

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

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

RECEIPT DATE: 3/16/15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 555772

INSTALLATION APPROVAL DATE: 9/17/15 **PERMIT** A _____
(Kmw)

CONSTRUCTION

PROPERTY ADDRESS: 15246 Sweetbay Street
 SUBDIVISION: Belle Haven Estates LOT: 37 TAX ID: _____
 CONTRACTOR: Ben Low Plumbing EMAIL: _____
 CONTRACTOR ADDRESS: 23407 Frederick Road, Clarksburg, MD 20871 PHONE: (301) 428-3900
 PROPERTY OWNER: K Hovnanian Homes EMAIL: cwillet@khov.com
 OWNER ADDRESS: 1802 Brightseat Road PHONE: 301-683-6268

BAT UNIT MODEL: Hoot 600 BNR PUMP SIZE: _____ PUMP TANK CAPACITY: 600GPD
 DISTRIBUTION SYSTEM: GRAVITY LOW PRESSURE DOSED NUMBER OF BEDROOMS: 4

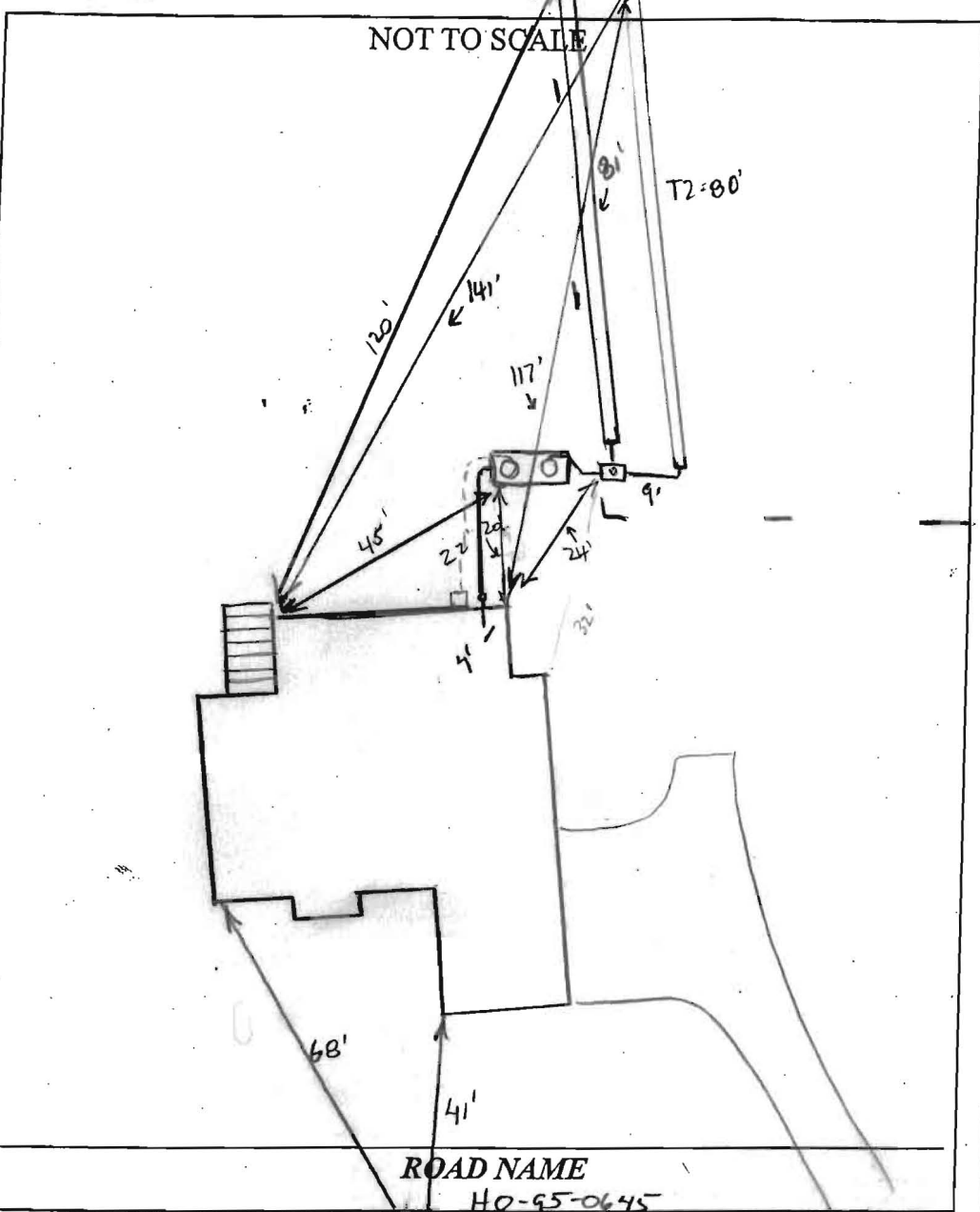
TRENCHES:	LINEAR FEET REQUIRED: <u>125 160</u>	INLET DEPTH: <u>SEE BAT PLAN 3</u>
	TRENCH WIDTH: <u>2</u>	MAXIMUM BOTTOM DEPTH: <u>SEE BAT PLAN 7</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>SEE BAT PLAN</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	Install BAT system per plan. <u>3-7'</u> <u>600gpd 1.2yo P&T</u> <u>2x80 @ 2' wide</u> <u>~ 80 ton</u>	

ISSUED BY: Dana Bernard *(Kmw)* ISSUE DATE: 3-16-15 EXPIRATION DATE: 3-16-16

- 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 DOWNGRAIENT 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'



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
2	3	7
NUMBER OF TRENCHES		2
TOTAL LENGTH		161'
ABSORPTION AREA		322' + SIDEWALL
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		Yes
DISTRIBUTION BOX PORT		Yes

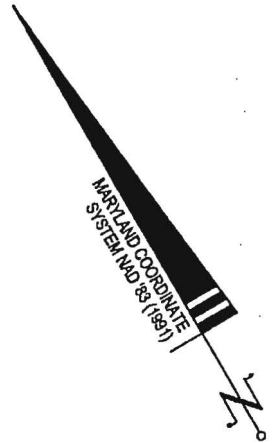
SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	Yes
MANUFACTURER	Mayer
CAPACITY	14600 GAL
SEAM LOC	TOP
TANK LID DEPTH	12-18"
BAFFLES	6" x 4"
BAFFLE FILTER	N/A
MANHOLE LOC	Front/Rear
6" PORT LOC	None
WATERTIGHT TEST	—
SLOTTED	Yes
DATE ON LID	N/A
PUMP/SEPTIC TANK LEVEL N/A	
MANUFACTURER	—
CAPACITY	— GAL
SEAM LOC	—
TANK LID DEPTH	—
BAFFLES	—
BAFFLE FILTER	—
MANHOLE LOC	—
6" PORT LOC	—
WATERTIGHT TEST	—
SLOTTED	—
DATE ON LID	—

PRE-CONSTRUCTION: 4/23/15 Perc test hole dug above SAA area to verify consistency. Perc / soil consistent w/ profiles shown. Specs adjusted same for installed system only. Call for inspection (KW)

INSTALLATION: 4/24/15 BAT unit set. House sewer connected. Trench over dug, contractor used #57 stone under all pipes. (Do not use, will channel unwanted H₂O around tanks and system). Top trench complete. Told contractor to pull lower trench down 1' for separator. Call for inspection (KW) 4/27/15 2nd trench finished + left open. 2' wide. 2.5' to stone. Need BAT startup certification. (SC) 8/6/15 Hoot startup with Mike sample EPO511F Gould's 1/2 hp pump. Alarm works. Pump pumps to D-box and recirculates. Circuit in house is 20A (should be 30A) - Mike will not approve until K Hov gets an electrician to fix. (SC)

FINAL INSPECTOR [Signature] DATE OF APPROVAL 8/12/15

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TAN	CHD. BRG.	CHD. DIST.
C46	335.00'	199.63'	34°08'37"	102.88'	S 75°56'45" E	196.69'

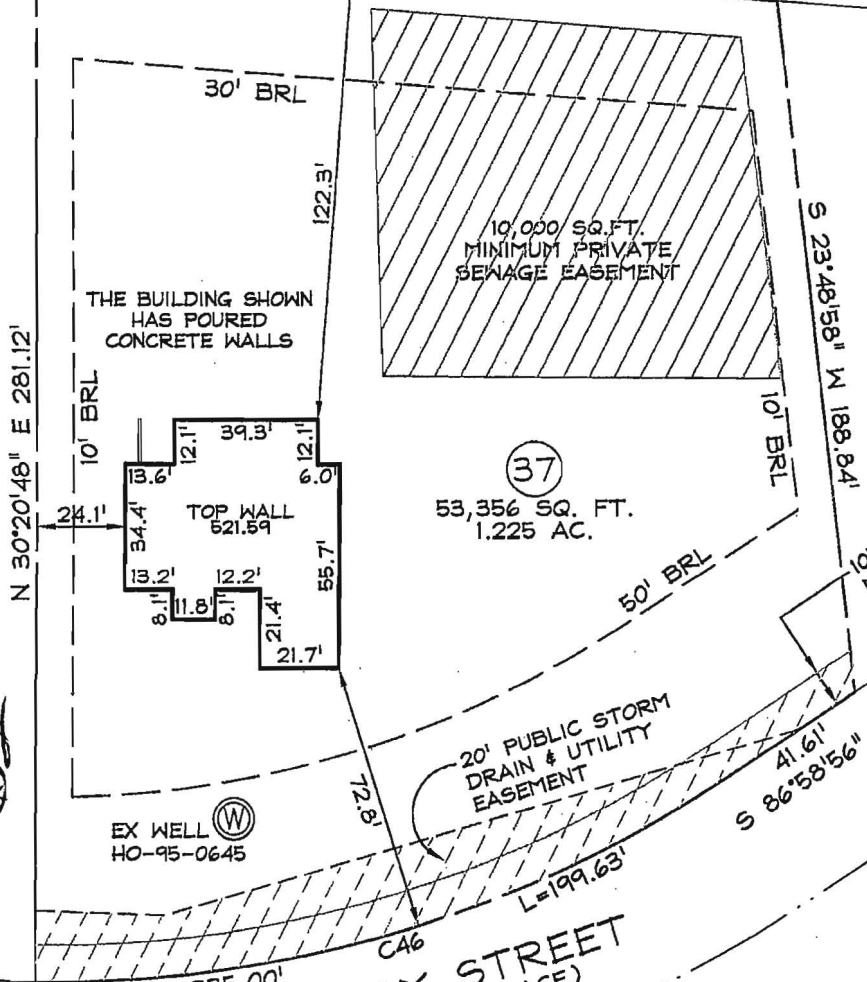


LOT 26
WELLINGTON WEST
PLAT 13637

LOT 25
WELLINGTON WEST
PLAT 13637

PRESERVATION
PARCEL D
WELLINGTON WEST
PLAT 13638

S 55°17'01" E 202.66'



Handwritten:
36
Wheel
check
4-7-15
RBS

NON-BUILDABLE
PRESERVATION
PARCEL L

(37)
53,356 SQ. FT.
1.225 AC.

THE BUILDING SHOWN
HAS POURED
CONCRETE WALLS

10,000 SQ. FT.
MINIMUM PRIVATE
SEWAGE EASEMENT

10' PUBLIC TREE
MAINTENANCE &
UTILITY EASEMENT

20' PUBLIC STORM
DRAIN & UTILITY
EASEMENT

EX WELL (W)
HO-95-0645

SWEETBAY STREET
(PUBLIC ACCESS PLACE)
(40' R/W)

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.



Handwritten signature: RBS 3/13/15



- Planners
- Surveyors
- Engineers
- Landscape Architects

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

LOCATION DRAWING / WALL CHECK
#15246 SWEETBAY STREET
LOT 37
BELLE HAVEN ESTATES
PLAT No. 19952
ELECTION DIST. No. 4 HOWARD COUNTY, MD

DDC JOB#: 06116:5
DATE: 3-12-2015
SCALE: 1"=50'
DRN. BY: RC
CHK. BY: RBS

15246 Sweetbay St. Woodbine, MD
21797.

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: abou
Reference/Control #: 198

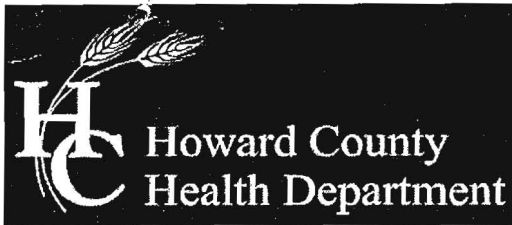
LR - Agreement Surcharge
1x 40.00 40.00

=====
SubTotal: 60.00
Total: 60.00

=====
CRD-Credit 60.00
Credit Card Confirmation : 06643c

09/22/2015 11:54 CC13-MH
#4885474 /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 Sabitlyu Abou + Kareem Abou ("the Owner").

WHEREAS, the Owner owns a tract of land at street address 15296 Sweetbay Street, 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 # 20, Parcel # 66, Deed Reference # _____ and Tax Account # 04-374037 ("the Property").

WHEREAS, the Property lacks an available public drinking water source and is required to have and 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-95-0645 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.

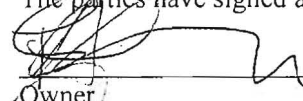
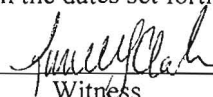
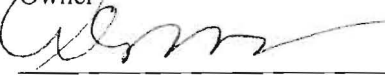
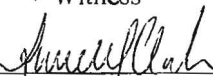

NOW THEREFORE, the parties have agreed to the following terms and conditions:

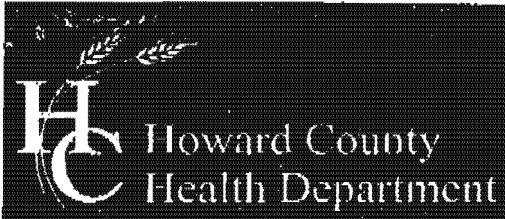
1. The Owner will record this Agreement among the Land Records of Howard County, Maryland and provide confirmation to the Health Dept.
2. The Owner agrees to install and maintain a water treatment device, which effectively reduces the Nitrate below the MCL. The Health Department shall verify that the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

	09/18/2015		09/18/15
Owner	Date	Witness	Date
	9/18/15		09/18/15
Owner	Date	Witness	Date
	9/22/2015		
Howard County Health Department	Date		



Bureau of Environmental Health 000159

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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 10th day of MARCH 2015, among K. HOVANNIAN THOMAS OF MARYLAND I, 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 15246 SWEETBAY STREET, WOODBANE MD., in the 4th 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 15990 Folio 00210. 04/374037

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 600 GPD BNR w/ 750 GALLON PUMP CHAMBER.

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

16072 000159

LIBER 16072 FOLIO 360

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.

Bea Ripen 3/16/2015
Howard County Health Department

Steve Snyder 2-18-15
Owner #1 Signature Date
VP CONSTRUCTION, K HOVNANIAN HOMES
OF MARYLAND LLC
STEVE SNYDER
Owner #1 Print Name

(AS OF 2/19/15 NO BUYER)
Buyer #1 Signature Date

Buyer #1 Print Name

LR - Agreement	
Recording Fee	20.00
Grantor/Grantee Name:	K HOVNANIAN HOMES
Reference/Control #:	159
LR - Agreement	
Surcharge	40.00
SubTotal:	60.00
Owner#2 Signature	Date
	03/16/2015 03:06
Owner #2 Print Name	3984558 CC0503 -
	Howard Co
	Columbia/CC05.03.04 -
	Register 04

Buyer #2 Signature Date

Buyer #2 Print Name



Bureau of Environmental Health

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

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FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM**

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PUMP CHASSIS.

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- 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.
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Bea Ryan 3/16/2015
Howard County Health Department

Steve Snyder 2-18-15
Owner #1 Signature Date
VP CONSTRUCTION, KRONANANAN HUNY
OF MARYLAND LLC
STEVE SNYDER
Owner #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

(AS OF 2/18/15 NO BUYER)
Buyer #1 Signature Date

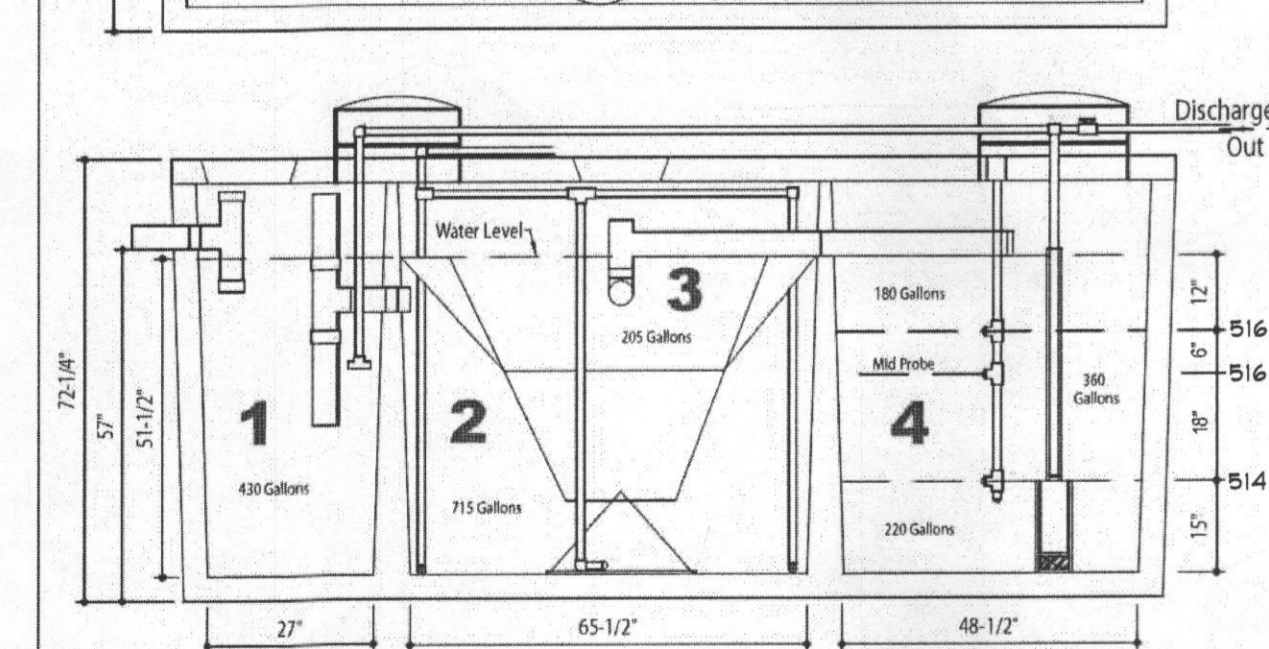
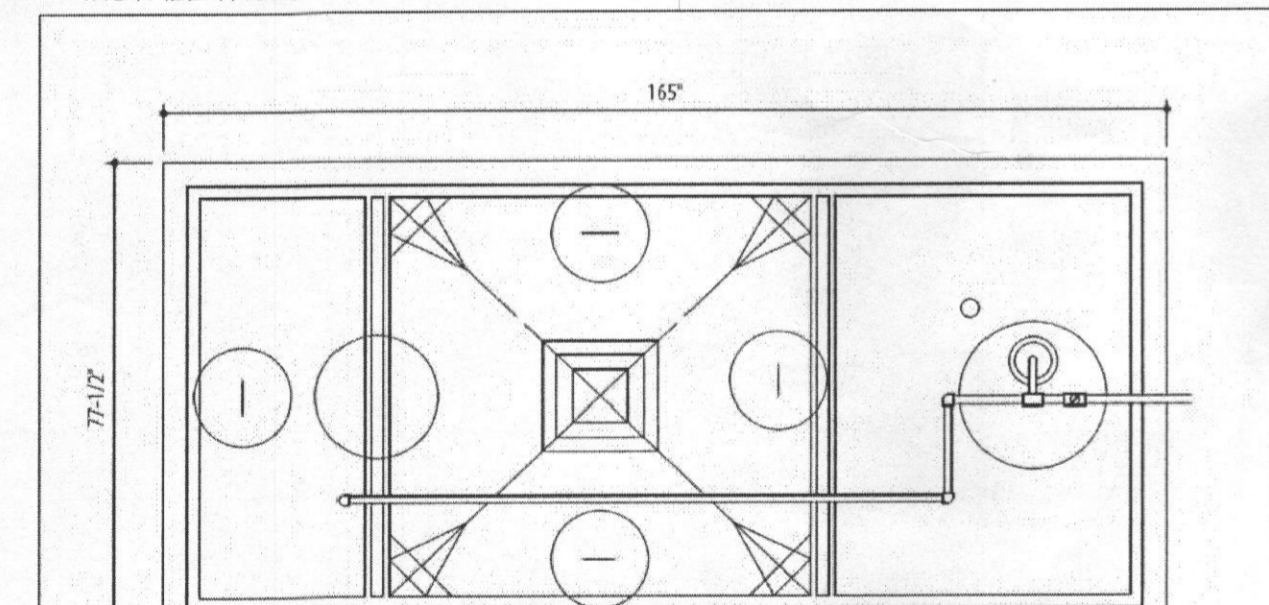
Buyer #2 Signature Date

Buyer #1 Print Name

Buyer #2 Print Name

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,876 SQ.FT.
 2. NUMBER OF BEDROOMS: 4
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. DRIVEWAY CURBVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS F-07-38
 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: H19948
 7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DMV, 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)313-1881 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: 12,856 SQ. FT. / 0.28 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 THIS 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.
 22. THE EXISTING WELL SHOWN (HO-095-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.

- 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 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.



LOT 37 PUMP ELEVATIONS
LOA PROBE/PUMP OFF: 514.7
MID PROBE: 516.2
ALARM: 516.7

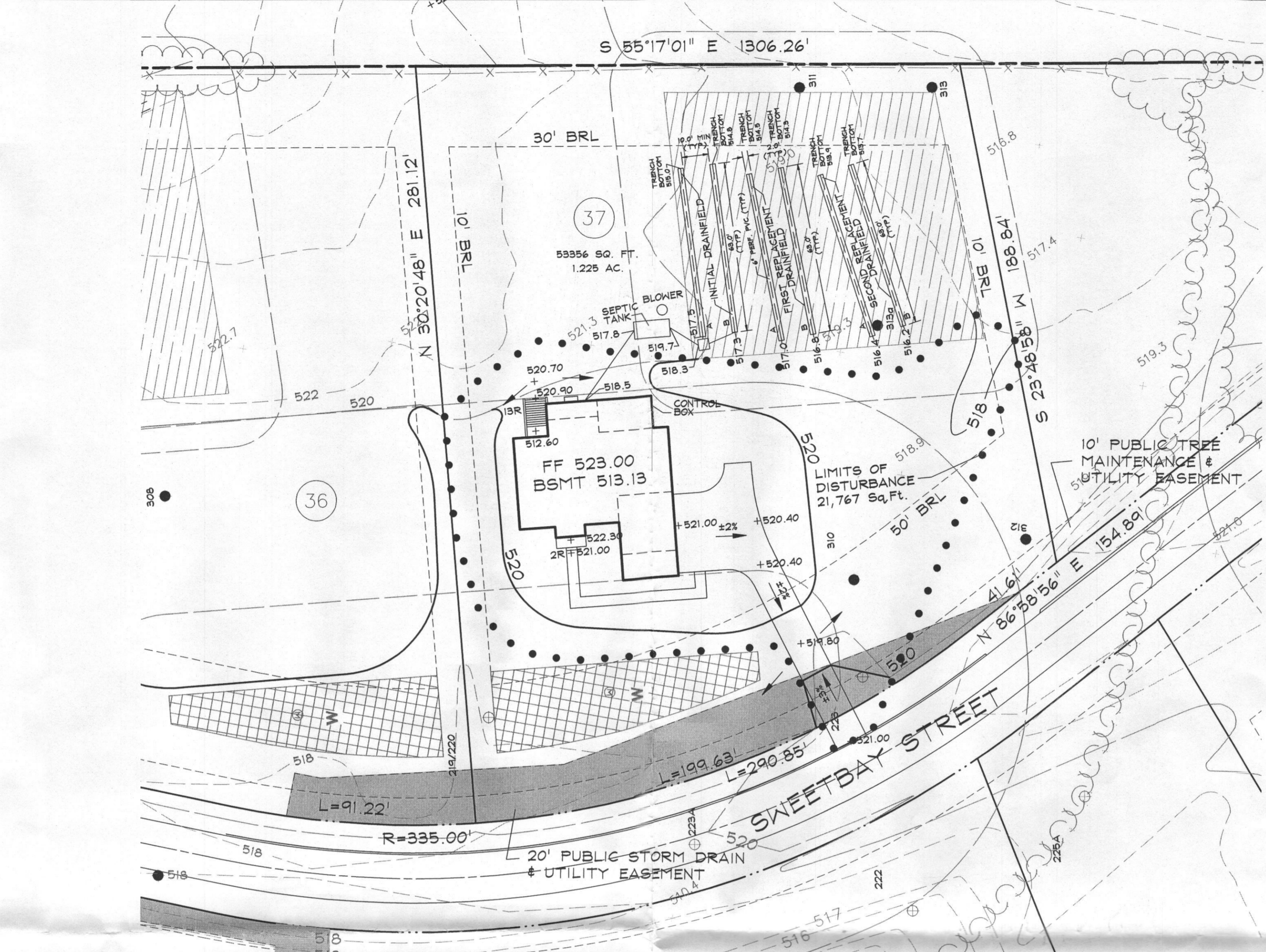
DESIGN DATA & GENERAL NOTES

1. Concrete strength for all concrete = 3000 psi
2. Concrete - Portland Type III per ASTM C 150-92
3. Admixtures & plasticizers per ASTM C 260-96 & C 494-92
4. Reinforcing per ASTM A 618, Min. 1/2" cover

Mayer Brothers, Inc.
 6294 Race Road
 Elkridge, Maryland 21075
 Tel: 410.796.1434
 Fax: 410.796.1438
 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



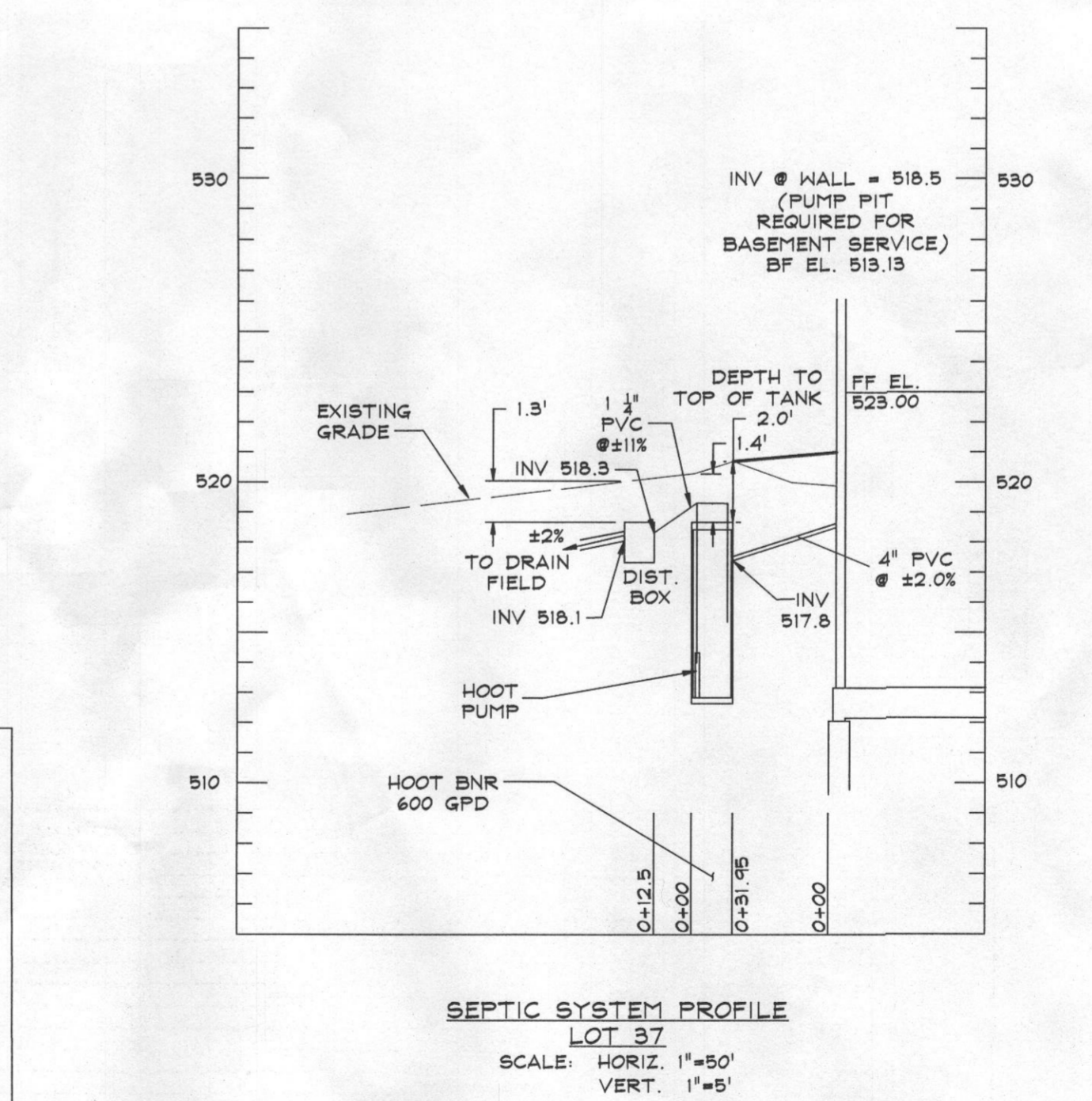
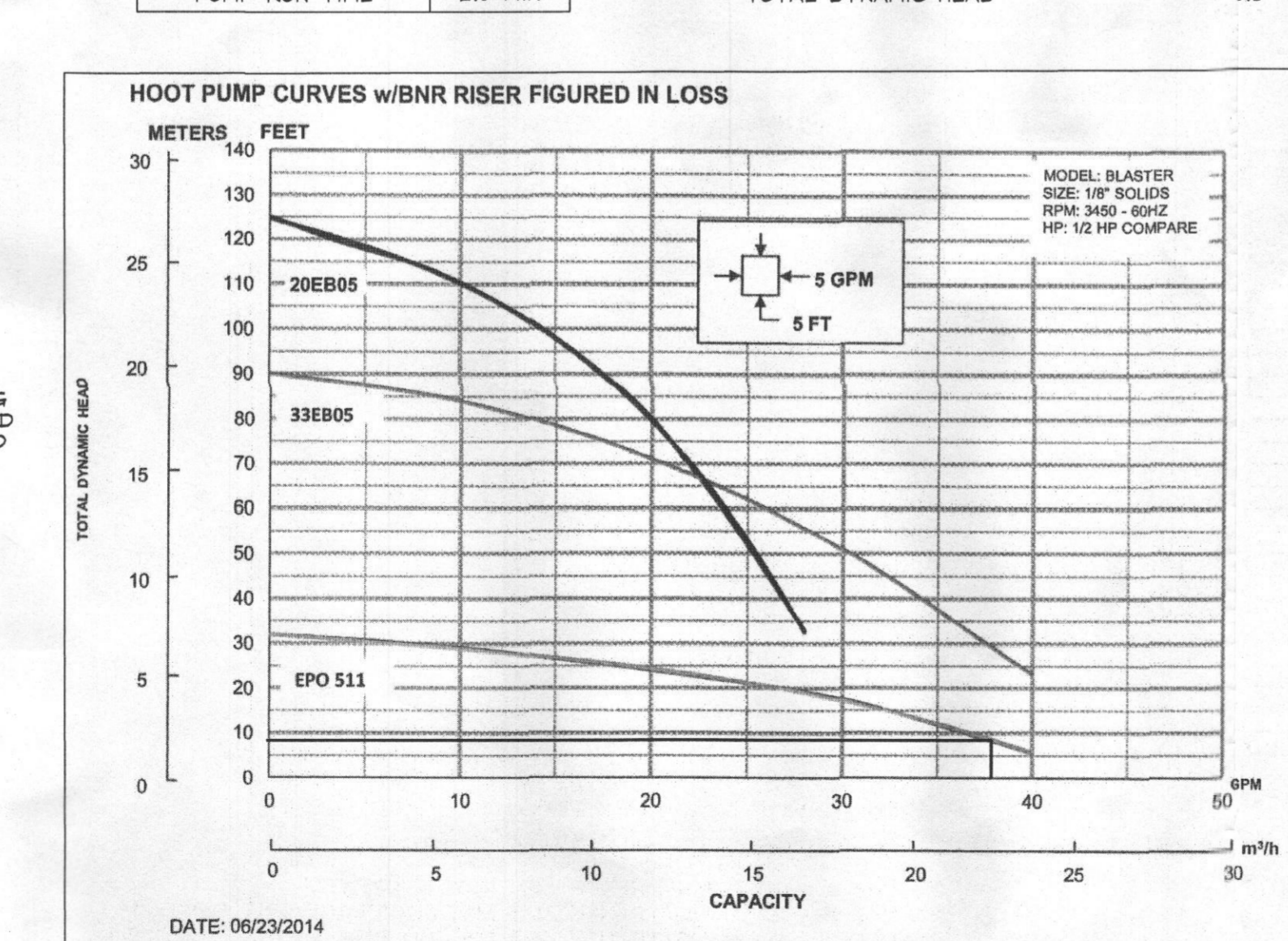
SCALE = 1"=30'

TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	
OFF FLOAT ELEVATION:	514.7'
HIGH POINT OF THE SYSTEM:	+ 519.7'
VERTICAL ELEVATION CHANGE:	5.0'

FRICTION HEAD	
FITTINGS:	13.8'
LENGTH OF PVC PIPE:	+ 12.5'
TOTAL LENGTH:	26.3'
26.3'/100 x 13.62 = 3.6' TOTAL FRICTION LOSS	

TOTAL HEAD	
VERTICAL ELEVATION CHANGE:	5.0'
TOTAL FRICTION LOSS:	3.6'
SYSTEM PRESSURE REQUIREMENTS:	+ 0.2'
TOTAL DYNAMIC HEAD:	9.6'



- SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):**
1. INVERT @ FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
 2. 600 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER
 EX. GRADE OVER TANK: 520.3
 PROPOSED GRADE OVER TANK: 520.3
 INVERT: 517.8
 3. DISTRIBUTION BOX
 EX @ PROPOSED GRADE OVER TANK: 520.0
 INVERT: 518.3
 4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)
 600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF
 USE 2' WIDE TRENCH W/ 30' OF GRAVEL BELOW PIPE
 10' MIN SPACING BETWEEN TRENCH EDGES
 500 SF / 2' WIDTH = 250 LF x 0.50 = 125 LF MIN. TRENCH
 USE 2 - 63' LONG TRENCH FOR INITIAL SYSTEM
 USE 2 - 63' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
 USE 2 - 63' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

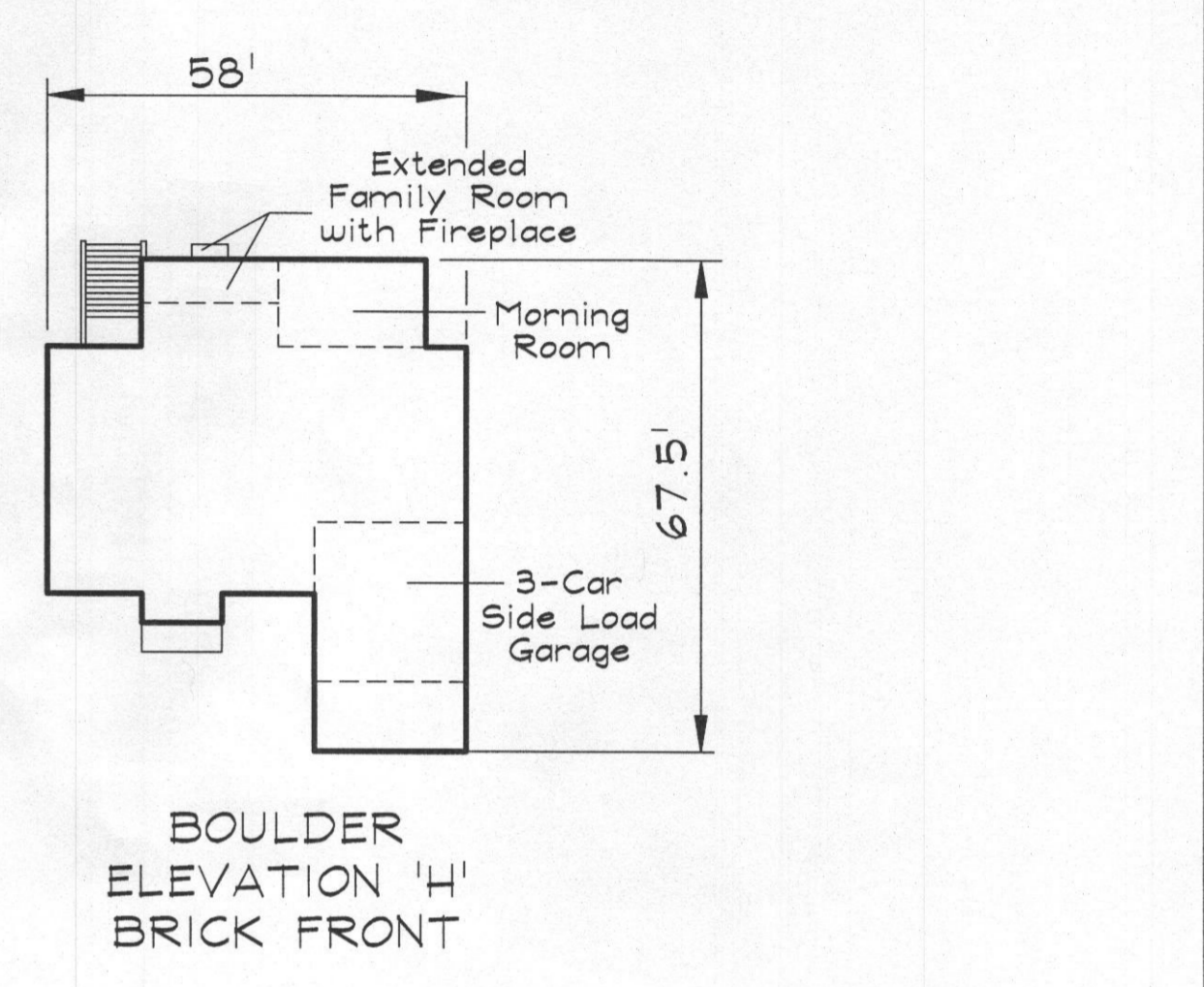
BENCHMARK

GEODETTIC SURVEY CONTROL #1
 N. 591450.42
 E. 120751.25
 A.A. 146A
 ELEV. 536.43

GEODETTIC SURVEY CONTROL #2
 N. 1296121.00
 E. 1468
 B.M. 542.23
 ELEV. 542.23

ADP MAP COORDINATES: 461204

VICINITY MAP
 SCALE: 1" = 2000'



BOULDER ELEVATION 'H' BRICK FRONT

DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED LIMIT OF DISTURBANCE
- + 665.5 PROP. SPOT ELEV./FLOW ARROW
- PROPOSED 20' SEPTIC RESERVE
- 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 35 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (63')	520.0	517.5	515.0517.1
INITIAL SYSTEM TRENCH B (63')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
SECOND REPLACEMENT TRENCH B (63')	518.7	516.2	513.7

DDC Inc.
 Development Design Consultants

OWNER:
 K. HOVANNIAN HOMES
 1802 Brightwood Road
 Landover, Maryland 20785
 (301) 683-6288

DEVELOPER:
 192 East Main Street
 Westminster, MD 21157
 410.386.0560
 410.386.0564 (Fax)
 DDC@DDCinc.us
 www.DDCinc.us

SITE ADDRESS:
 LOT 37
 15248 Sweetbay Street
 Woodbine, Maryland 21787

BELLE HAVEN ESTATES LOT 37

SITE PLAN FOR BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: **DES. BY:** BKC
TAX ACC. #: **DRN. BY:** BKC
TAX MAP: 14 **CHK. BY:** PGC
BLOCK / GRID: **DATE:** 10/28/14
PARCEL #: 06 **DDC JOB#:** 06116.5
ZONE / USE: RC-DEO **SHEET NUMBER:**
DWG. SCALE: 1"=30' 1 of 1

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.

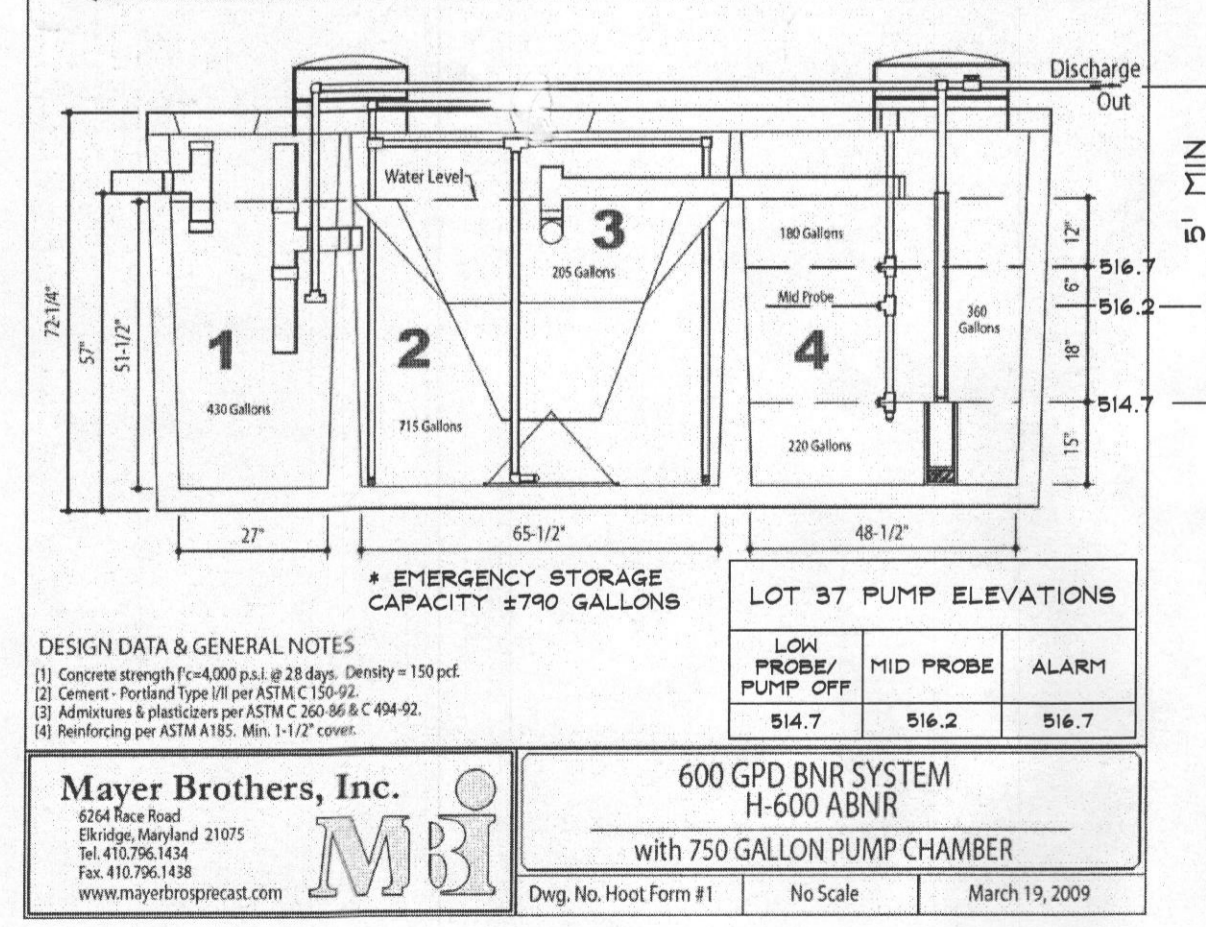
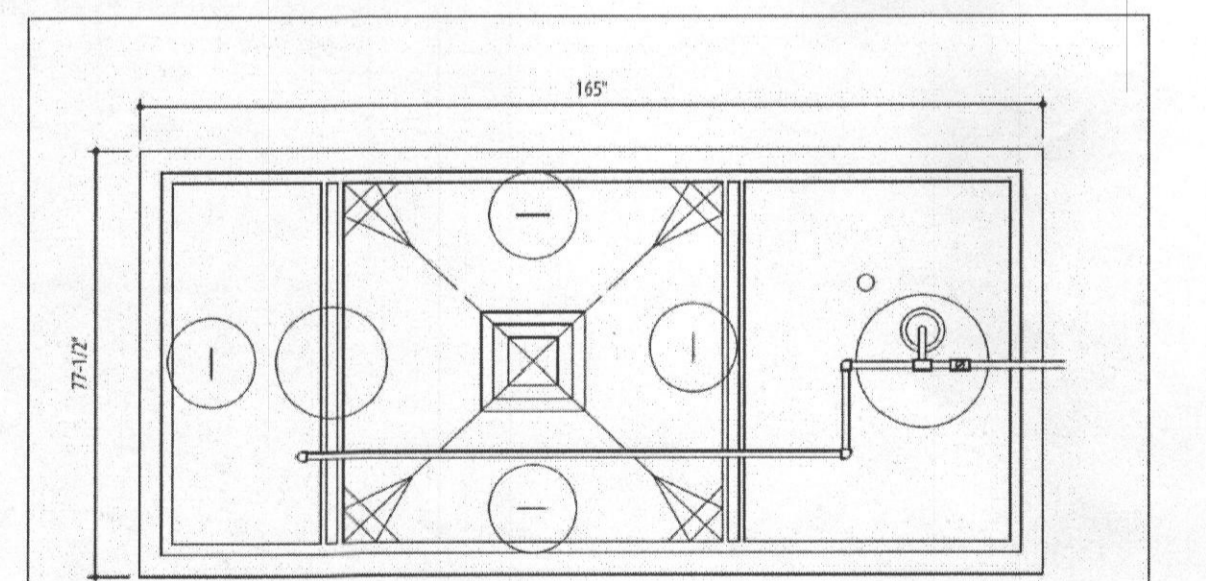
LICENSE NO. 27020, EXPIRATION DATE: JANUARY 26, 2016

DATE: 10/28/2014

PAUL G. CAVANAUGH
 PROFESSIONAL ENGINEER

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,876 SQ.FT.
NUMBER OF BEDROOMS: 4
 2. EJECTOR PUMP REQUIRED TO SENIOR BASEMENT
 3. DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-38.
 4. 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.
 5. PLAT REFERENCE: #19948
 6. 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.
 7. 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.
 8. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)313-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 9. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 10. TOTAL LIMIT OF DISTURBANCE: 12,856 SQ. FT. / 0.28 AC.
 11. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
 12. 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.
 13. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
 14. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
 15. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
 16. 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.
 17. 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.
 18. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
 19. 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.
 20. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT WAS PREVIOUSLY APPROVED UNDER F-07-38.
 21. THE EXISTING WELL SHOWN (40-095-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.
 22. AT ANY TIME IN THE FUTURE THAT A BUILDING PERMIT IS SUBMITTED TO FINISH THE AREA CURRENTLY IDENTIFIED AS OPTIONAL DEN, THEN A SEPTIC SYSTEM UPGRADE WILL BE REQUIRED AS FINISHING THE OPTIONAL DEN CREATES A FIFTH BEDROOM PER HOWARD COUNTY CODE 3.80(B).

- 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.
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 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.

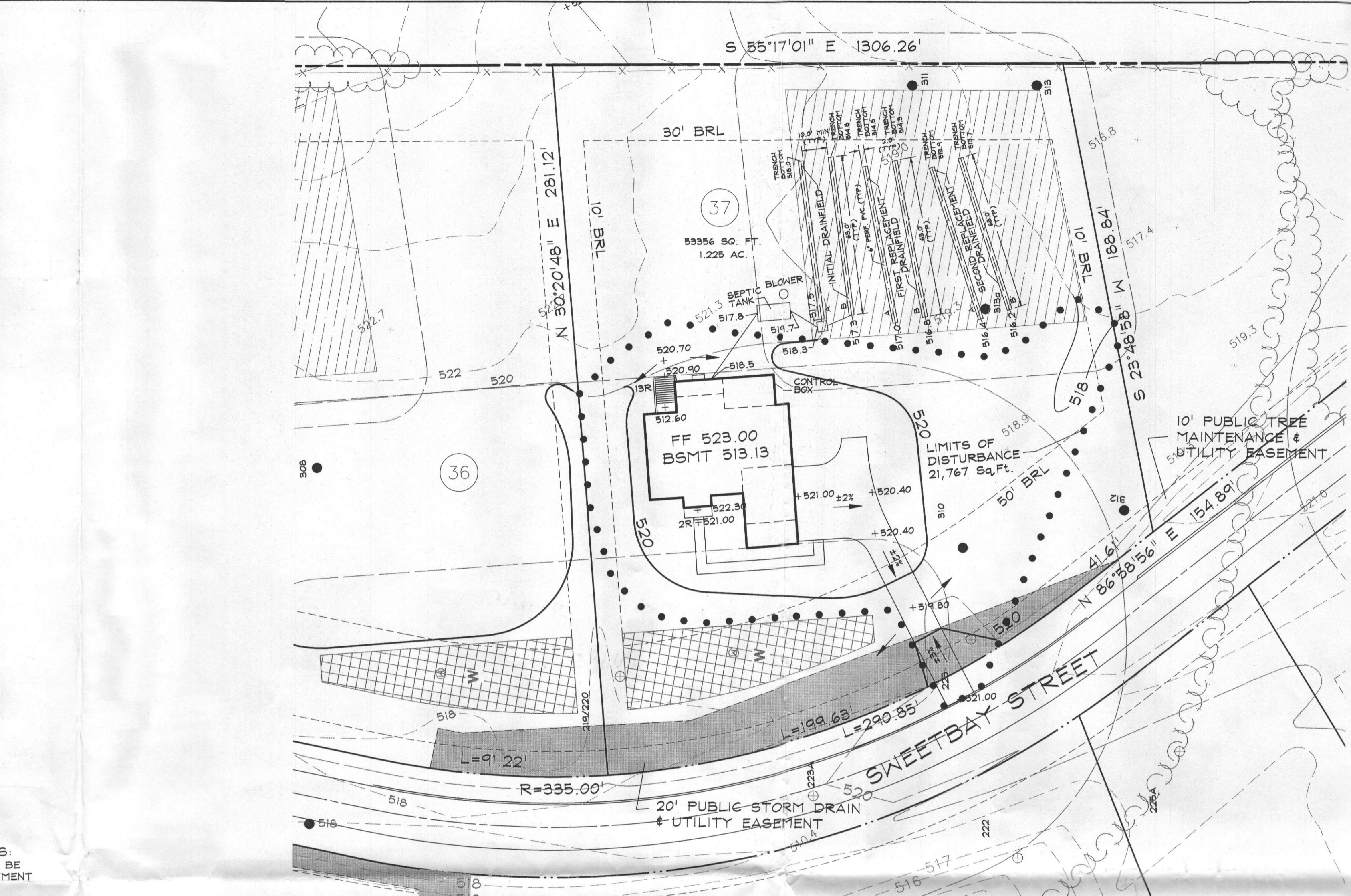


LOT 37 PUMP ELEVATIONS

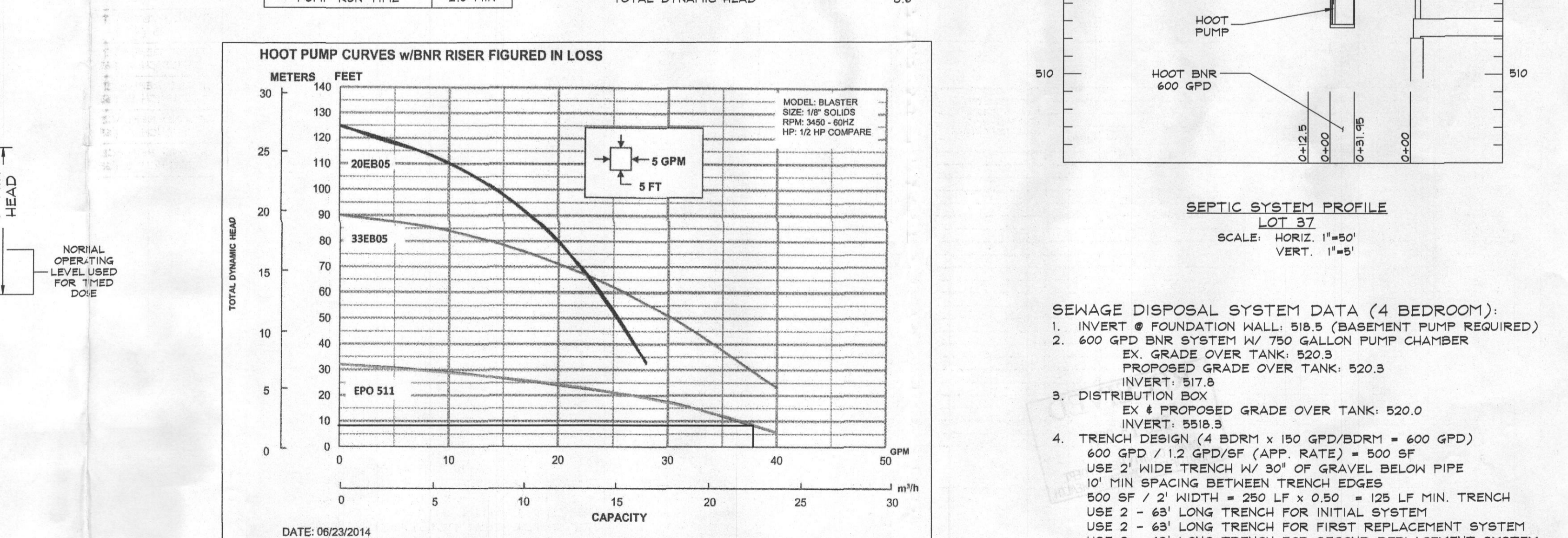
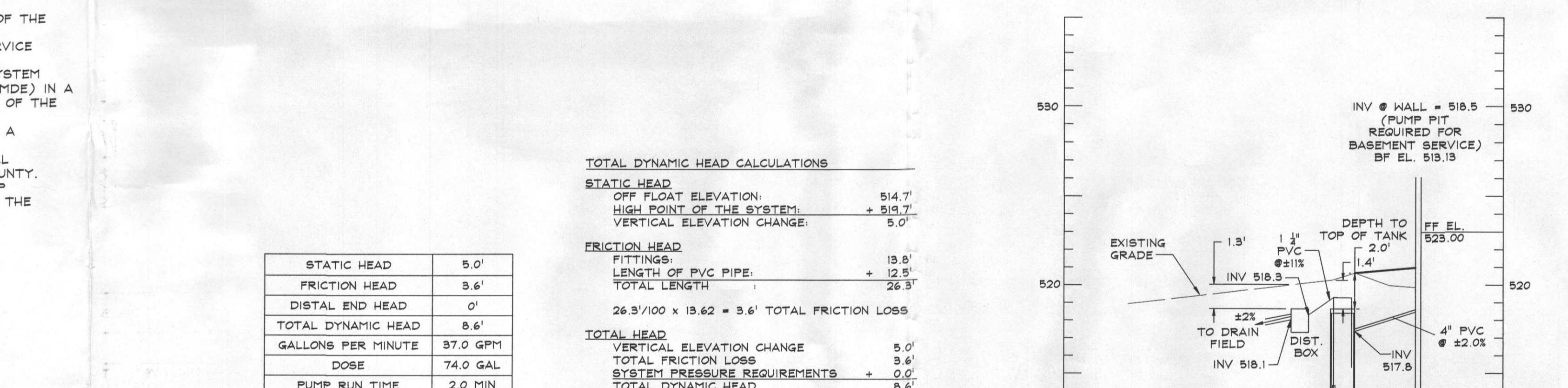
LOW PROBE / PUMP OFF	MID PROBE	ALAR#1
514.7	516.2	516.7

600 GPD BNR SYSTEM H-600 ABNR
with 750 GALLON PUMP CHAMBER

Mayer Brothers, Inc. 6514 New Road, Elridge, Maryland 21075
Dwg. No. Hoot Form #1 No Scale March 19, 2009



SCALE = 1"=30'



DATE: 06/23/2014

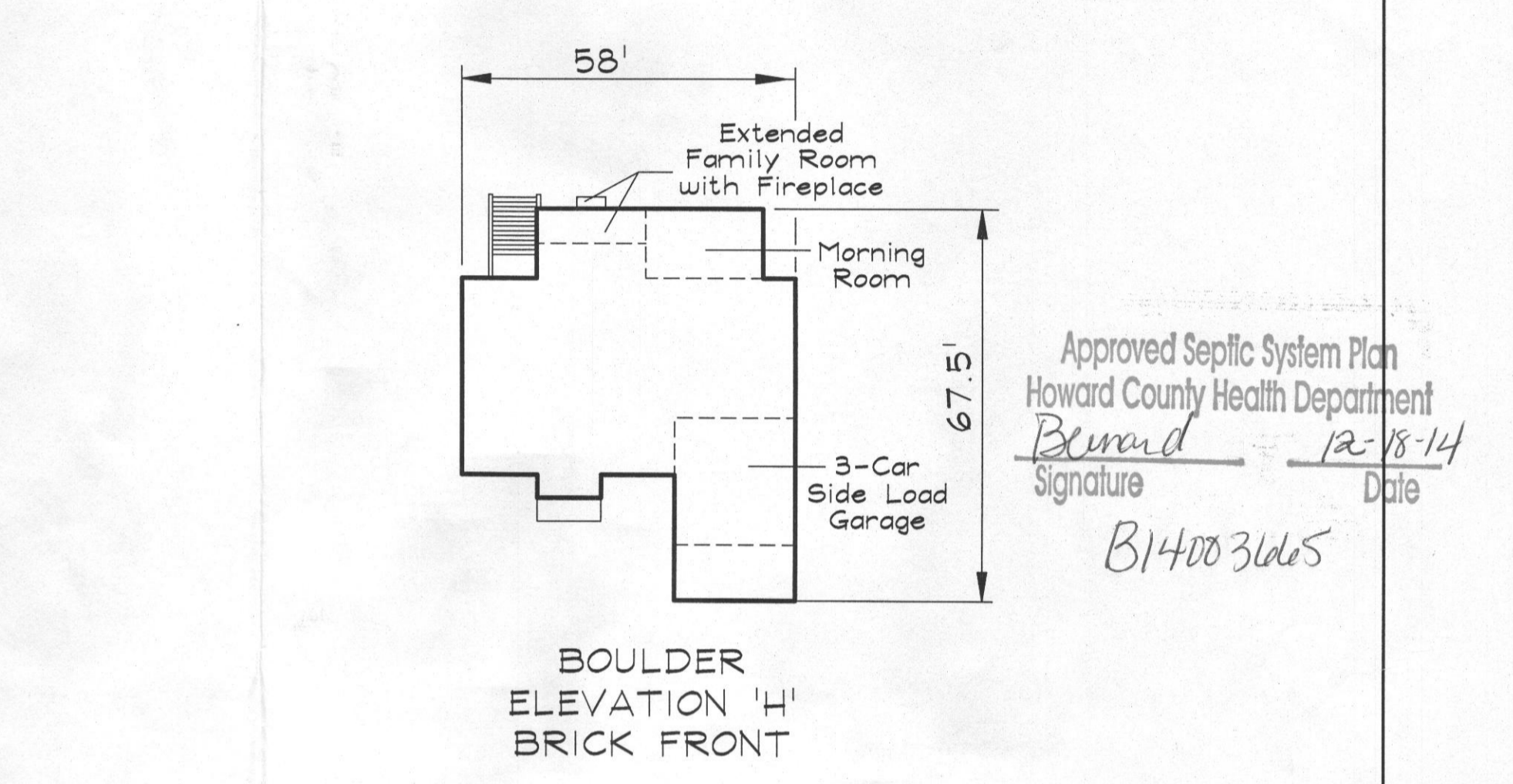
BENCHMARK

GEODETIC SURVEY CONTROL #1
N. 591450.42
E. 1227571.25
A.A. 146A
ELEV. 535.43

GEODETIC SURVEY CONTROL #2
N. 591863.38
E. 1226121.80
B.M. 146B
ELEV. 642.23

ADP MAP COORDINATES: 461204

VICINITY MAP
SCALE: 1" = 2000'



DATA SOURCES:

DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 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 35 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (63')	520.0	517.5	515.05/1.1
INITIAL SYSTEM TRENCH B (63')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
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DDC Inc.
Development Design Consultants

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

OWNER:
K. HOVANIAN HOMES
1802 Brightwood Road
Linthicum, Maryland 21086
(301) 683-6268

DEVELOPER:
Belle Haven Estates
LOT 37

SITE ADDRESS:
LOT 37
15248 Sweetbay Street
Woodburn, Maryland 21787

3rd ELECTION DISTRICT HOWARD COUNTY

REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: **DES. BY:** BKC
TAX ACC. #: **DRN. BY:** BKC
TAX MAP: 14 **CHK. BY:** PGC
BLOCK / GRID: **DATE:** 12/05/14
PARCEL #: 66 **DDC JOB #: 08116.5**
ZONE / USE: RC-DEO **SHEET NUMBER:**
DWG. SCALE: 1"=30' 1 of 1

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. 27100 EXPIRATION DATE: JANUARY 28, 2016

10/28/2014
DATE

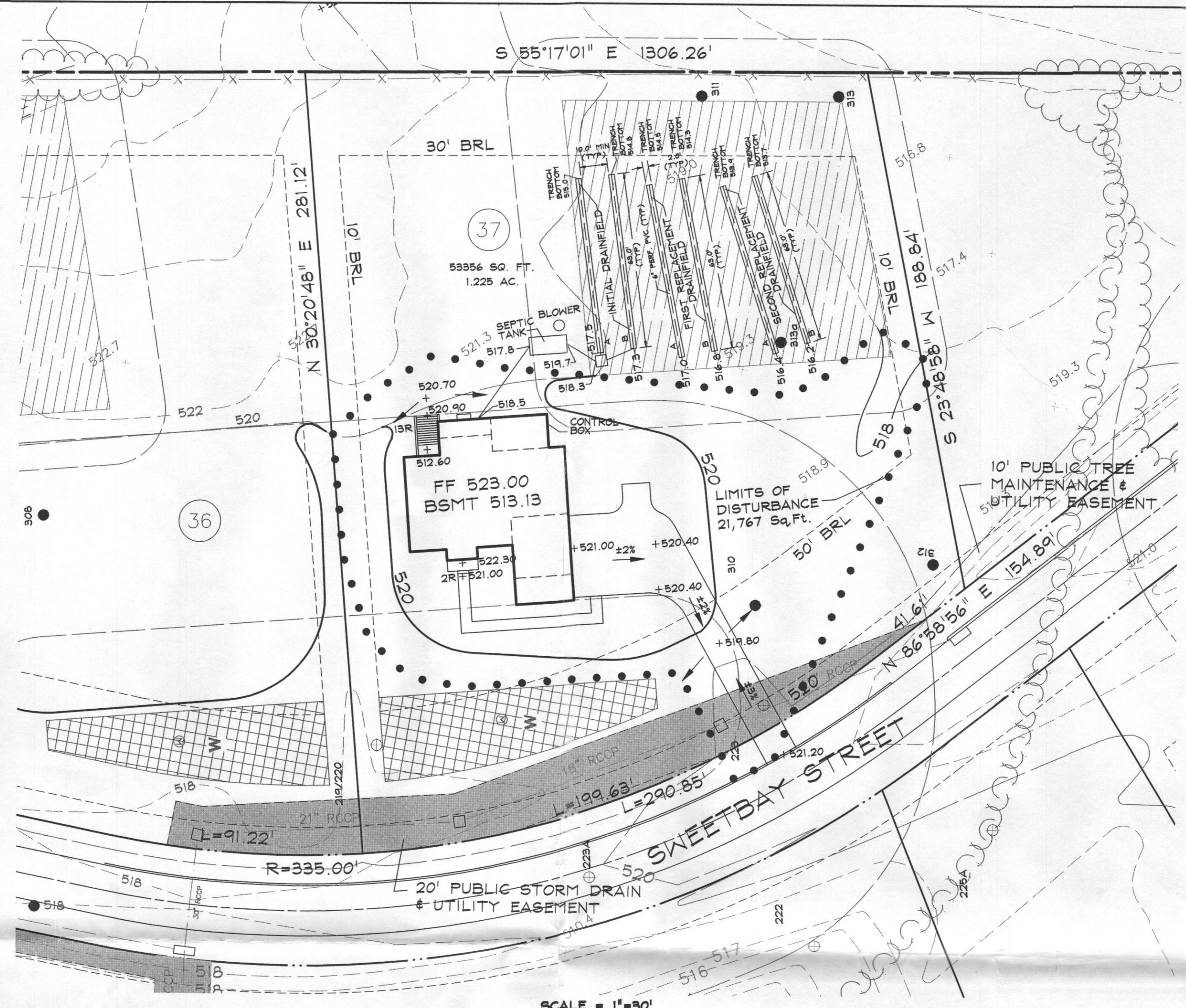
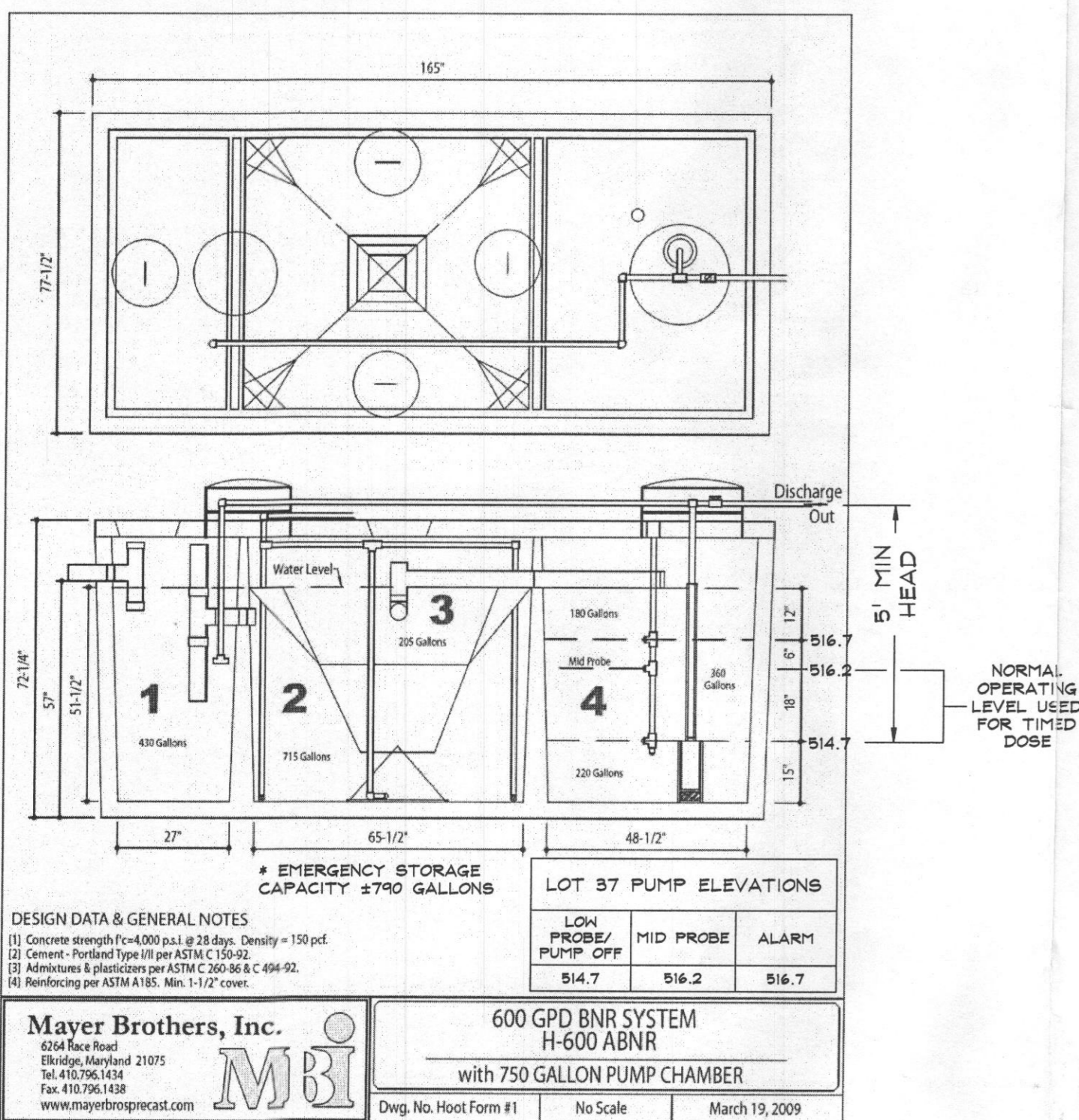
PAUL G. CAVANAUGH
PROFESSIONAL ENGINEER

GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 3,976 SQ.FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
4. A DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-39.
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.
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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: 12,856 SQ. FT. / 0.28 AC.
12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-39).
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.
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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.
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21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER F-07-39.
22. THE EXISTING WELL SHOWN (H0-09B-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.
23. AT ANY TIME IN THE FUTURE THAT A BUILDING PERMIT IS SUBMITTED TO FINISH THE AREA CURRENTLY IDENTIFIED AS OPTIONAL DEN, THEN A SEPTIC SYSTEM UPGRADE WILL BE REQUIRED AS FINISHING THE OPTIONAL DEN CREATES A FIFTH BEDROOM PER HOWARD COUNTY CODE 3.80(B).

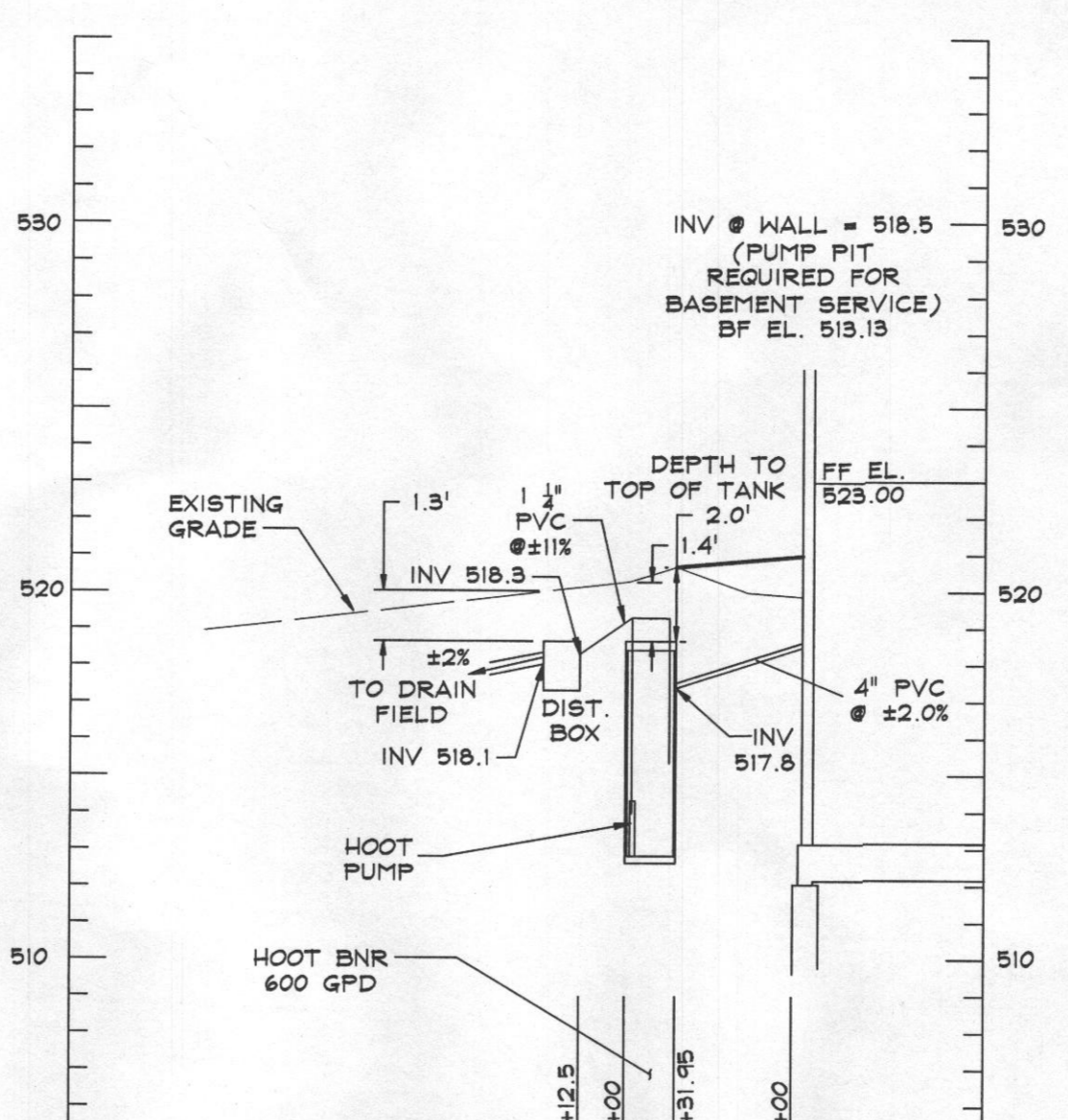
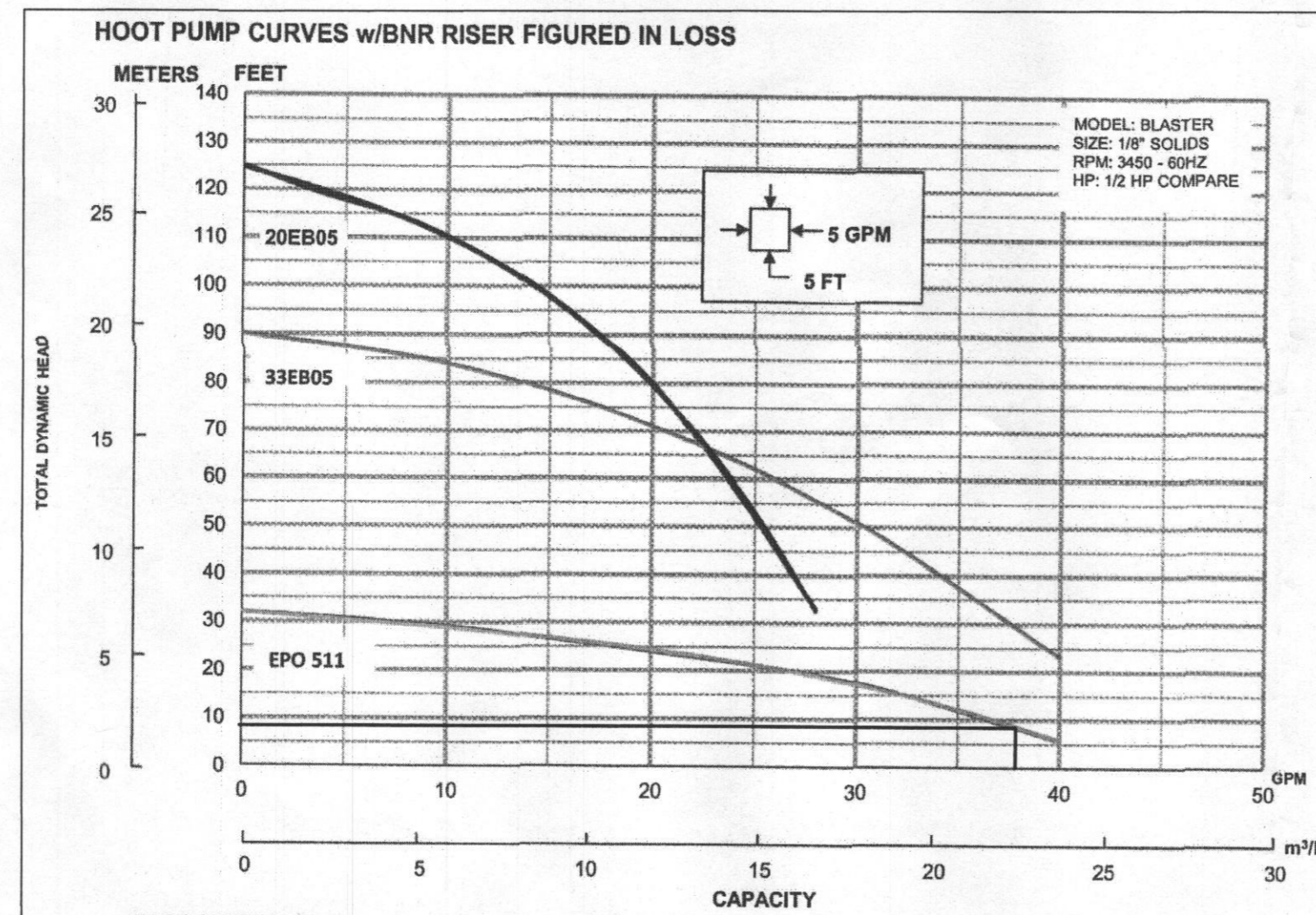
SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

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.
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9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	5.0'
FRICITION HEAD	9.6'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.6'
GALLONS PER MINUTE	57.0 GPM
DOSE	74.0 GAL
PUMP RUN TIME	2.0 MIN

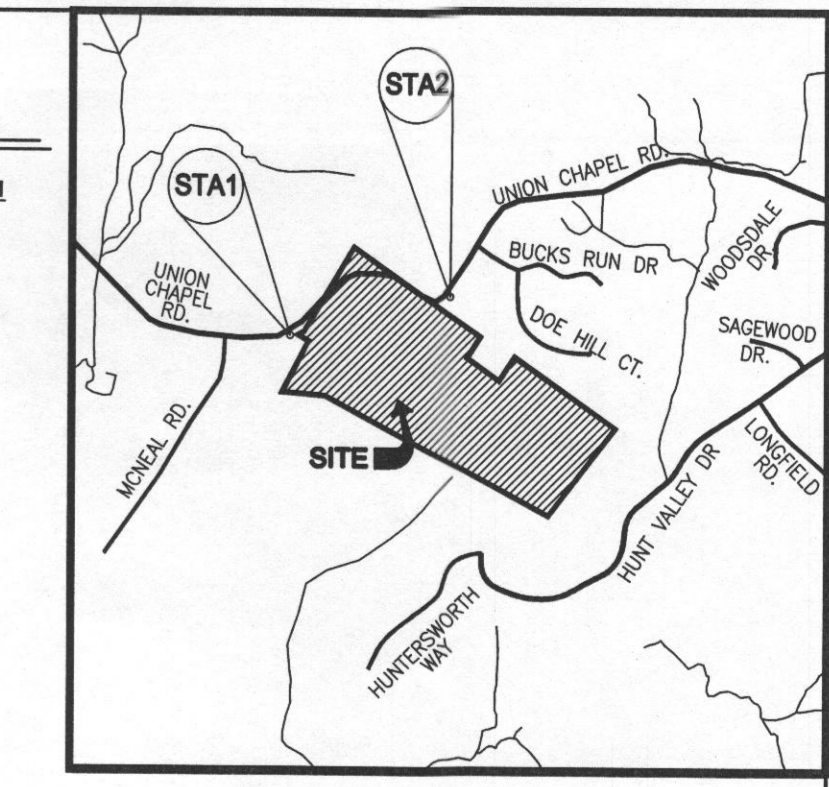


SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):

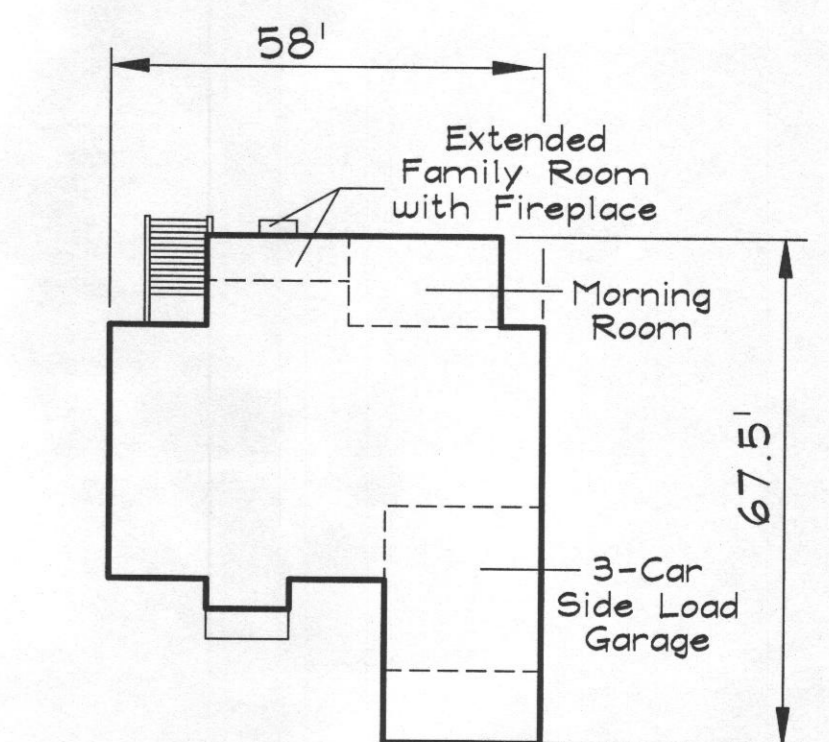
1. INVERT @ FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
2. 600 GPD BNR SYSTEM 1/4" 750 GALLON PUMP CHAMBER EX GRADE OVER TANK: 520.3 PROPOSED GRADE OVER TANK: 520.3 INVERT: 517.8
3. DISTRIBUTION BOX EX @ PROPOSED GRADE OVER TANK: 520.0 INVERT: 518.3
4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD) 600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF USE 2' WIDE TRENCH W/ 30' OF GRAVEL BELOW PIPE 10' MIN SPACING BETWEEN TRENCH EDGES 500 SF / 2' WIDTH = 250 LF x 0.50 = 125 LF MIN. TRENCH USE 2 - 63' LONG TRENCH FOR INITIAL SYSTEM USE 2 - 63' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM USE 2 - 63' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

BENCHMARK

GEODETIC SURVEY CONTROL #1	N. 591450.42
E. 1297671.25	A.A. 1424
ELEV. 636.43	
GEODETIC SURVEY CONTROL #2	N. 591663.88
E. 1299121.80	B.M. 1408
ELEV. 642.23	
ADC MAP COORDINATES	4812C4



VICINITY MAP
SCALE: 1" = 2000'



BOULDER ELEVATION 'H' BRICK FRONT

DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 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 35 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (43')	520.0	517.5	515.05/1.1
INITIAL SYSTEM TRENCH B (43')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
SECOND REPLACEMENT TRENCH B (63')	518.7	516.2	513.7

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. 27020 EXPIRATION DATE: JANUARY 26, 2016

DATE: 02/06/2015

PAUL G. CAVANAUGH

DDC
Development Design Consultants

Planners
Surveyors
Engineers
Landscape Architects

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

OWNER:
K. HOVANNIAN HOMES
1802 Brightwell Road
Landover, Maryland 20785
(301) 683-4288

DEVELOPER:

SITE ADDRESS:
LOT 37
16248 Sweetbay Street
Woodbine, Maryland 21787

BELLE HAVEN ESTATES LOT 37

SITE PLAN FOR BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

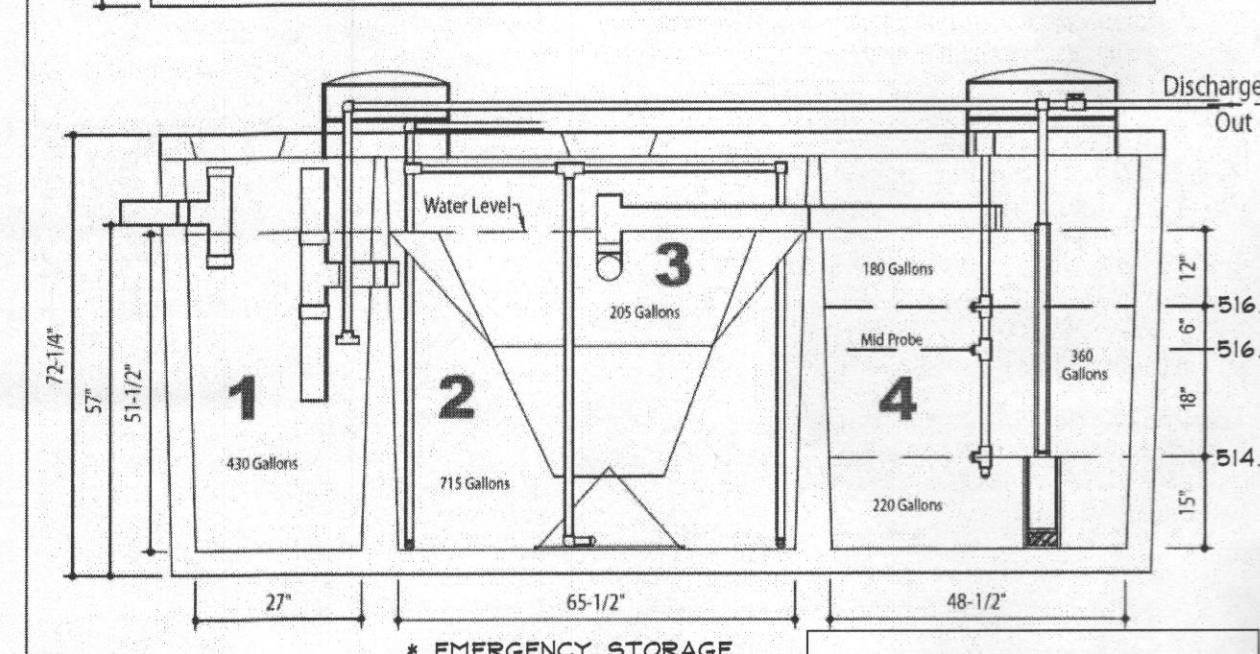
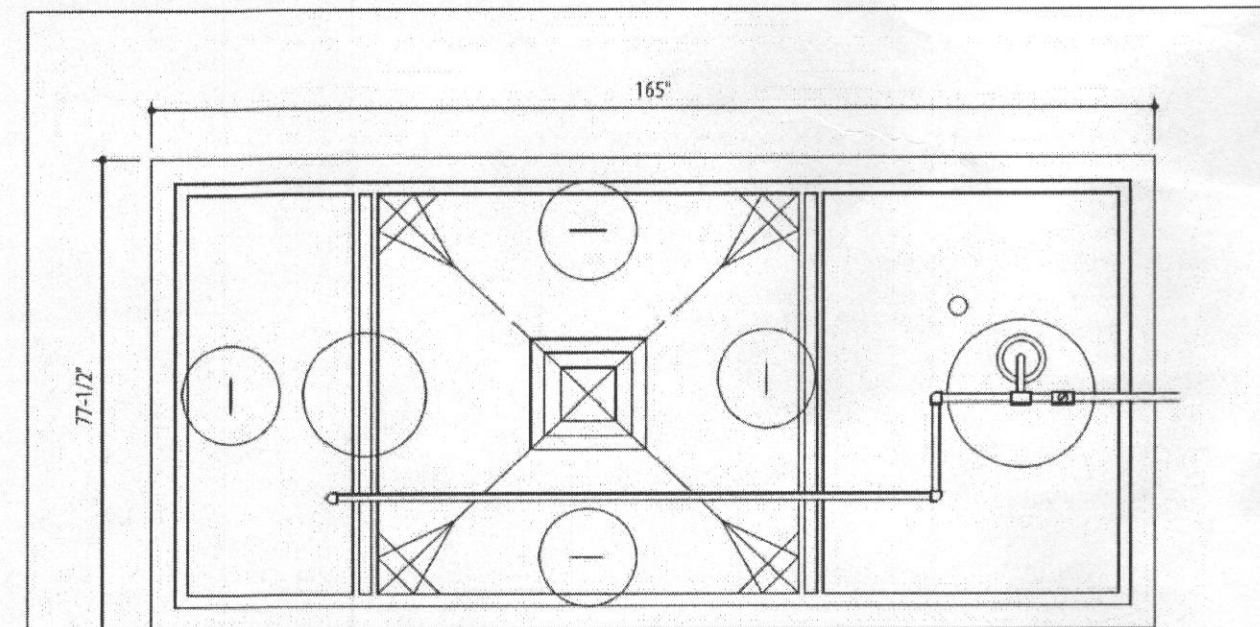
REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: DES. BY: BKC
TAX ACC. #: DRN. BY: BKC
TAX MAP: 14 CHK. BY: PGC
BLOCK / GRID: DATE: 2/06/15
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: 3,876 SQ.FT.
 2. NUMBER OF BEDROOMS: 4
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. A DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-38.
 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.
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 9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)313-1881 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: 12,856 SQ. FT. / 0.28 AC.
 12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
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 16. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
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 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.
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 21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER F-07-38.
 22. THE EXISTING WELL SHOWN (HO-095-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.

- 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.
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 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.



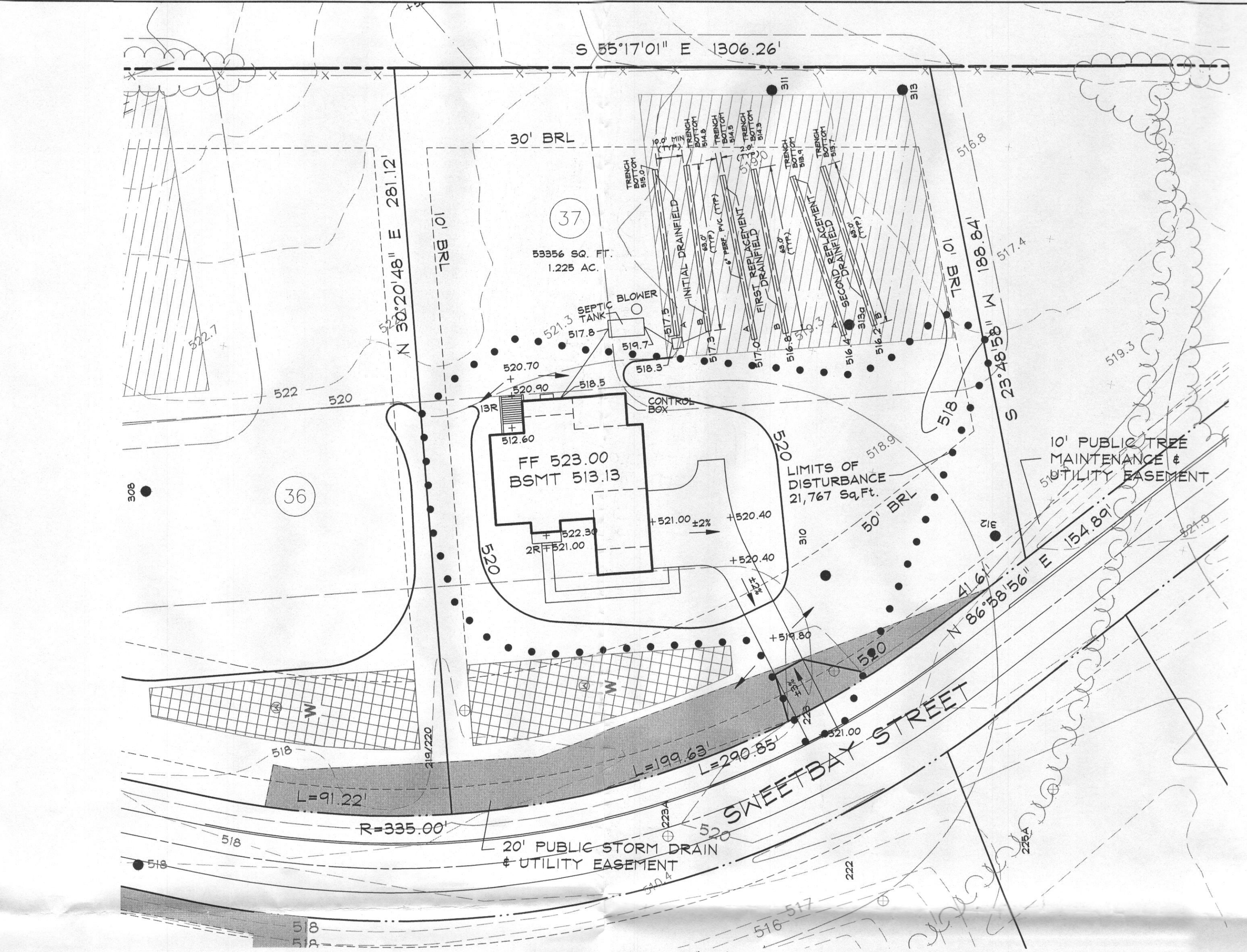
LOT 37 PUMP ELEVATIONS

LOW PROBE / PUMP OFF	MID PROBE	ALARM
514.7	516.2	516.7

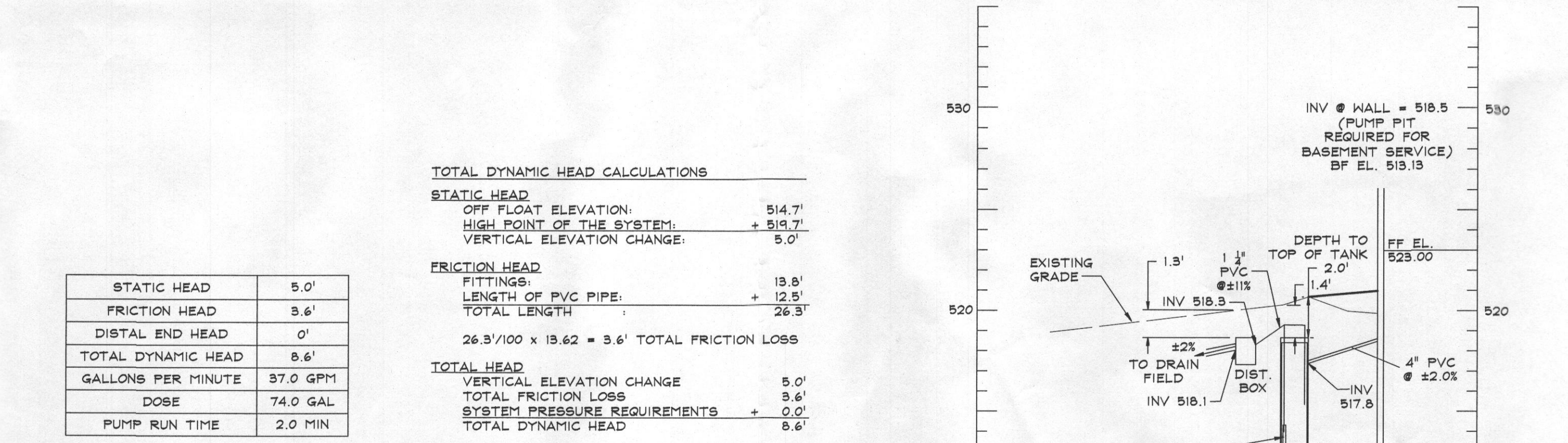
DESIGN DATA & GENERAL NOTES

- 1) Concrete strength f'c=4,000 p.s.i. @ 28 days. Density = 150 pcf.
- 2) Cement - Portland Type I/II per ASTM C 150-92.
- 3) Admixtures as indicated per ASTM C 494 & C 494-02.
- 4) Reinforcing per ASTM A185. Min. 1/2" cover.

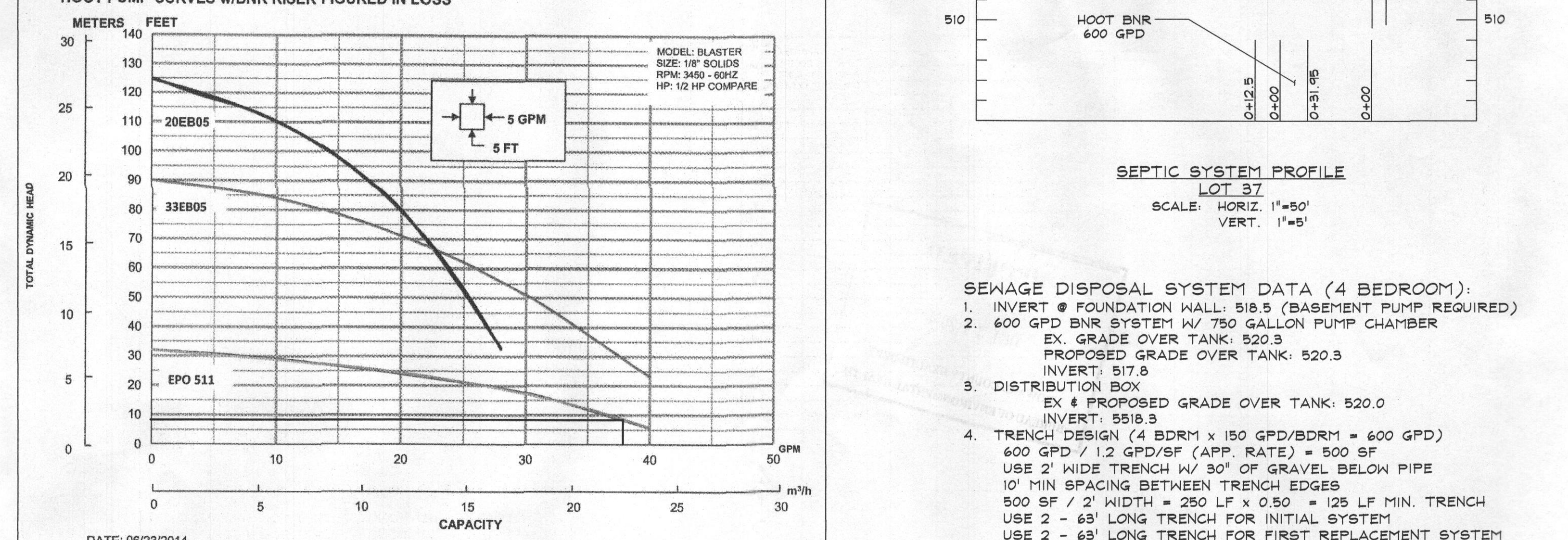
Mayer Brothers, Inc.
 600 GPD BNR SYSTEM H-600 ABNR
 with 750 GALLON PUMP CHAMBER
 Dwg. No. Hoot Form #1 No Scale March 19, 2009



SCALE = 1"=30'



SEPTIC SYSTEM PROFILE
 LOT 37
 SCALE: HORIZ. 1"=50' VERT. 1"=5'



DATE: 06/23/2014

BENCHMARK

CONTROL #	N.	E.	A.A.	ELEV.
1	581480.42	1297571.25	146A	536.43
2	591862.88	1296121.00	146B	542.23

ADDITIONAL COORDINATES: 461204

VICINITY MAP
SCALE: 1"=2000'

BOULDER ELEVATION 'H' BRICK FRONT

DATA SOURCES:

DRAWING LEGEND

- 502 PROPOSED GRADE
- 502 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 35 SYSTEM TRENCH SPECIFICATIONS

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DDC inc.
 Development Design Consultants

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 K. HOWANIAN HOMES
 1002 Brightwood Road
 Landover, Maryland 20785
 (301) 683-6288

DEVELOPER:
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 Westminster, MD 21157
 410.386.0560
 410.386.0564 (Fax)
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SITE ADDRESS:
 LOT 37
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BELLE HAVEN ESTATES LOT 37

SITE PLAN FOR BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

REVISIONS

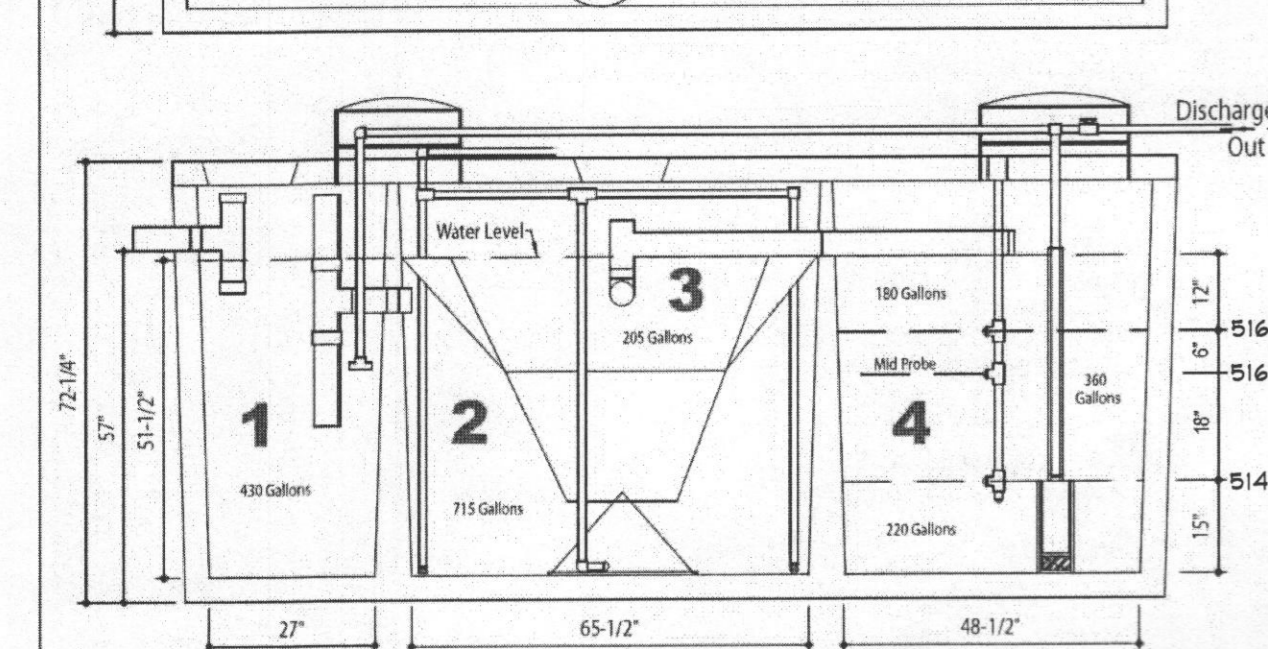
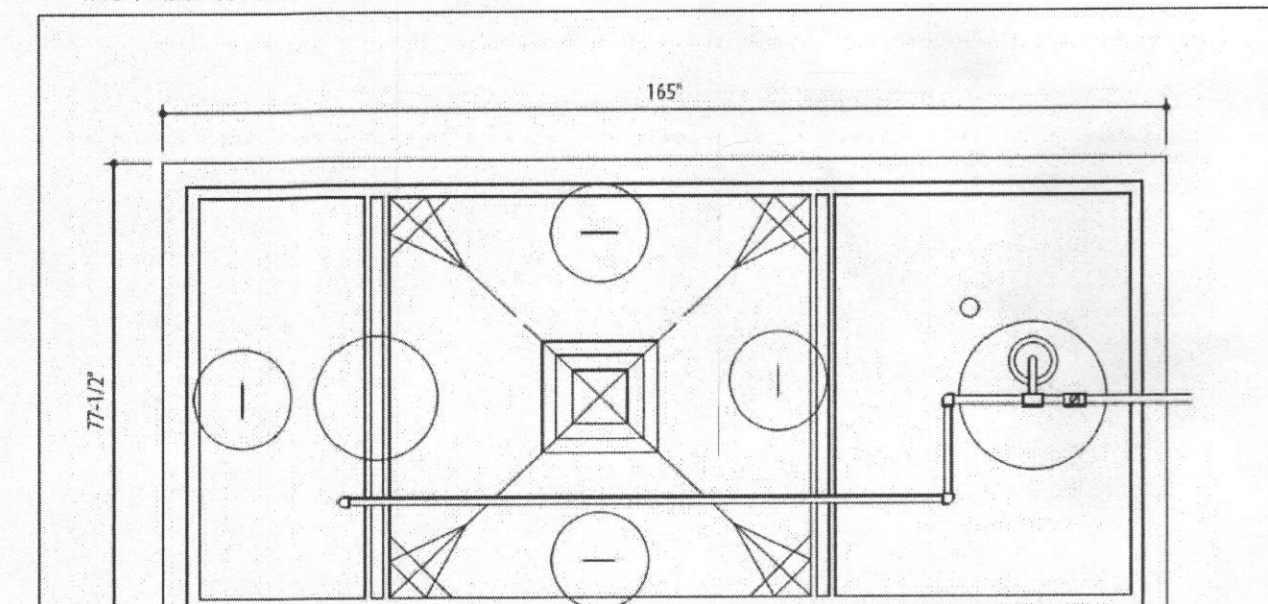
NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: **DES. BY:** BKC
TAX ACC. #: **DRN. BY:** BKC
TAX MAP: 14 **CHK. BY:** PGC
BLOCK / GRID: **DATE:** 10/28/14
PARCEL #: 66 **DDC JOB#:** 06116.5
ZONE / USE: RC-DEO **SHEET NUMBER:**
DWG. SCALE: 1"=30' 1 of 1

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. 27020 EXPIRATION DATE: JANUARY 28, 2016
 DATE: 10/28/2014
 PAUL G. CAVANAUGH

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,876 SQ.FT.
 2. NUMBER OF BEDROOMS: 4
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. A DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS F-07-38.
 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: #19448
 7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DMV, 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.
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 11. TOTAL LIMIT OF DISTURBANCE: 12,856 SQ. FT. / 0.28 AC.
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LOT 37 PUMP ELEVATIONS

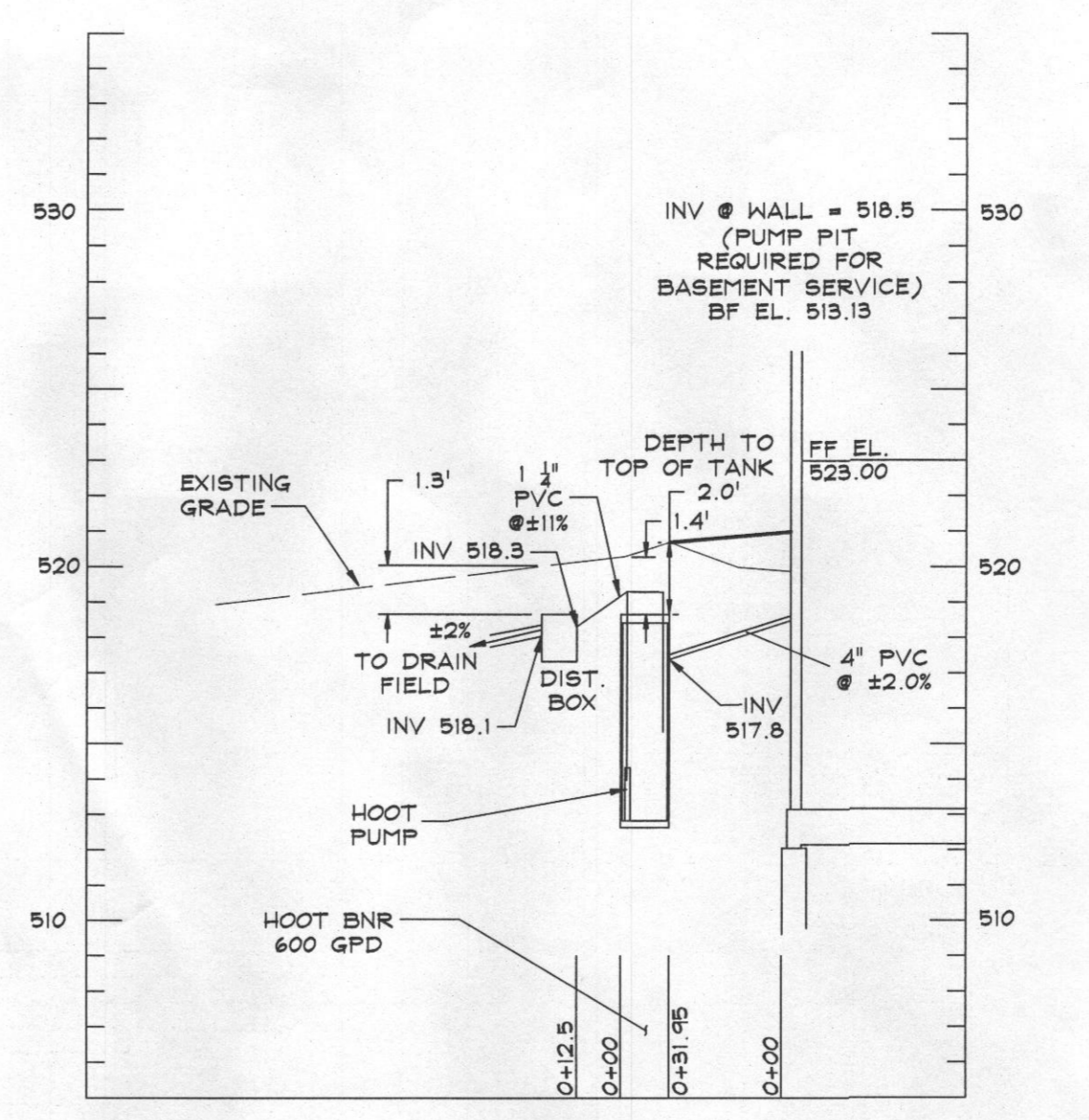
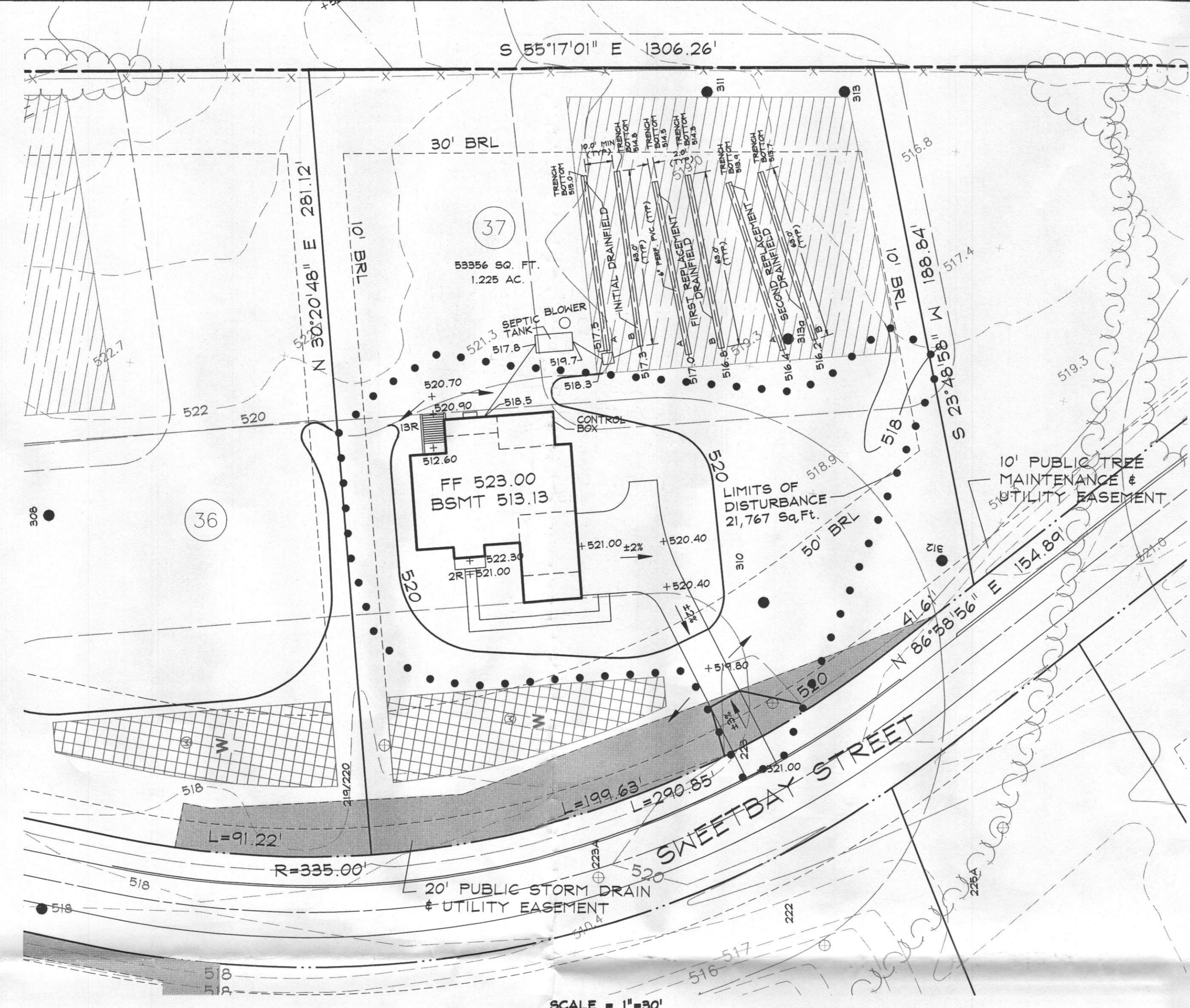
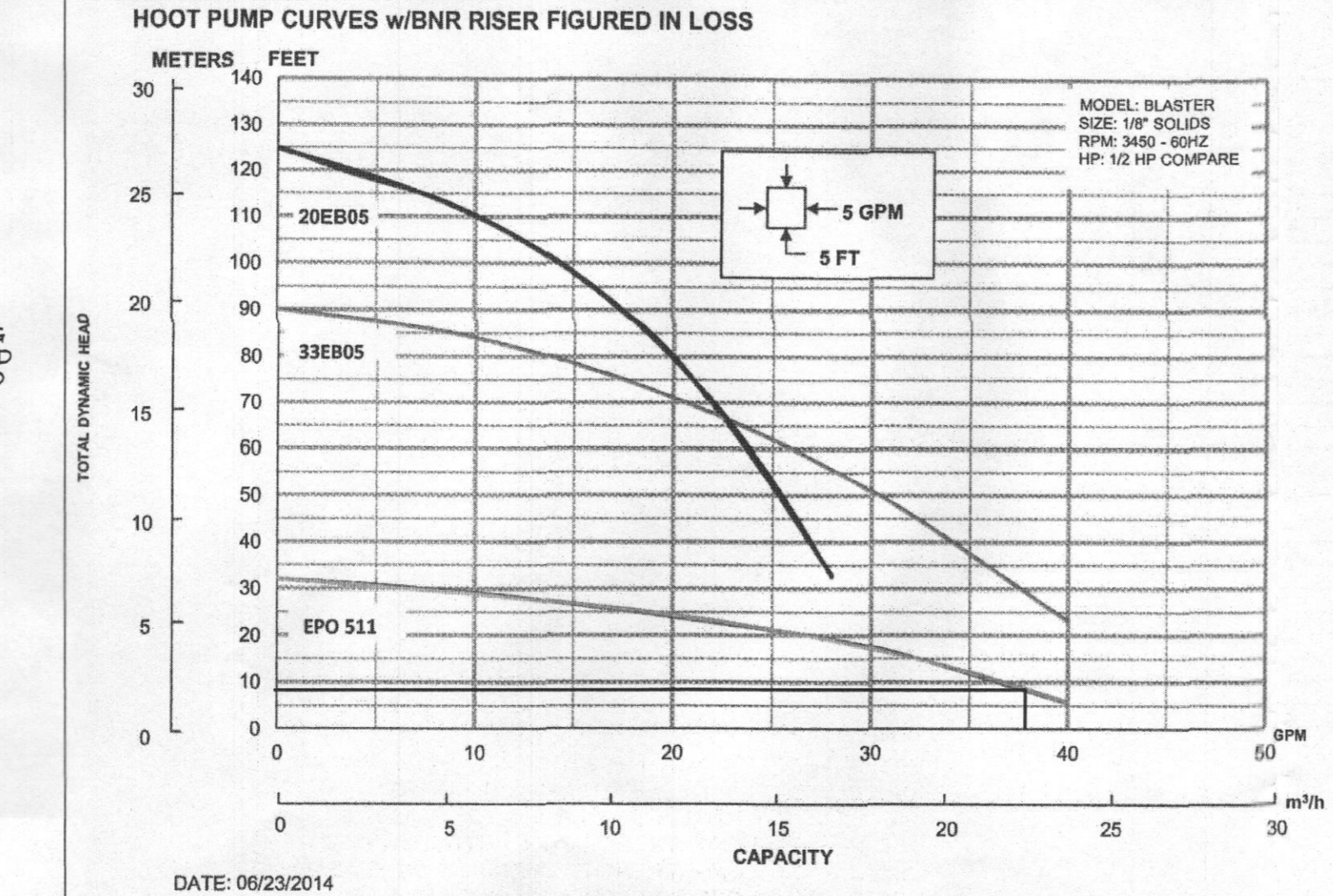
LOW PROBE/ PUMP OFF	MID PROBE	ALARM
514.7	516.2	516.7

DESIGN DATA & GENERAL NOTES

1. Concrete strength f'c=4000 psi & f'c=150 psi
2. Concrete - Portland Type I/II per ASTM C 150-92
3. Admixtures & plasticizers per ASTM C 260-96 & C 494-92
4. Reinforcing per ASTM A108, Min. 1/2" cover

Mayer Brothers, Inc.
634 Race Road
Elkridge, Maryland 21075
Tel: 410.796.1434
Fax: 410.796.1438
www.mayerbrosgreencast.com

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



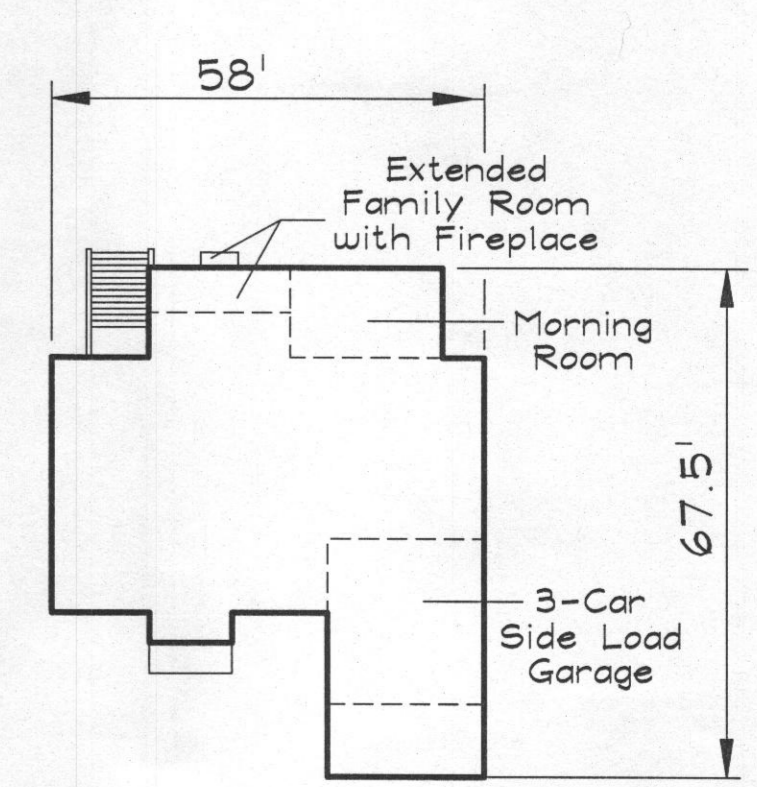
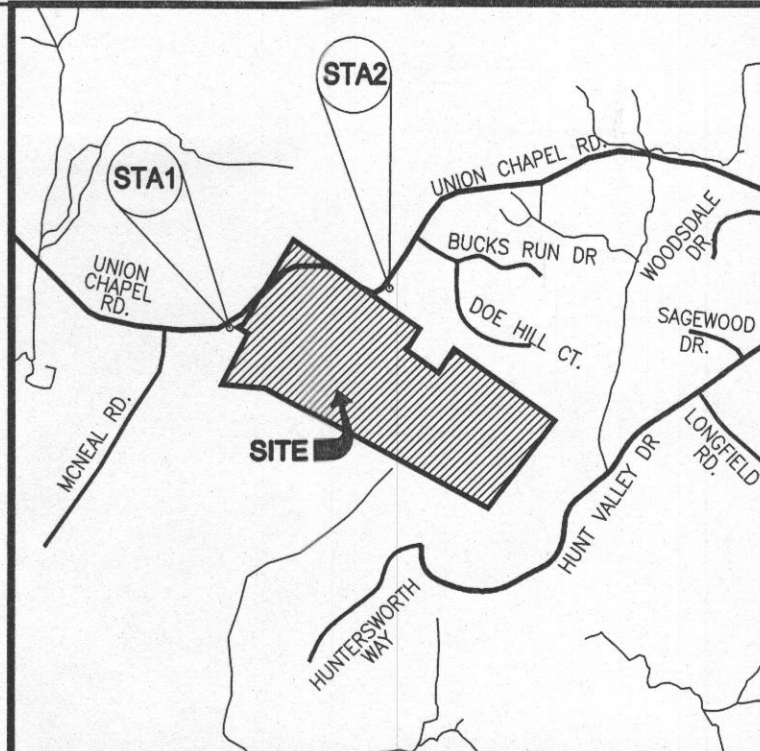
- SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):**
1. INVERT @ FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
 2. 600 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER
EX. GRADE OVER TANK: 520.3
PROPOSED GRADE OVER TANK: 520.3
INVERT: 517.8
 3. DISTRIBUTION BOX
EX @ PROPOSED GRADE OVER TANK: 520.0
INVERT: 518.3
 4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)
600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF
USE 2' WIDE TRENCH w/ 30" OF GRAVEL BELOW PIPE
10' MIN SPACING BETWEEN TRENCH EDGES
500 SF / 2' WIDTH = 250 LF x 0.50 = 125 LF MIN. TRENCH
USE 2 - 63' LONG TRENCH FOR INITIAL SYSTEM
USE 2 - 63' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
USE 2 - 63' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

BENCHMARK

GEODEIC SURVEY CONTROL #1	
N.	581480.42
E.	1207171.25
A.A.	146A
ELEV.	638.43

GEODEIC SURVEY CONTROL #2	
N.	591853.38
E.	1208121.80
B.M.	146B
ELEV.	642.23

ADIC MAP COORDINATES
481204



BOULDER ELEVATION 'H' BRICK FRONT

- DRAWING LEGEND**
- 500 PROPOSED GRADE
 - 502 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
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LOT 37 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
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LICENSE NO. 27029, EXPIRATION DATE: JANUARY 26, 2016

DATE: 10/28/2014

PAUL G. CAVANAUGH
PROFESSIONAL ENGINEER

DDC
Development Design Consultants

Planners
Surveyors
Engineers
Landscape Architects

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Lansdowne, Maryland 20785
(301) 683-6268

DEVELOPER:

SITE ADDRESS:
LOT 37
15248 Sweetbay Street
Woodlawn, Maryland 21107

BELLE HAVEN ESTATES
LOT 37

SITE PLAN FOR BAT INSTALLATION

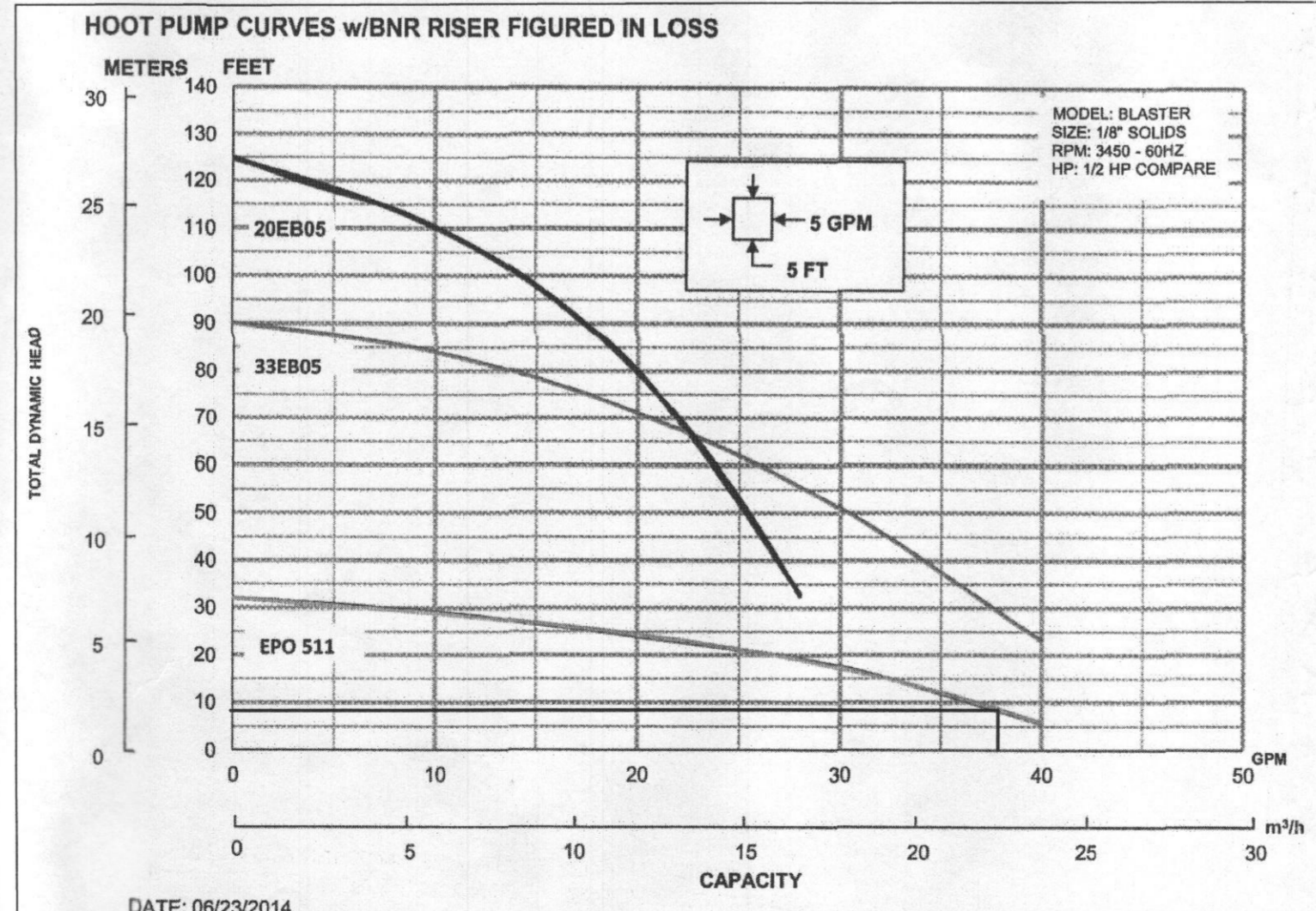
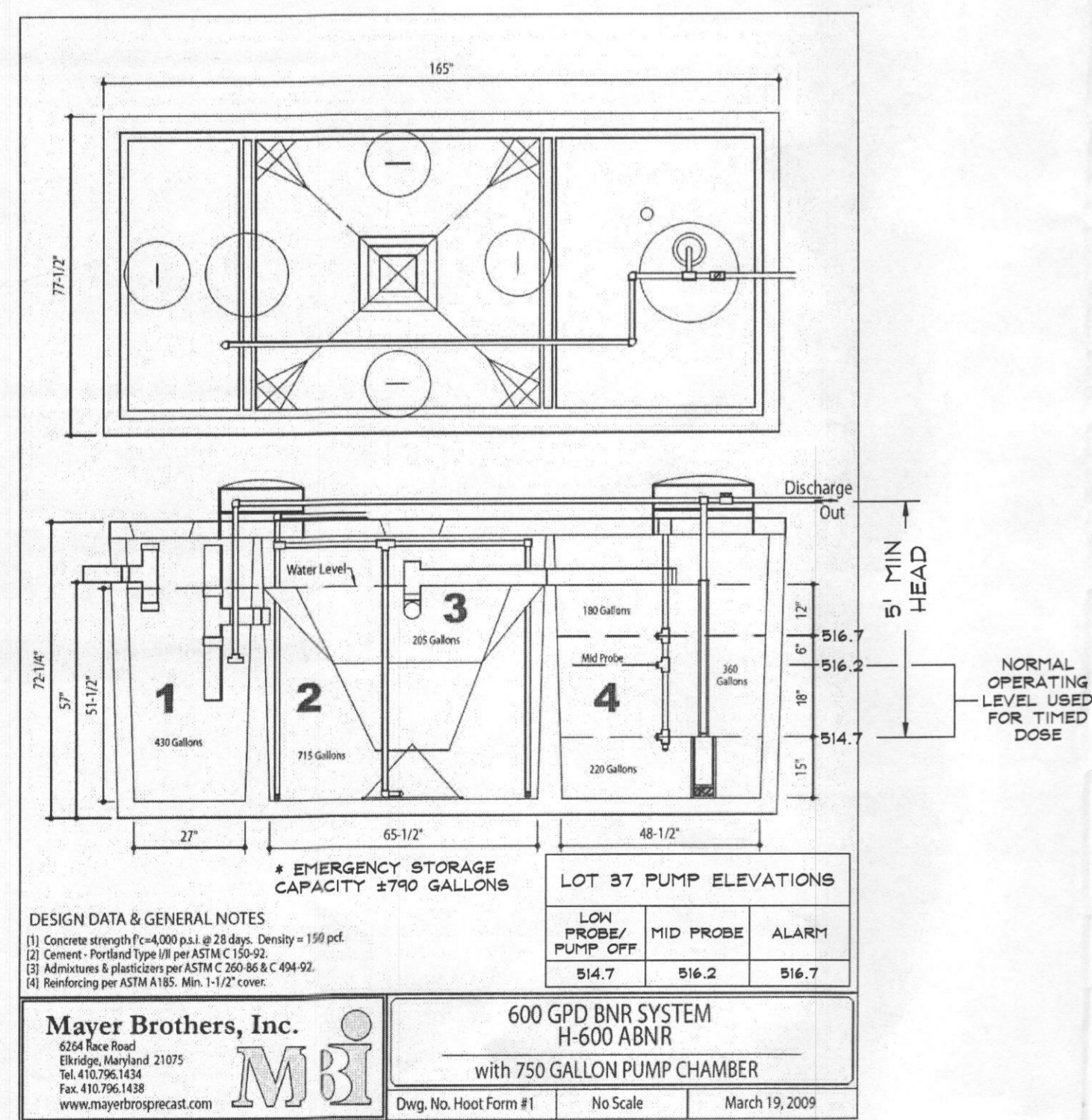
3rd ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #:	DES. BY: BKC
TAX ACC. #:	DRN. BY: BKC
TAX MAP: 14	CHK. BY: PGC
BLOCK / GRID:	DATE: 10/28/14
PARCEL #: 68	DDC JOB#: 06110.5
ZONE / USE: RC-DEO	SHEET NUMBER:
DWG. SCALE: 1"=30'	1 of 1

- GENERAL NOTES**
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 2. NUMBER OF BEDROOMS: 4
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
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 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)313-1881 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: 12,856 SQ. FT. / 0.28 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. 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 20' 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.
 22. THE EXISTING WELL SHOWN (HO-095-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.
 23. AT ANY TIME IN THE FUTURE THAT A BUILDING PERMIT IS SUBMITTED TO FINISH THE AREA CURRENTLY IDENTIFIED AS OPTIONAL DEN, THEN A SEPTIC SYSTEM UPGRADE WILL BE REQUIRED AS FINISHING THE OPTIONAL DEN CREATES A FIFTH BEDROOM PER HOWARD COUNTY CODE 3.80(B).

- 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 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.



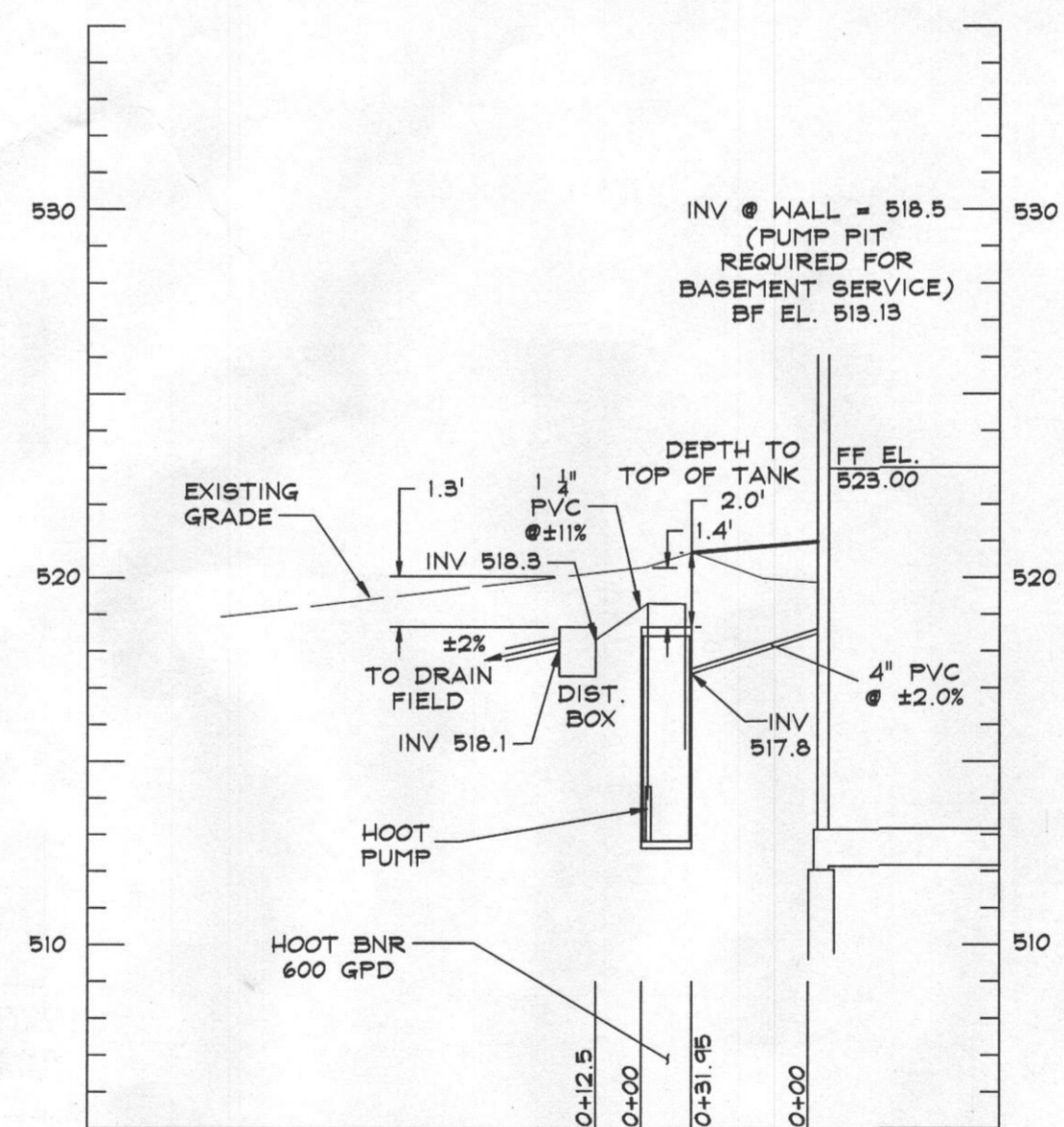
STATIC HEAD	5.0'
FRICTION HEAD	3.6'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.6'
GALLONS PER MINUTE	37.0 GPM
DOSE	74.0 GAL
PUMP RUN TIME	2.0 MIN

TOTAL DYNAMIC HEAD CALCULATIONS

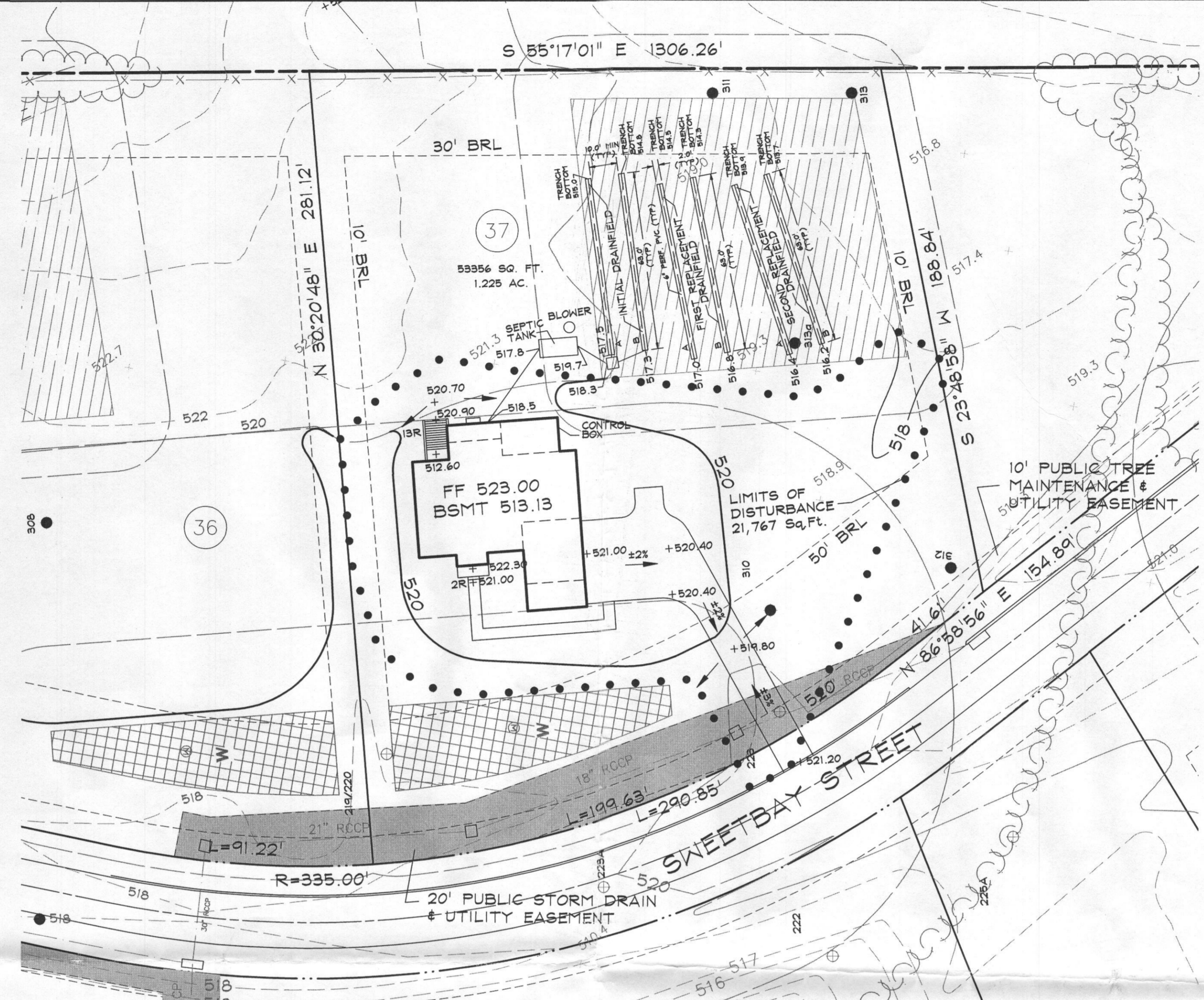
STATIC HEAD
 OFF FLOAT ELEVATION: 514.7'
 HIGH POINT OF THE SYSTEM: + 519.7'
 VERTICAL ELEVATION CHANGE: 5.0'

FRICTION HEAD
 FITTINGS: 19.3'
 LENGTH OF PVC PIPE: + 12.5'
 TOTAL LENGTH: 26.3'
 26.3'/100 x 13.62 = 3.6' TOTAL FRICTION LOSS

TOTAL HEAD
 VERTICAL ELEVATION CHANGE: 5.0'
 TOTAL FRICTION LOSS: 3.6'
 SYSTEM PRESSURE REQUIREMENTS: + 0.0'
 TOTAL DYNAMIC HEAD: 8.6'

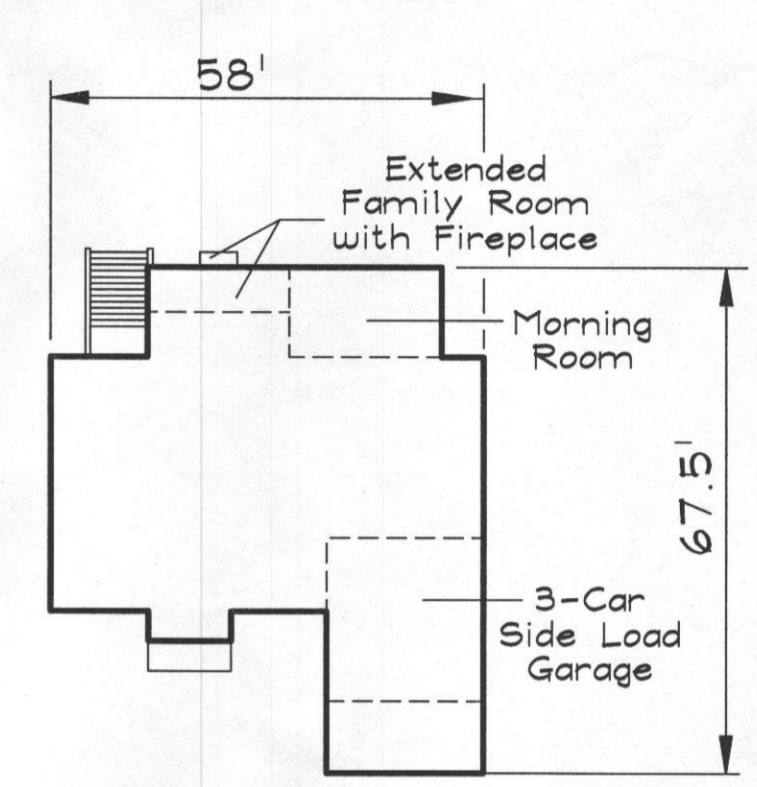
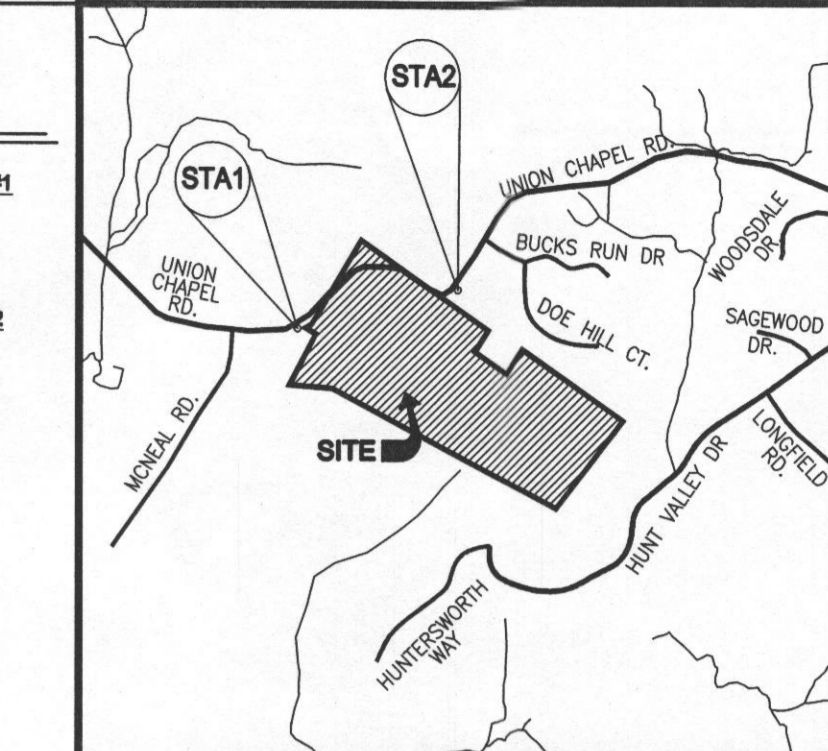


- SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):**
1. INVERT @ FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
 600 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER
 EX. GRADE OVER TANK: 520.3
 PROPOSED GRADE OVER TANK: 520.3
 INVERT: 517.8
 2. DISTRIBUTION BOX
 EX @ PROPOSED GRADE OVER TANK: 520.0
 INVERT: 518.3
 3. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)
 600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF
 USE 2' WIDE TRENCH W/ 30° OF GRAVEL BELOW PIPE
 10' MIN SPACING BETWEEN TRENCH EDGES
 500 SF / 2' WIDTH = 250 LF x 0.50 = 125 LF MIN. TRENCH
 USE 2 - 63' LONG TRENCH FOR INITIAL SYSTEM
 USE 2 - 63' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
 USE 2 - 63' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM



BENCHMARK

GEODETTIC SURVEY CONTROL #1	
N.	591480.42
E.	120717.25
A.A.	146A
ELEV.	636.43
GEODETTIC SURVEY CONTROL #2	
N.	591693.38
E.	1206121.80
B.M.	146B
ELEV.	642.23
ADIC MAP COORDINATES	
461204	



DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED LIMIT OF DISTURBANCE
- + 665.5 PROP. SPOT ELEV./FLOW ARROW
- PROPOSED 20' SEPTIC RESERVE
- 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 35 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (63')	520.0	517.5	515.051.1
INITIAL SYSTEM TRENCH B (63')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
SECOND REPLACEMENT TRENCH B (63')	518.7	516.2	513.7

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. 27202, EXPIRATION DATE: JANUARY 26, 2016

DATE: 02/06/2015

PAUL G. CAVANAUGH
 PROFESSIONAL ENGINEER

DDC Development Design Consultants

Planners
 Surveyors
 Engineers
 Landscape Architects

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

OWNER:
 K. HOVHANNIAN HOMES
 1802 Brightwood Road
 Landover, Maryland 20785
 (301) 683-6268

DEVELOPER:

SITE ADDRESS:
 LOT 37
 18246 Sweetbay Street
 Woodbine, Maryland 21797

BELLE HAVEN ESTATES
 LOT 37

SITE PLAN FOR
BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

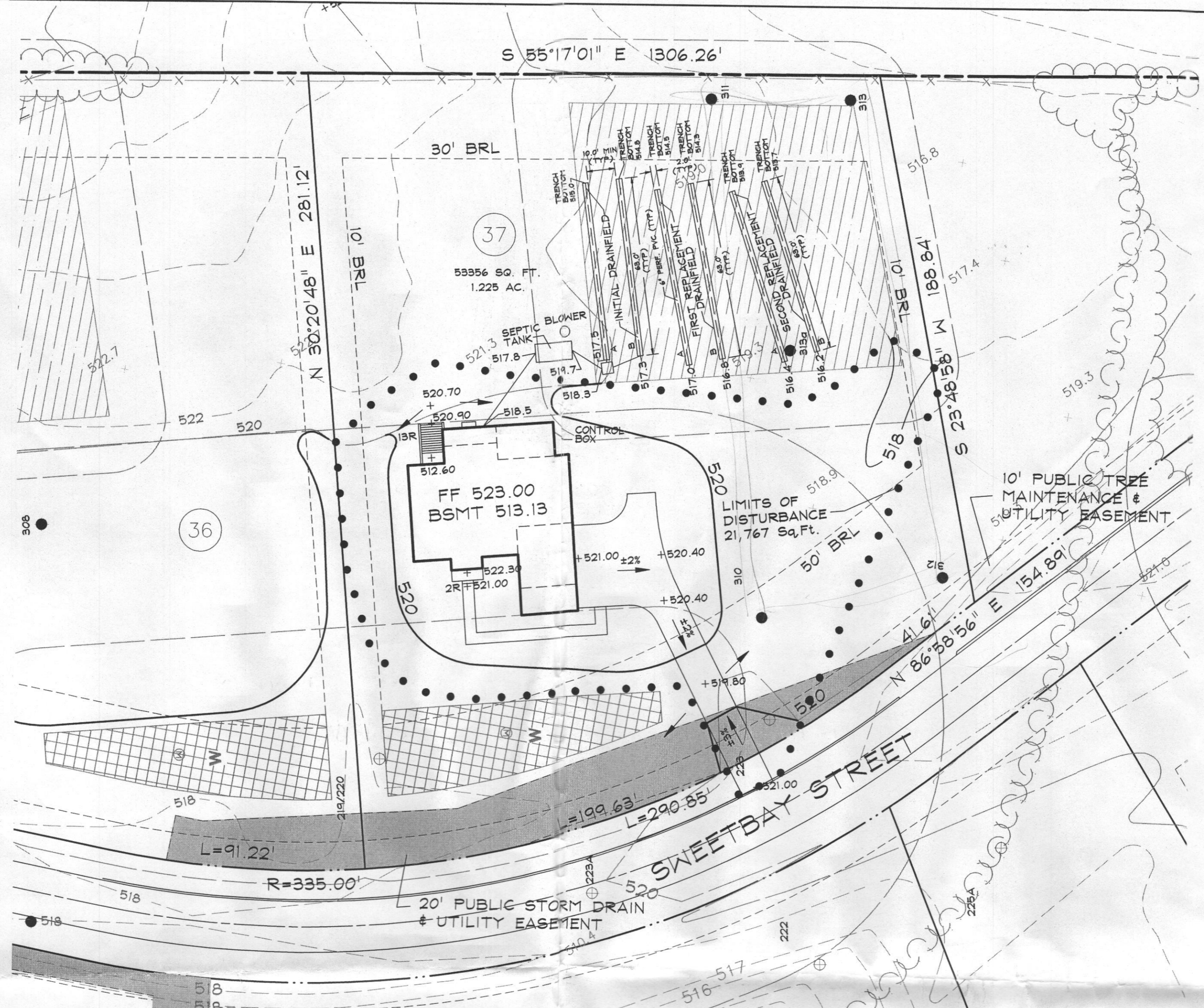
CO. FILE #:	DES. BY: BKC
TAX ACC. #:	DRN. BY: BKC
TAX MAP: 14	CHK. BY: PGC
BLOCK / GRID:	DATE: 2/06/15
PARCEL #: 66	DDC JOB#: 06116.5
ZONE / USE: RC-DEO	SHEET NUMBER:
DWG. SCALE: 1"=30'	1 of 1

GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 3,876 SQ.FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
4. A DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-38.
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.
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SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

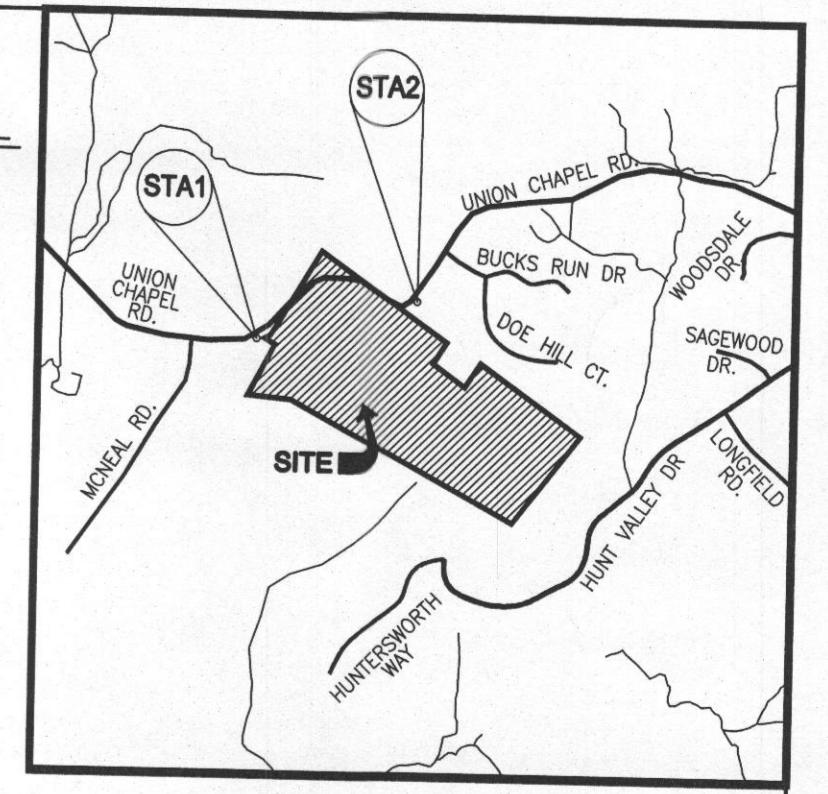
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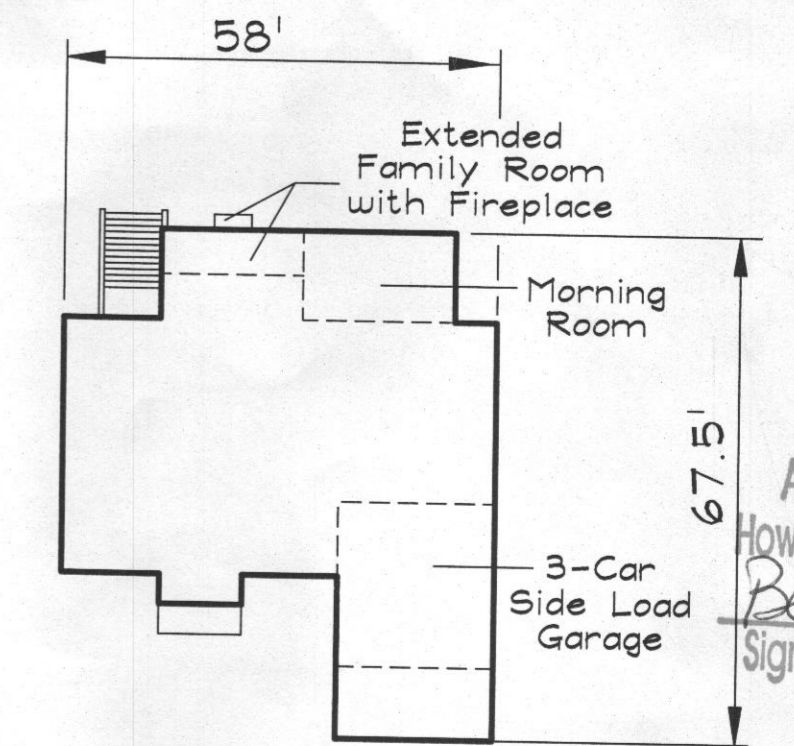
SCALE = 1"=30'

BENCHMARK

GEODETTIC SURVEY CONTROL #1	
N.	591450.42
E.	129757.25
A.A.	14GA
ELEV.	635.43
GEODETTIC SURVEY CONTROL #2	
N.	591652.80
E.	129912.00
I.M.	1428
ELEV.	642.23
ADC MAP COORDINATES	
4812C4	



VICINITY MAP
SCALE: 1" = 2000'



BOULDER ELEVATION 'H' BRICK FRONT

DATA SOURCES:

DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED GRADE
- PROPOSED LIMIT OF DISTURBANCE
- 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 35 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (63')	520.0	517.5	515.051.1
INITIAL SYSTEM TRENCH B (63')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
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Planners
Surveyors
Engineers
Landscape Architects

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

DDC
Development Design Consultants

OWNER:
K. HOVANNIAN HOMES
1802 Brightwood Road
Lanover, Maryland 20786
(301) 963-6288

DEVELOPER:

SITE ADDRESS:
LOT 37
15048 Sweetbay Street
Woodbine, Maryland 21787

BELLE HAVEN ESTATES LOT 37

SITE PLAN FOR BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: DES. BY: BKC
TAX MAP: 14 DRN. BY: BKC
BLOCK / GRID: CHK. BY: PGC
PARCEL #: 68 DATE: 12/05/14
ZONE / USE: RC-DEO DDC JOB#: 08116.5
DWG. SCALE: 1"=30' SHEET NUMBER: 1 of 1

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.

DATE: 10/28/2014

LICENSE NO. 27620 EXPIRATION DATE: JANUARY 25, 2016

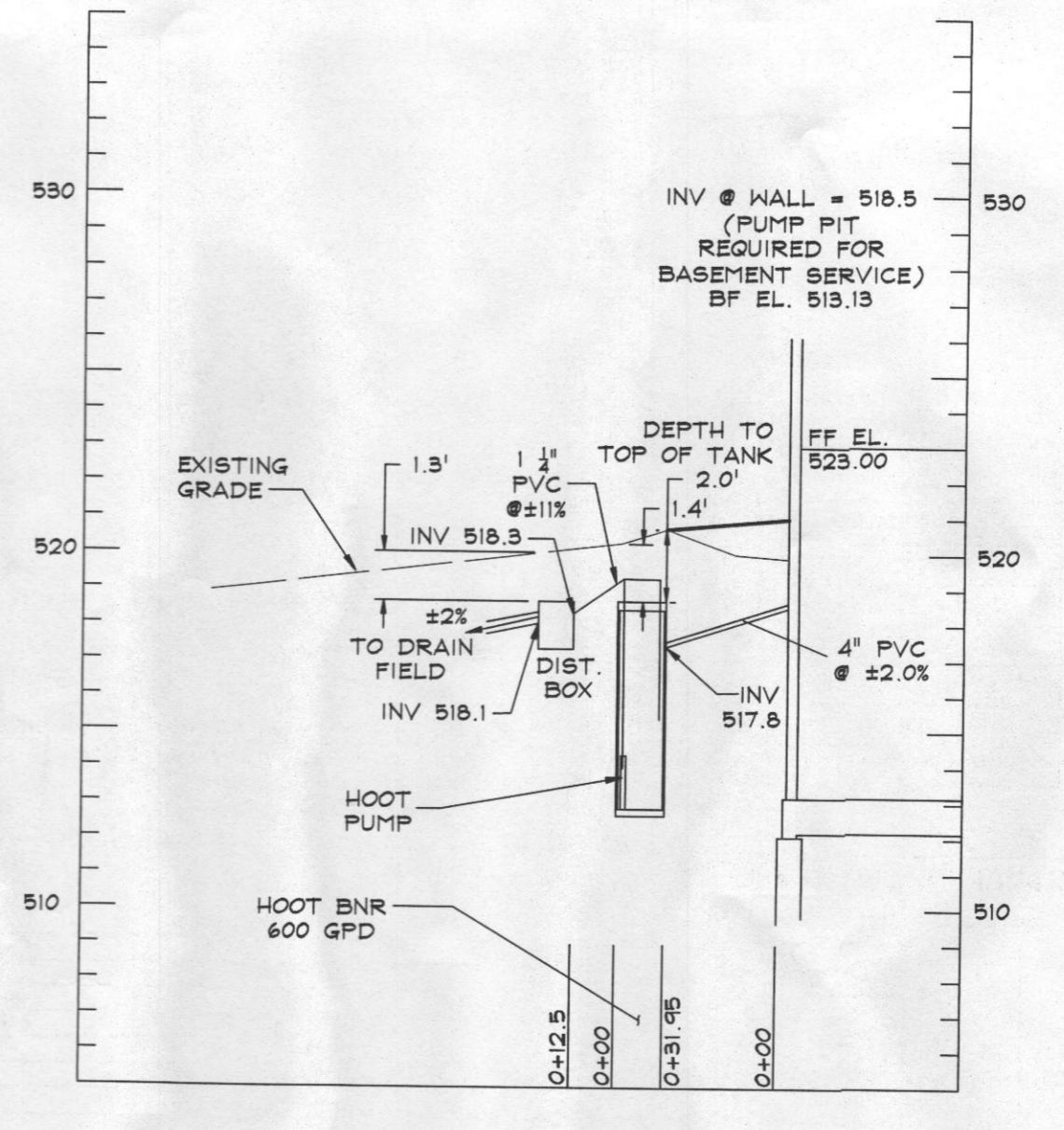
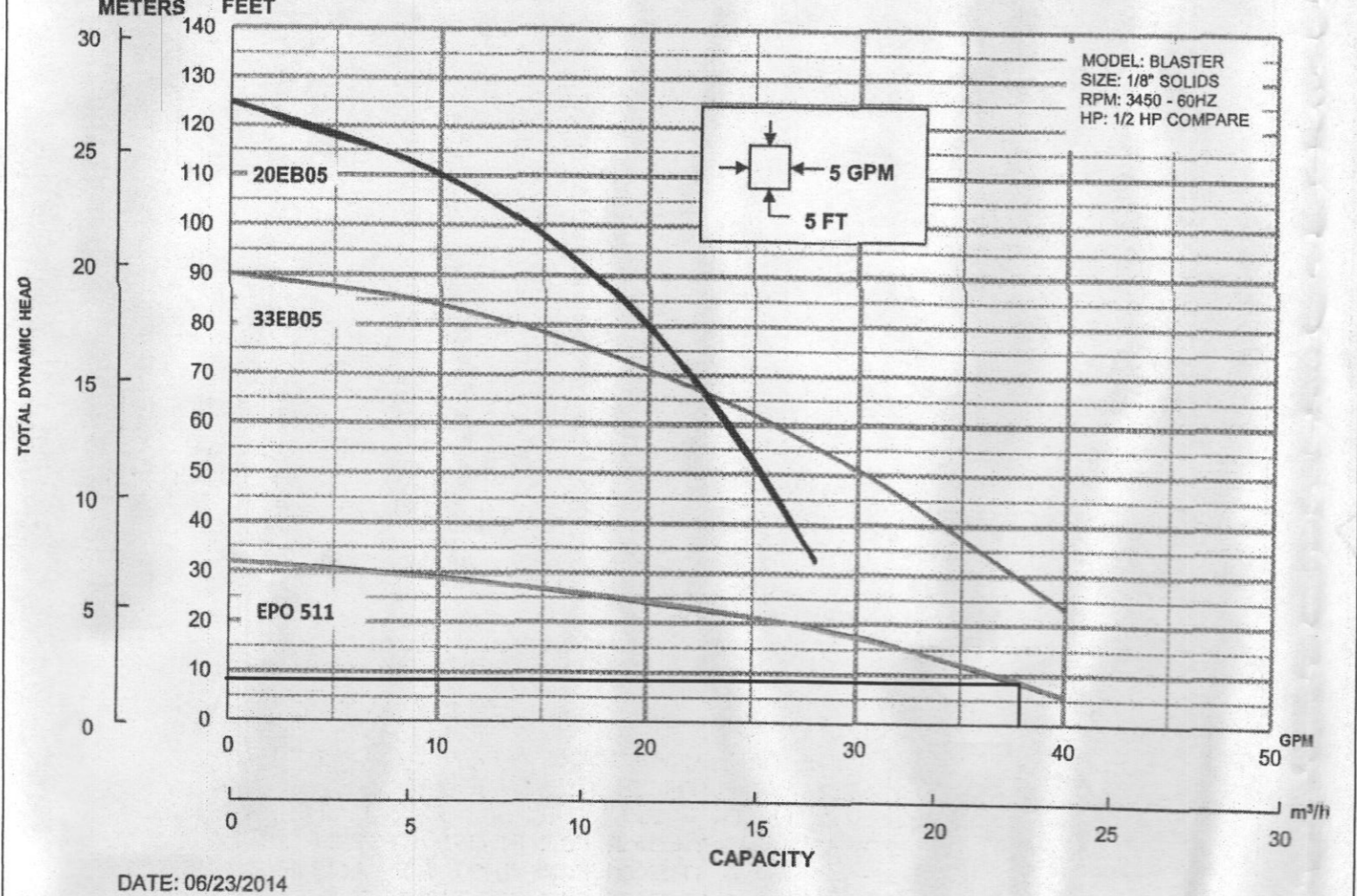
STATE OF MARYLAND
PAUL G. CAVANAUGH
PROFESSIONAL ENGINEER

TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	
OFF FLOAT ELEVATION	514.7'
HIGH POINT OF THE SYSTEM	+ 518.7'
VERTICAL ELEVATION CHANGE	5.0'
FRICITION HEAD	
FITTINGS	13.8'
LENGTH OF PVC PIPE	+ 12.5'
TOTAL LENGTH	26.3'
26.3/100 x 18.62 = 3.6' TOTAL FRICTION LOSS	
TOTAL HEAD	
VERTICAL ELEVATION CHANGE	5.0'
TOTAL FRICTION LOSS	3.6'
SYSTEM PRESSURE REQUIREMENTS	+ 0.0'
TOTAL DYNAMIC HEAD	8.6'

STATIC HEAD	5.0'
FRICTION HEAD	3.6'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.6'
GALLONS PER MINUTE	37.0 GPM
DOSE	74.0 GAL
PUMP RUN TIME	2.0 MIN

HOOT PUMP CURVES w/BNR RISER FIGURED IN LOSS

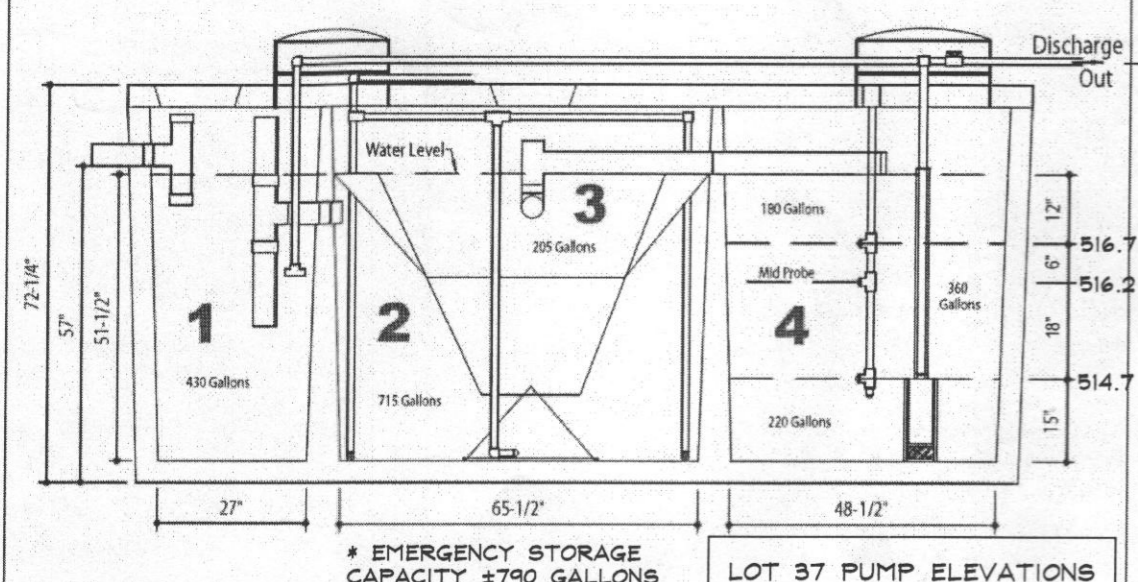
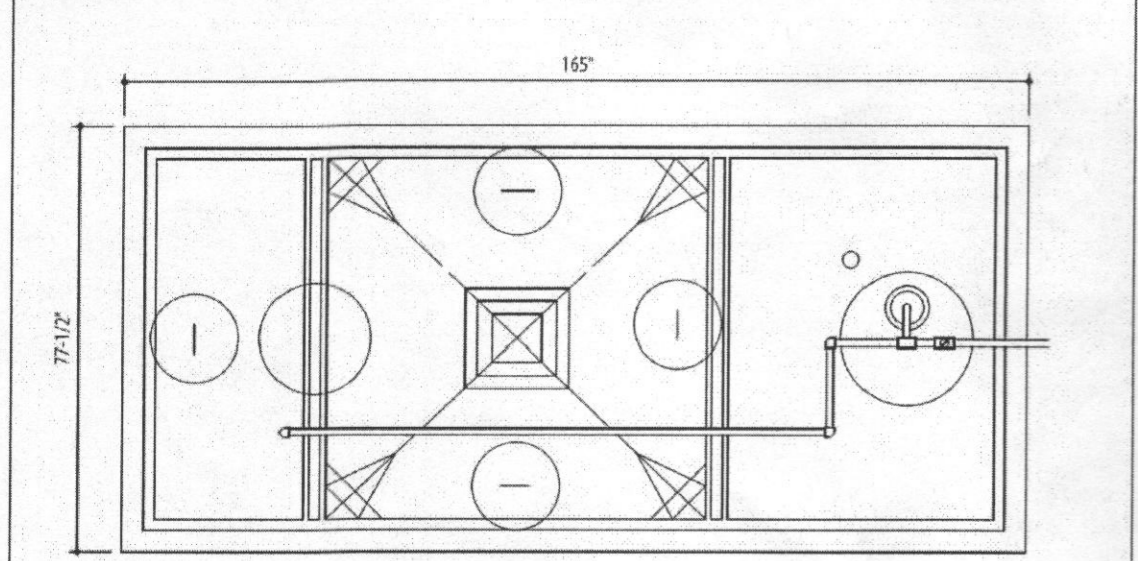


SEPTIC SYSTEM PROFILE

LOT 37
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):

1. INVERT # FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
2. 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER
EX. GRADE OVER TANK: 520.3
PROPOSED GRADE OVER TANK: 520.3
INVERT: 517.8
3. DISTRIBUTION BOX
EX # PROPOSED GRADE OVER TANK: 520.0
INVERT: 518.3
4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)
600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF
USE 2' WIDE TRENCH W/ 30' OF GRAVEL BELOW PIPE
10' MIN SPACING BETWEEN TRENCH EDGES
500 SF / 2' WIDTH = 250 LF x 0.50 = 125 LF MIN. TRENCH
USE 2 - 63" LONG TRENCH FOR INITIAL SYSTEM
USE 2 - 63" LONG TRENCH FOR FIRST REPLACEMENT SYSTEM
USE 2 - 63" LONG TRENCH FOR SECOND REPLACEMENT SYSTEM



DESIGN DATA & GENERAL NOTES

1) Concrete strength = 4000 psi @ 28 days. Density = 150 pcf.
2) Cement - Portland Type II per ASTM C 150-02.
3) Admixtures & additives per ASTM C 260-05 & 494-02.
4) Reinforcing per ASTM A108, Min. 1-1/2" cover.

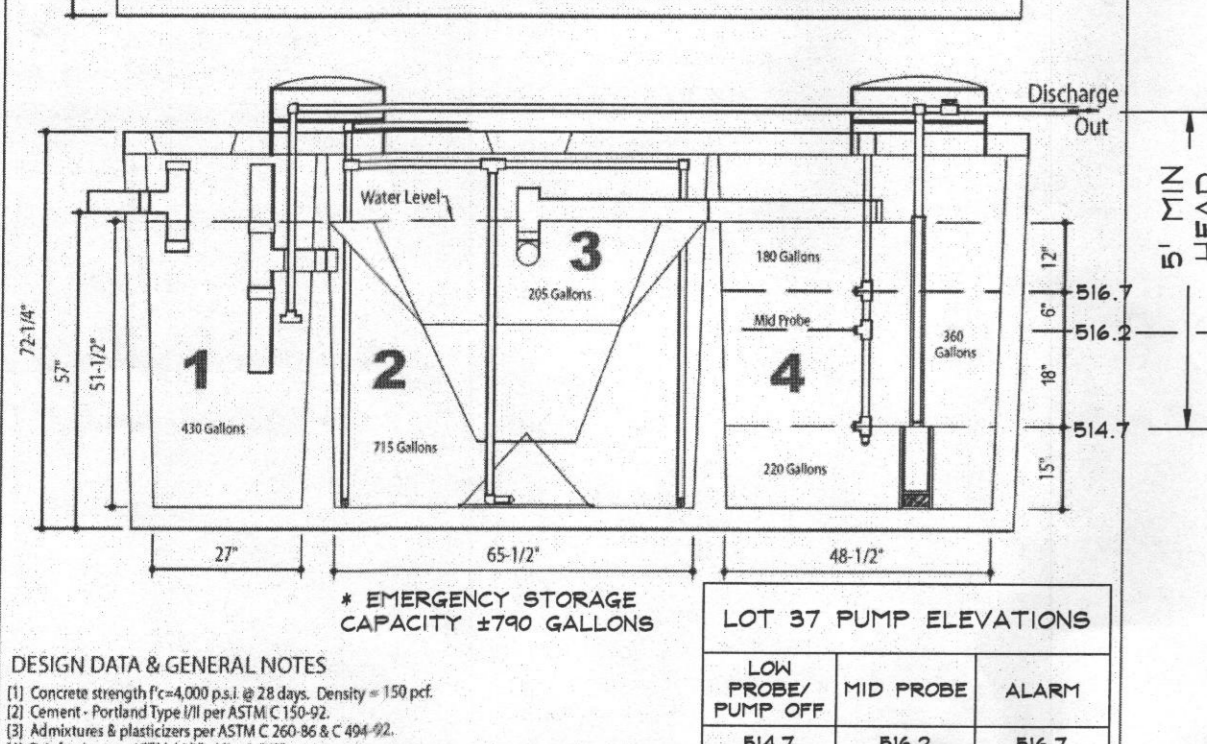
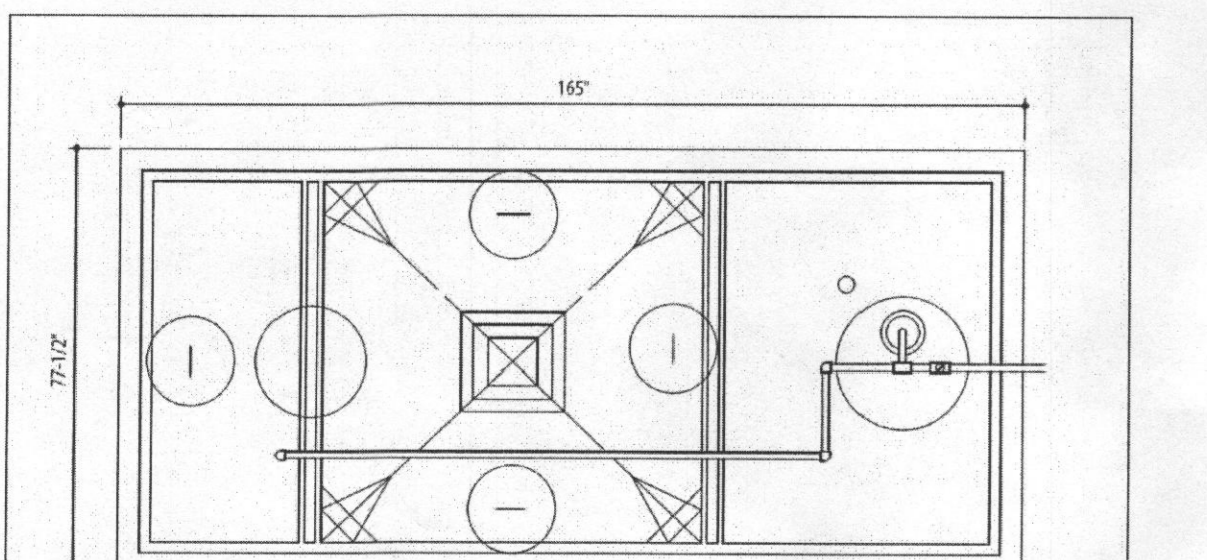
Mayer Brothers, Inc.
4300 Rockwell
Bridgeton, Maryland 21075
Tel: 410.796.1024
Fax: 410.796.1439
www.mayerbrothers.com

600 GPD BNR SYSTEM
H-600 ABNR
with 750 GALLON PUMP CHAMBER

Dwg. No. Hoot Form #1
No Scale
March 19, 2009

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,876 SQ.FT.
 2. NUMBER OF BEDROOMS: 4
 3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
 4. A DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-38.
 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 DMVA, 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.
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 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.
 22. THE EXISTING WELL SHOWN (HO-095-0643) HAS BEEN FIELD LOCATED AND IS SHOWN ACCURATELY.
 23. AT ANY TIME IN THE FUTURE THAT A BUILDING PERMIT IS SUBMITTED TO FINISH THE AREA CURRENTLY IDENTIFIED AS OPTIONAL DEN, THEN A SEPTIC SYSTEM UPGRADE WILL BE REQUIRED AS FINISHING THE OPTIONAL DEN CREATES A FIFTH BEDROOM PER HOWARD COUNTY CODE 3.801(B).

- 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 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.



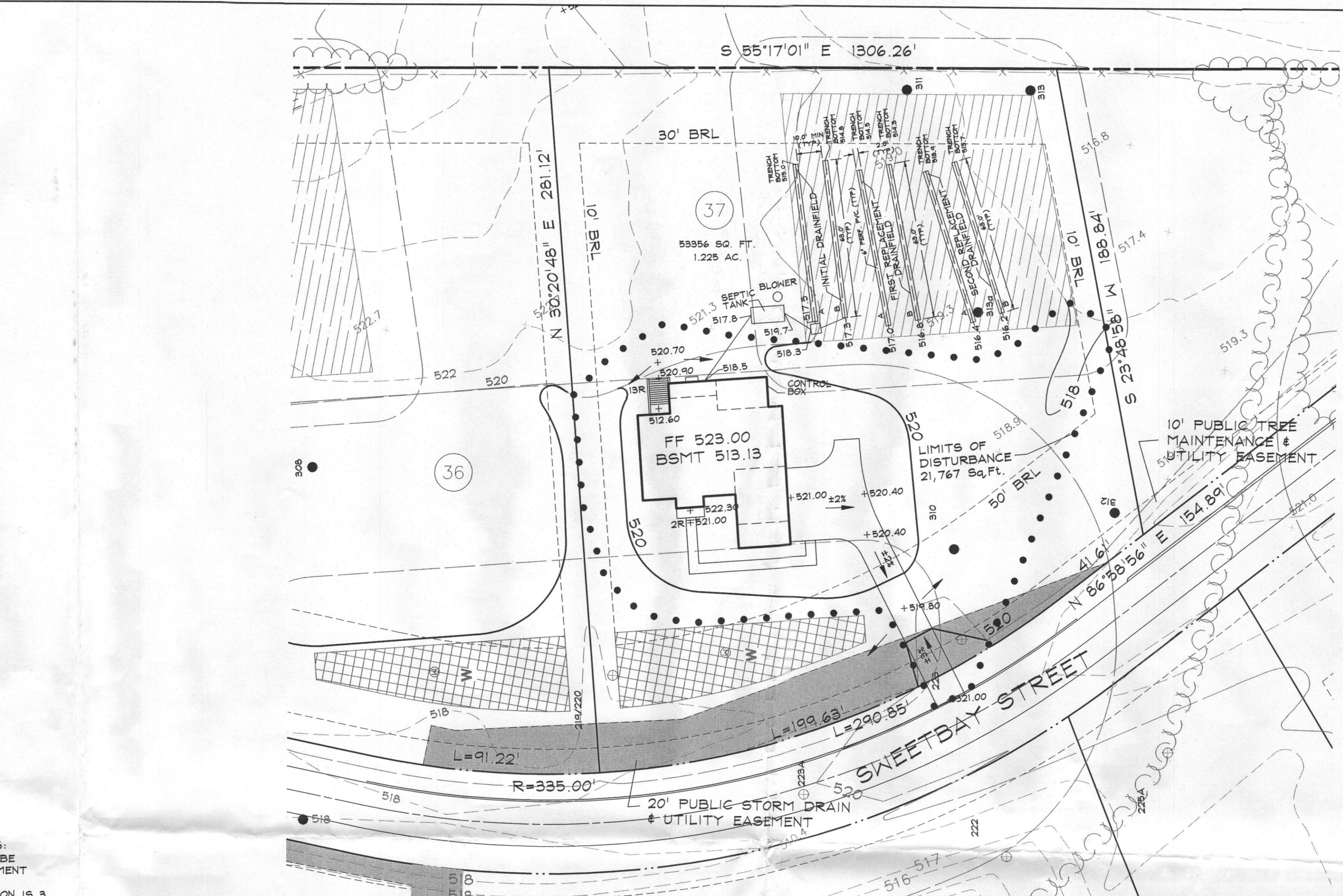
DESIGN DATA & GENERAL NOTES

1. Concrete strength 4000 PSI (28 Day) Density = 150 pcf.
2. Cement: Portland Type I/II per ASTM C 150-02.
3. Aggregates: 8 per ASTM C 33, Max. 1-1/2" (38 mm) C-94-92.
4. Reinforcing per ASTM A 618, Min. 1-1/2" (38 mm) C-94-92.

600 GPD BNR SYSTEM
H-600 ABNR
with 750 GALLON PUMP CHAMBER

Maver Brothers, Inc.
4340 Main Road
Elkridge, Maryland 21075
Tel: 410.796.1434
Fax: 410.796.1438
www.maverbrothers.com

Dwg. No. Hoot Form #1 No Scale March 19, 2009



TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD

OFF FLOAT ELEVATION	514.7'
HIGH POINT OF THE SYSTEM	+ 518.7'
VERTICAL ELEVATION CHANGE	5.0'

FRICTION HEAD

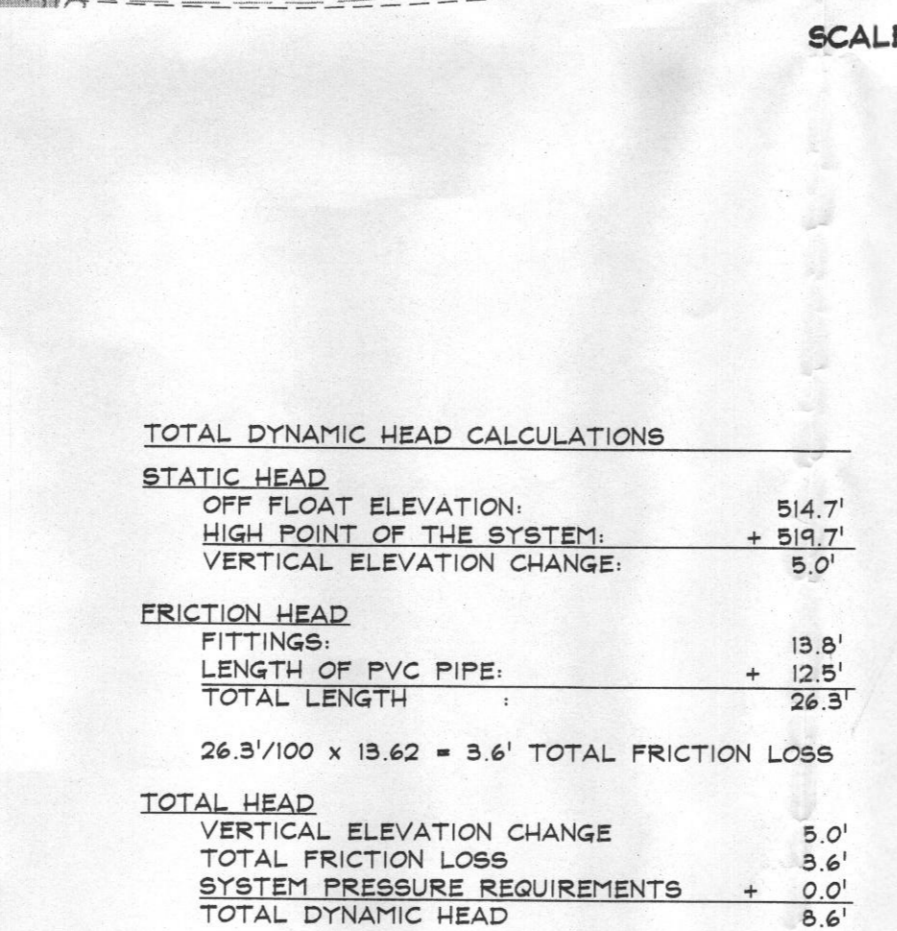
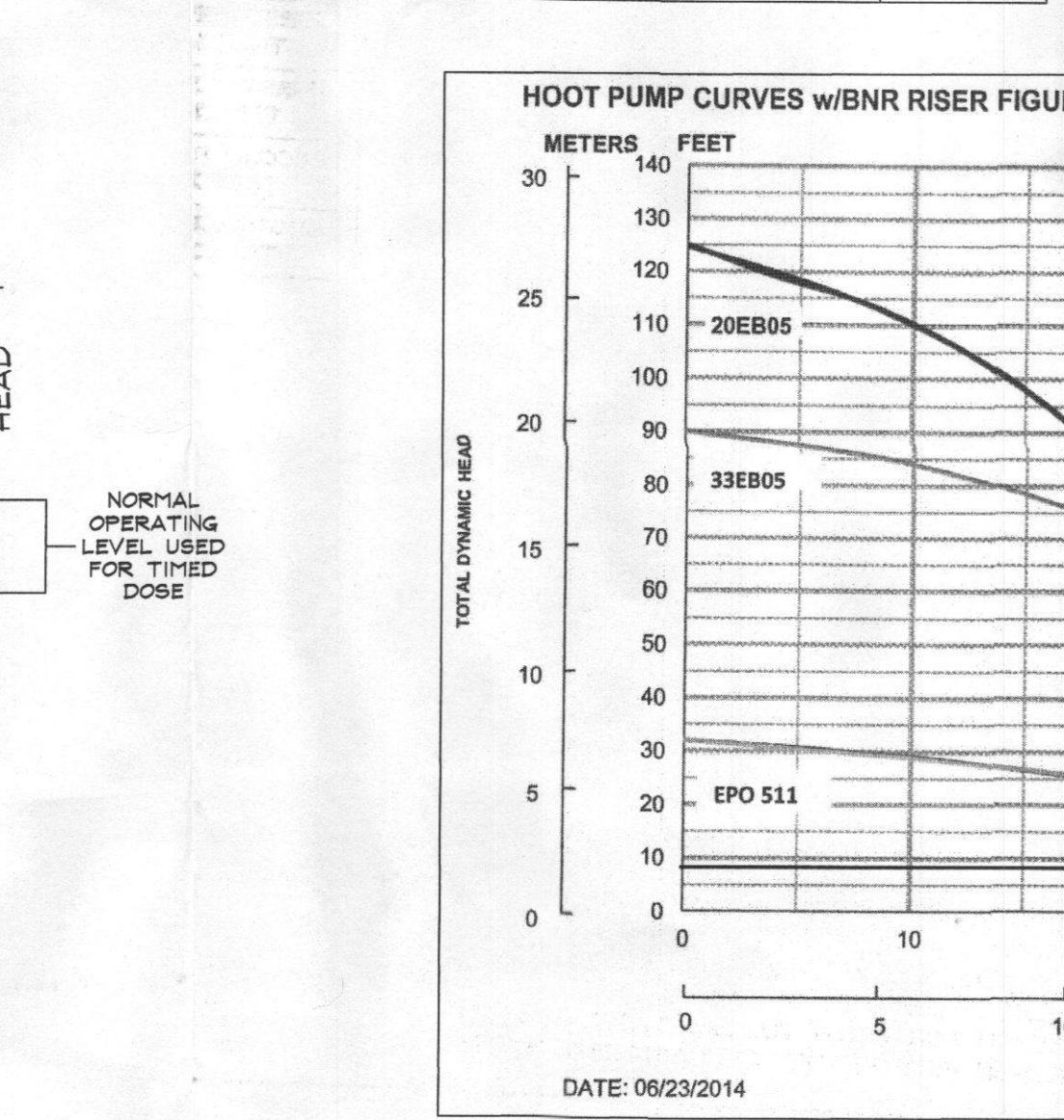
FITTINGS	13.8'
LENGTH OF PVC PIPE	+ 12.5'
TOTAL LENGTH	26.3'

26.3'/100 x 13.62 = 3.6' TOTAL FRICTION LOSS

TOTAL HEAD

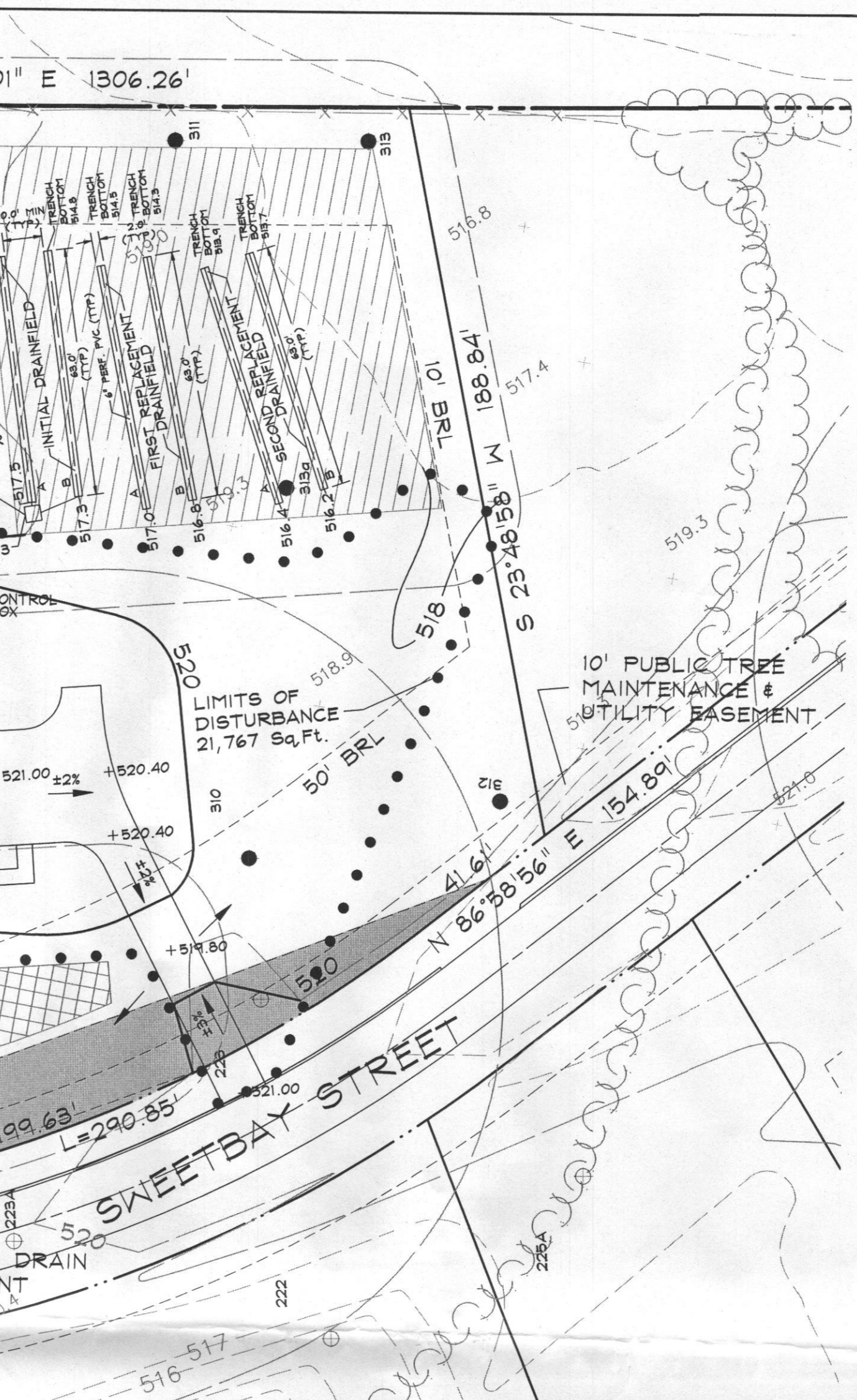
VERTICAL ELEVATION CHANGE	5.0'
TOTAL FRICTION LOSS	3.6'
SYSTEM PRESSURE REQUIREMENTS	+ 0.0'
TOTAL DYNAMIC HEAD	8.6'

DOSE 74.0 GAL
PUMP RUN TIME 2.0 MIN



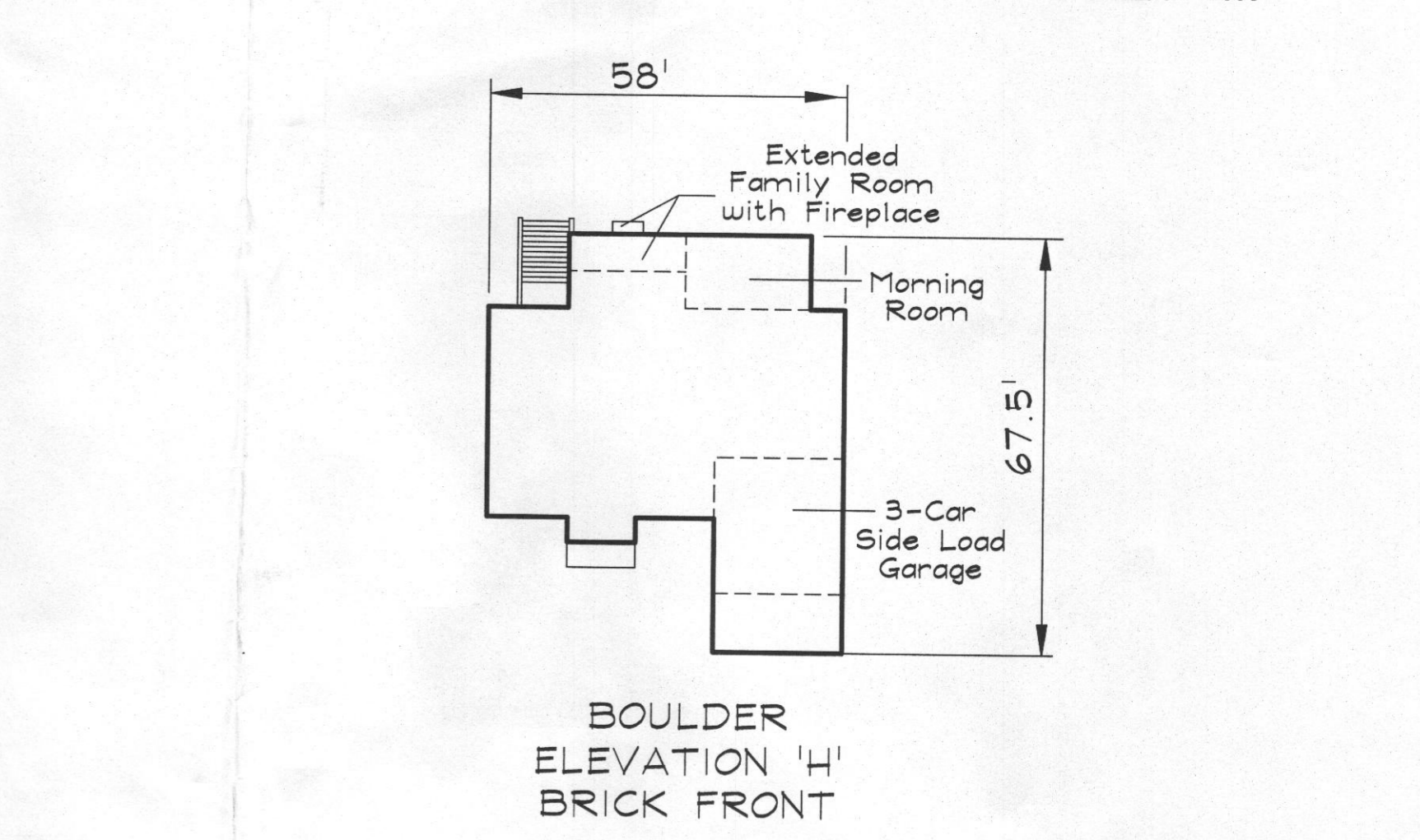
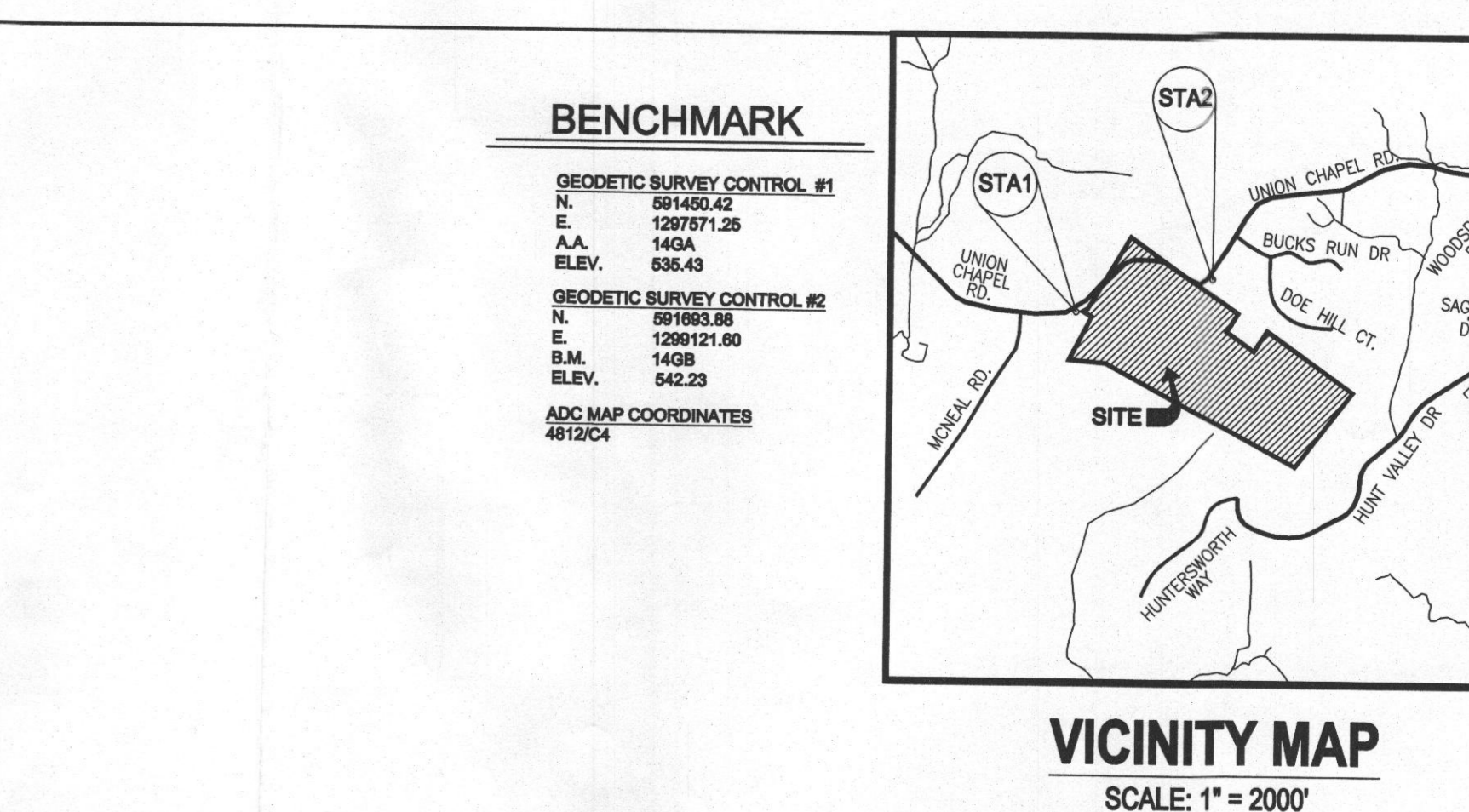
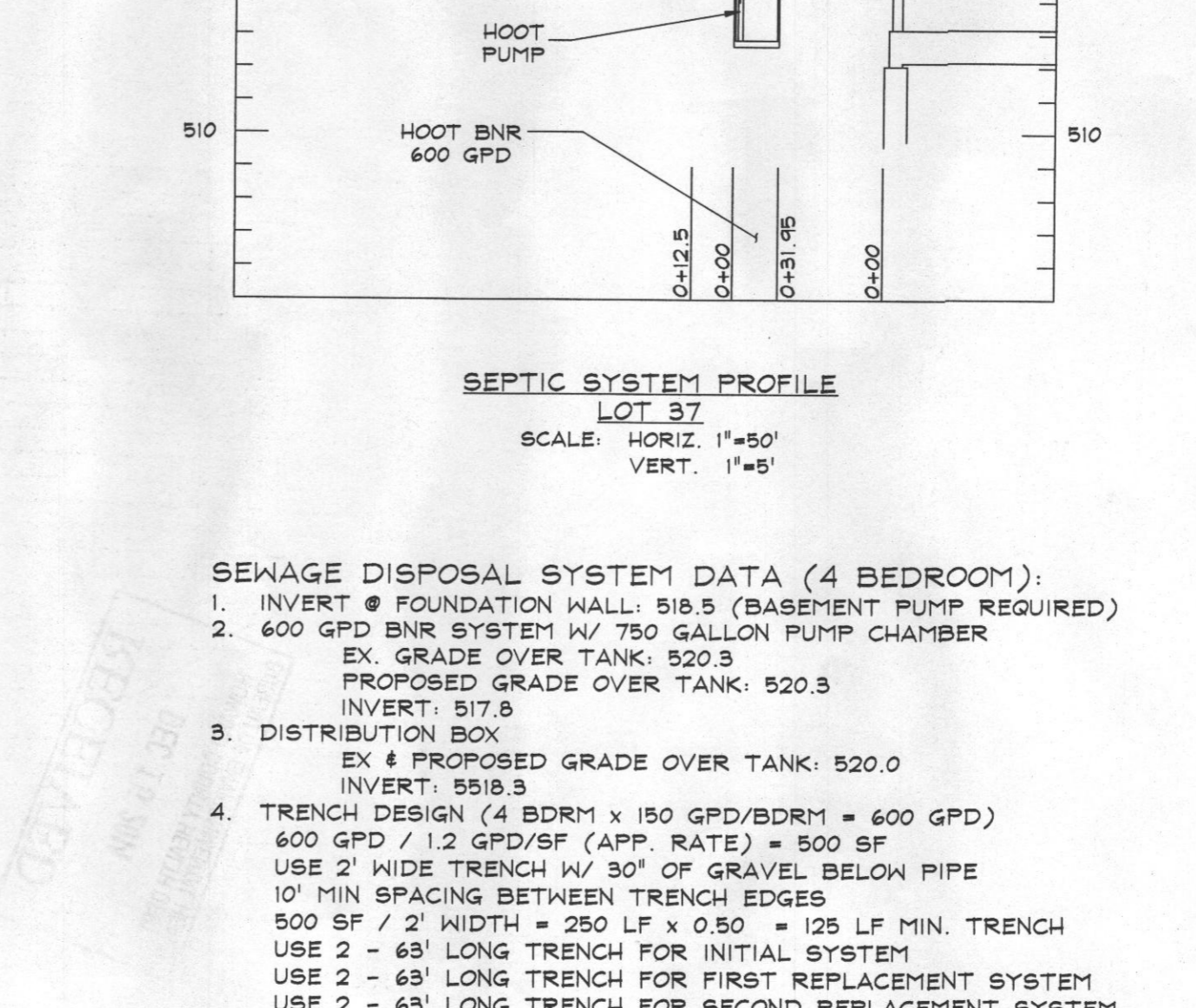
SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):

1. INVERT # FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
2. 600 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER
EX. GRADE OVER TANK: 520.3
PROPOSED GRADE OVER TANK: 520.3
INVERT: 517.8
3. DISTRIBUTION BOX
EX # PROPOSED GRADE OVER TANK: 520.0
INVERT: 518.3
4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)
600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF
USE 2' WIDE TRENCH W/ 30\"/>



LOT 37 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (63')	520.0	517.5	515.05/1.1
INITIAL SYSTEM TRENCH B (63')	519.8	517.3	514.8
FIRST REPLACEMENT TRENCH A (63')	519.5	517.0	514.5
FIRST REPLACEMENT TRENCH B (63')	519.3	516.8	514.3
SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
SECOND REPLACEMENT TRENCH B (63')	518.7	516.2	513.7



- DRAWING LEGEND**
- 500 PROPOSED GRADE
 - 502 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

DATA SOURCES:

DRAWING LEGEND

LOT 37 SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
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SECOND REPLACEMENT TRENCH A (63')	519.1	516.4	513.9
SECOND REPLACEMENT TRENCH B (63')	518.7	516.2	513.7

SEPTIC SYSTEM PROFILE
LOT 37
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):

1. INVERT # FOUNDATION WALL: 518.5 (BASEMENT PUMP REQUIRED)
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USE 2' WIDE TRENCH W/ 30\"/>

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 Brightwell Road
Landover, Maryland 20785
(301) 983-6283

DEVELOPER:

SITE ADDRESS:
LOT 37
15248 Sweetbay Street
Woodbine, Maryland 21787

BELLE HAVEN ESTATES
LOT 37

SITE PLAN FOR
BAT INSTALLATION

3rd ELECTION DISTRICT HOWARD COUNTY

REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: **DES. BY:** BKC
TAX ACC. #: **DRN. BY:** BKC
TAX MAP: 14 **CHK. BY:** PGC
BLOCK / GRID: **DATE:** 12/05/14
PARCEL #: 66 **DDC JOB #:** 06116.5
ZONE / USE: RC-DEO **SHEET NUMBER:**
DWG. SCALE: 1"=30' 1 of 1

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. 27029 EXPIRATION DATE: JANUARY 26, 2016

10/28/2014
DATE

PAUL G. CAVANAUGH
PROFESSIONAL ENGINEER