



**Bureau of Environmental Health**

8930 Stanford Boulevard, Columbia, MD 21045

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

TDD 410-313-2323 | Toll Free 1-866-313-6300

[www.hchealth.org](http://www.hchealth.org)

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

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

RECEIPT DATE: 7/21/16

**ONSITE SEWAGE DISPOSAL SYSTEM**

P 558803-B

APPROVAL DATE: 9/9/16

**PERMIT: CONSTRUCTION**

A \_\_\_\_\_

PROPERTY ADDRESS: 2783 Florence Road

SUBDIVISION: Layton Knoll

LOT: 4

TAX ID: \_\_\_\_\_

CONTRACTOR: Cumberland Custom Homes

EMAIL: \_\_\_\_\_

CONTRACTOR ADDRESS: 2983 Duvall Road, Woodbine, MD 21797

PHONE: 301-252-1122

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:



MDE



MANUFACTURER:

PROPERTY OWNER: Jan Gorden

EMAIL: \_\_\_\_\_

OWNER ADDRESS: 2732 Jennings Chapel Road

PHONE: 410-984-4851

BAT UNIT MODEL: Singulair TNT-500

PUMP SIZE: \_\_\_\_\_

PUMP TANK CAPACITY: \_\_\_\_\_

OPERATION & MAINTENANCE AGREEMENT

DATE SIGNED: 8/2/16

DATE RECORDED: 8/2/16

DISTRIBUTION SYSTEM:



GRAVITY



PRESSURE DOSED

BEDROOMS: 5

APPLICATION RATE: 1.2

TRENCHES:

LINEAR FEET REQUIRED: 88' 96"

INLET DEPTH: 4

TRENCH WIDTH: 3

MAXIMUM BOTTOM DEPTH: 8

MINIMUM SPACE

BETWEEN TRENCHES: 10

EFFECTIVE AREA BEGINNING DEPTH: 4.5

LOCATION:

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

NOTES:

2 x 48' trenches

ISSUED BY: Hank Oswald

ISSUE DATE: 8/2/16

EXPIRATION DATE: 7/21/17

**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 DOWNGRAIDENT 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

16003432

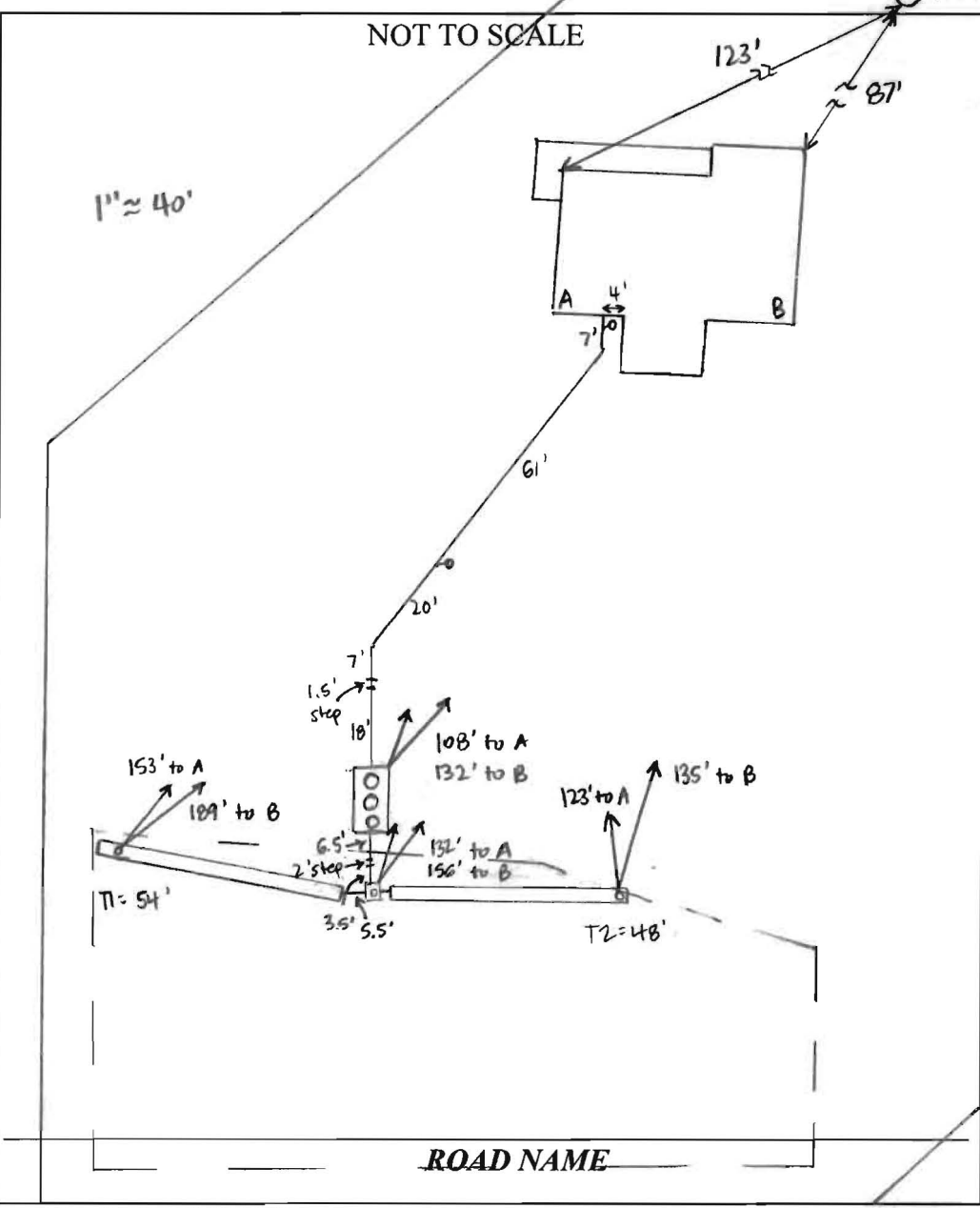
**NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.**

**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.**



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	4'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		102'
ABSORPTION AREA		306' + SIDEWALL
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		YES
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	BACKRIVER / NORWEGIAN
CAPACITY	1300 GAL
SEAM LOC	TOP
TANK LID DEPTH	1-1.5'
BAFFLES	NO
BAFFLE FILTER	NO
MANHOLE LOC	FRONT, MID, REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	6-25-16

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: 8/4/16 Met Curtis Cumberland on site for layout. All SDA stakes present. No tank stakes. Shot contour and laid out 2x48' trenches. Staked a tank location in vicinity of what's shown on BAT plan, 35'+ from future stormwater infiltration area. (SC)

INSTALLATION: 8/9/16 House connection made. Tank installed and connected. D-box set. Trenches dug + left open, contractor just starting to add stone. 8' to bottom. (SC)  
 8/10/16 Trenches complete + left open. 3.5-4' to stone. T1 slightly longer b/c contractor forgot observation pipe. leveled speed levelers in D-box. Perforated pipe only covered with stone to top of pipe under cloth - told contractor that stone can come 2" above top of pipe in future systems. Need BAT startup certification. (SC) 9/8/16 On site for BAT startup. Alarm sounds, aerator runs. (SC) 9/9/16 BAT startup certification received. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 9/9/16

1820 / ~~2387~~ Florence Rd  
2783

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: roach  
Reference/Control #: 224

LR - Agreement Surcharge  
1x 40.00 40.00

LR - Agreement Recording Fee  
1x 20.00 20.00

Grantor/Grantee Name: wilson  
Reference/Control #: 225

LR - Agreement Surcharge  
1x 40.00 40.00

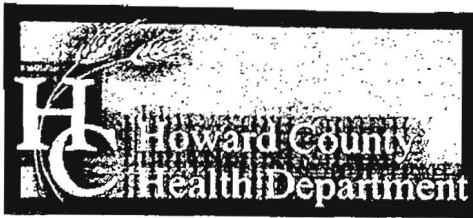
=====  
SubTotal: 120.00  
Total: 120.00

=====  
REV-Check-BOA 120.00  
Number : 124

06/02/2016 12:27  
#6645858 /497/109

CC13-MH

Thank you for visiting us today~



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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Twitter: HowardCoHealthDep

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 2<sup>nd</sup> day of AUGUST among Tim + Jane Roach, 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 2783 Florence Rd, Woodbine, in the \_\_\_ Election District of Howard County, Maryland, and the deed to same is recorded or shall be recorded among the Land Records of Howard County, Maryland in Liber \_\_\_ Folio \_\_\_.

WHEREAS, The Lot 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 Natureco.

NOW, THEREFORE, the parties hereto agree as follows:

- A. Owner hereby grants to the County the right to enter upon the Lot at any reasonable time 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 to develop accurate and thorough test results.
- 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 Lot 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 Lot that the system shall require

maintenance or other attention. Upon taking title to the Lot, 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.

Bert Nifen 8/2/2016  
Howard County Health Department

\_\_\_\_\_  
Owner #1 Signature                      Date

\_\_\_\_\_  
Owner #2 Signature                      Date

\_\_\_\_\_  
Owner #1 Print Name

\_\_\_\_\_  
Owner #2 Print Name

[Signature]                      7/26/16  
Buyer #1 Signature                      Date

[Signature]                      7/26/16  
Buyer #2 Signature                      Date

Timothy J. Roach  
Buyer #1 Print Name

June L. Roach  
Buyer #2 Print Name

# Back River Pre-Cast, LLC

PO BOX 329  
Glyndon, MD 21071  
Phone # 410-833-3394  
Fax # 410-833-4116

## Letter of Certification

This is to certify that the Norweco Singulair TNT 600 GPD Septic Tank installed at 2783 Florence Rd., Woodbine, MD 21787 August 8, 2016 was installed according to the manufacture's specifications.

Installer: Matt Geckle

Property Owner: Jan Gordan

Permit #

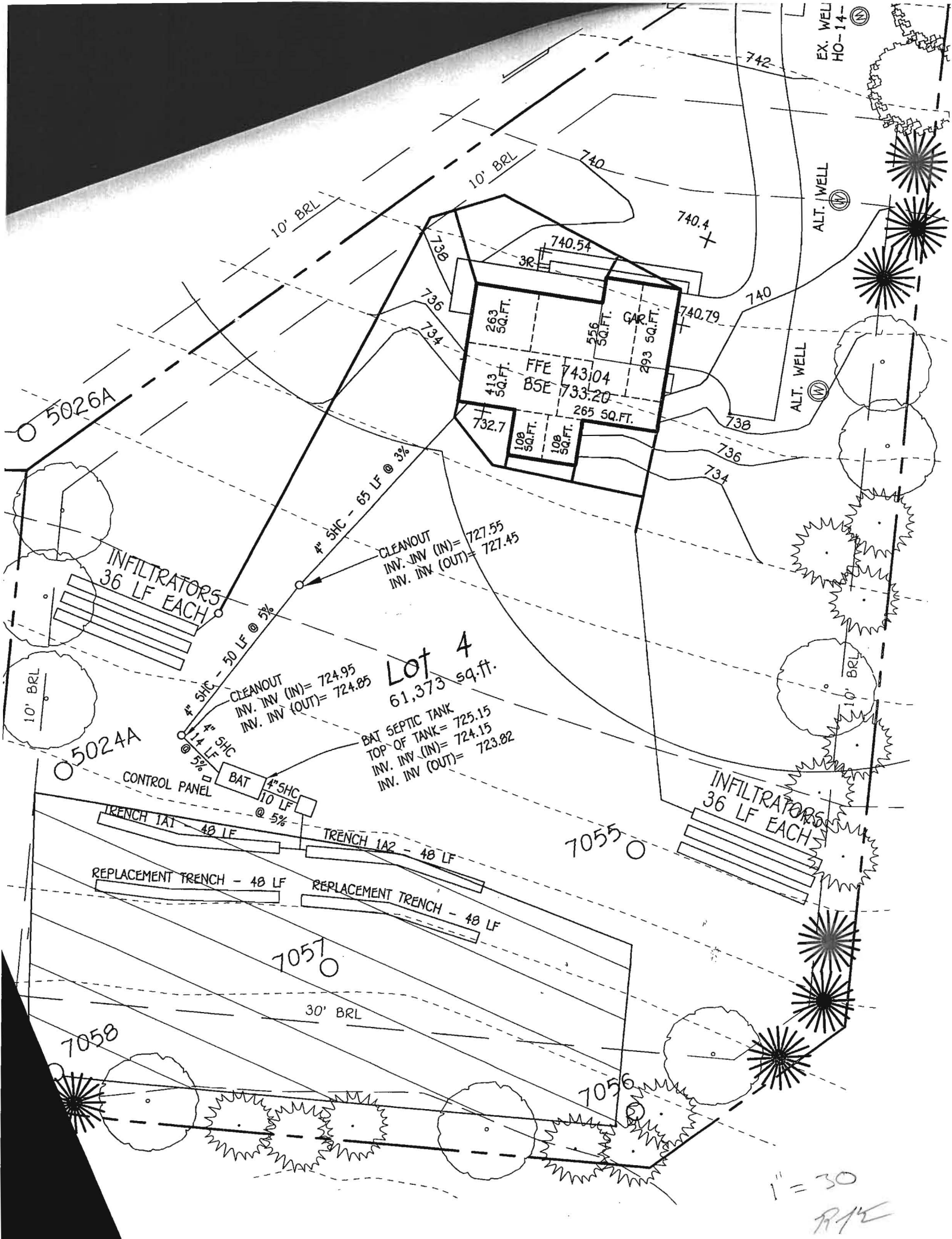
**THIS CERTIFICATION IS FOR INSTALLATION ONLY. THE 5-YEAR OPERATIONS & MAINTENANCE AGREEMENT FROM DATE OF INSTALLATION WILL ONLY GO INTO EFFECT AFTER BACK RIVER PRE-CAST, LLC RECEIVES FINAL AND FULL PAYMENT FOR THE SYSTEM.**



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MATTHEW GECKLE

Vice-President



1" = 30'  
 RAC



Terrell A. Fisher, P.E., L.S.  
 Earl D. Collins, P.E.  
 Charles J. Crovo, Sr. P.E, L.S.

Paul W. Kriebel, P.E.  
 Mark L. Robel, P.L.S.  
 Aldo M. Vitucci, P.E.

# Transmittal

Via:  Fax  Mail  Messenger  Email  To Be Picked Up  
 Fax (Original to Follow via U.S. Mail)

To:	<b>Bureau of Environmental Health</b> 8930 Stanford Blvd Columbia, MD 21046-4544	Attn:	<b>Hank Oswald</b>
		Fax:	<b>410-313-2648</b>
		Phone:	<b>410-313-2640</b>

From:	<b>Stephanie Tuite</b>	cc:	<b>File:</b>
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Re:	<b>Layton Knoll, Lot 4 BAT Plan</b>	W.O.#	<b>60787-6</b>
Date:	<b>July 11, 2016</b>	Pages:	<b>4</b>

We are forwarding	<input checked="" type="checkbox"/> Prints	<input type="checkbox"/> Copy of Letter	<input type="checkbox"/> Specifications	<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Other
	<input type="checkbox"/> Urgent	<input type="checkbox"/> For your use	<input type="checkbox"/> As requested	<input type="checkbox"/> For Review & Comment	

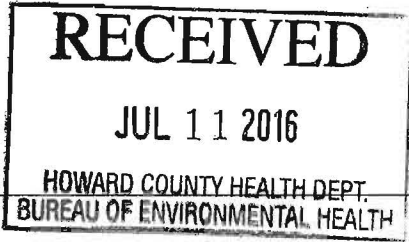
Comments:

**Attached please find three (3) copies of the revised BAT Site Plan associated with Building Permit #B16001080 (2783 Florence Road) for your review and signature approval. This revised plan shows 5 bedrooms instead of the previous design which was for 4 bedrooms.**

**If you have any questions or comments, please do not hesitate to call.**

**Very truly yours,**

**Stephanie Tuite, RLA, PE, LEED AP BD&C**  
**Fisher, Collins & Carter, Inc.**




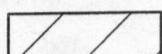
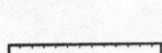
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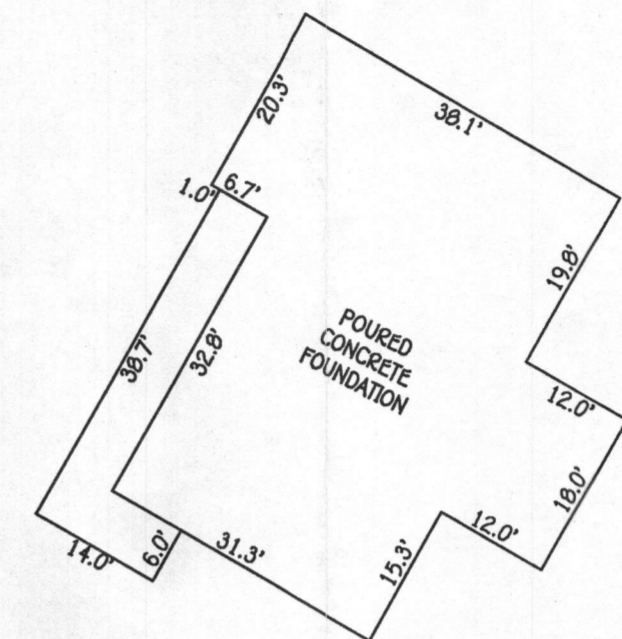
**GENERAL NOTES:**

- 1) THIS LOCATION DRAWING IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM IN SO FAR AS IT IS REQUIRED BY A LENDER OR TITLE INSURANCE COMPANY OR ITS AGENTS IN CONNECTION WITH THE CONTEMPLATED TRANSFER, FINANCING OR REFINANCING OF THE PROPERTY SHOWN HEREON. UNLESS INDICATED AS BEING A BOUNDARY SURVEY, THIS LOCATION DRAWING IS NOT INTENDED FOR USE IN THE ESTABLISHMENT OF PROPERTY LINES AND IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OR LOCATIONS OF FENCES, GARAGES, BUILDINGS OR OTHER EXISTING OR FUTURE IMPROVEMENTS. AS A RESULT, THIS LOCATION DRAWING DOES NOT PROVIDE FOR ACCURATE IDENTIFICATION OF PROPERTY LINES, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING FOR RE-FINANCING.
- 2) SUBJECT PROPERTY IS SHOWN IN ZONE X ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 24027C00300 EFFECTIVE NOV. 6, 2013.
- 3) THE OFFSETS FROM BUILDING LINE TO PROPERTY LINE AS SHOWN ON THE PLAT HEREON ARE TO AN ACCURACY OF PLUS OR MINUS 1'(+/-)
- 4) NO TITLE REPORT FURNISHED. SUBJECT TO ALL EASEMENTS, RIGHTS OF WAY AND CONDITIONS OF RECORD.
- 5) PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 339, EXPIRATION DATE 10/04/2016.
- 6) THE EXISTING WELL(S) SHOWN ON THIS PLAN (IDENTIFIED WITH THE ATTACHED WELL TAG NUMBER HO-14-0020 HAS BEEN FIELD LOCATED BY FISHER, COLLINS AND CARTER, INC. PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.
- 7) BUILDING PERMIT# B-16001080

**LEGEND**

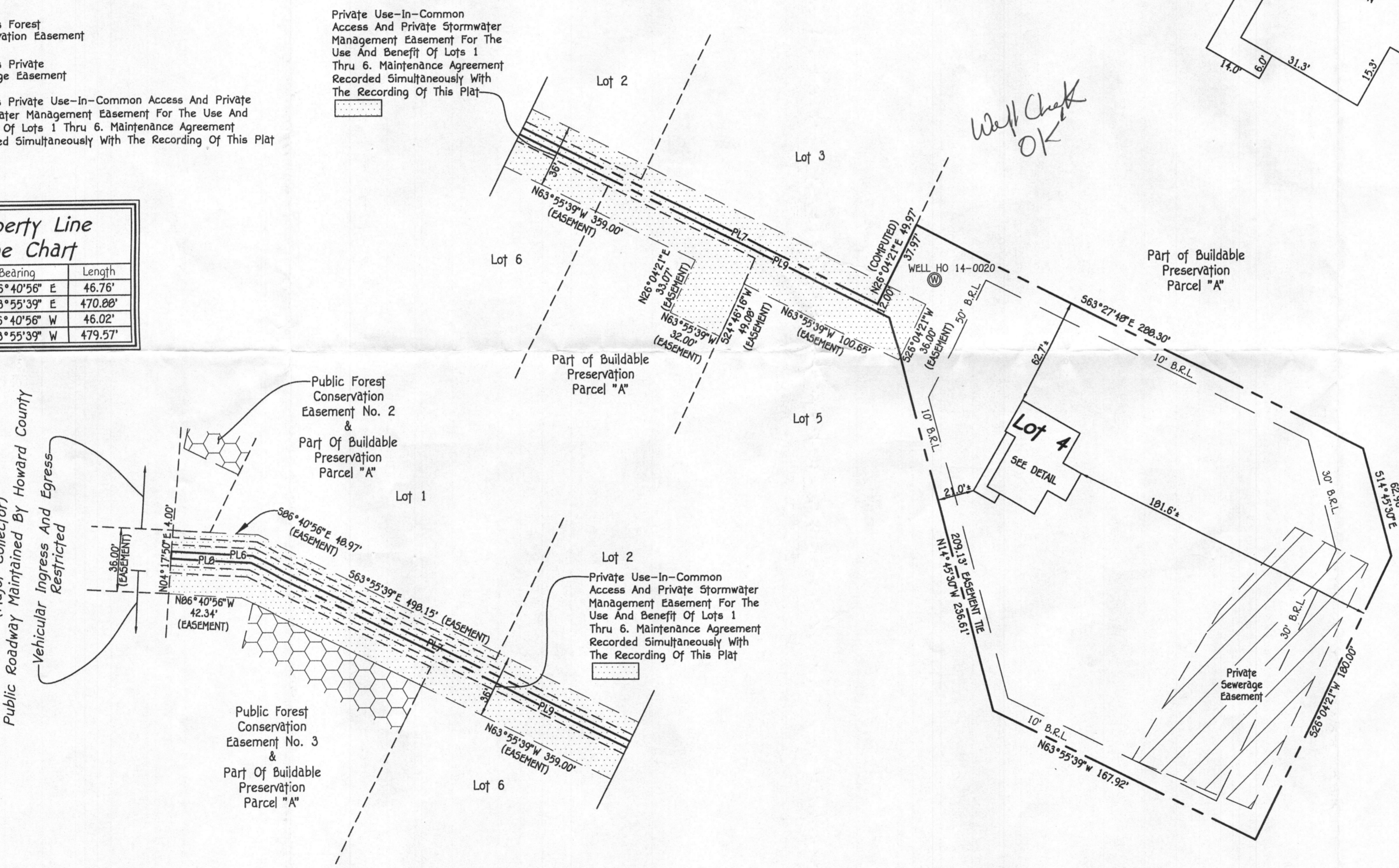
-  Denotes Forest Conservation Easement
-  Denotes Private Sewerage Easement
-  Denotes Private Use-In-Common Access And Private Stormwater Management Easement For The Use And Benefit Of Lots 1 Thru 6. Maintenance Agreement Recorded Simultaneously With The Recording Of This Plat

Line	Bearing	Length
PL6	S 06°40'56" E	46.76'
PL7	S 63°55'39" E	470.00'
PL8	N 06°40'56" W	46.02'
PL9	N 63°55'39" W	479.57'



DETAIL:  
1"=20'

**Florence Road**  
(Major Collector)  
Public Roadway Maintained By Howard County  
Vehicular Ingress And Egress Restricted

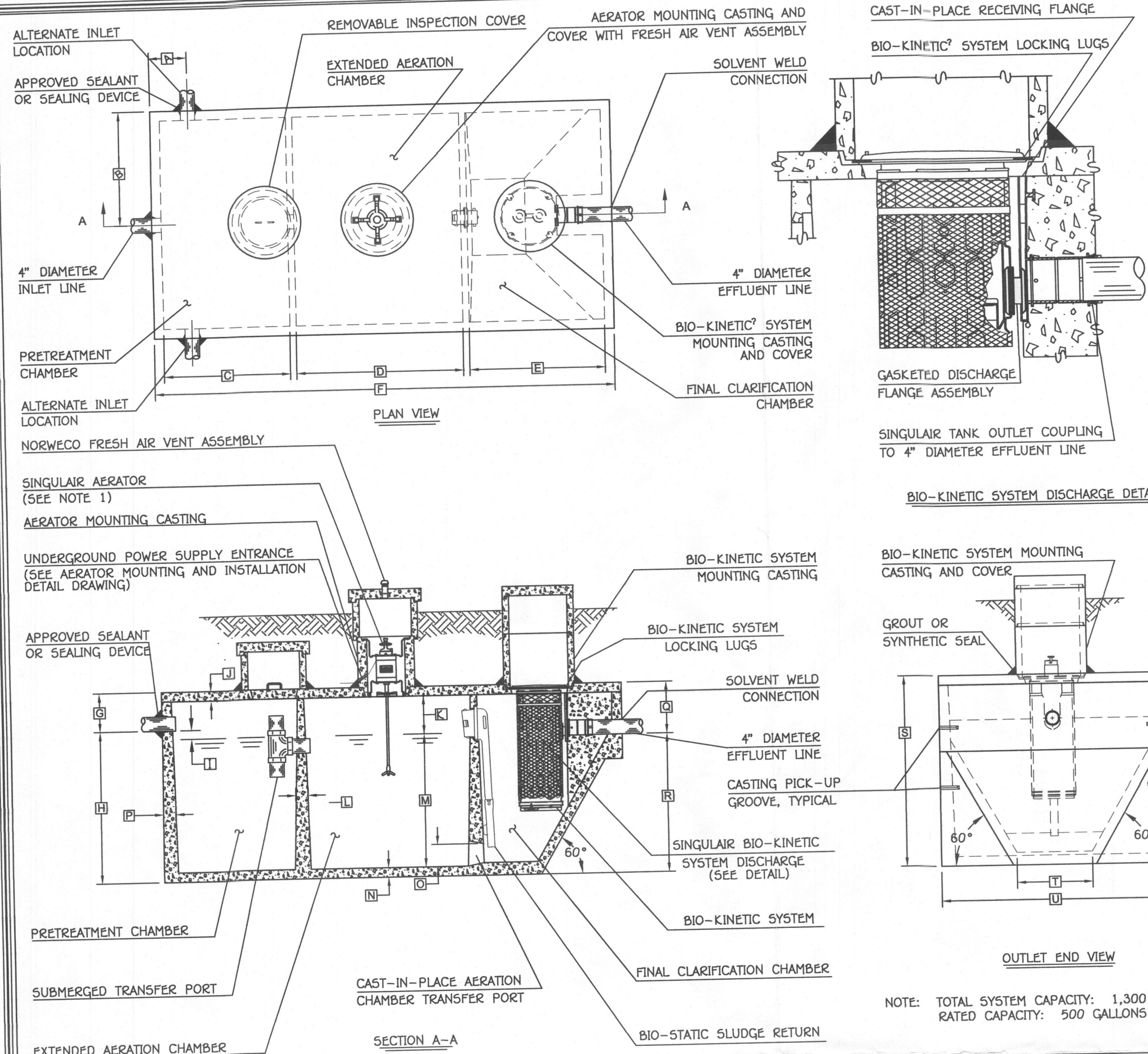


*Mark L. Hill*  
PROPERTY LINE SURVEYOR  
REG. #339  
DATE 5/24/16

**HOUSE LOCATION DRAWING**

FOUNDATION LOCATION: 5/29/16  
FINAL LOCATION:  
BOUNDARY SURVEY:  
  
SCALE: 1"=50'  
DATE: 5/24/16  
DRAWN BY: GAO  
CHECKED BY: MLR  
PROJECT No.: 60707-6001

LOT 4  
LAYTON KNOLL  
LOTS 1 THRU 6, BUILDABLE PRESERVATION  
PARCEL 'A' AND NON-BUILDABLE  
PRESERVATION PARCEL 'B'  
PLATS #22910 THRU 22920  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND



- GENERAL NOTES:**
- SINGULAR AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
  - FALL THROUGH SINGULAR 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.
  - TANK REINFORCED PER ACI STD. 318-05.
  - REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
  - CONTACT THE LOCAL LICENSED SINGULAR DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

**PROJECT ENGINEER'S APPROVAL:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

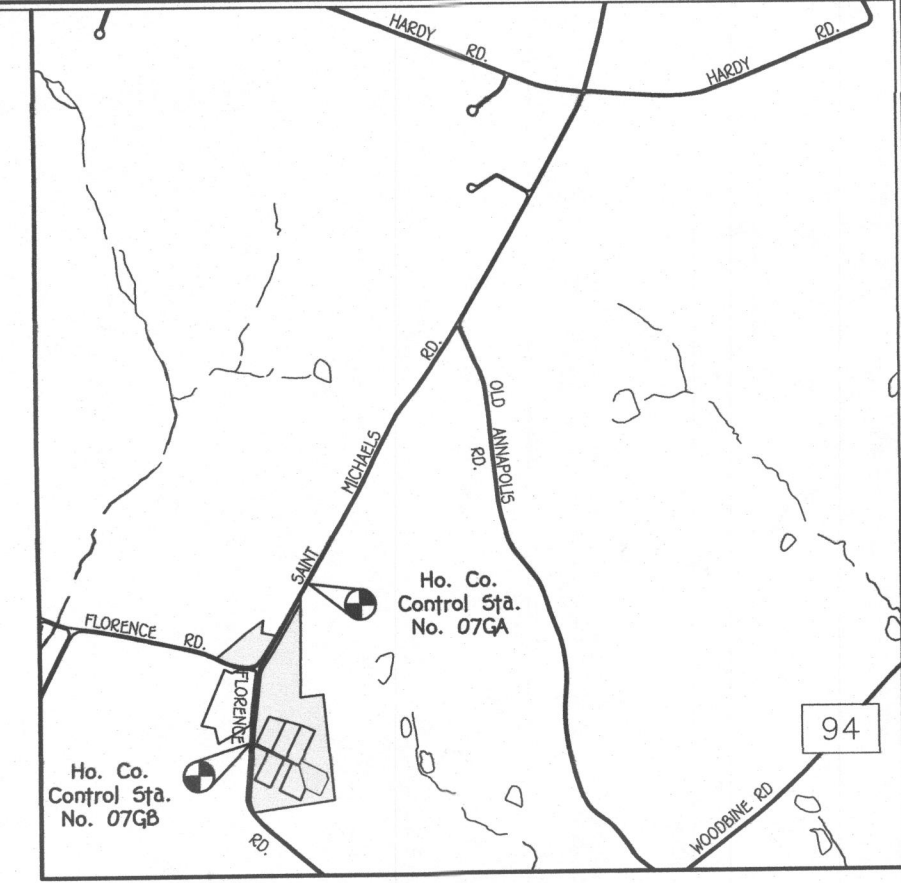
CRITICAL DIMENSIONS			
A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	3'-8"
F	12'-2"	S	5'-0"
G	1'-0"	T	2'-0"
H	4'-0"	U	6'-0"
I	0'-3"	V	0'-0"
J	0'-3"	W	0'-0"
K	1'-0"	X	0'-0"
L	0'-2"	Y	0'-0"
M	3'-6"	Z	0'-0"

**norweco** 3-28-07  
LOW-PROFILE SINGULAR BIO-KINETIC WASTEWATER TREATMENT SYSTEM  
MODEL TMTLP-500 GPD

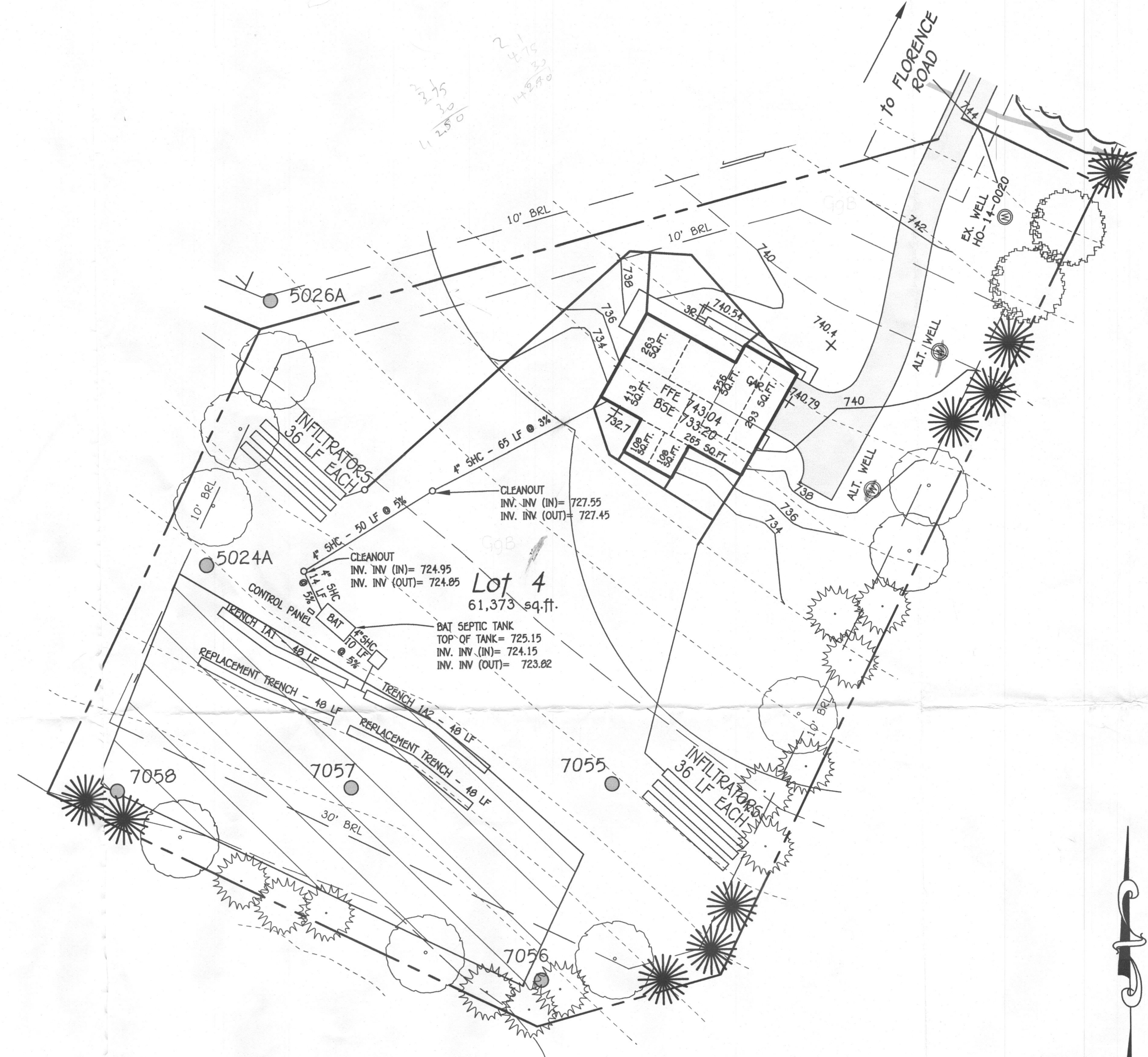
U.S. AND FOREIGN PATENTS PENDING © 2007  
PC-5-7091

**LEGEND**

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
X362.5	SPOT ELEVATION
IP	INLET PROTECTION
SSP-SSP	SUPER SILT FENCE
WALK	PROPOSED WALKOUT
LOD	LIMITS OF DISTURBANCE
(Tree symbol)	EXISTING STREET TREES FROM F-12-072
(Tree symbol)	EXISTING PERIMETER TREES FROM F-12-072



- GENERAL NOTES**
- SUBJECT PROPERTY ZONED: RC-DEO
  - TOTAL AREA OF PROPERTY: 61,373 SQ.FT.
  - CONTRACTOR/BUILDER TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
  - EXISTING TOPOGRAPHY SHOWN IS BASED ON A FIELD RUN SURVEY ALONG FLORENCE ROAD & SAINT MICHAELS ROAD WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED AUGUST, 2014, SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY ON-SITE AND OFF-SITE.
  - NO WETLANDS CURRENTLY EXIST ON THE PROPERTY.

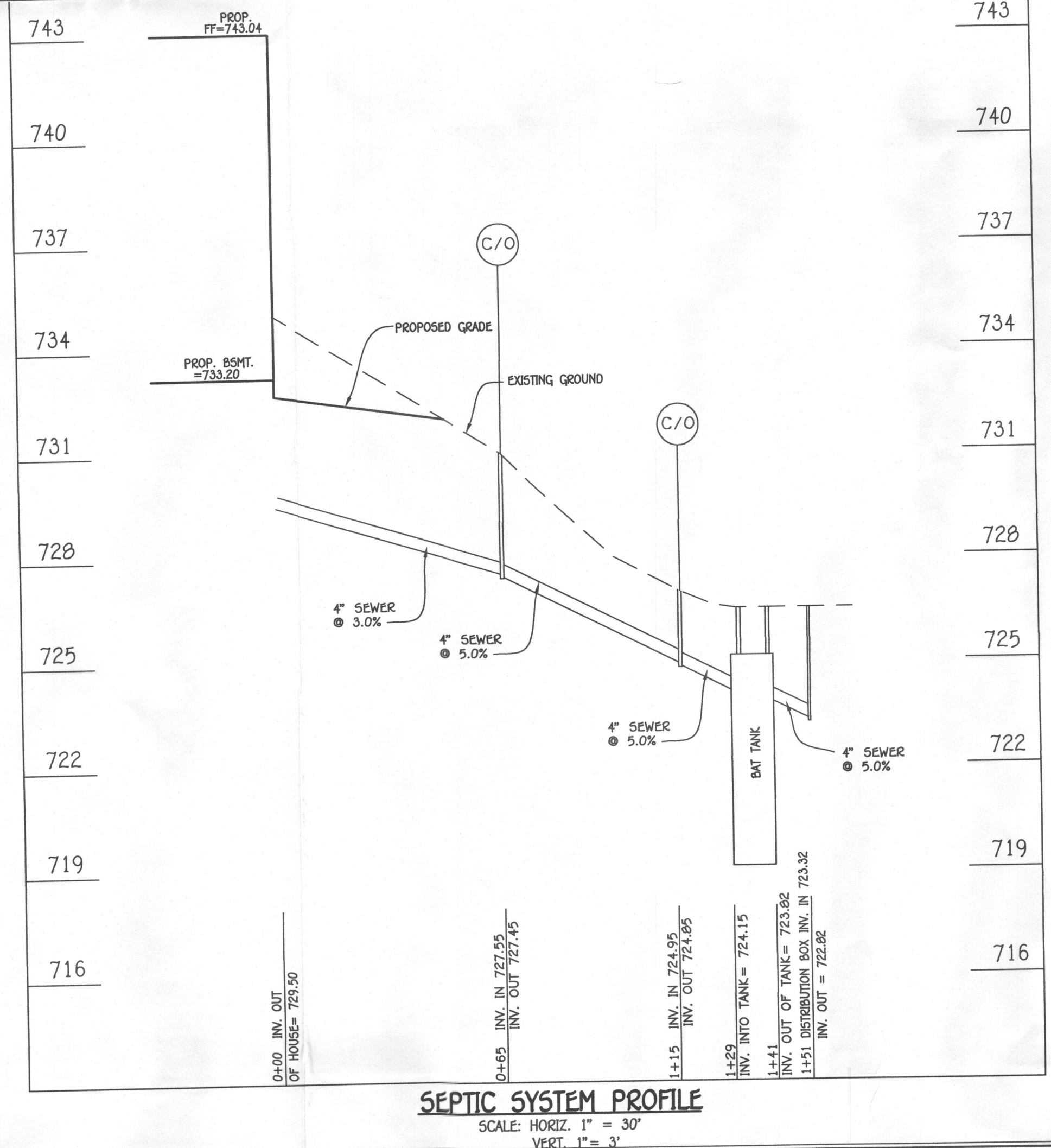


- BAT NOTES**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
  - THE MAXIMUM COVER OVER THE BAT SHALL BE 3 FEET.
  - THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED 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 (HDE) IN A MANNER ACCEPTABLE TO HDE, THE ADDRESS ENVIRONMENT (HDE) IN A MANNER ACCEPTABLE TO HDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
  - ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
  - AN AGREEMENT AND EASEMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBRE, F010
  - THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
  - SURFACE RUNOFF SHALL BE DIRECTED AROUND THE BAT TANK.

**SEPTIC SYSTEM DESIGN**  
5 BEDROOM HOUSE  
LOADING RATE = 750 GPD  
APPLICATION RATE = 1.2

EFFECTIVE SIDEWALL BEGINS AT 4.5 FEET  
TRENCH DEPTH = 8 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 3.5 FEET  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = 0.454  
 $(W+2) / (W+1+2D) = (3+2) / (3+1+(2x3.5))$   
SF OF DRAINFIELD = 750 GPD / 1.2 = 625 SF  
TRENCH LENGTH = 625 SF x 0.454 / 3 = 94.58 FEET (USE 96 FEET)

**SEPTIC SYSTEM ELEVATIONS**  
FFE = 743.04  
BSE = 733.20  
INV. OUT OF HOUSE = 729.5  
EXISTING GROUND AT C/O = 730.8  
INV. INTO C/O = 727.55  
INV. OUT OF C/O = 727.45  
EXISTING GROUND AT C/O = 727.0  
INV. INTO C/O = 724.95  
INV. OUT OF C/O = 724.85  
EX. GROUND AT BAT TANK = 726.5  
TOP OF BAT TANK = 725.15  
COVERS OVER BAT TANK = 1.35 FT  
INVERT INTO BAT TANK = 724.15  
INVERT OUT OF BAT TANK = 723.82  
EX. GRADE AT DIST BOX = 725.5  
INVERT INTO DISTRIBUTION BOX = 723.32  
INVERT OUT OF DISTRIBUTION BOX = 722.82

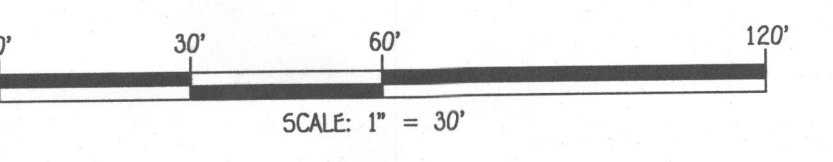


**TRENCH DESIGN**

TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	INVERT INTO TRENCH	DEPTH TO STONE AT	DEPTH OF TRENCH (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH (FROM EX. GROUND)	EFFECTIVE DEPTH (D)	WIDTH OF TRENCHES (W)	TRENCH SPACNG
T1A1	725.5	722.00	721.50	3.5'	4.5'	717.5	4.5'	3.5'	3.0'	10'
T1A2	725.5	722.00	721.50	3.5'	4.5'	717.5	4.5'	3.5'	3.0'	10'
T1B1	724.2	720.70	720.20	3.5'	4.5'	716.2	4.5'	3.5'	3.0'	10'
T1B2	724.1	720.60	720.10	3.5'	4.5'	716.1	4.5'	3.5'	3.0'	10'

**NOTE**  
THE EXISTING WELL SHOWN ON THIS PLAN, TAG NO. HO 14-0020 HAS BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC., PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.

Approved Septic System Plan  
Howard County Health Department  
Tank Oswald 7/13/16  
Signature Date



**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. 38366, EXPIRATION DATE: 01/12/2018.

*Stephen Tate* 7/11/16  
Signature of Professional Engineer DATE

STATE OF MARYLAND  
STEPHEN TATE  
No. 38366  
PROFESSIONAL ENGINEER

**OWNER**  
Jan Estelle Gordon  
2732 Jennings Chapel Road  
Woodbine, Maryland 21797  
Contact: Mr. Chuck Zepp  
Ph: (410)904-4651

**DEVELOPER**  
Cumberland Development Corporation  
16391 A.E. Mullinix Road  
Woodbine, MD 21797  
Contact: Mr. Curtis Cumberland  
Phone: (301)252-1122

**SITE PLAN FOR BAT SYSTEM INSTALLATION LAYTON KNOLL LOT 4**  
2783 FLORENCE ROAD  
ZONED RC-DEO

TAX MAP NO.: 7 GRID NO.: 19 PARCEL NO.: 112  
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: JULY, 2016  
SHEET 1 OF 1