



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: 4-23-15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 555826

INSTALLATION APPROVAL DATE: 7/30/15 **PERMIT CONSTRUCTION** A _____

PROPERTY ADDRESS: 2791 FLORENCE ROAD, WOODBINE MD 21797

SUBDIVISION: LAYTON KNOLL LOT: 6 TAX ID: 04-596847

CONTRACTOR: CUMBERLAND & COMPANY EMAIL: _____

CONTRACTOR ADDRESS: _____ PHONE: _____

PROPERTY OWNER: CUMBERLAND DEVELOPMENT CORPORATION EMAIL: Ccumbe54237@gmail.com

OWNER ADDRESS: 16391 A.E.MULLINIX ROAD, WOODBINE, MD 21797 PHONE: 301-252-1122

BAT UNIT MODEL: NORWECO TNTLP-500 GPD PUMP SIZE: N/A PUMP TANK CAPACITY: N/A

DISTRIBUTION SYSTEM: GRAVITY LOW PRESSURE DOSED NUMBER OF BEDROOMS: 4

TRENCHES:	LINEAR FEET REQUIRED: <u>156 180</u>	INLET DEPTH: <u>3.5 4' (For Fall)</u>
	TRENCH WIDTH: <u>3 OK</u>	MAXIMUM BOTTOM DEPTH: <u>6 OK</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10 9</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4 OK</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:	<u>3x60' trenches = ~75 ton stone</u>	

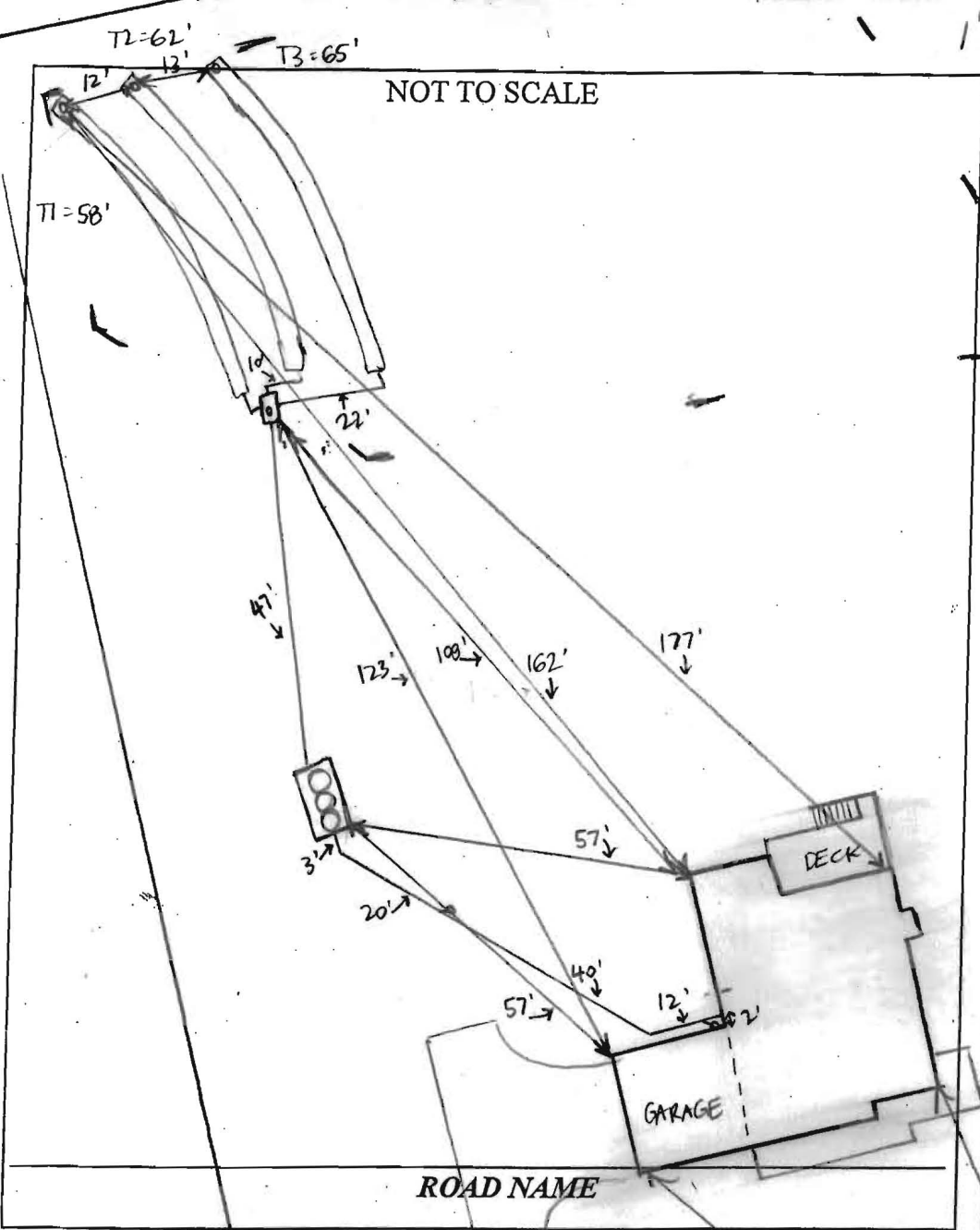
ISSUED BY: Dana Bernard Kmw ISSUE DATE: 4-23-15 EXPIRATION DATE: 4-23-16

- 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 DOWNGRADE 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
- 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.

1"=30'

NOT TO SCALE



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	4'	6'
NUMBER OF TRENCHES		3
TOTAL LENGTH		185'
ABSORPTION AREA		555' + SIDEWALL
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		YES
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	Norweco
CAPACITY	TNTP 400 GAL
SEAM LOC	TOP
TANK LID DEPTH	2-3'
BAFFLES	NO
BAFFLE FILTER	NO
MANHOLE LOC	FRONT, MID, REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	NONE
PUMP/SEPTIC TANK LEVEL	
MANUFACTURER	
CAPACITY	
SEAM LOC	
TANK LID DEPTH	
BAFFLES	
BAFFLE FILTER	
MANHOLE LOC	
6" PORT LOC	
WATERTIGHT TEST	
SLOTTED	
DATE ON LID	

PRE-CONSTRUCTION:

4/24/15 Elevations shot. Need to deepen trench inlet 6". Inlet adjusted to 4', bottom @ 6'. Install 3x60' trunks pointed out in field. tank location staked. Call for msp when working.

INSTALLATION: 4/30/15 Tank set and house connection made. Kelly from Cumberland hit rock while digging tank hole - starts around 3' and very dense by 8'. 1/3 of tank area is rock. Started digging line to D-box and rock starts at 2'. Y-cleanouts used. Told Kelly to stop work and contact HCHD if he hits >50% rock while digging trench. (SC) 5/1/15 First two trenches finished, T1 left open at ends and T2 left open. Some rock in spoil piles - contractor says that it's not 50% in trenches. (SC) 5/4/15 T3 finished + piping connected. D-box leveled. Needs BAT startup certification (SC)

FINAL INSPECTOR [Signature] DATE OF APPROVAL 7/30/15

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

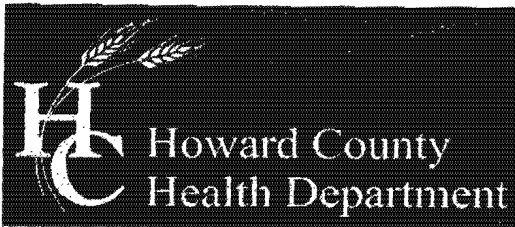
Grantor/Grantee Name: Parks
Reference/Control #: 184

LR - Agreement Surcharge
1x 40.00 40.00

=====
SubTotal: 60.00
Total: 60.00
=====

REV-Check-BOA 60.00
Number : 10306

07/29/2015 14:14 CC13-CH
#4608616 /495/109
Thank you for visiting us today~



Bureau of Environmental Health

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Facebook: www.facebook.com/hocohealth

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 20 day of July, among Adam + Heather Parks, 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 2791 Florence Rd, Woodbine, MD, 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 NORWECO TNTP-500

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.

Richard J. Davis 7/29/15
Howard County Health Department

[Signature] 7/20/15
Owner #1 Signature Date

Adam Parks
Owner #1 Print Name

[Signature] 7/20/15
Owner #2 Signature Date

Heather A. Parks
Owner #2 Print Name

[Signature] 7/20/15
Buyer #1 Signature Date

Adam Parks
Buyer #1 Print Name

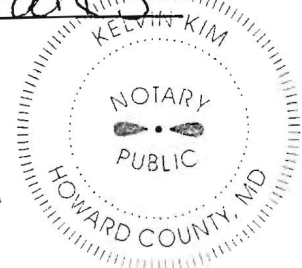
[Signature] 7/20/15
Buyer #2 Signature Date

Heather A. Parks
Buyer #2 Print Name

State of Maryland, Howard County
Subscribed & sworn before me, in my
presence, this 20 day of July,
2015 by Adam K. Parks / Heather A. Parks

JW 8/8/2014

Notary Public: *[Signature]*
My Commission Expires: 02/04/2017



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 Singlair TNT 600 GPD Septic Tank installed at 2791 Florence Rd., Woodbine, MD 21797 was installed on April 29, 2015 according to the manufacture's specifications.

Installer: Kelly Cumberland

Property Owner: Jan Gordan



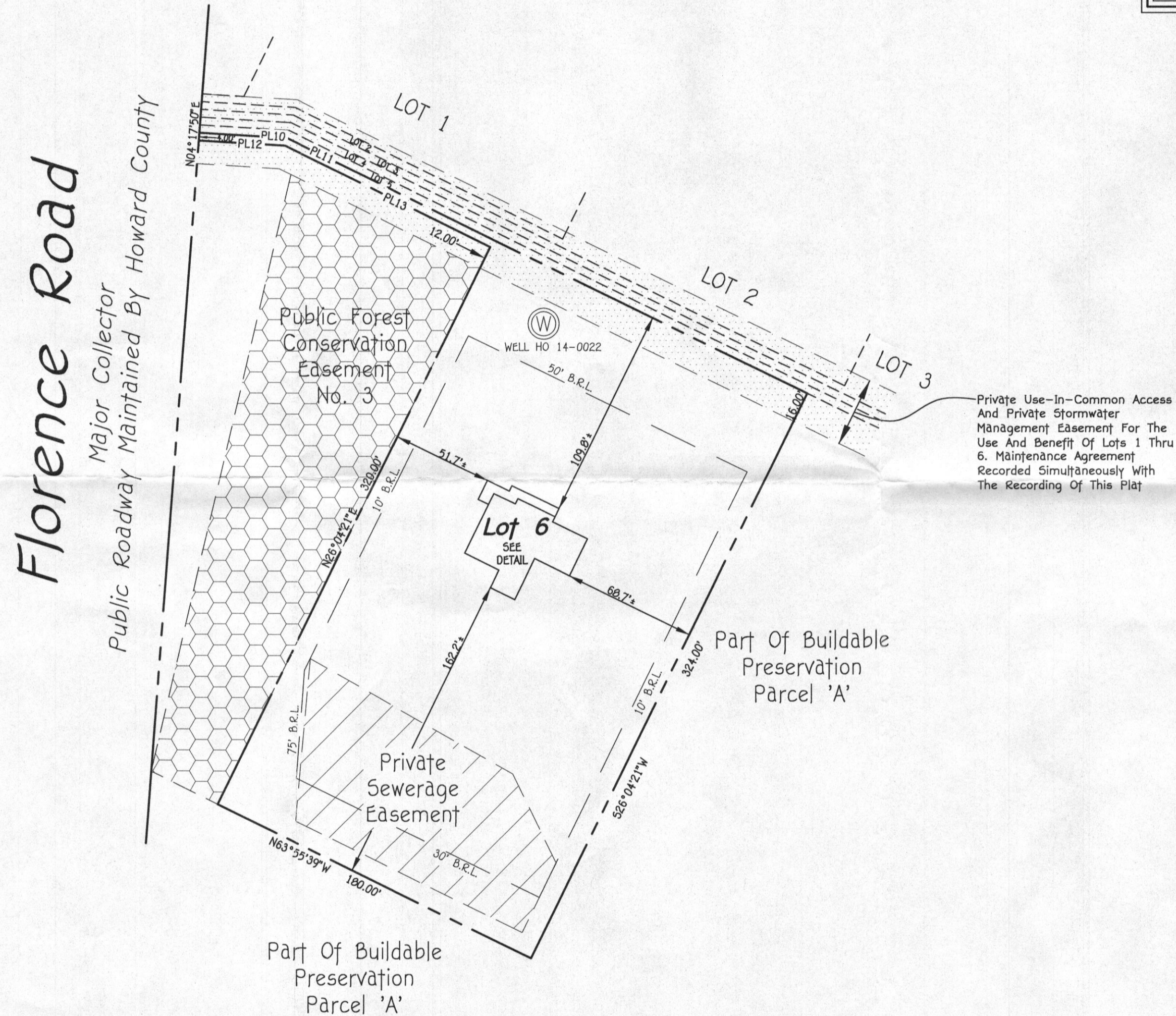
MATTHEW GECKLE

Vice-President

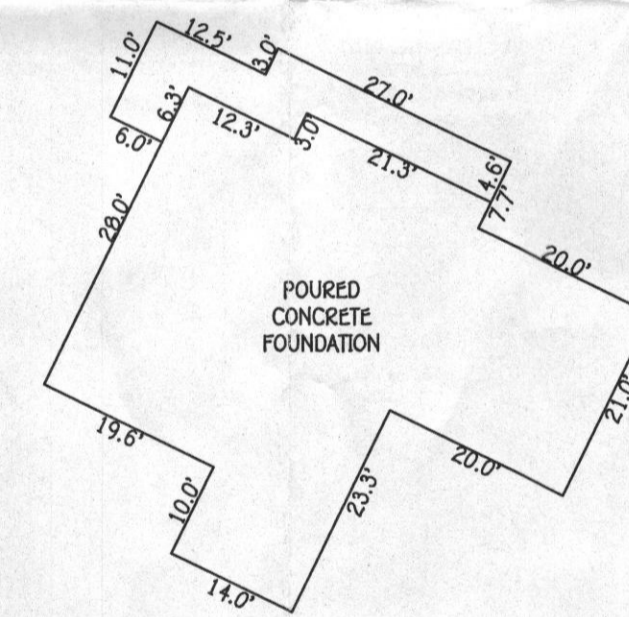
GENERAL NOTES:

- 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 C ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 2400440007-B EFFECTIVE DEC. 4, 1986.
- 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-14-0022 HAS BEEN FIELD LOCATED BY FISHER, COLLINS AND CARTER, INC. PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.
- 7) BUILDING PERMIT# B-14003883

Property Line Line Chart		
Line	Bearing	Length
PL10	S 06°40'56" E	45.29'
PL11	S 63°55'39" E	290.77'
PL12	N 06°40'56" W	44.55'
PL13	N 63°55'39" W	117.96'



DETAIL:
1"=20'



3/10/15.
Informed WTC Builders about ELOPOD moratorium. BAR plan will be revised & submitted for review.
-H.O.

3/10/15-
Well check approved.
-H.O.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855



Mark L. Robel 2/26/15
PROPERTY LINE SURVEYOR DATE
REG. #339

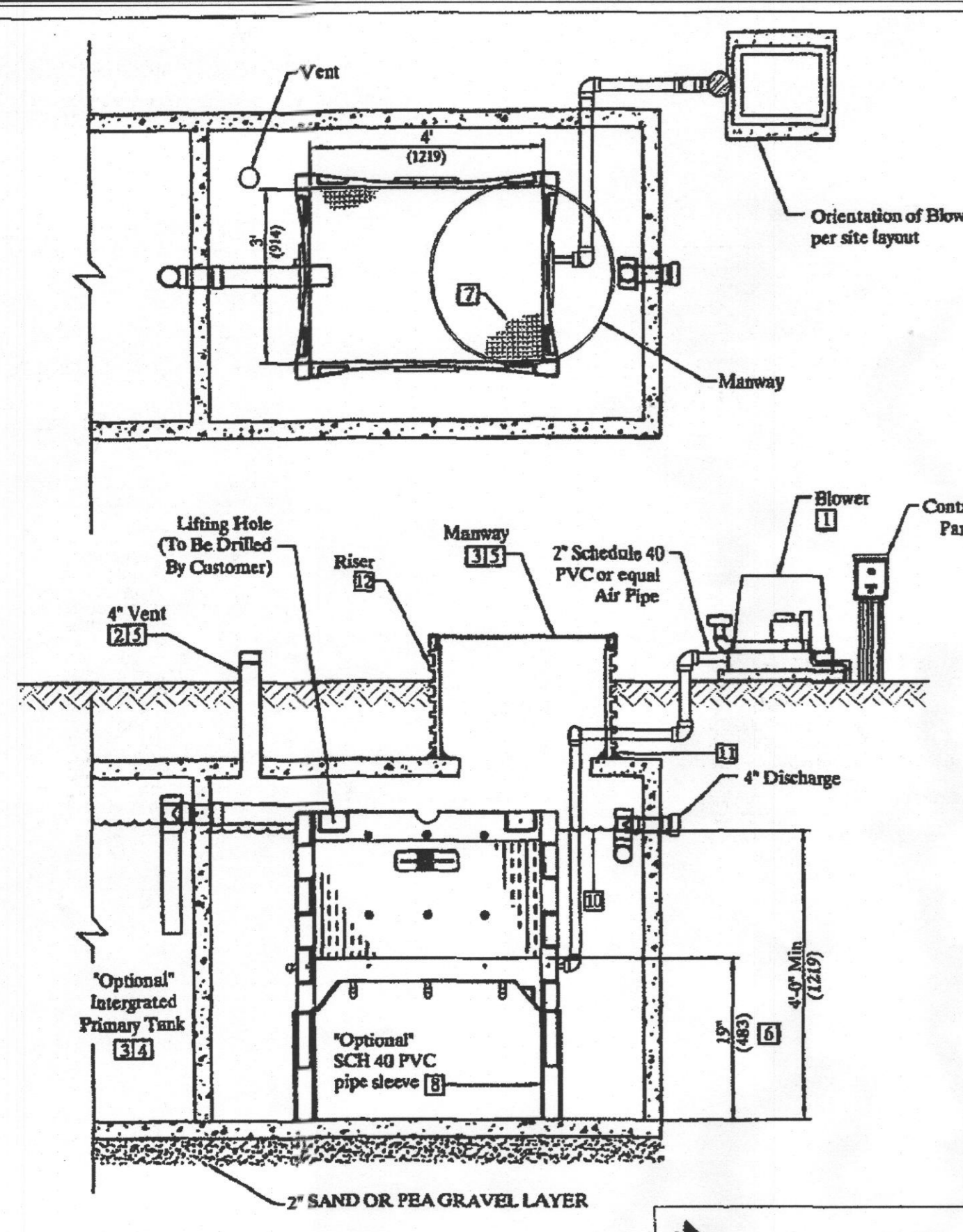
* 279/ FLORENCE ROAD
B.R.L.= BUILDING RESTRICTION LINE
TOP OF FOUNDATION ELEV.= 750.2'

LOT 6
LAYTON KNOLL
LOTS 1 THRU 6, BUILDABLE PRESERVATION
PARCEL 'A' AND NON-BUILDABLE
PRESERVATION PARCEL 'B'
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
PLAT #22918 THRU 22920

HOUSE LOCATION DRAWING

FOUNDATION LOCATION: 2/26/15
FINAL LOCATION:
BOUNDARY SURVEY:

SCALE: 1"=50'
DATE: 2/27/15
DRAWN BY: GAD
CHECKED BY: MLR
PROJECT No.: 60707-6001



- NOTES:**
- Blower piping to ECOPOD not to exceed 100 FT total length in the piping system. For distances greater than 100 FT, consult factory. Blower must be located above flood levels on a solid base.
 - Vent to be located above finish grade or higher to avoid infiltration. Cap on vent must be secured with a stainless steel screw.
 - All other tanks to/from ECOPOD must conform to applicable country, state, province, and local plumbing and electrical codes.
 - The primary tank compartment volume must be 1 to 2 times the rated ECOPOD GPD. Primary and Reactor tank volumes are listed in the ECOPOD Design Manual. The primary tank may be integrated with the reactor tank or stand alone in a separate tank.
 - All manways, pump out ports, and vents must be secured to prevent accidental or unauthorized access.
 - ECOPOD media is recommended to be at least 19" from bottom of tank. Distances not 19" need factory approval.
 - ECOPOD media EV19PVC224
 - Tanks with higher inlets, install SCH 40 PVC pipe over legs to elevate reactor to correct height.
 - Air supply line should be secured with non-corrosive clamps where required to prevent vibration damage.
 - Effluent discharge level must be at a height no more, or no less than 2" above vertical tube PVC media.
 - Use epoxy, or use another approved method or substance, to create strong connection & watertight seal (TYP.)
 - Risers must conform to country, state, province, and local acceptable codes. Fiberglass riser shown.

TREATMENT UNIT	
Discharge From Tank	4'-0"
Reactor Volume	840 Gallons
Recommended Distance Under Reactor Box	19"

REACTOR IN CONCRETE TANK

DESIGNED BY: B. WRIGHT DATE: 12/10/14 SCALE: N.T.S. DWG. NO.: 121004 REV: 2 PAGE: 1 OF 3

- A = 5' 7"
- B = 4' 6"
- C = 6' 3"
- D = 4' 4"
- E = 5' 0"
- F = 11' 1/2"
- G = 2' 2"
- H = 3'

ECOPOD® FIXED FILM WASTEWATER TREATMENT SYSTEM UNIT SPECIFICATIONS

TREATMENT PLANT	TREATMENT CAPACITY (GPD)	PRIMARY TANK TOTAL VOLUME (GAL)	REACTOR TANK VOLUME (GAL)	MEDIA SIZE	AIR REQUIREMENTS
E50	500	500	780	58C	2 X2'X4'
E60	600	600	840	73E	3'X2'X4'
E75	750	750	1050	87C	3'X2'X4'
E100	1000	1000	1200	1180	4'X2'X4'
E150	1500	1500	2100	1740	6'X2'X4'

MATERIALS OF CONSTRUCTION

Suffix F	Reactor Tank	Fiberglass
	Cover	Fiberglass
	Media Container	Fiberglass
Suffix C	Reactor Tank	Concrete
	Cover	Concrete
	Media Container	Fiberglass

These are standard production units. Other configurations are available upon request.

- 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.
 - FOR 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 (MDE) IN A MANNER ACCEPTABLE TO MDE, 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, LIBER 1 FOLD
 - 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
 4 BEDROOM HOUSE
 LOADING RATE = 600 GPD
 APPLICATION RATE = 0.8
 EFFECTIVE SIDEWALL BEGINS AT 2 FEET
 TRENCH DEPTH = 6 FEET
 TRENCH WIDTH (W) = 3 FEET
 EFFECTIVE DEPTH (D) = 4 FEET
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH = 0.625
 $(W+2) / (W+1+2D) = (3+2) / (3+1+(2x4.5))$
 SF OF DRAINFIELD = 600 GPD / 0.8 = 750 SF
 TRENCH LENGTH = 750 SF x 0.625 / 3 = 156 FEET

SEPTIC SYSTEM ELEVATIONS
 FFE = 752.34
 BSE = 743.50
 INV. OUT OF HOUSE = 746.5
 EX. GROUND AT BAT TANK = 748.2
 TOP OF BAT TANK = 746.0
 COVER OVER BAT TANK = 2.2 FT
 INVERT INTO BAT TANK = 744.93
 INVERT OUT OF BAT TANK = 744.60
 EX. GRADE AT DIST. BOX = 744.8
 INVERT INTO DISTRIBUTION BOX = 744.5
 INVERT OUT OF DISTRIBUTION BOX = 744.0
 * BASEMENT SEWERAGE TO BE PUMPED

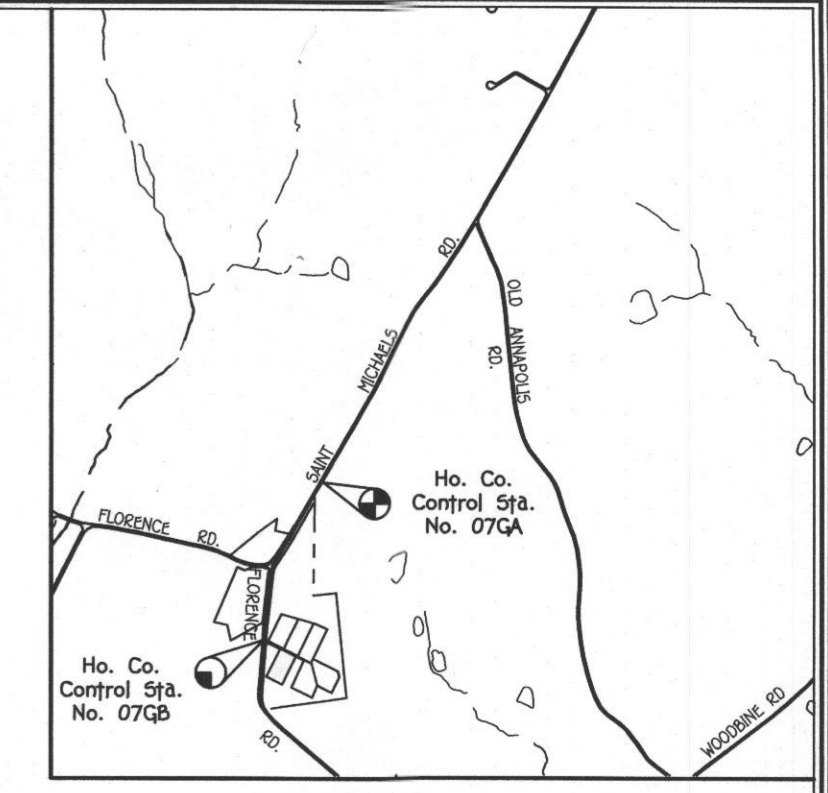
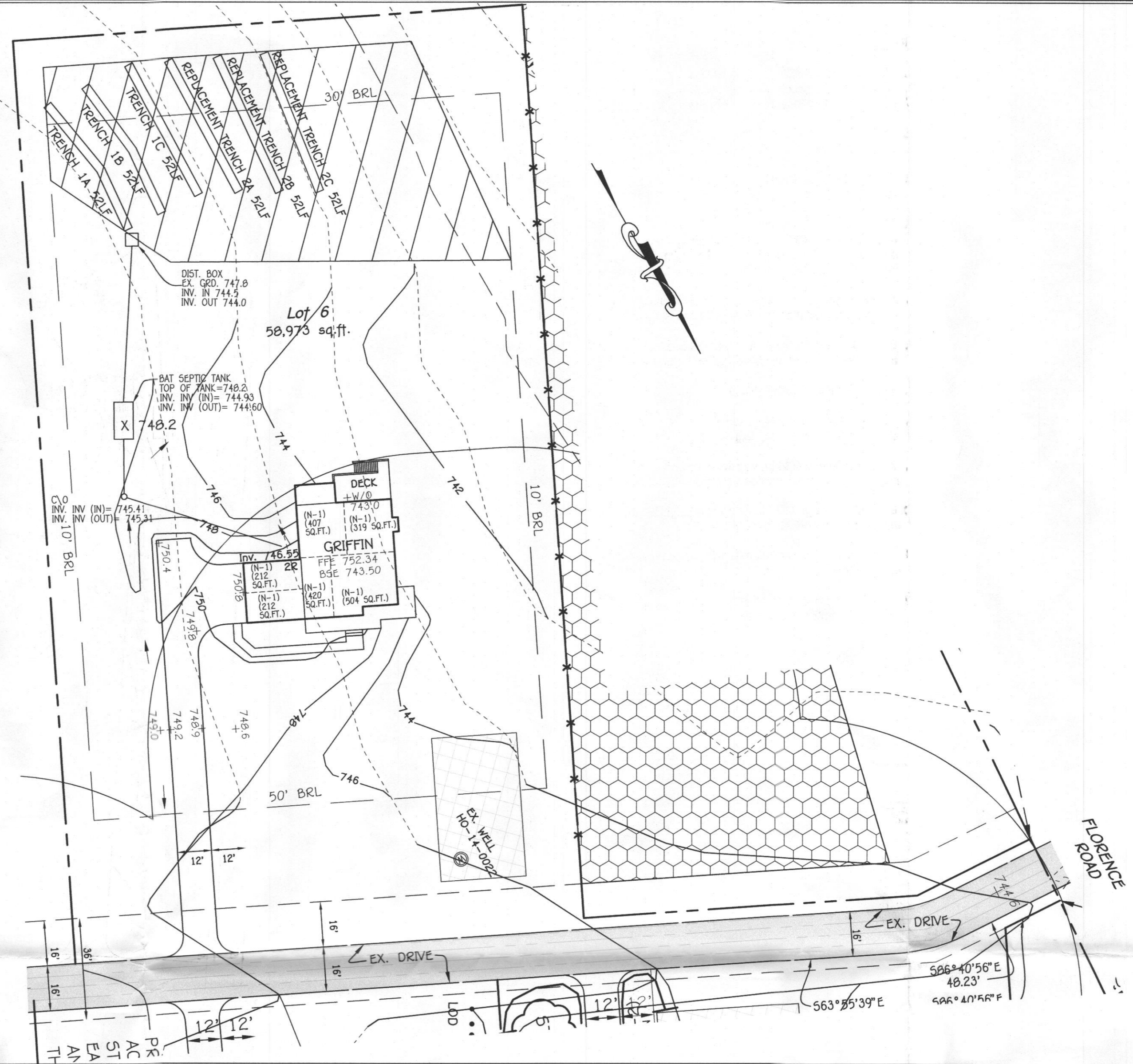
TRENCH DESIGN

TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	INVERT INTO TRENCH	DEPTH OF TRENCH AT	DEPTH OF STONE (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH AT	EFFECTIVE DEPTH (D)	WIDTH OF TRENCHES (W)	TRENCH SPACING
T1	548.0	545.0	544.5	3'	5	540.0	3.5'	4.5	3.0	12
T2	546.0	543.0	542.5	3'	5	538.0	3.5'	4.5	3.0	12
RT1	550.0	547.0	546.5	3'	5	542.0	3.5'	4.5	3.0	12
RT2	548.0	545.0	544.5	3'	5	540.0	3.5'	4.5	3.0	12

PROFESSIONAL CERTIFICATION

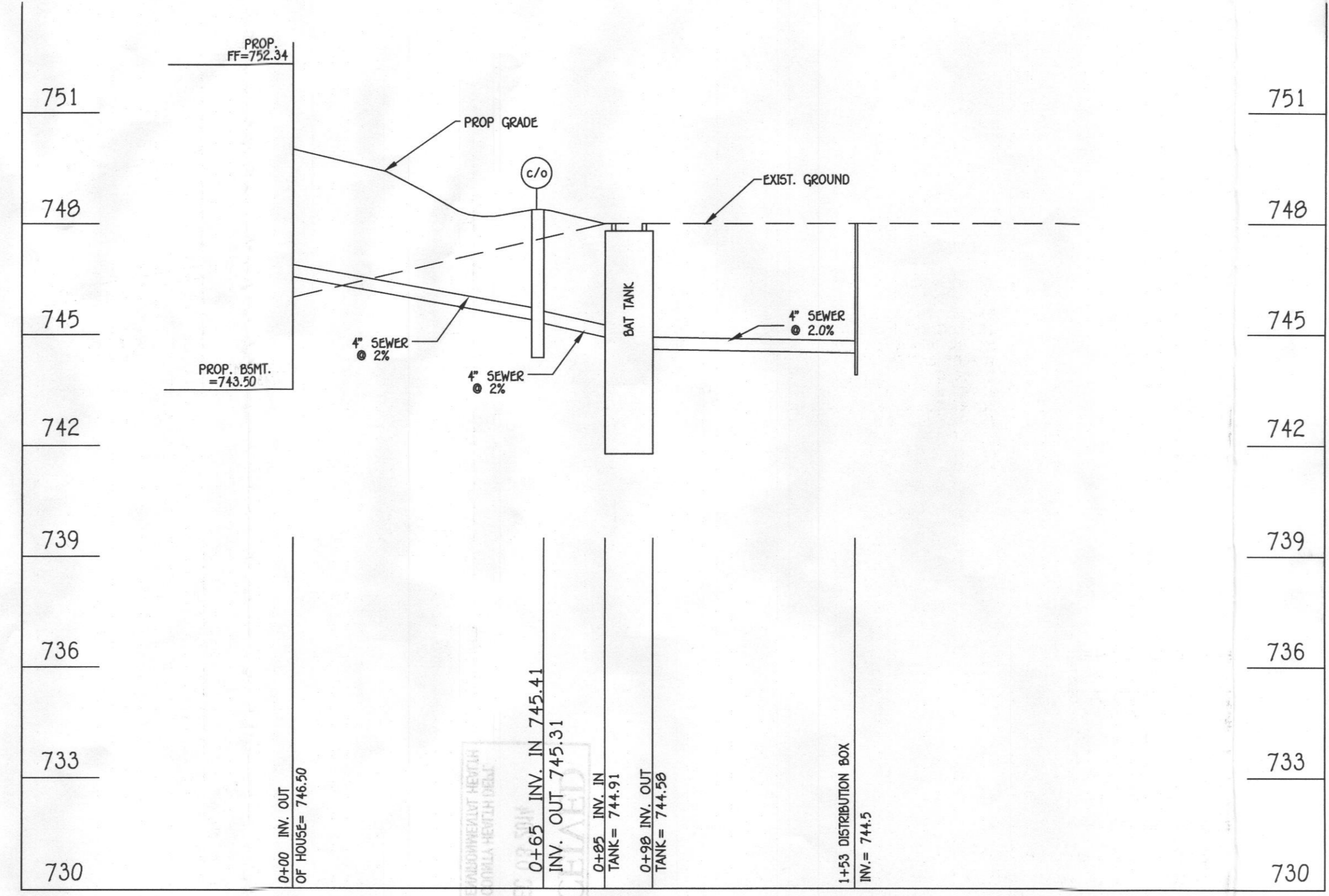
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38366, EXPIRATION DATE: 01/12/2016.

Signature: *Stephen L. Lutz* 12/31/14
 Signature of Professional Engineer DATE



- GENERAL NOTES**
- SUBJECT PROPERTY ZONED: RC-DEO
 - TOTAL AREA OF PROPERTY: 58,973 SQ. FT.
 - SEPTIC EASEMENT SUBJECT TO HOWARD COUNTY HEALTH DEPARTMENT REVIEW.
 - LENGTH OF TRENCH TO BE DETERMINED AT TIME OF SEPTIC PERMIT ISSUANCE.
 - 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.

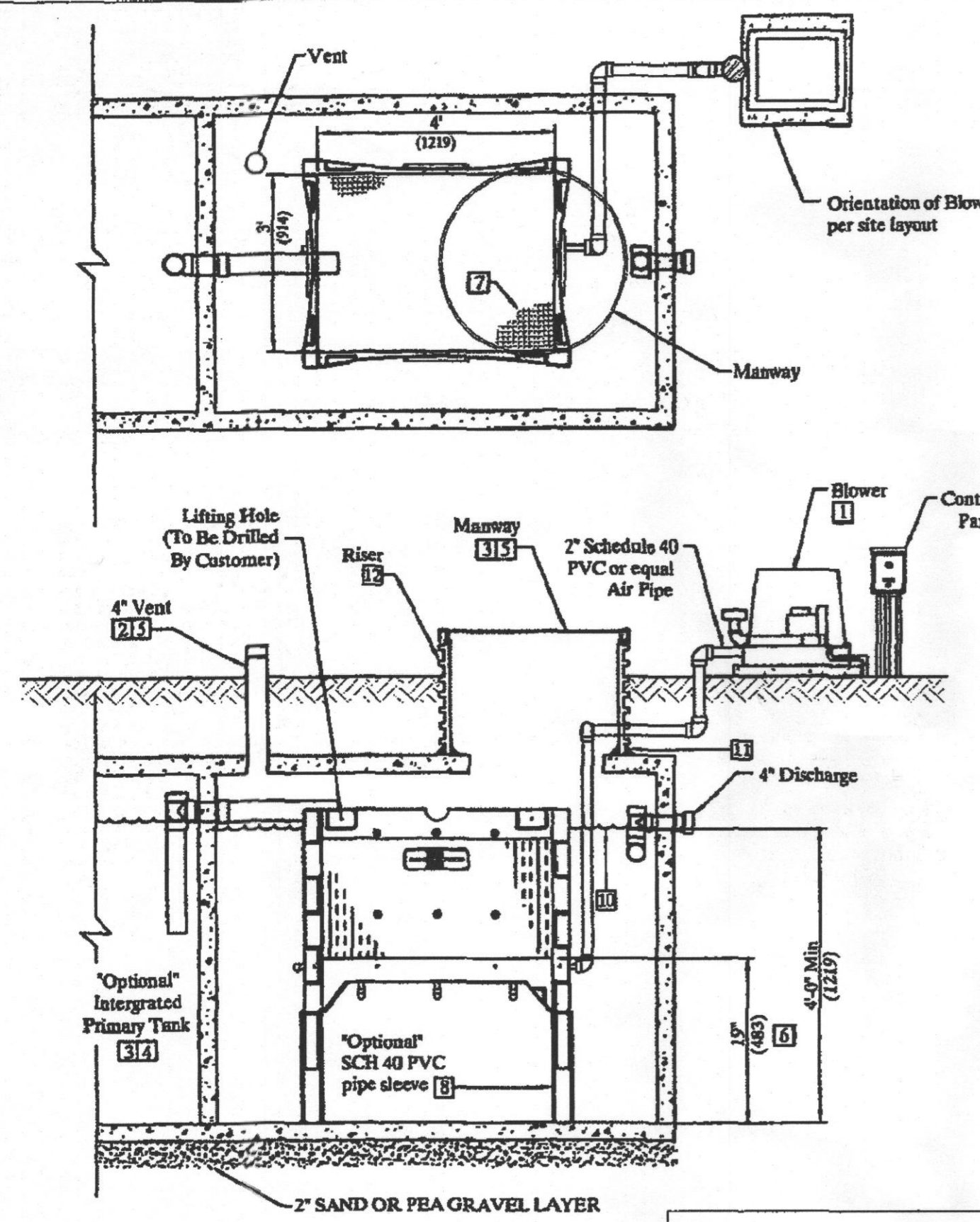
NOTE
 THE EXISTING WELL SHOWN ON THIS PLAN, TAG NO. HO 14-0022 HAS BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC., PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.



SEPTIC SYSTEM PROFILE

SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'

SITE PLAN FOR BAT SYSTEM INSTALLATION
LAYTON KNOLL
 LOT 6
 2791 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: DECEMBER, 2014



- NOTES:**
- Blower piping to ECOPOD not to exceed 100 FT total length in the piping system. For distances greater than 100 FT, consult factory. Blower must be located above flood levels on a solid base.
 - Vent to be located above finish grade or higher to avoid infiltration. Cap on vent must be secured with a stainless steel screw.
 - All other tanks to/from ECOPOD must conform to applicable country, state, province, and local plumbing and electrical codes.
 - The primary tank compartment volume must be 1 to 2 times the rated ECOPOD GPD. Primary and Reactor tank volumes are listed in the ECOPOD Design Manual. The primary tank may be integrated with the reactor tank or stand alone in a separate tank.
 - All manways, pump out ports, and vents must be secured to prevent accidental or unauthorized access.
 - ECOPOD media is recommended to be at least 19" from bottom of tank. Distances not 19" need factory approval.
 - ECOPOD media EV19PVC224
 - Tanks with higher inlets, install SCH 40 PVC pipe over legs to elevate reactor to correct height.
 - Air supply line should be secured with non-corrosive clamps where required to prevent vibration damage.
 - Effluent discharge level must be at a height no more, or no less than 2" above vertical tube PVC media.
 - Use epoxy, or use another approved method or substance, to create strong connection & watertight seal (TYP.)
 - Risers must conform to country, state, province, and local acceptable codes. Fiberglass riser shown.

TREATMENT UNIT	
Discharge From Tank	4"-Ø"
Reactor Volume	840 Gallons
Recommended Distance Under Reactor Box	19"

REACTOR IN CONCRETE TANK

DRAWN BY:	DATE:	SCALE:	DWG. NO.:	REV.:	PAGE:
B.LANDRY	12/10/14	N.T.S.	EXXX-F	2	1 OF 3

- A = 5' 7"
 B = 4' 6"
 C = 6' 3"
 D = 4' 4"
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ECOPOD® FIXED FILM WASTEWATER TREATMENT SYSTEM UNIT SPECIFICATIONS

TREATMENT PLANT	TREATMENT CAPACITY (GPD)	PRIMARY TANK TOTAL VOLUME (GAL)	REACTOR TANK VOLUME (GAL)	REACTOR TANK DILUTION VOLUME (GAL)	MEDIA SIZE	AIR REQUIREMENTS
E50	500	500	760	580	2.2X2'X4'	12 CFM
E60	600	600	840	730	3'X2'X4'	14.4 CFM
E75	750	750	1050	870	3'X2'X4'	18 CFM
F100	1000	1000	1400	1100	4'X2'X4'	24 CFM
E150	1500	1500	2100	1740	6'X2'X4'	36 CFM

MATERIALS OF CONSTRUCTION

Suffix F	Reactor Tank	Fiberglass
	Cover	Fiberglass
	Media Container	Fiberglass
Suffix C	Reactor Tank	Concrete
	Cover	Concrete
	Media Container	Fiberglass

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SEPTIC SYSTEM DESIGN

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 APPLICATION RATE = 0.8
 EFFECTIVE SIDEWALL BEGINS AT 2 FEET
 TRENCH DEPTH = 6 FEET
 TRENCH WIDTH (W) = 3 FEET
 EFFECTIVE DEPTH (D) = 4 FEET
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH = 0.625
 $(W+2) / (W+1+2D) = (3+2) / (3+1+(2*4.5))$
 $SF OF DRAINFIELD = 600 GPD / 0.8 = 750 SF$
 TRENCH LENGTH = 750 SF x 0.625 / 3 = 156 FEET

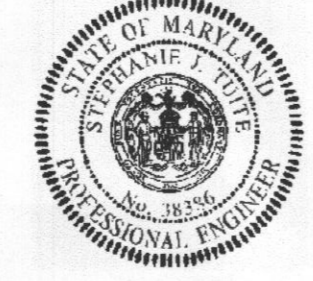
SEPTIC SYSTEM ELEVATIONS

FFE = 752.34
 BSE = 743.50
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 EX. GROUND AT BAT TANK = 748.2
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 * BASEMENT SEWERAGE TO BE PUMPED

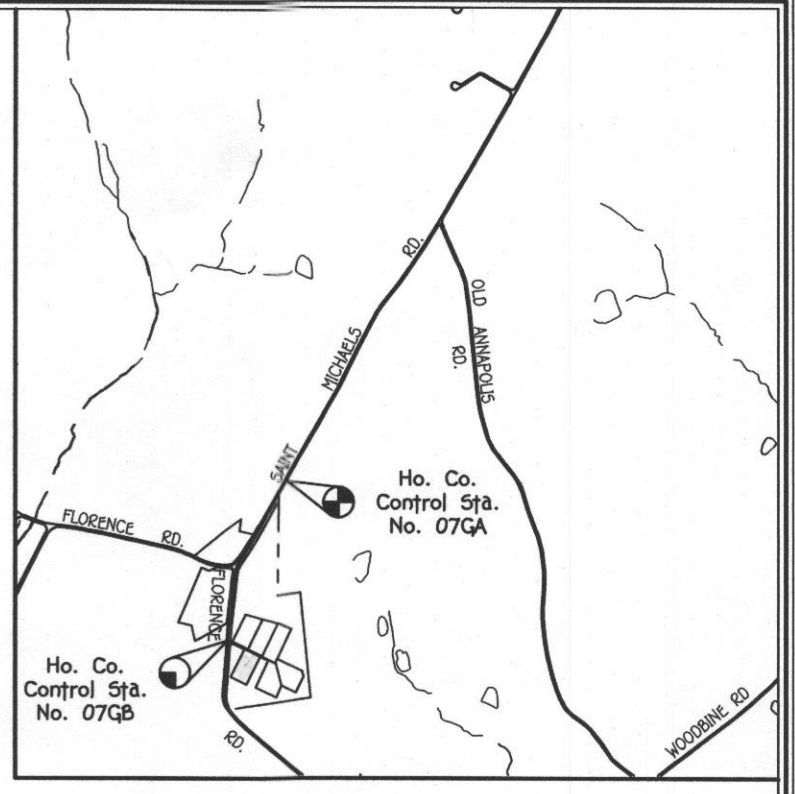
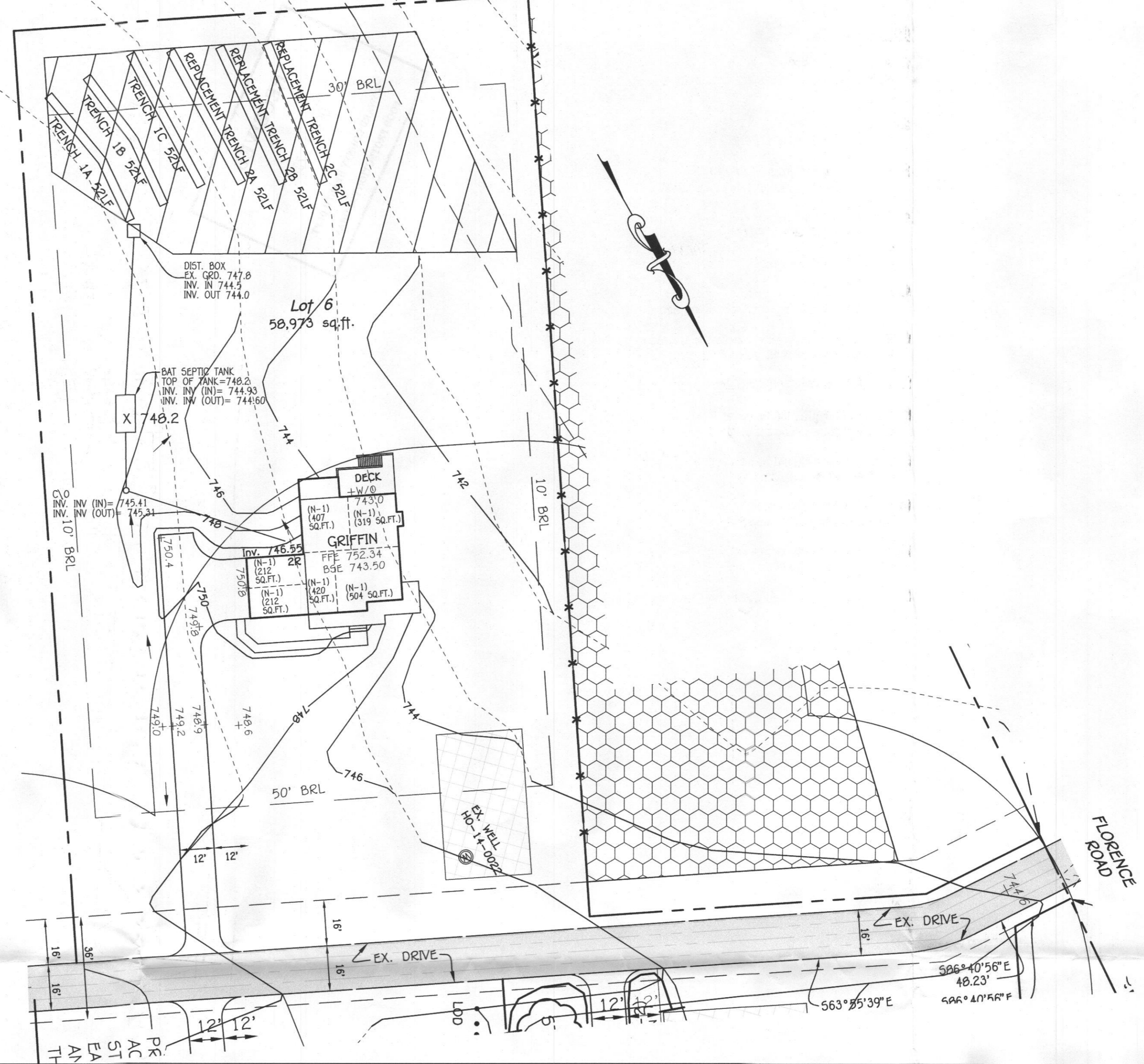
TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	INVERT INTO TRENCH	DEPTH OF TRENCH AT	DEPTH OF STONE (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH AT	EFFECTIVE DEPTH (D)	WIDTH OF TRENCHES (W)	TRENCH SPACING
T1	548.0	545.0	544.5	3'	5	540.0	3.5'	4.5	3.0	12
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RT1	550.0	547.0	546.5	3'	5	542.0	3.5'	4.5	3.0	12
RT2	548.0	545.0	544.5	3'	5	540.0	3.5'	4.5	3.0	12

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. 30386, EXPIRATION DATE: 01/12/2016.



Signature of Professional Engineer DATE



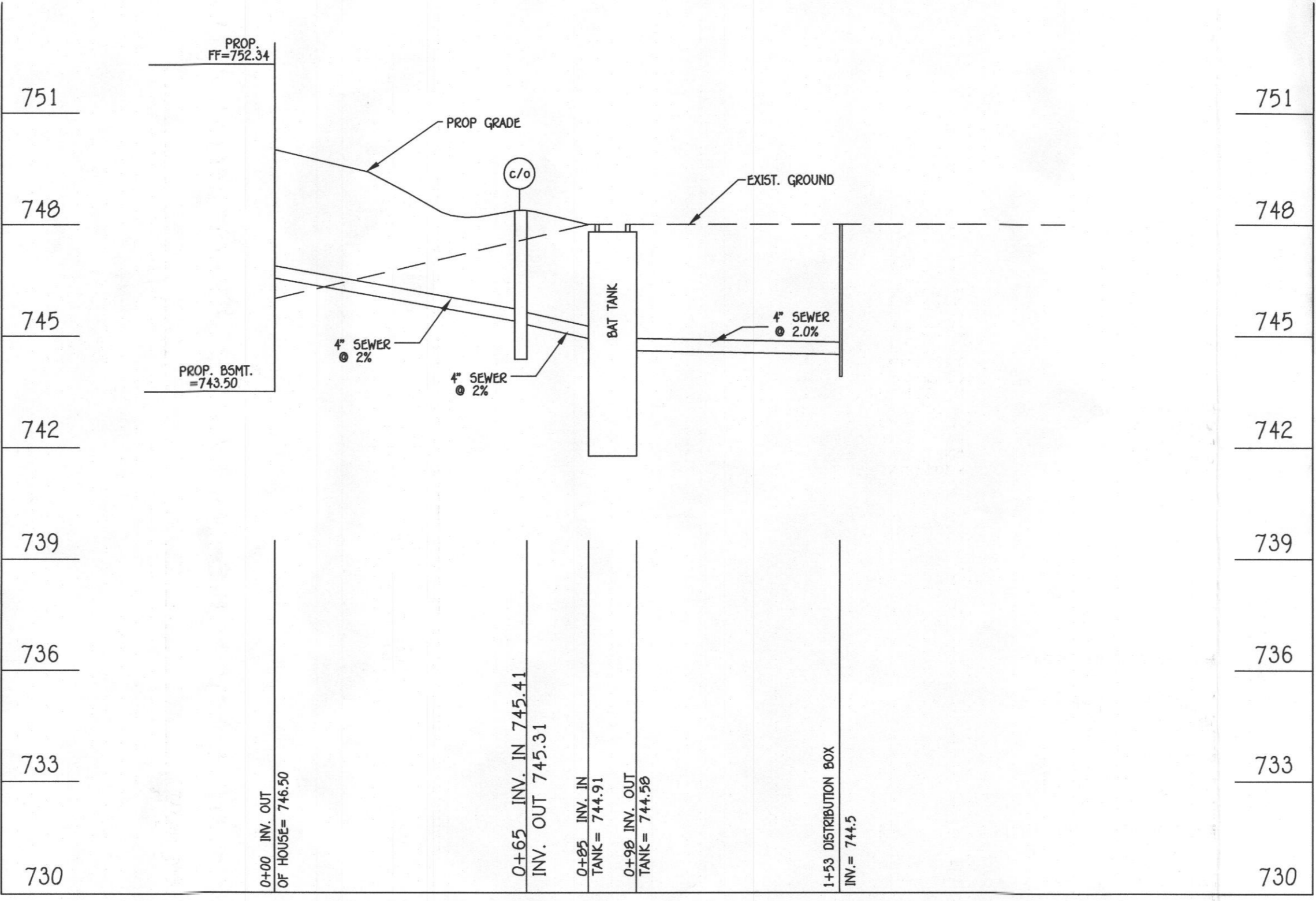
VICINITY MAP
 SCALE: 1" = 2000'
 ADC MAP NO. 8, GRIDS B-7 & B-8

GENERAL NOTES

- SUBJECT PROPERTY ZONED: RC-DEO
- TOTAL AREA OF PROPERTY: 56,973 SQ.FT.
- SEPTIC EASEMENT SUBJECT TO HOWARD COUNTY HEALTH DEPARTMENT REVIEW.
- LENGTH OF TRENCH TO BE DETERMINED AT TIME OF SEPTIC PERMIT ISSUANCE.
- 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.

NOTE

THE EXISTING WELL SHOWN ON THIS PLAN, TAG NO. HO 14-0022 HAS BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC., PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.



SEPTIC SYSTEM PROFILE

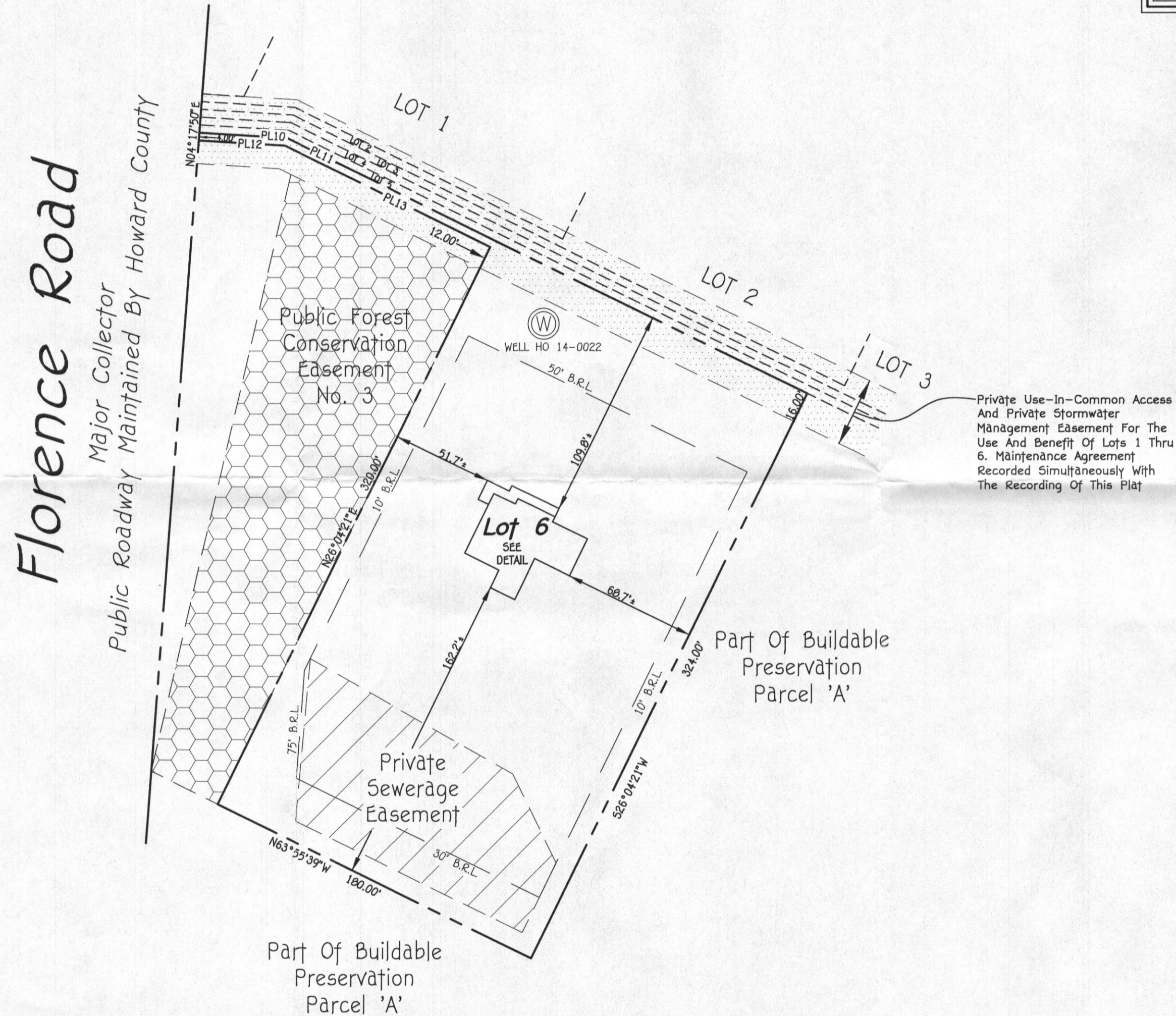
SCALE: HORIZ. 1" = 30'
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SITE PLAN FOR BAT SYSTEM INSTALLATION
LAYTON KNOLL
 LOT 6
 2791 FLORENCE ROAD
 ZONED RC-DEO
 TAX MAP NO.: 7 GRID NO.: 19 PARCEL NO.: 112
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: DECEMBER, 2014
 SHEET 1 OF 1

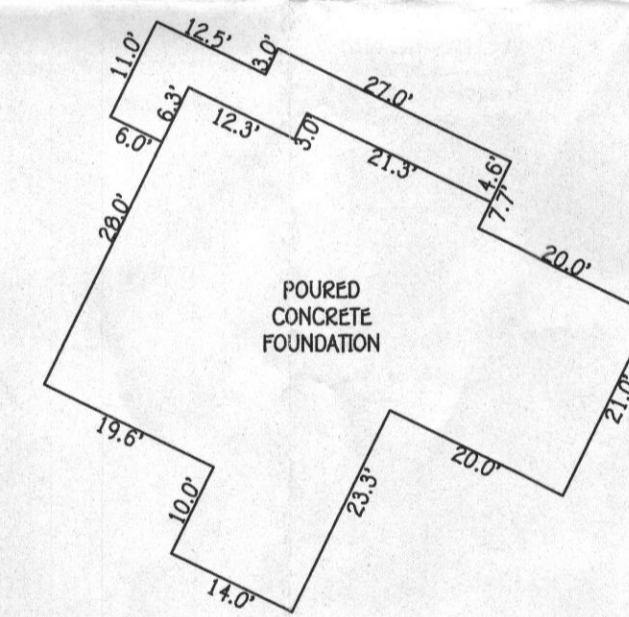
GENERAL NOTES:

- 1) THIS LOCATION DRAWING IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM INsofar 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 C ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 2400440007-B EFFECTIVE DEC. 4, 1986.
- 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-14-0022 HAS BEEN FIELD LOCATED BY FISHER, COLLINS AND CARTER, INC. PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.
- 7) BUILDING PERMIT# B-14003883

Property Line Line Chart		
Line	Bearing	Length
PL10	S 06°40'56" E	45.29'
PL11	S 63°55'39" E	290.77'
PL12	N 06°40'56" W	44.55'
PL13	N 63°55'39" W	117.96'



DETAIL:
1"=20'



3/10/15.
Informed WTC Builders about ELOPOD moratorium. BAR plan will be revised & submitted for review.
-H.O.

3/10/15-
Well check approved.
-H.O.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855



Mark L. Robel 2/26/15
PROPERTY LINE SURVEYOR DATE
REG. #339

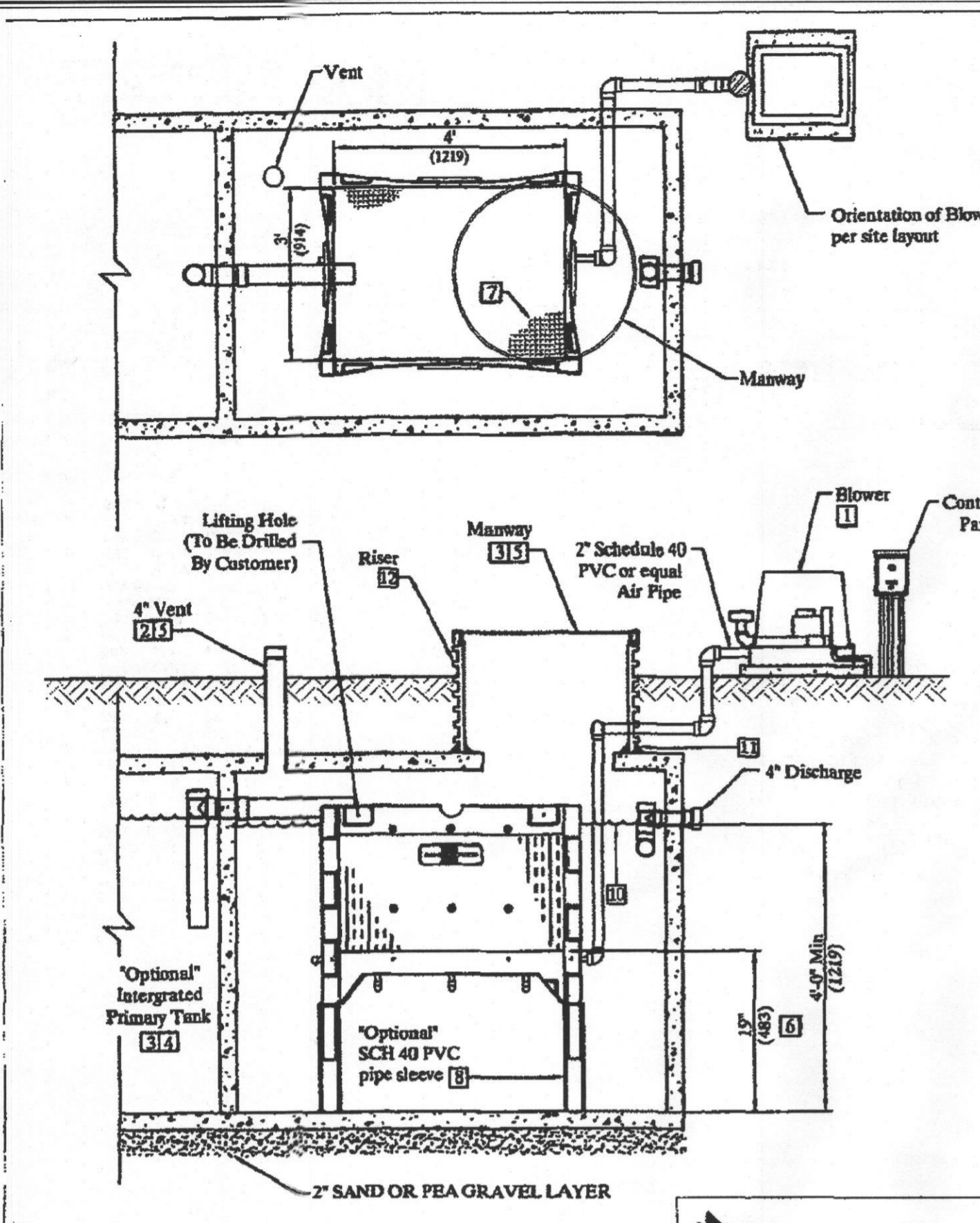
* 279/ FLORENCE ROAD
B.R.L.= BUILDING RESTRICTION LINE
TOP OF FOUNDATION ELEV.= 750.2'

LOT 6
LAYTON KNOLL
LOTS 1 THRU 6, BUILDABLE PRESERVATION
PARCEL 'A' AND NON-BUILDABLE
PRESERVATION PARCEL 'B'
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
PLAT #22918 THRU 22920

**HOUSE LOCATION
DRAWING**

FOUNDATION LOCATION: 2/26/15
FINAL LOCATION:
BOUNDARY SURVEY:

SCALE: 1"=50'
DATE: 2/27/15
DRAWN BY: GAD
CHECKED BY: MLR
PROJECT No.: 60707-6001



- NOTES:**
- Blower piping to ECOPOD not to exceed 100 FT total length in the piping system. For distances greater than 100 FT, consult factory. Blower must be located above flood levels on a solid base.
 - Vent to be located above finish grade or higher to avoid infiltration. Cap on vent must be secured with a stainless steel screw.
 - All other tanks to/from ECOPOD must conform to applicable country, state, province, and local plumbing and electrical codes.
 - The primary tank/ compartment volume must be 1 to 2 times the rated ECOPOD GPD. Primary and Reactor tank volumes are listed in the ECOPOD Design Manual. The primary tank may be integrated with the reactor tank or stand alone in a separate tank.
 - All manways, pump out ports, and vents must be secured to prevent accidental or unauthorized access.
 - ECOPOD media is recommended to be at least 19" from bottom of tank. Distances not 19" need factory approval.
 - ECOPOD media EV19PVC224
 - Tanks with higher inlets, install SCH 40 PVC pipe over legs to elevate reactor to correct height.
 - Air supply line should be secured with non-corrosive clamps where required to prevent vibration damage.
 - Effluent discharge level must be at a height no more, or no less than 2" above vertical tube PVC media.
 - Use epoxy, or use another approved method or substance, to create strong connection & watertight seal (TYP.)
 - Risers must conform to country, state, province, and local acceptable codes. Fiberglass riser shown.

TREATMENT UNIT	
Discharge From Tank	4'-0"
Reactor Volume	840 Gallons
Recommended Distance Under Reactor Box	19"

REACTOR IN CONCRETE TANK

DWN BY: D.WRIGHT DATE: 12/10/04 SCALE: N.T.S. DWG. NO.: 5836 REACTOR IN CONCRETE TANK REV: 3 PAGE: 1 OF 3

- A = 5' 7"
- B = 4' 6"
- C = 6' 3"
- D = 4' 4"
- E = 5' 0"
- F = 11' 2"
- G = 2' 3"
- H = 3'

ECOPOD® FIXED FILM WASTEWATER TREATMENT SYSTEM UNIT SPECIFICATIONS

TREATMENT PLANT	TREATMENT CAPACITY (GPD)	PRIMARY TANK TOTAL VOLUME (GAL)	REACTOR TANK VOLUME (GAL)	REACTOR TANK DILUTION VOLUME (GAL)	MEDIA SIZE	AIR REQUIREMENTS
E50	500	500	700	580	2 X2' X4'	12 CFM
E60	600	600	840	730	3 X2' X4'	14.4 CFM
E75	750	750	1050	870	3 X2' X4'	18 CFM
E100	1000	1000	1400	1160	4 X2' X4'	24 CFM
E150	1500	1500	2100	1740	6 X2' X4'	36 CFM

MATERIALS OF CONSTRUCTION

Suffix F: Reactor Tank - Fiberglass, Cover - Fiberglass, Media Container - Fiberglass

Suffix C: Reactor Tank - Concrete, Cover - Concrete, Media Container - Fiberglass

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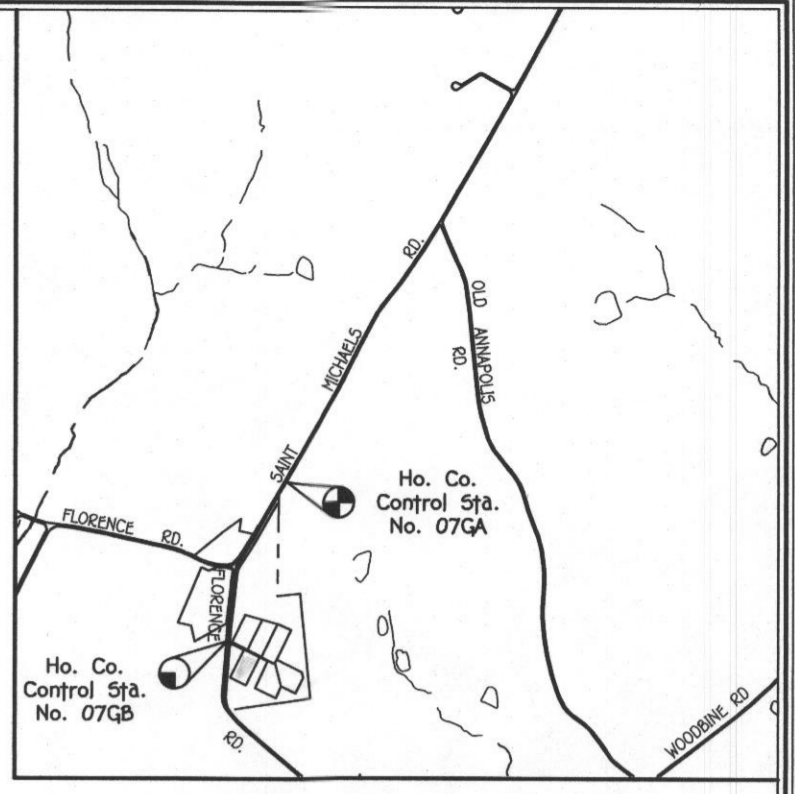
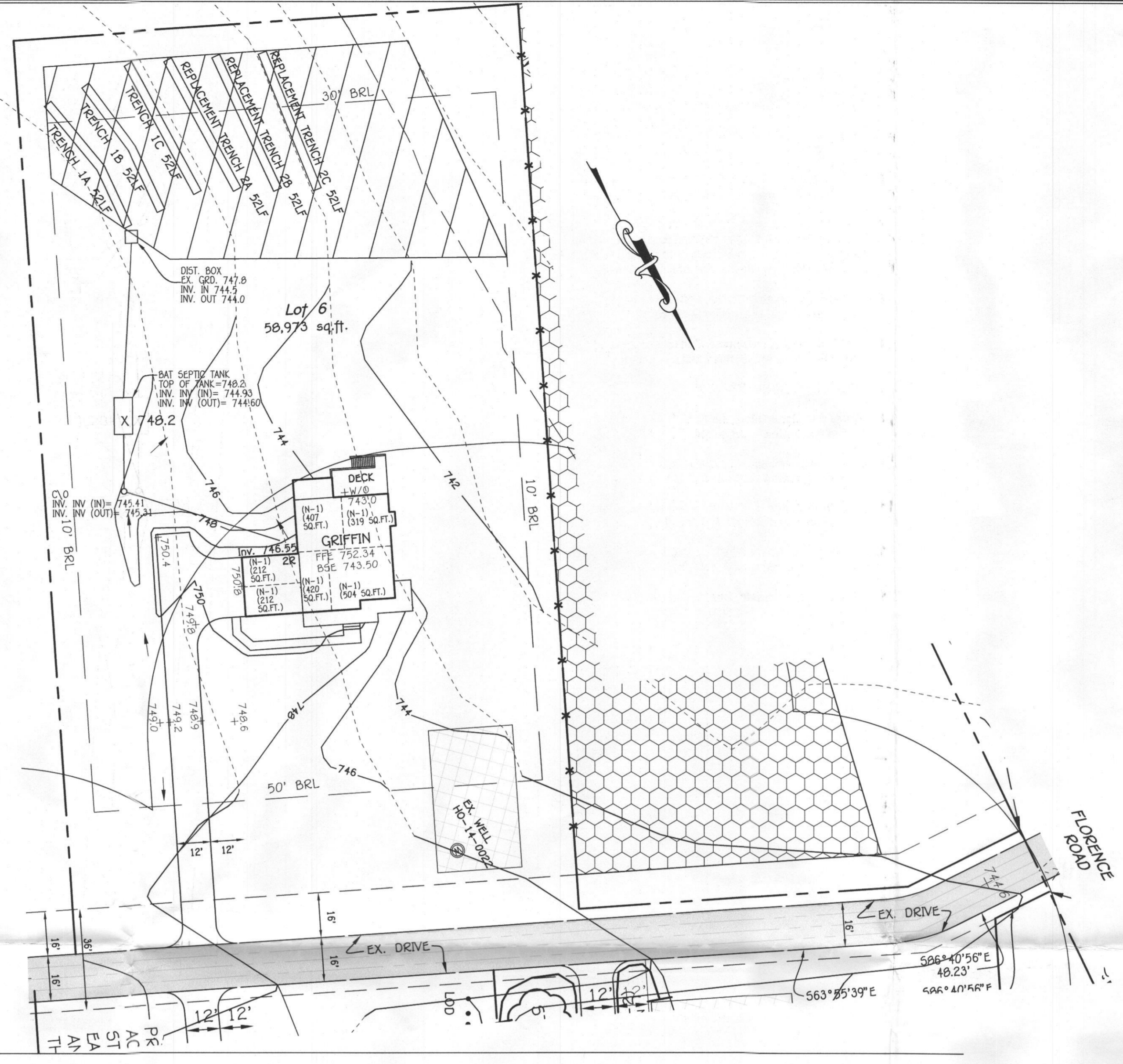
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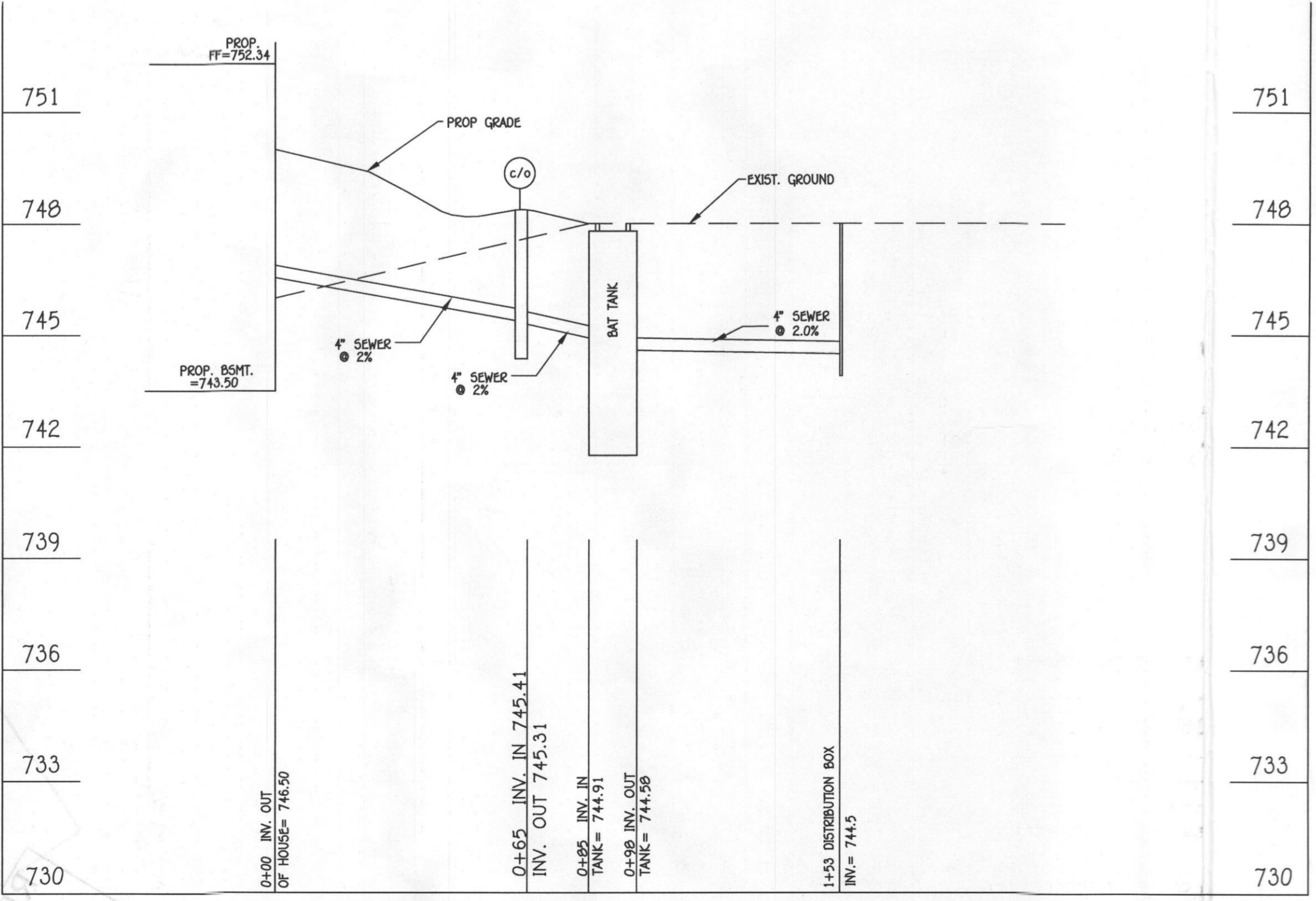
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 ZONED RC-DEO

TAX MAP NO.: 7 GRID NO.: 19 PARCEL NO.: 112
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: DECEMBER, 2014

K:\SOS\PROJ\60787.DWG\DOTS\DELIGHT\60787-5.Layton Knoll_Site_Plan\60787-5.BAT_Plan_L&S.dwg, 12/20/14 10:35:54 AM, 11

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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