

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: 11/17/15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 557459

APPROVAL DATE: 2/18/16 SEC **PERMIT: CONSTRUCTION** A _____

PROPERTY ADDRESS: 15250 Sweetbay Street, Woodbine, MD 21797

SUBDIVISION: Belle Haven Estates LOT: 36 TAX ID: _____

CONTRACTOR: Ben Lewis Plumbing EMAIL: benlewisplumbing.com

CONTRACTOR ADDRESS: 23407 Frederick Road, Clarksburg, MD, 20871 PHONE: (301) 428-3900

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: K. Hovnanian Homes EMAIL: _____

OWNER ADDRESS: 1802 Brightseat Road, Landover, MD, 20785 PHONE: (301) 683 - 6268

BAT UNIT MODEL: Hoot 600 BNR PUMP SIZE: EP05 PUMP TANK CAPACITY: 750

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 11/17/15 DATE RECORDED: 11/17/15

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>75' 04'</u>	INLET DEPTH: <u>4' 3'</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8' 6'</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>13'</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3</u>

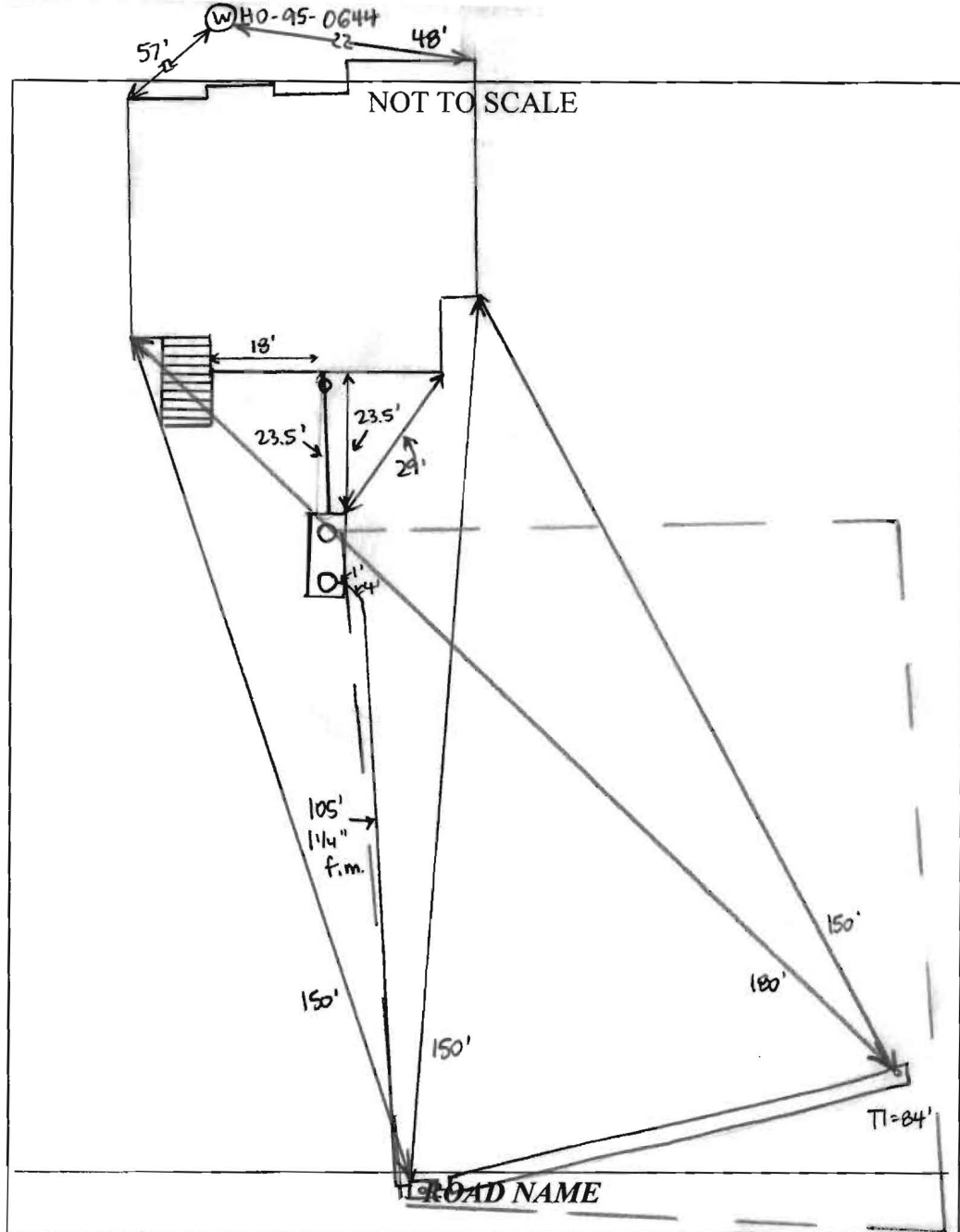
LOCATION: **PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**

NOTES: Use 1 - 75 FT. long trench
04'

ISSUED BY: Hank Oswald ISSUE DATE: 12/9/2015 EXPIRATION DATE: 12/9/2015

- 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 15005966
- 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'	3'	6'
NUMBER OF TRENCHES		1
TOTAL LENGTH		84'
ABSORPTION AREA		252' + SIDEWALL
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		YES
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	MAYER BROS./HOOT
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	1.5-2'
BAFFLES	YES
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	

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:

12/11/15 Met Andy from Ben Lewis for layout. All SDA stakes and tank stakes present. Laid out one 84' trench on contour. (SC)

INSTALLATION:

12/11/15 House connection made. D-box installed. Trench complete + left open - 2-2.5' to stone, 3' wide. (SC) 12/15/15 Tank installed. No fall in line from house - Andy is making hole at house larger to raise pipe up. 1 1/4" force main run from tank to D-box. Sand beds line from house to tank. (SC) 12/15/15 New house connection made - line to tank has 2% fall. Need BAT startup certification. (SC) 2/5/16 On site for BAT startup with Mike Sample. Pump pumps effluent to D-box, alarm sounds. (SC) 2/8/16 BAT startup certification received. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 2/8/16

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TAN	CHD. BRG.	CHD. DIST.
C46	335.00'	91.22'	15°36'04"	45.89'	N 51°04'24" W	90.94'

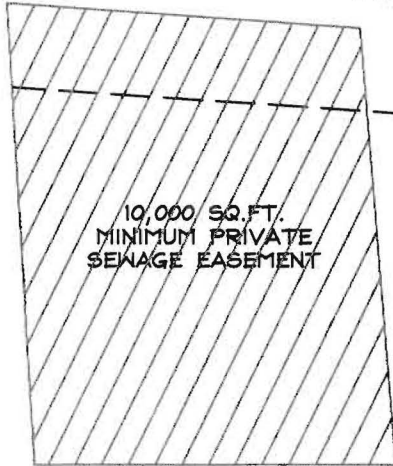
LOT 26
WELLINGTON WEST
PLAT 13637

LOT 25
WELLINGTON WEST
PLAT 13637

S 55°17'01" E 190.32'

N 27°31'37" E 256.72'

NON-BUILDABLE
PRESERVATION
PARCEL 1



10,000 SQ. FT.
MINIMUM PRIVATE
SEWAGE EASEMENT

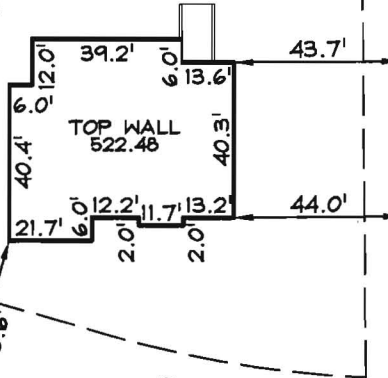
30' BRL

36

49,885 SQ. FT.
1.145 AC.

10' BRL

THE BUILDING SHOWN
HAS POURED
CONCRETE WALLS



TOP WALL
522.48

EX WELL
HO-95-0644

37

S 30°20'48" W 281.12'

10' PUBLIC TREE
MAINTENANCE &
UTILITY EASEMENT

50' BRL

20' PUBLIC STORM
DRAIN & UTILITY
EASEMENT

N 43°16'22" W 90.91'
SWEETBAY STREET
(PUBLIC ACCESS PLACE)
(40' R/W)

R=335.00'
C46
L=91.22'

12/4/15-

Well check
okay - H.O.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I EITHER PERSONALLY PREPARED OR WAS IN RESPONSIBLE CHARGE OVER THE PREPARATION OF THIS DRAWING AND THE SURVEYING WORK REFLECTED IN IT, AND THAT IT IS IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION .12 OF CHAPTER 06, MINIMUM STANDARDS OF PRACTICE.

I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 239, EXPIRATION DATE 07/06/16.

John B. ...
STATE OF MARYLAND



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Twitter: HowardCoHealthDep

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

TO: Brian Collins, DDC, Inc.
Via e-mail:

FROM: Dana Bernard, R.E.H.S./L.E.H.S.
Well and Septic Program

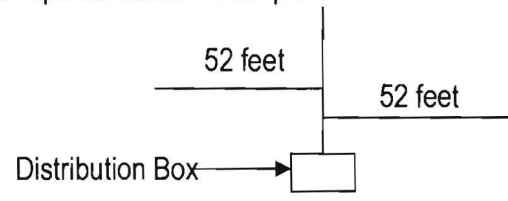
RE: Belle Haven Estates, Lot # 40 and Lot #30
BAT Plan and Building Plan

DATE: July 31, 2014

The following comments apply to the plan prepared by DDC, Inc. Applicant is advised to revise and resubmit.

BAT Plan

- Show the location of the initial absorption system and 2 replacements with perforated pipe elevations. All trenches should be equal in length and **on contour**. We prefer that all trenches are no longer that 50 feet \pm 5 feet. This layout will allow more room for future replacements. Example:



- I have included a copy of the BAT site plan requirements to use for your revisions.

Building Site Plan

- Your building site plan must show the location of the initial absorption system and 2 replacements with perforated pipe elevations. All trenches should be equal in length.

Building Application

- Your building application does not reflect same number of bedrooms you are showing in your BAT plan. You can give DPZ a call to have this information changed in the computer system.

If you have any questions or correspondence, I can be reached at the above address or by telephone at (410) 313-2775.

Sincerely,
Dana Bernard
Dana Bernard, R.E.H.S./L.E.H.S
Well and Septic Program
Phone (410) 313-2775E-mail:
DBernard@howardcountymd.gov



MAYER BROS., INC.
Precast Concrete Products
 6264 Race Rd. Elkridge, MD 21075

Letter of Satisfaction Hoot System Installation

Address of Property: 15250 Sweetbay St.
Woodbine, MD, 21797

Date of Final Inspection: 2/5/16

Installer: Ben Lewis Plumbing

Hoot Technician/Inspector: Mike Sample

I hereby certify that the Hoot system installed at the property listed above has been installed according to proper Hoot installation practices. I have also verified the startup of the system and it is in proper working order.

Sincerely,

H. Michel Dargatzis
 Name of Inspector
 Mayer Bros., Inc.

PH: 410-796-1434

WBE

FX: 410-796-1438

www.mayerbrosprecast.com

Grease Interceptors, Grease Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,
 Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Slabs, Curb Heads, Curb Bumpers,
 Custom Precast Products

170-95-0644

Insp. Dates Nov-Dec 2015

15250 Sweetbay Street
Clerk of the Circuit Court for
Howard County
Land Records/Licensing

Woodbine
MD
21797

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: Chan
Reference/Control #: 117

LR - Agreement Surcharge
1x 40.00 40.00

=====
SubTotal: 60.00
Total: 60.00

=====
REV-Check-BOA 60.00
Number : 2497

02/22/2016 12:08 CC13-SB
#5628739 /496/109
~ Thank you for visiting us today ~



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

AGREEMENT FOR APPROVAL OF AN INDIVIDUAL DRINKING WELL WITH AN ON-SITE TREATMENT SYSTEM

This agreement is entered into by and between the Howard County Health Department ("the Health Department") and Kam Keung Chan and Yin C Chan ("the Owner").

WHEREAS, the Owner owns a tract of land at street address 15250 Sweetbay St., Woodbine, MD 21797 and the deed and subdivision plat of the property is recorded among the Land Records of Howard County, Maryland, Tax Map # 14, Block # 9999, Parcel # 66, Deed Reference # 16501/00172 and Tax Account # 04-374079 ("the Property").

WHEREAS, the Property lacks an available public drinking water source and is required to have an individual well as the source of drinking water for the residence of the property.

WHEREAS, the Owner has installed a residential drinking well under well permit HO-95-0644 that has been tested by the Health Department (or a private laboratory certified to perform testing) for Nitrate-nitrogen. The results of the tests have shown that the Nitrate level meets or exceeds the Maximum Contaminant Level (MCL) of 10 milligrams per liter.

WHEREAS, The Maryland Department of the Environment (MDE) has promulgated rules and regulations under which a Certificate of Potability may be issued and has delegated the authority to issue such Certificate to the Health Department.

WHEREAS, MDE regulations permit the Health Department to issue as a special condition, a permanent deviation to the Certificate of Potability for individual wells where treatment has been installed to meet the MCL for Nitrate.

WHEREAS, MDE has determined that Nitrate can be effectively removed from the drinking water by the use of treatment devices (e.g. reverse osmosis).

WHEREAS, the Owner is requesting that the Health Department issue a Certificate of Potability contingent upon installation and maintenance of a water treatment device to reduce Nitrate.

WHEREAS, neither the Owner nor the Health Department has knowledge of an alternative safe source of water for the Property.

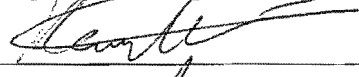
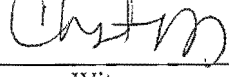

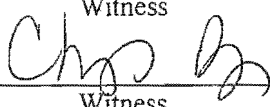

NOW THEREFORE, the parties have agreed to the following terms and conditions:

1. The Owner will record this Agreement among the Land Records of Howard County, Maryland and provide confirmation to the Health Dept.
2. The Owner agrees to install and maintain a water treatment device, which effectively reduces the Nitrate below the MCL. The Health Department shall verify that the treatment device is

operating effectively and the Owner agrees to allow access to the Health Department to collect a follow-up sample(s).

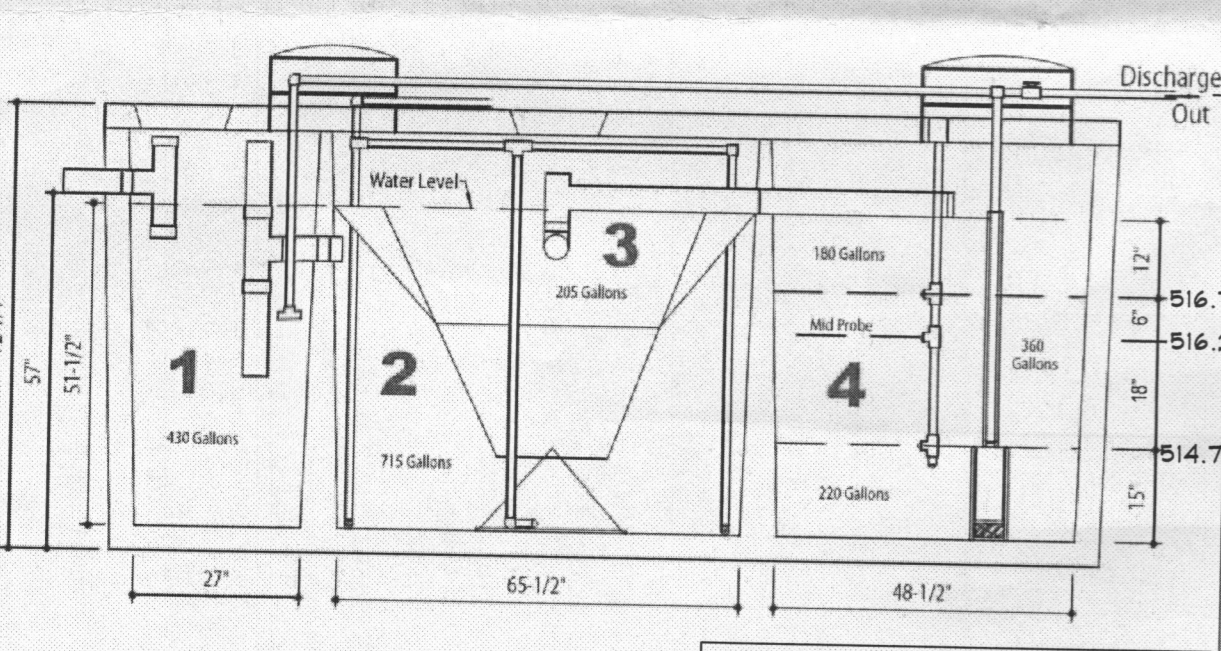
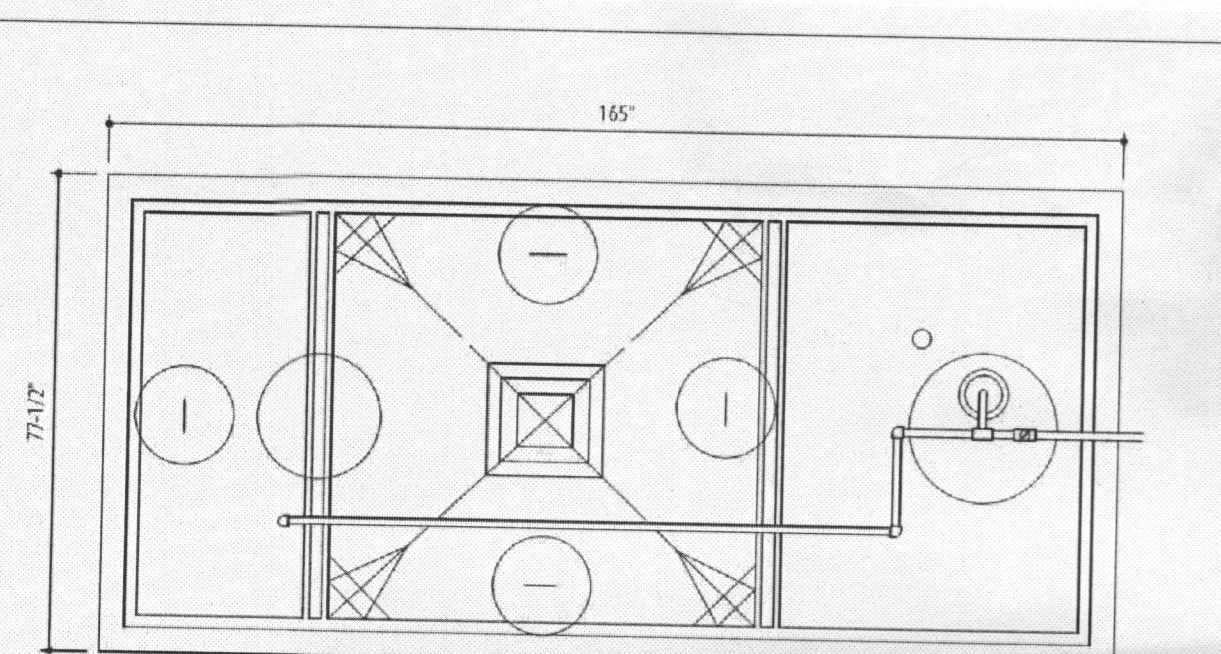
3. The Health Department shall issue a Certificate of Potability for the well once follow-up sampling shows acceptable Nitrate levels.
4. The Owner agrees that there shall be no liability on part of the Health Department for any immediate or long term impacts to health or property, under any circumstance or including, but not limited to, treatment device failure, improper maintenance or installation, or defect. The Health Department does not warranty or guarantee that the device will adequately or properly function and the Owner agrees to implement and pay for any necessary changes or corrections.
5. The Owner acknowledges and agrees that neither the Health Department nor any of its agents or employees, either officially or individually, underwrites the operation of any system or treatment device.
6. This Agreement shall not be construed to limit any authority of the Health Department to protect the public health, safety or enjoyment of property or to issue any other orders to take any other action, which is now or may hereafter be within its authority.
7. This agreement contains the entire agreement and understanding between the Health Department 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 their authorized representatives.
8. The Agreement shall run with the land and binds the Owner, his heirs, successors, and assigns. The owner agrees to provide a copy of this agreement to any purchaser or lessee of the property.
9. The laws of the State of Maryland govern the provisions of all transactions.

The parties have signed and sealed this Agreement on the dates set forth below.

 _____ Owner	2/17/16 _____ Date	 _____ Witness	2/17/16 _____ Date
 _____ Owner	2/17/16 _____ Date	 _____ Witness	2/17/16 _____ Date
 Howard County Health Department	2/22/16 _____ Date		

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,560 SQ. FT.
 2. NUMBER OF BEDROOMS: 5
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. PER THE APPROVED ROAD DRAWINGS, F-07-38, A DRIVEWAY CULVERT IS NOT REQUIRED
 5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER COMP-LITE ZONING REGULATIONS DATED 7/28/06
 6. PLAT REFERENCE: #19948
 7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DMW, AND DATED 06/25/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DEMARIO DESIGN CONSULTANTS DATED 07/09/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC IN JAN. 2012.
 8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDERS RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
 9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)315-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 10. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 11. TOTAL LIMIT OF DISTURBANCE: 16,871 SQ. FT. / 0.38 AC.
 12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
 13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAYS" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
 14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
 15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
 16. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
 17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL.
 18. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
 19. EXISTING WELLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
 20. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
 21. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
 22. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT WAS PREVIOUSLY APPROVED UNDER F-07-38.

- SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:**
1. 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.
 2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
 3. THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
 4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
 6. WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
 7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
 9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



LOT 36 PUMP ELEVATIONS

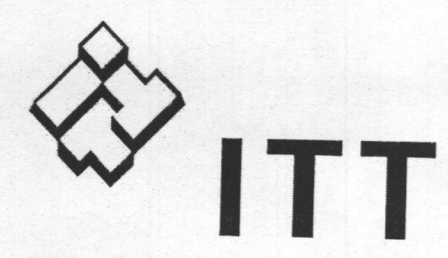
OFF	ON	ALARM
514.7	516.2	516.7

DESIGN DATA & GENERAL NOTES

- 1) Concrete strength Fc=4000 p.s.i. @ 28 days. Density = 150 pcf.
- 2) Cement: Portland Type I or II per ASTM C 150.
- 3) Admixtures & plasticizers per ASTM C 260 & C 494-92.
- 4) Reinforcing per ASTM A108. Min. 1/2" cover.

Mayer Brothers, Inc. 6204 Race Road, Ellicott City, Maryland 21075. Tel: 410.796.1434, Fax: 410.796.1438, www.mayerbrothersinc.com

600 GPD BNR SYSTEM H-600 ABNR with 750 GALLON PUMP CHAMBER
Dwg. No. Hoot Form #1 No Scale March 19, 2009



PERFORMANCE RATINGS

Total Head (ft. of water)	Gallons Per Minute	EP04	EP05
5	53	-	-
10	46	62	-
15	36	55	-
20	21	46	-
25	0	33	-
30	-	11	-

STATIC HEAD	10.2'
FRICTION HEAD	15.5'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	25.7'
GALLONS PER MINUTE	31.5 GPM
DOSE	104
PUMP RUN TIME	3.3 MIN

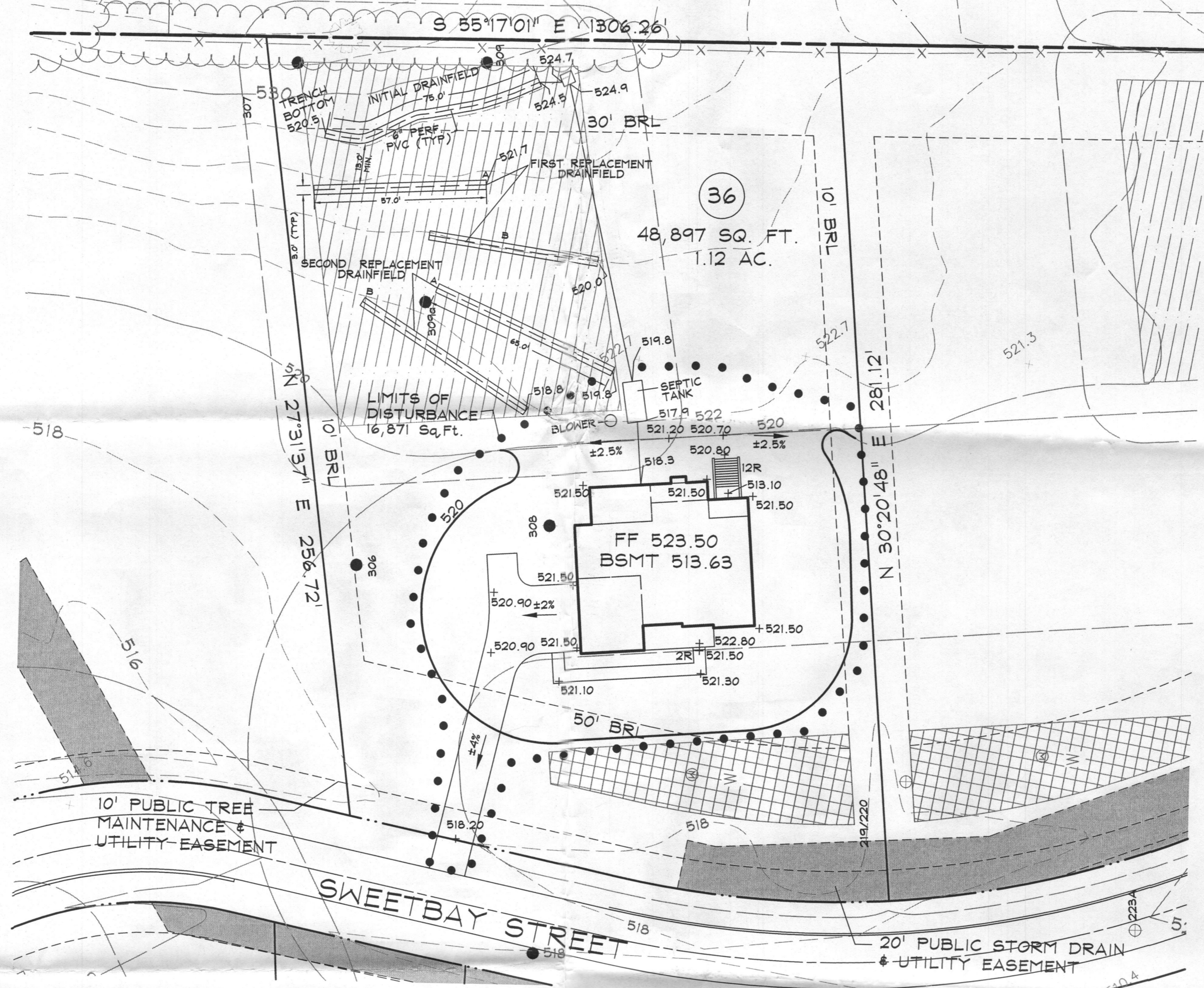
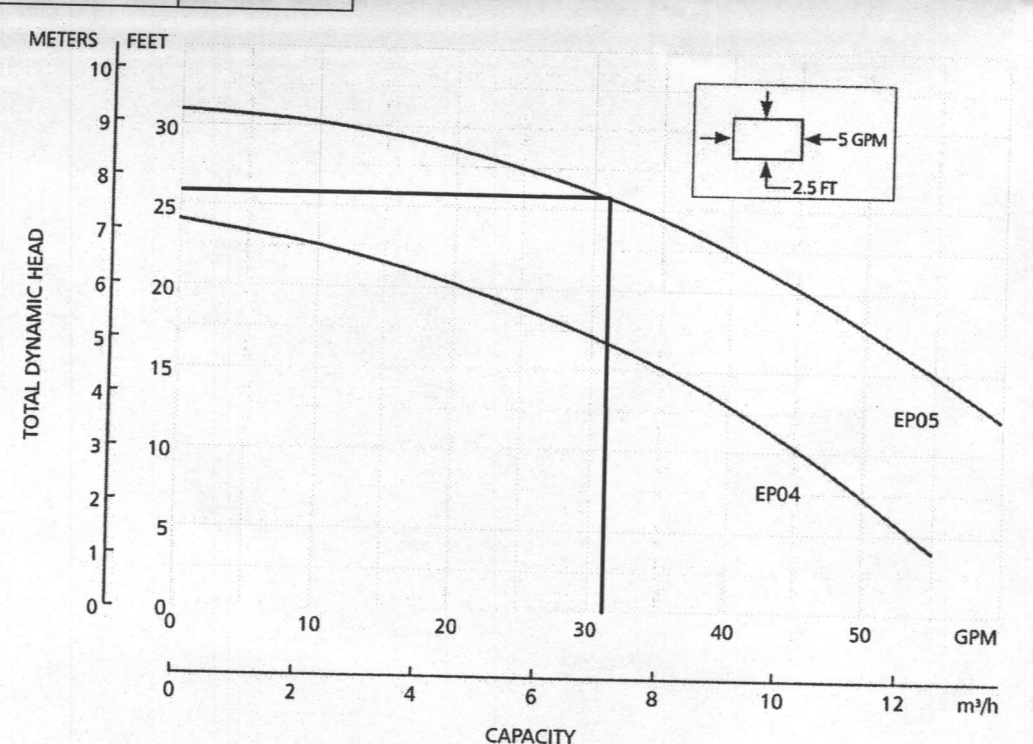
GOULDS PUMPS Wastewater

TOTAL DYNAMIC HEAD CALCULATIONS

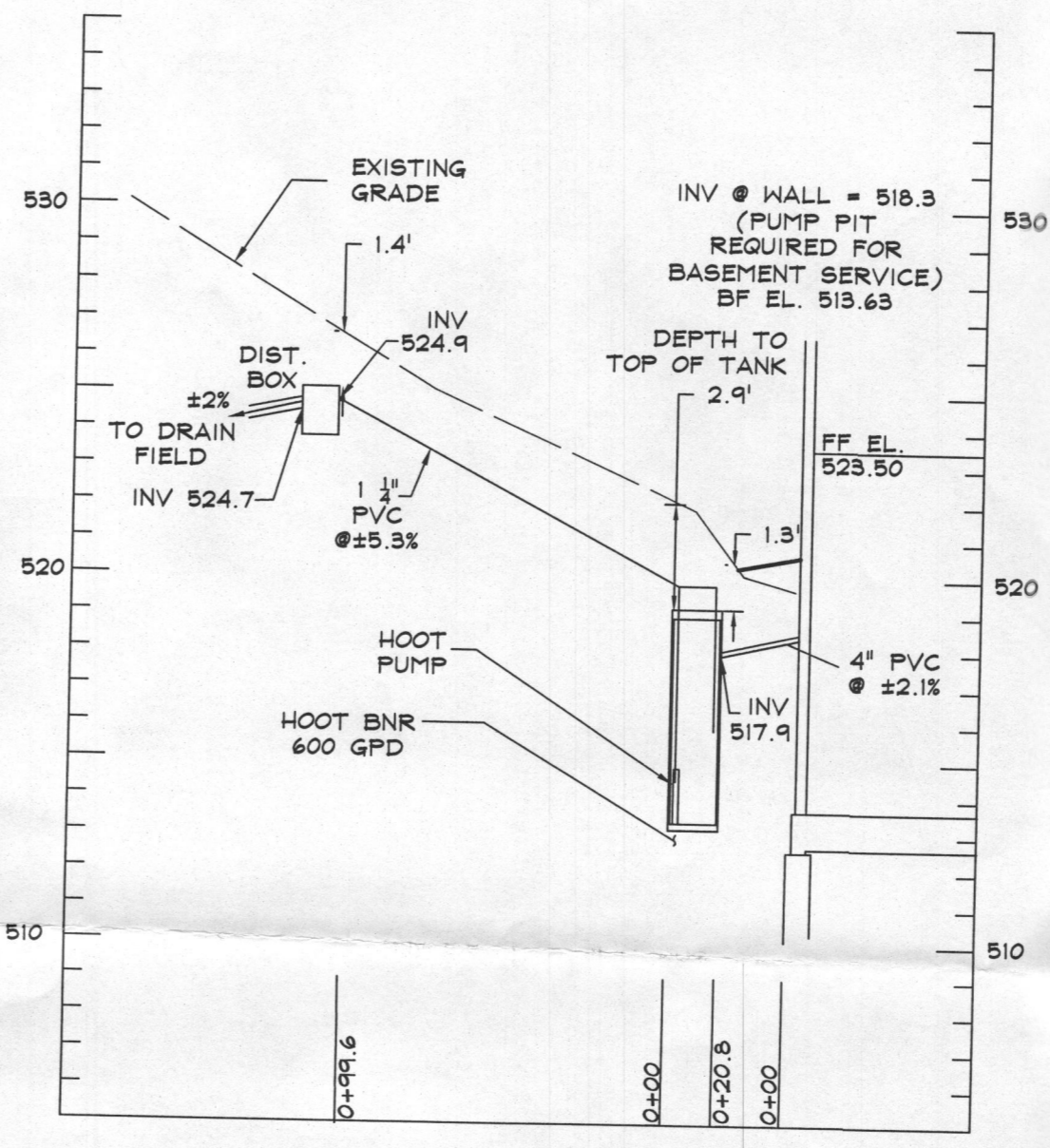
STATIC HEAD
OFF FLOAT ELEVATION: 514.7'
HIGH POINT OF THE SYSTEM: + 524.9'
VERTICAL ELEVATION CHANGE: 10.2'

FRICTION HEAD
FITTINGS: 13.8'
LENGTH OF PVC PIPE: + 49.6'
TOTAL LENGTH: 113.4'
113.4'/100 x 13.62 = 15.5' TOTAL FRICTION LOSS

TOTAL HEAD
VERTICAL ELEVATION CHANGE: 10.2'
TOTAL FRICTION LOSS: 15.5'
SYSTEM PRESSURE REQUIREMENTS: + 0.0'
TOTAL DYNAMIC HEAD: 25.7'



SCALE = 1"=30'



SEPTIC SYSTEM PROFILE
LOT 36
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

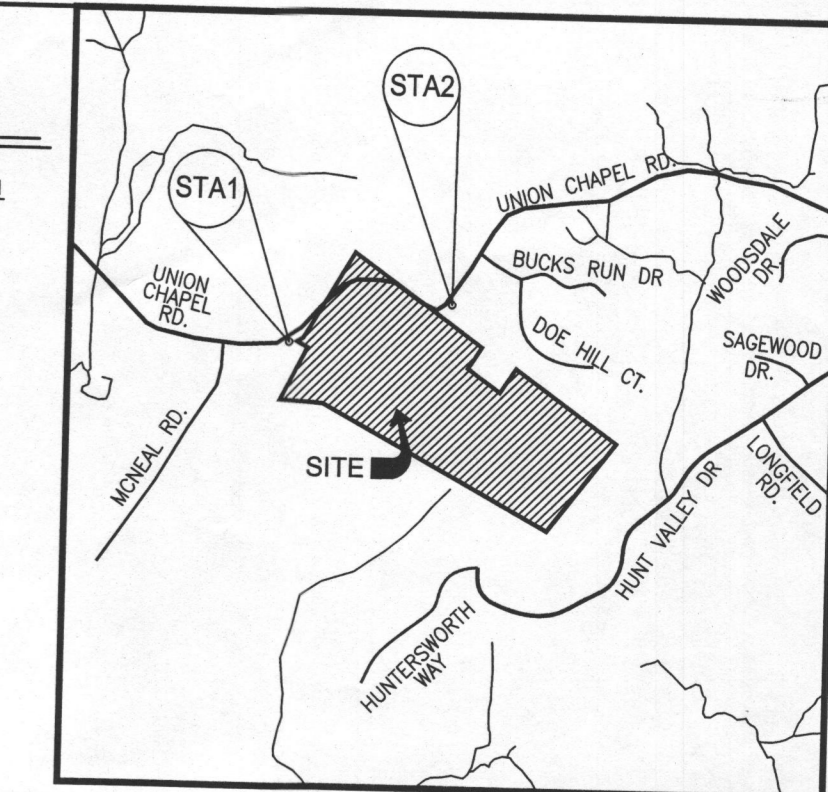
- SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):**
1. INVERT @ FOUNDATION WALL: 518.3 (BASEMENT PUMP REQUIRED)
 2. 750 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER (EPOS)
EX. GRADE OVER TANK: 522.0
PROPOSED GRADE OVER TANK: 522.0
INVERT: 517.9
 3. DISTRIBUTION BOX
EX. # PROPOSED GRADE OVER TANK: 526.6
INVERT: 524.9
 4. TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)
13' MIN SPACING BETWEEN TRENCH EDGES
USE 3' WIDE TRENCH w/ 48" OF GRAVEL BELOW PIPE
INITIAL TRENCH 750 GPD / 1.2 GPD/SF (APP. RATE) = 625 SF
625 SF / 3' WIDTH = 208.3 LF x 0.36 = 75 LF MIN.
USE 1 - 75' LONG TRENCH FOR INITIAL TRENCH
FIRST REPLACEMENT 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
937.5 SF / 3' WIDTH = 312.5 LF x 0.36 = 113 LF MIN.
USE 2 - 57' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
SECOND REPLACEMENT 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
937.5 SF / 3' WIDTH = 312.5 LF x 0.42 = 130 LF MIN.
USE 2 - 65' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

BENCHMARK

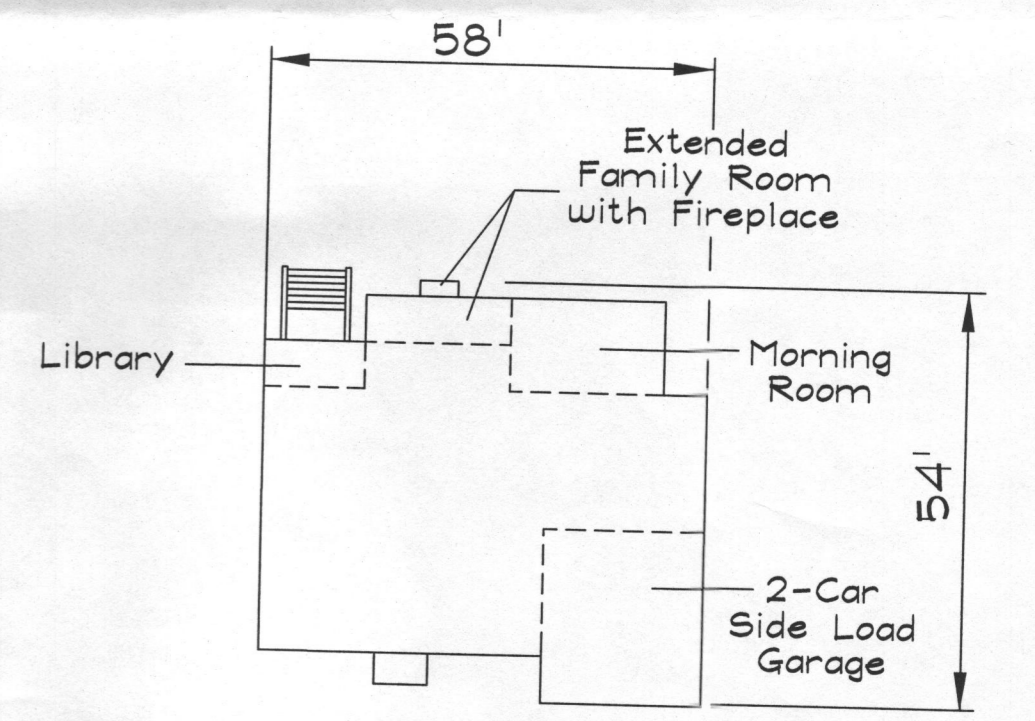
GEODETIC SURVEY CONTROL #1
N. 591450.42
E. 129717.25
A.A. 14GA
ELEV. 535.43

GEODETIC SURVEY CONTROL #2
N. 591653.88
E. 1299121.80
B.M. 14GB
ELEV. 542.23

ADC MAP COORDINATES
4812/C4



VICINITY MAP
SCALE: 1"=2000'



COLORADO TRADITIONAL ELEVATION BRICK FRONT, WALKOUT REVERSE UNIT

DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED GRADE
- PROPOSED LIMIT OF DISTURBANCE
- + 665.5 PROP. SPOT ELEV./FLOW ARROW
- PROPOSED 20' SEPTIC RESERVE BUFFER
- EXISTING 30' WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- WELL AREA
- 174 PASSED PERCOLATION TEST
- 127 FAILED PERCOLATION TEST

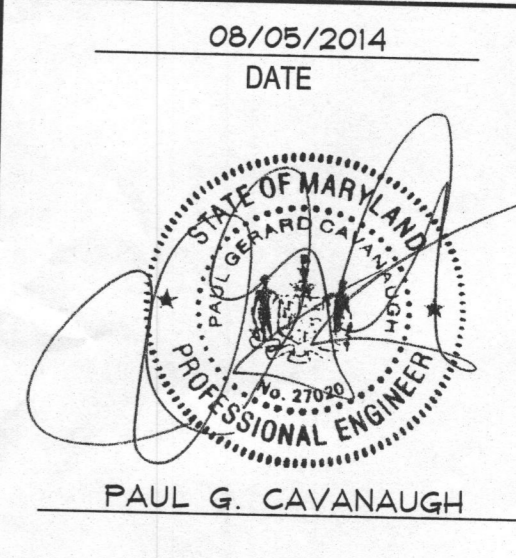
LOT 36 INITIAL SYSTEM TRENCH SPECIFICATIONS

TRENCH	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH (75')	528.5	524.5	520.5
FIRST REPLACEMENT TRENCH (A)	525.7	521.7	517.7
FIRST REPLACEMENT TRENCH (B)	524.0	520.0	516.0
SECOND REPLACEMENT TRENCH (A)	522.8	519.8	515.8
SECOND REPLACEMENT TRENCH (B)	521.8	518.8	516.8

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. 27920. EXPIRATION DATE: JANUARY 25, 2018

DATE: 08/05/2014



DDC Development Design Consultants

Planners
Surveyors
Engineers
Landscape Architects

192 East Main Street
Westminster, MD 21157
410.386.0560
410.386.0564 (Fax)
DDC@DDCincus
www.DDCincus

OWNER: K. HOVANNIAN HOMES
1802 Brightseat Road
Lanham, Maryland 20785
(301) 683-6268

DEVELOPER:

SITE ADDRESS:
LOT 36
15250 Sweetbay Street
Woodbine, Maryland 21797

BELLE HAVEN ESTATES LOT 36

SITE PLAN FOR BAT INSTALLATION

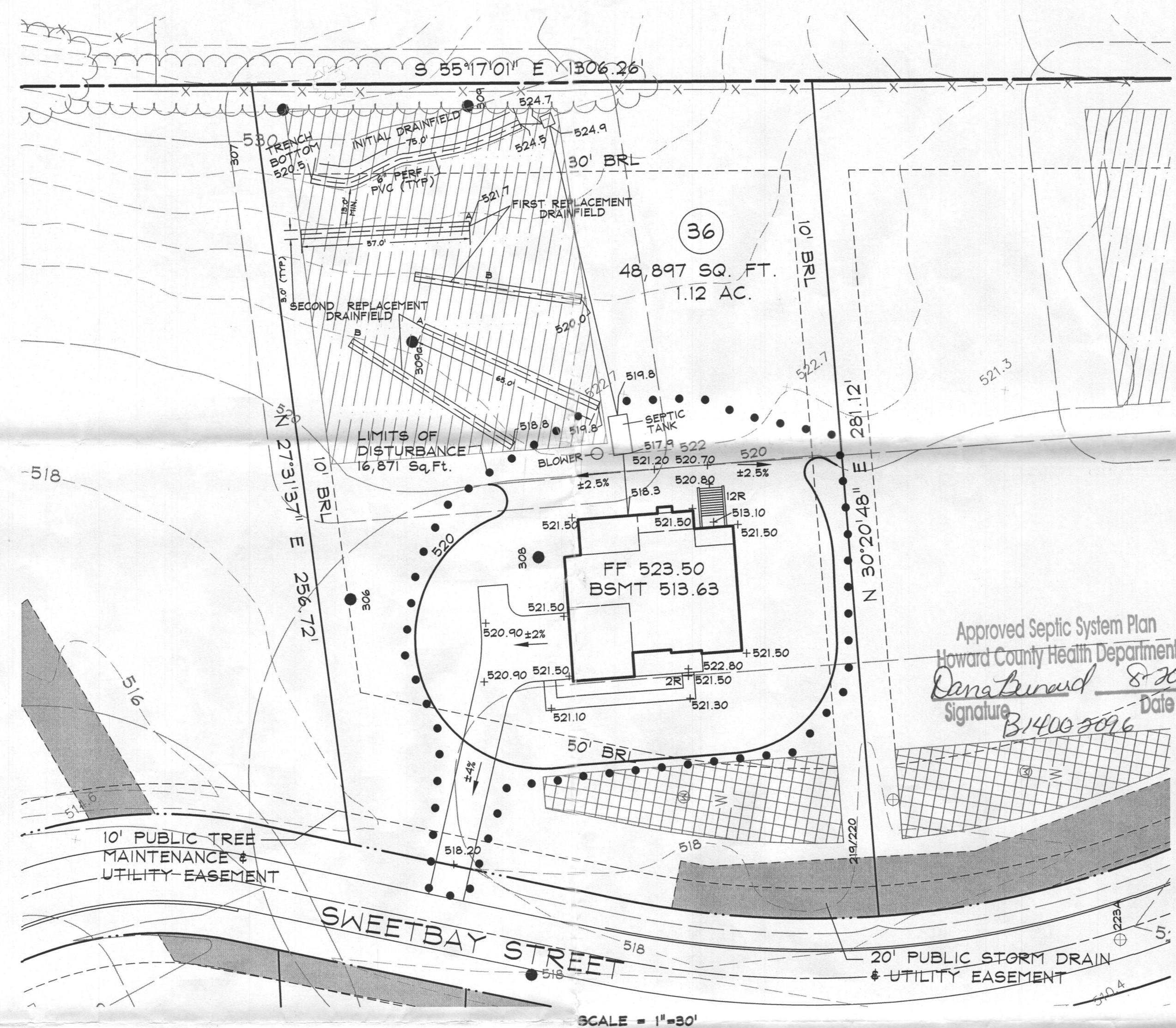
3rd ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

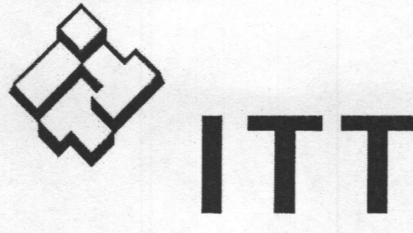
CO. FILE #:	DES. BY: JMM
TAX ACC. #:	DRN. BY: JMM
TAX MAP: 14	CHK. BY: PGC
BLOCK / GRID:	DATE: 08/05/14
PARCEL # 66	DDC JOB# 06116.5
ZONE / USE: RC-DEO	SHEET NUMBER:
DWG. SCALE: 1"=30'	1 of 1

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,560 SQ.FT.
 2. NUMBER OF BEDROOMS: 5
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. PER THE APPROVED ROAD DRAWINGS, F-07-38, A DRIVEWAY CULVERT IS NOT REQUIRED
 5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER COMP-LITE ZONING REGULATIONS DATED 7/28/06.
 6. PLAT REFERENCE: #19948
 7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DTM, AND DATED 06/25/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DENARIO DESIGN CONSULTANTS DATED 07/09/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC IN JAN. 2012.
 8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDERS RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
 9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)318-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 10. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 11. TOTAL LIMIT OF DISTURBANCE: 16,871 SQ. FT. / 0.38 AC.
 12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
 13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAYS" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
 14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
 15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
 16. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
 17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ.FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
 18. EXISTING WELLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
 19. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
 20. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
 21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT WAS PREVIOUSLY APPROVED UNDER F-07-38.

- SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:**
1. 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.
 2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
 3. THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURE'S SPECIFICATIONS.
 4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
 6. 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.
 7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
 9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



SCALE = 1"=30'



PERFORMANCE RATINGS

Total Head (ft. of water)	Gallons Per Minute	EP04	EP05
5	53		
10	46	63	
15	36	55	
20	21	46	
25	0	33	
30	-	11	

STATIC HEAD	10.2'
FRICITION HEAD	15.5'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	25.7'
GALLONS PER MINUTE	31.5 GPM
DOSE	104
PUMP RUN TIME	3.3 MIN

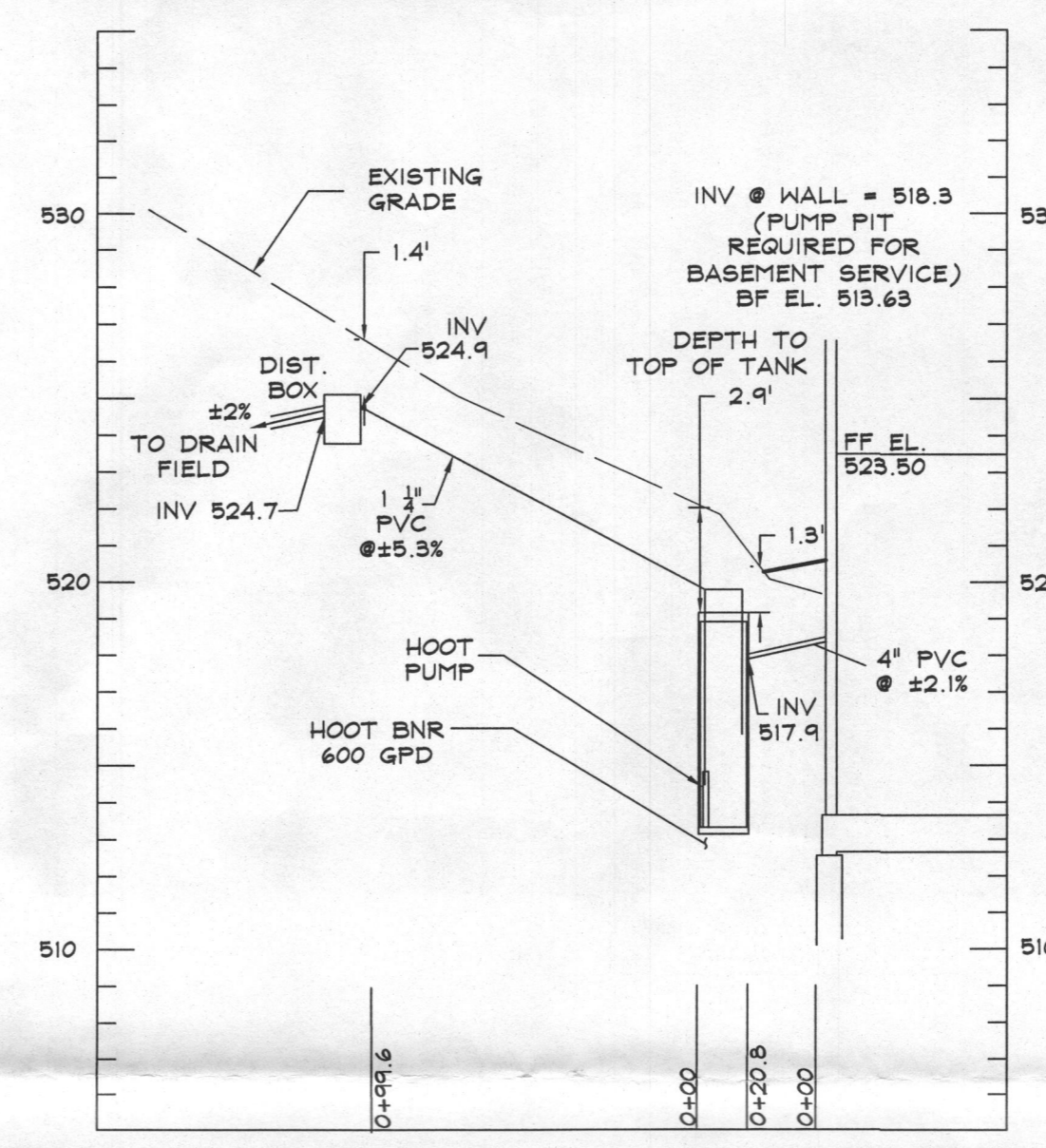
TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD
 OFF FLOAT ELEVATION: 514.7'
 HIGH POINT OF THE SYSTEM: + 524.9'
 VERTICAL ELEVATION CHANGE: 10.2'

FRICITION HEAD
 FITTINGS: 15.8'
 LENGTH OF PVC PIPE: + 49.6'
 TOTAL LENGTH: 115.4'

115.4'/100 x 13.62 = 15.5' TOTAL FRICITION LOSS

TOTAL HEAD
 VERTICAL ELEVATION CHANGE: 10.2'
 TOTAL FRICITION LOSS: 15.5'
 SYSTEM PRESSURE REQUIREMENTS: + 0.0'
 TOTAL DYNAMIC HEAD: 25.7'



SEPTIC SYSTEM PROFILE
 LOT 36
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'

SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):

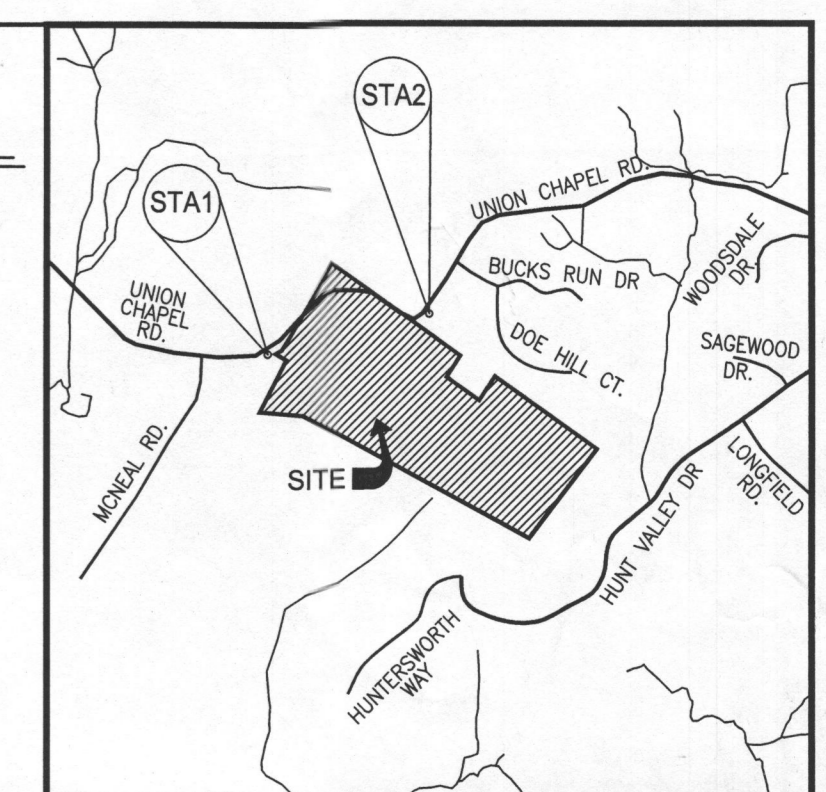
1. INVERT @ FOUNDATION WALL: 518.3 (BASEMENT PUMP REQUIRED)
2. 750 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER (EP05)
 EX. GRADE OVER TANK: 522.0
 PROPOSED GRADE OVER TANK: 522.0
 INVERT: 517.9
3. DISTRIBUTION BOX
 EX. # PROPOSED GRADE OVER TANK: 526.6
 INVERT: 524.9
4. TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)
 13' MIN SPACING BETWEEN TRENCH EDGES
 USE 3' WIDE TRENCH W/ 48" OF GRAVEL BELOW PIPE
 INITIAL TRENCH 750 GPD / 1.2 GPD/SF (APP. RATE) = 625 SF
 625 SF / 3' WIDTH = 208.3 LF x 0.36 = 75 LF MIN.
 USE 1 - 75' LONG TRENCH FOR INITIAL TRENCH
 FIRST REPLACEMENT 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
 937.5 SF / 3' WIDTH = 312.5 LF x 0.36 = 113 LF MIN.
 USE 2 - 57' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
 SECOND REPLACEMENT 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
 937.5 SF / 3' WIDTH = 312.5 LF x 0.42 = 130 LF MIN.
 USE 2 - 65' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

BENCHMARK

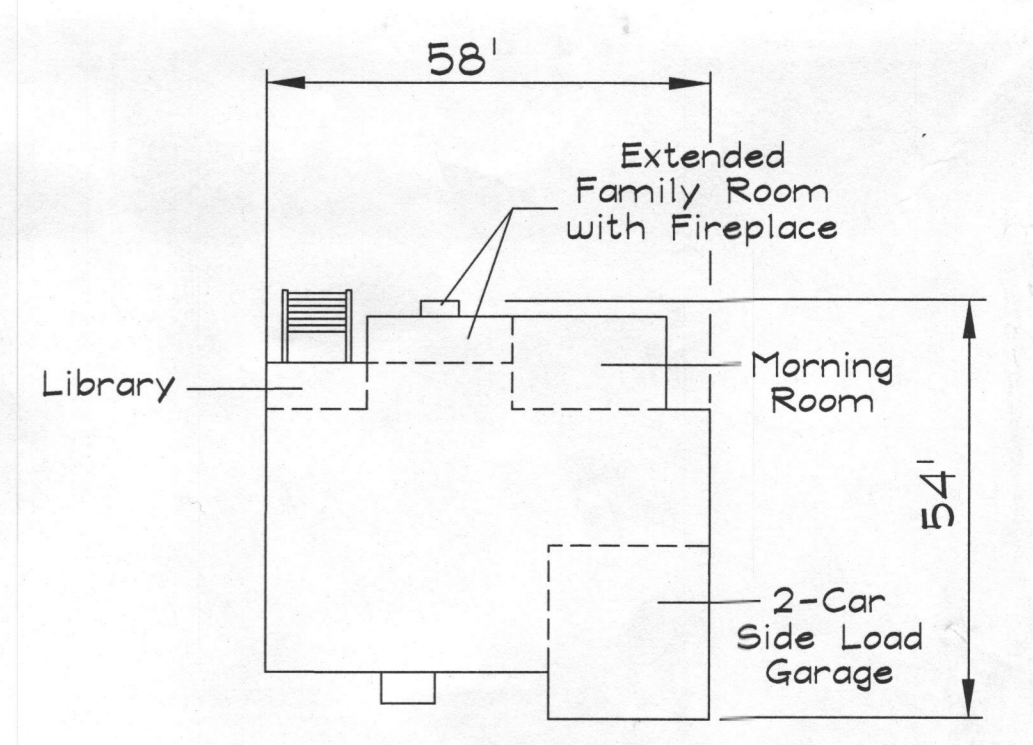
GEODETIC SURVEY CONTROL #1
N: 591450.42
E: 1297571.25
A.A.: 1454
ELEV.: 558.43

GEODETIC SURVEY CONTROL #2
N: 591693.88
E: 1299121.60
B.M.: 1408
ELEV.: 542.23

ADC MAP COORDINATES: 4812/04



VICINITY MAP
 SCALE: 1" = 2000'



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SITE PLAN FOR BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

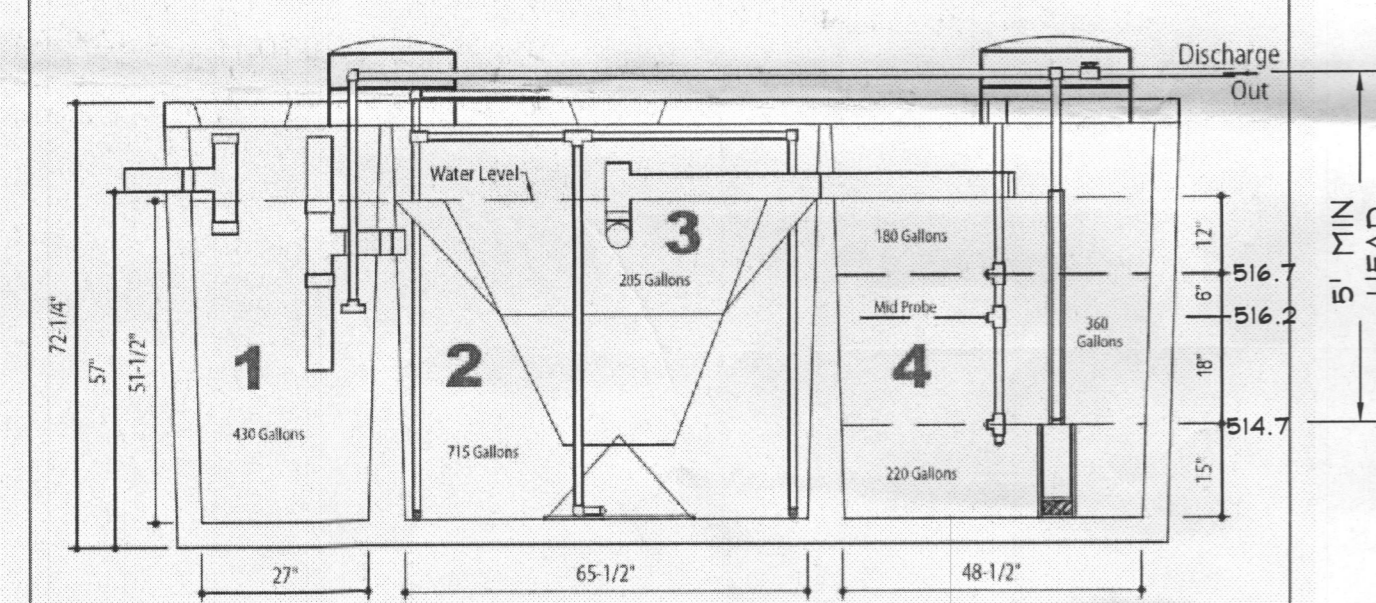
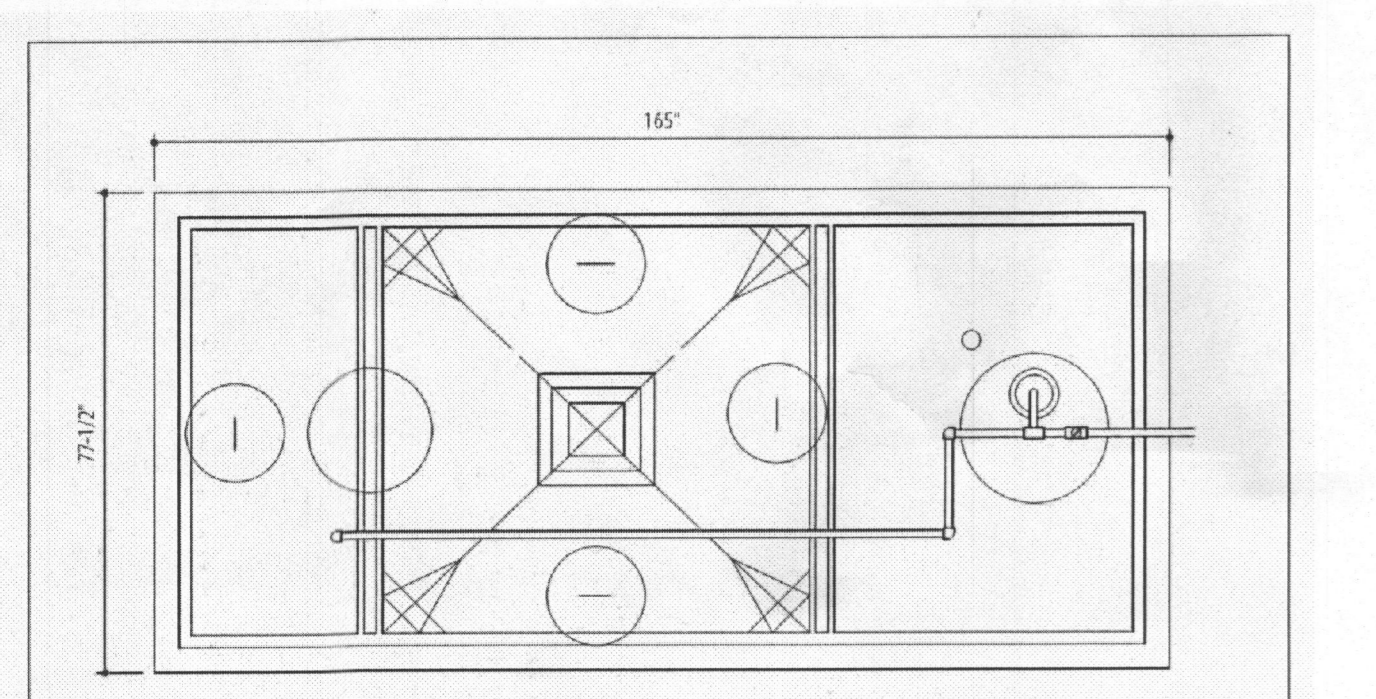
NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #:	DES. BY: JMM			
TAX ACC. #:	DRN. BY: JMM			
TAX MAP: 14	CHK. BY: PGC			
BLOCK / GRID:	DATE: 08/05/14			
PARCEL #: 66	DDC JOB#: 06116.5			
ZONE / USE: RC-DEO	SHEET NUMBER:			
DWG. SCALE: 1"=30'	1 of 1			

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DATE: 08/05/2014

EXPIRATION DATE: JANUARY 25, 2016

PAUL G. CAVANAUGH
 PROFESSIONAL ENGINEER



LOT 36 PUMP ELEVATIONS

	OFF	ON	ALARM
	514.7	516.2	516.7

DESIGN DATA & GENERAL NOTES

1. Concrete strength FC=4000 psi, @ 28 days. Density = 150 pcf.
2. Cement: Portland Type II per ASTM C 150-92.
3. Admixtures & plasticizers per ASTM C 260-96 & C 494-92.
4. Reinforcing per ASTM A305, Min. 1.127 cover.

Mayer Brothers, Inc.
 6364 Race Road
 Ellicott City, Maryland 21075
 Tel. 410.796.1134
 Fax 410.796.1138
 www.mayerbrothers.com

600 GPD BNR SYSTEM H-600 ABNR with 750 GALLON PUMP CHAMBER
 Dwg. No. Hoot Form #1 No Scale March 19, 2009