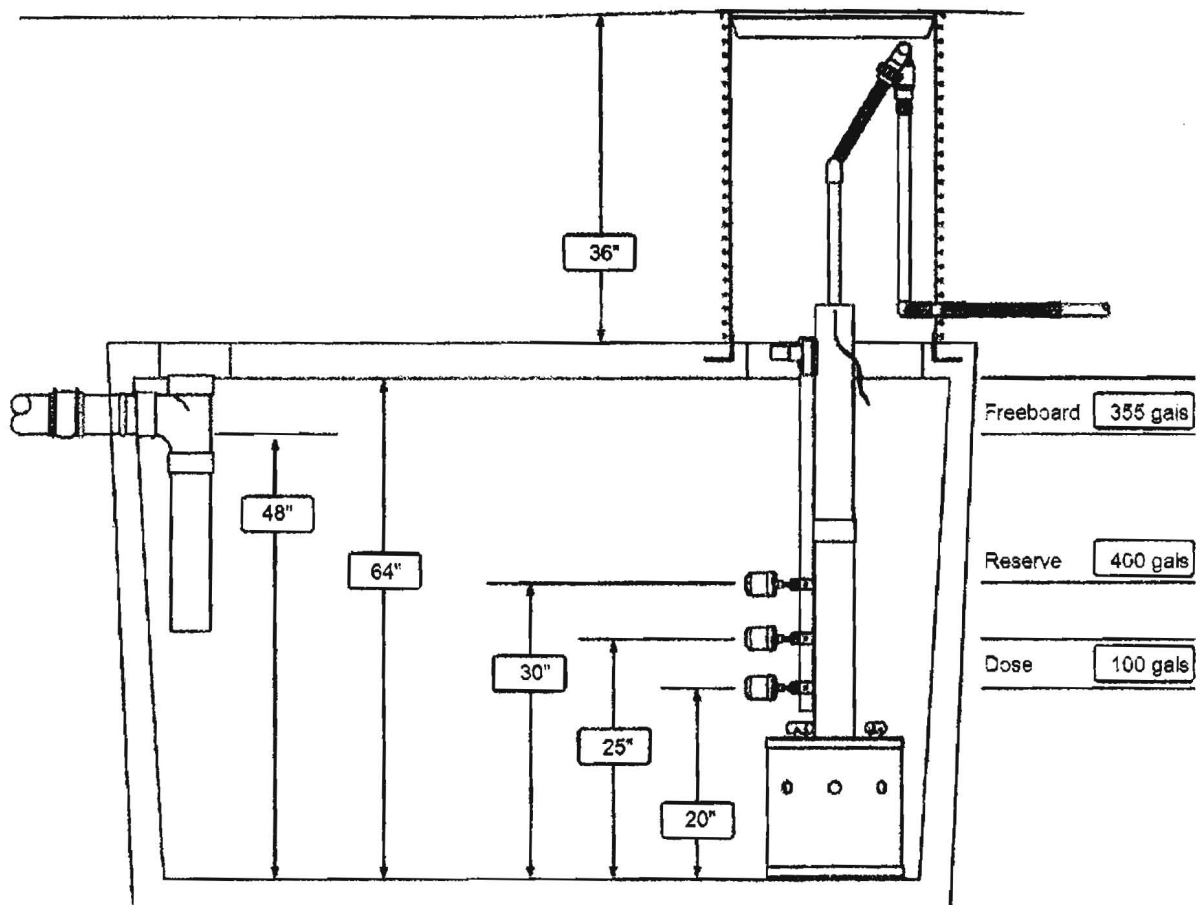
Total Dynamic Head 21.6 feet
Pump Flow Rate 50.0 gpm
Design Flow Rate 600 gpd

Tank Volumes

Freeboard 355.2 gals
Reserve Volume 399.6 gals
Dose Volume 100.0 gals

Floats

High Water (Y): 30 inches
Pump On (B): 25 inches
Pump Off (R): 20 inches



C. T. Jamison Precast 1000 Gallon

The following technologies have successfully completed the field verification and designated as BAT Class I and are eligible to Bay Restoration Funds onsite sewage disposal system grant program:

Model	Contact Information	Certifications	MDE Field Performance Analysis for Total Nitrogen
Advantex®-RT	<p>Manufacturer Orenco Systems®, Inc. www.orenco.com/</p> <p>Local Distributor</p> <p>Eastern Region - Service Energy Paul Hufschmidt - 302-734-7433 phuffy@serviceenergy.com</p> <p>Central, Southern, Western - Atlantic Solutions Bob Johnson- 1-877-214-9283 bjohnson@septicssystems.net</p>	Other 3rd Party	<p>Mean % Reduction of TN: 76%</p> <p>Mean Effluent Concentration: 14 mg/l</p> <p><u>Data & Analysis</u></p>
Advantex®-AX20	<p>Manufacturer Orenco Systems®, Inc. www.orenco.com/</p> <p>Local Distributor</p> <p>Eastern Region - Service Energy Paul Hufschmidt - 302-734-7433 phuffy@serviceenergy.com</p> <p>Central, Southern, Western - Atlantic Solutions Bob Johnson- 1-877-214-9283 bjohnson@septicssystems.net</p>	Other 3rd Party	<p>Mean % Reduction of TN: 71%</p> <p>Mean Effluent Concentration: 17 mg/l</p> <p><u>Data & Analysis</u></p>
SeptiTech®	<p>Manufacturer SeptiTech, Inc. www.septitech.com</p> <p>Local Distributors</p> <p>Eastern Region - Gillespie & Sons Inc. Jim Gillespie - (410) 778-0900 jimg@gillespieandson.com</p> <p>Central Region - Maryland Concrete Septic Tank Inc. Trent Glace- (443) 491-3598 trent@marylandconcreteinc.com</p>	ETV And NSF 245	<p>Mean % Reduction of TN: 67%</p> <p>Mean Effluent Concentration: 20 mg/l</p> <p><u>Data & Analysis</u></p>
Hydro-Action® - AN Series	<p>Manufacturer Hydro-Action/AK Industries Inc. www.hydro-action.com</p> <p>Regional Distributor- Blue Water Environmental, LLC Mark O'Rourke - (240) 444-6401 Email: Mark@BWEnvironmental.com</p> <p>Local Distributors</p> <p>Central-Eastern Region- Sample Excavating Co. Inc. Mike Sample - (443) 807-8639 Email: Sample415@yahoo.com</p> <p>Southern Region -Outback Porta-Jon, Inc. Steve Willson - (410) 257-1600 Email: Willson05@comcast.net</p>	NSF 245	<p>Mean % Reduction of TN: 66%</p> <p>Mean Effluent Concentration: 20.3 mg/l</p>

Hoot® BNR	<p>Manufacturer Hoot Aerobic Systems, Inc. www.hootsystems.com</p> <p>Local Distributor - Mayer Bros. Nancy Mayer- (410) 796-1434 nancy@mayerprecast.com</p>	Other 3rd Party	<p>Mean % Reduction of TN: 64%</p> <p>Mean Effluent Concentration: 21 mg/l</p> <p><u>Data & Analysis</u></p>
RetroFAST	<p>Manufacturer Bio-Microbics, Inc. http://www.biomicrobics.com</p> <p>Local Distributors</p> <p>Eastern Region - Gillespie & Sons, Inc. Jim Gillespie- (410) 778-0900 jimg@gillespieandson.com</p> <p>Central Region - Maryland Concrete Septic Tank, Inc. Trent Glace- (443) 491-3598 trent@marylandconcreteinc.com</p>	ETV	<p>Mean % Reduction of TN: 57%</p> <p>Mean Effluent Concentration: 25 mg/l</p> <p><u>Data & Analysis</u></p> <p>Limited to households of 1 to 4 occupants and 3 bedroom or less</p>
Singulair TNT & Singulair Green (plastic tank)	<p>Manufacturer Norweco, Inc. www.norweco.com</p> <p>Local Distributors</p> <p>Eastern Shore - Towers Concrete Products John Short- (443) 786-0594 btowers62@gmail.com</p> <p>Southern Region - Superior Tank Jeff Earnshaw- (301) 274-3772 superiortank@olg.com</p> <p>Western Region - C.R. Semler Charlie Semler- (301) 824-2780 crsemler@crsemler.com</p> <p>Western Region - Garrett & Allegany Co. Pile's Concrete Products Co. Inc. Brett Zimmerman- (814) 445-6619 brett_zimmerman@hotmail.com</p> <p>Central Region - Back River Pre-Cast LLC Matt Geckle- (410) 833-3394</p>	Other 3rd Party And <u>NSF 245</u>	<p>Mean % Reduction of TN: 55%</p> <p>Mean Effluent Concentration: 27 mg/l</p> <p><u>Data & Analysis</u></p>
AquaKlear	<p>Manufacturer AquaKlear Inc http://www.aquaklear.net/</p> <p>Local Distributor - BayStar Precast Corp. Dave Care - 410-977-3453 careless32@comcast.net</p>	Other 3rd Party And <u>NSF 245</u>	<p>Mean % Reduction of TN: 54%</p> <p>Mean Effluent Concentration: 27.5 mg/l</p>

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, February 09, 2016 8:36 AM
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Hi Zach:

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triadelphia woods

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Transport Pipe Class	40	
Transport Line Size	2.00	inches
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Max Elevation Lift	12	feet
Design Flow Rate	50	gpm
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Transport Velocity	4.8	fps
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Frictional Head Losses

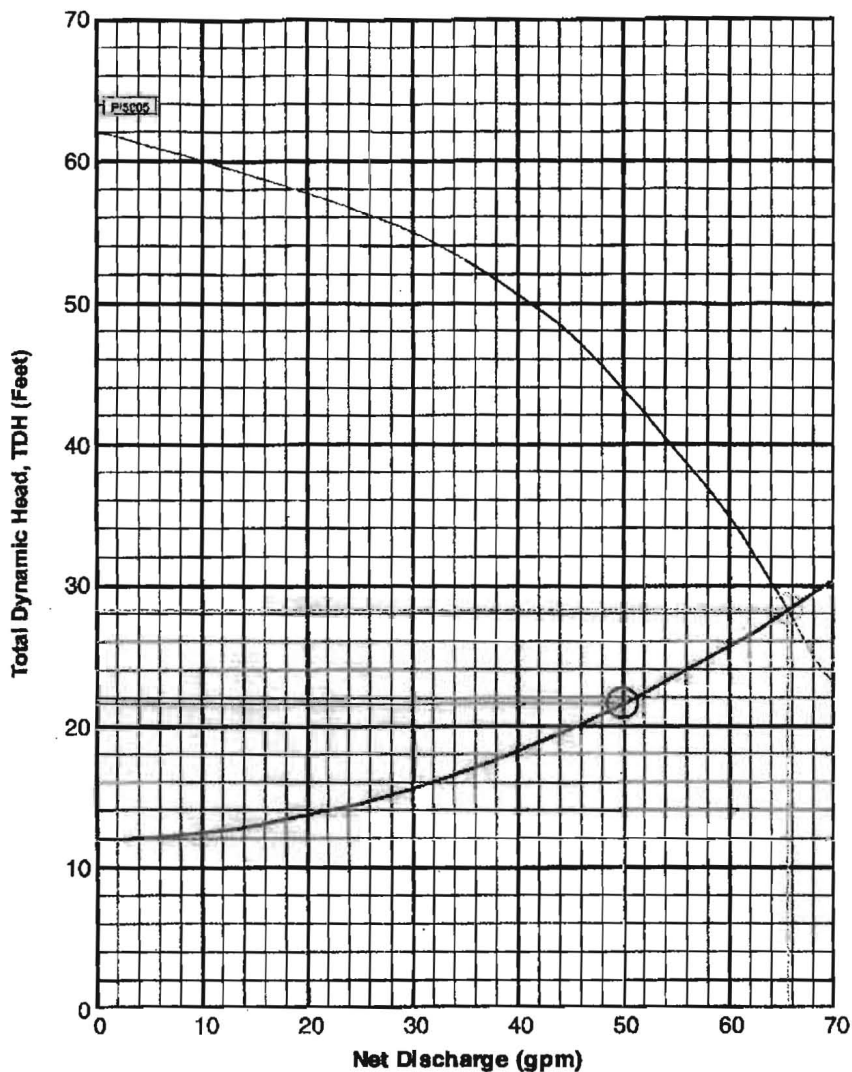
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Pipe Volumes

Vol of Transport Line	20.0	gals
-----------------------	------	------

Size Pump For

Design Flow Rate	50.0	gpm
Total Dynamic Head	21.6	feet



Pump Data

PI5005 High Head Effluent Pump
50 GPM
1/2HP, 115 1Ø

Legend

System Curve:	—
Pump Curve:	—
Pump Optimal Range:	—
Curve Intersection:	○
Design Point:	●

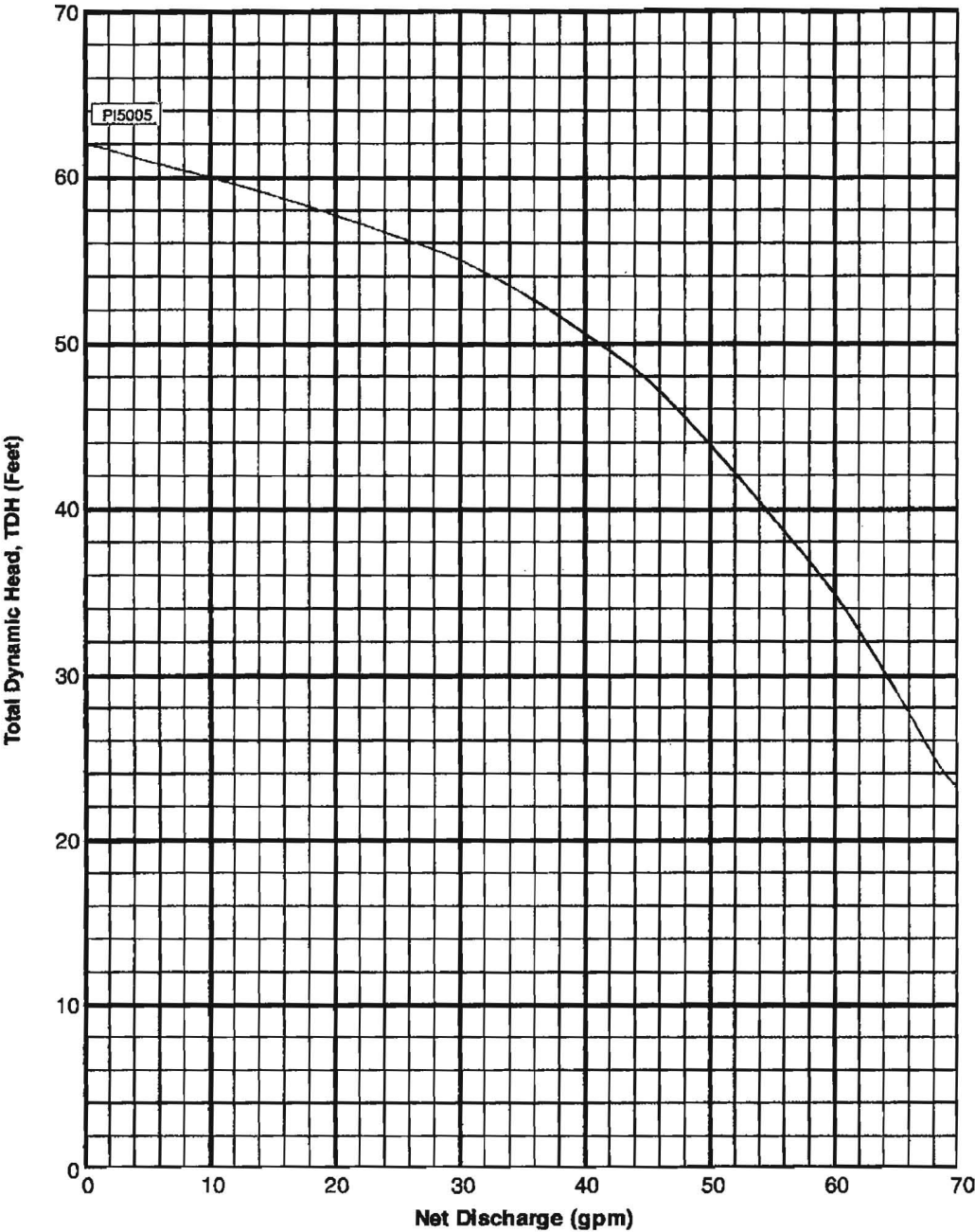


Oranco Systems
Incorporated
Chicago, IL 60641
Westview, Missouri

Pump Curve
for PI5005



Oreco Systems®
Incorporated
*Changing the Way the
World Does Wastewater®*



Package Selection for an EasyPak System

triadelphia woods



Oreco Systems[®]
Incorporated

*Changing the Way the
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Package

Model: BEP50DD-CW
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Demand Dose
Cold Weather w/Kit

Flows

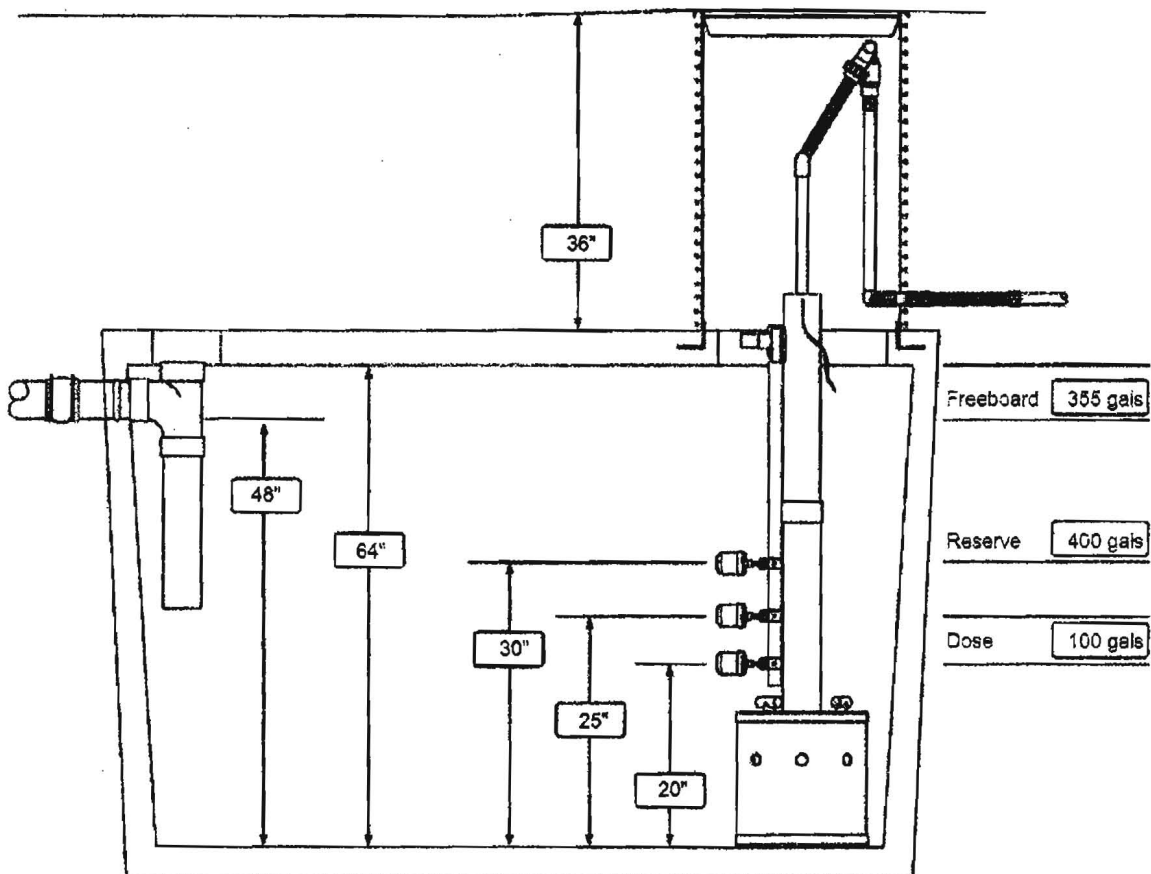
Total Dynamic Head	21.6 feet
Pump Flow Rate	50.0 gpm
Design Flow Rate	600 gpd

Tank Volumes

Freeboard	355.2 gals
Reserve Volume	399.6 gals
Dose Volume	100.0 gals

Floats

High Water (Y):	30 inches
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C. T. Jamison Precast 1000 Gallon

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Phone: 410-567-5200 • Fax: 410-796-1562 • Email: ZFisch@fsheri.com

Williams, Jeffrey

From: Zach Fisch <zfisch@FSHERI.COM>
Sent: Tuesday, January 12, 2016 3:06 PM
To: Williams, Jeffrey
Subject: The woods at Triadelphia lot 3.

12504 Tria

Hi Jeff

WE are designing the BAT system for " The woods at Triadelphia lot 3" could you please send me the trench design parameters for this lot.

Thank you

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

RECEIPT DATE: 12/19/12P 544475-BINSTALLATION
APPROVAL DATE: _____

PERMIT

A

**ON-SITE SEWAGE DISPOSAL SYSTEM
HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH**

PROPERTY OWNER: Greenfield Homes Inc.OWNER'S
ADDRESS: 6656 Luster Drive, Highland MD 20777 PHONE: 443-535-0418ADDRESS: 12504 Triadelphia Road TAX ACC'T #: 03-352269SUBDIVISION: The Woods at Triadelphia LOT: 3SEPTIC TANK CAPACITY (GALLONS): TBDPUMP CHAMBER CAPACITY (GALLONS): TBDNUMBER OF BEDROOMS: TBD APPLICATION RATE: TBDSQUARE FOOTAGE OF HOUSE: TBDLINEAR FEET OF TRENCH REQUIRED: TBD

TRENCHES:	TO BE DETERMINED ON APPROVED SUPPLEMENTAL PLAN
LOCATION:	TO BE DETERMINED ON APPROVED SUPPLEMENTAL PLAN
NOTES:	A SUPPLEMENTAL PLAN PROVIDING SYSTEM DETAILS IS REQUIRED PRIOR TO HEALTH APPROVAL OF BUILDING PERMIT, PLOT PLAN, AND WALL CHECK. AN APPROVED WALL CHECK IS REQUIRED PRIOR TO PRE-CONSTRUCTION INSPECTION. THE OSDS PERMITTED HEREIN IS NOT SUBJECT TO REVISIONS TO COMAR 26.04.02 EFFECTIVE 1/1/2013 ON THE CONDITION THAT FINAL HEALTH APPROVAL OF THE INSTALLATION IS GRANTED PRIOR TO PERMIT EXPIRATION.

ISSUED BY: JEFF WILLIAMS ISSUE DATE: 12/19/12 EXPIRATION DATE: 12/19/13

NOTE: CONTRACTOR RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE 100 FEET 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

**NEITHER THE HOWARD COUNTY COUNCIL OR 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 FOR INSPECTION OF SEPTIC SYSTEM.**

Collins, Sarah

From: Zach Fisch <zfisch@FSHERI.COM>
Sent: Thursday, February 02, 2017 11:32 AM
To: Collins, Sarah
Subject: RE: 12504 Triadelphia Road septic install

Sarah

Seems that adding a check valve will increase the head losses by about 3 feet. It seems to still keep the system functioning in range.

As far as I know HDPE and PVC pipes are compatible

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From: Collins, Sarah [<mailto:SCollins@howardcountymd.gov>]
Sent: Thursday, February 02, 2017 10:23 AM
To: Zach Fisch <zfisch@FSHERI.COM>
Subject: 12504 Triadelphia Road septic install

Hi Zach,

We're doing the septic install with Paul Dymond at 12504 Triadelphia Road. Paul would like to install a check valve in the line coming out of the pump tank. Would you be able to confirm that the pump will be adequate with the increased friction loss of a check valve?

The 2" pressure line he installed is HDPE, 250psi SDR 9 line. I'm used to seeing 2" PVC for force mains with couplings and bends and didn't know if this changed the friction loss at all.

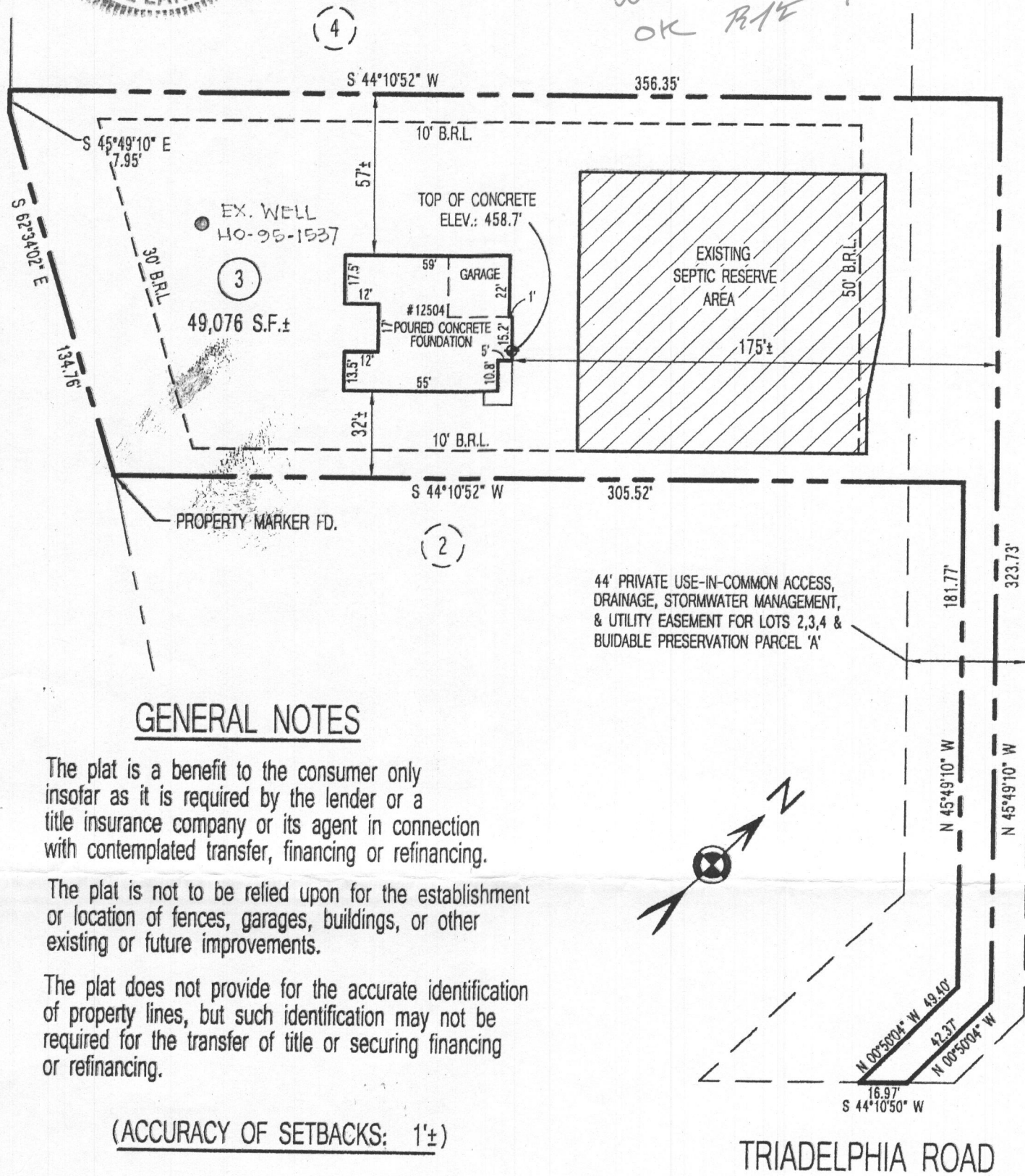
Thanks,
Sarah

Sarah Collins, L.E.H.S.
Environmental Health Specialist
Howard County Health Department



FLOOD INSURANCE NOTE: By graphics plotting only,
this property is in ZONE "X"
of the Flood Insurance Rate Map, Community Panel No.
24027C0065D effective date of 11/06/2013
Exact designations can only be determined by an Elevation
Certificate. Based on the above information, this property
IS NOT in a Special Flood Hazard Area.

Wall Check 11/15/16
OK R/L



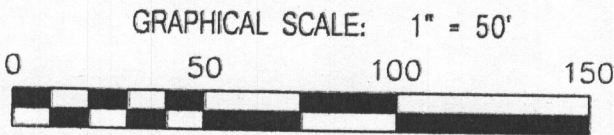
GENERAL NOTES

The plat is a benefit to the consumer only
insofar as it is required by the lender or a
title insurance company or its agent in connection
with contemplated transfer, financing or refinancing.

The plat is not to be relied upon for the establishment
or location of fences, garages, buildings, or other
existing or future improvements.

The plat does not provide for the accurate identification
of property lines, but such identification may not be
required for the transfer of title or securing financing
or refinancing.

(ACCURACY OF SETBACKS: 1'±)



SITERITE
SURVEYING INC.
200 E. JOPPA ROAD
SHELL BUILDING, SUITE 101
TOWSON, MD. 21286
410-828-9060

FOUNDATION CERTIFICATION

#12504 TRIADELPHIA ROAD
LOT-3 MDR PLAT No. 19926
"THE WOODS AT TRIADELPHIA"
TAX MAP: 22 GRID: 5 & 6 PARCEL: 528
DEED REFERENCE: 15436/388
3RD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

Scale: 1" = 50'	Date: 07/13/2016	JOB #10459
Drawn: M.V.M.	Checked: B.L.M.	SURVEY'D: DTW,JK

