

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: 8/18/15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 556590

APPROVAL DATE: 12/2/15 **PERMIT: CONSTRUCTION** A _____

PROPERTY ADDRESS: 15213 Sweetbay Street

SUBDIVISION: Belle Haven Estates LOT: 45 TAX ID: _____

CONTRACTOR: Ben Lewis Plumbing EMAIL: _____

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: cwillet@khov.com

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

BAT UNIT MODEL: Hoot 600 BNR PUMP SIZE: _____ PUMP TANK CAPACITY: 600GPD

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: _____ DATE RECORDED: _____

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>177</u>	INLET DEPTH: <u>4.5'</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>5.5</u>

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

NOTES: install BAT unit per plan.
2x90' trenches

ISSUED BY: Robert Bricker ISSUE DATE: 9-1-15 EXPIRATION DATE: 8-18-16

- 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 DOWNGRADIENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM
 ELECTRICAL PERMIT ISSUED E 15004529
- 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.**

NOT TO SCALE

See separate sheet
for as-built drawing

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	5'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		175'
ABSORPTION AREA		350' + 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'
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:

9/17/15 Layout with Andy from Ben Lavis. All SDA and tank stakes present. Contour relatively flat across SDA. Laid out 2x90' trenches with ends within 2" elevation of each other. Russ from K Hov on site - requested moving tank closer to corner of house to leave room in backyard for pool. New location 20' off house + okay. (SC)

INSTALLATION:

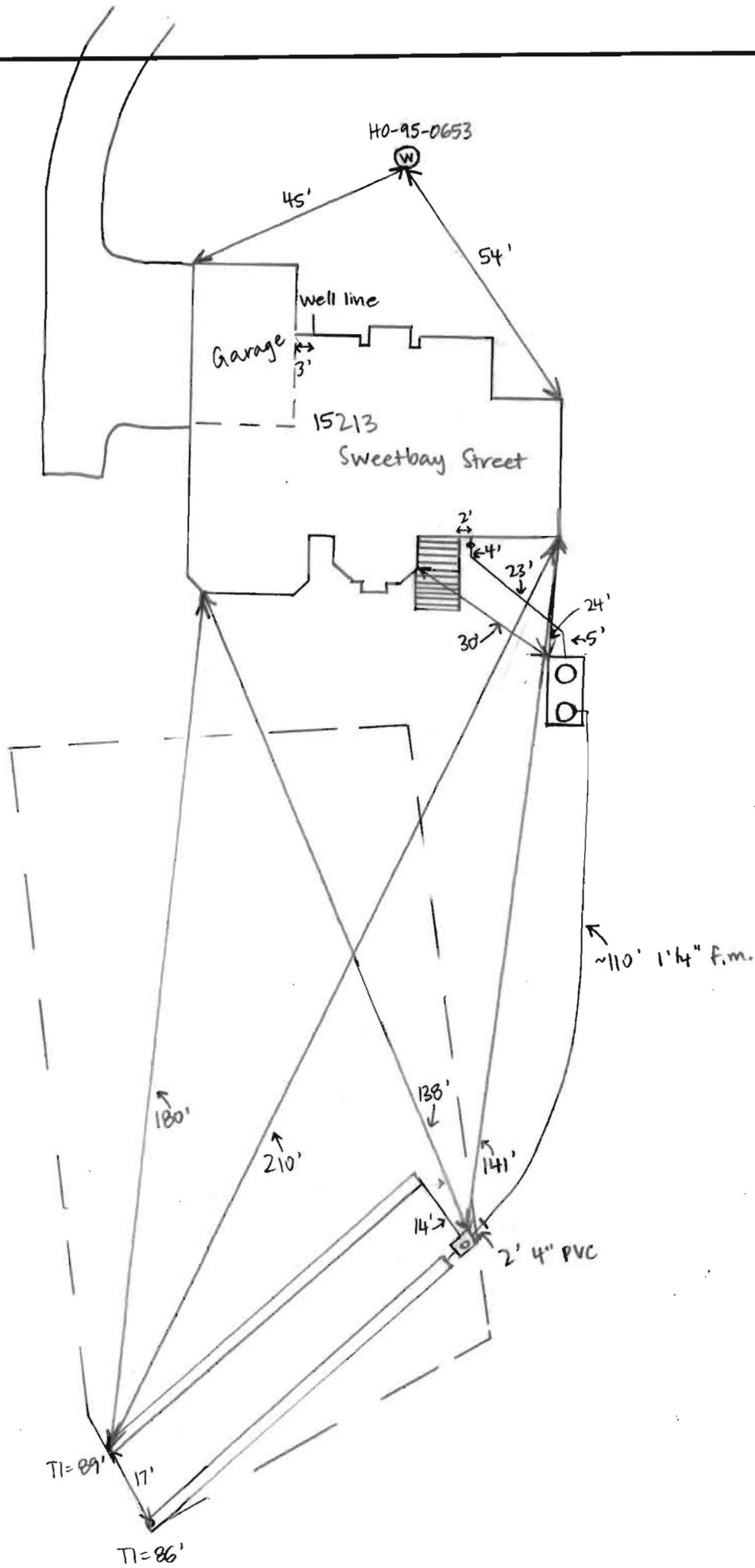
9/17/15 House connection made. (SC) 9/21/15 D-box installed. T1 finished + left open. 3.5' to stone, 3' wide. (SC) 9/23/15 T2 finished + left open. 4.5' to stone, 3' wide. 1 1/4" force main run from D-box to tank site. (SC) 9/24/15 Tank set and bedded w/ #2 stone. Pipe laid from house to tank and force main connected. Need BAT startup certification. (SC) 11/6/15 Hoot startup with Mike Sample. Alarm sounds. pump pumps effluent to D-box, reameration is good. All cleanouts need screw caps. Contractor notified. (SC) 11/12/15 BAT startup certification received. (SC)

FINAL INSPECTOR

Sarah Collins

DATE OF APPROVAL

12/2/15



NOT TO SCALE

Letter of Satisfaction

Hoot System Installation

Address of Property: 15213 Sweetbay St.
Woodbine, MD. 21797

Date of Final Inspection: 11/16/15

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,

W. Michael Sayer
Name of Inspector
Mayer Bros. ,Inc.

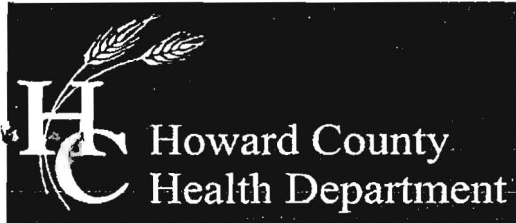
PH: 410-796-1434

FX: 410-796-1438

WBE
NPCA Certified Plant

mayerbro@connect.net
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, PermEntry Basement Entries,
Scapewel Window Wells, Custom Precast Products



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Twitter: HowardCoHealthDep

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

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

THIS AGREEMENT is made this 18th day of AUGUST, 2018, among K. HOVANANIAN HUNTER 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 15213 SWEETBAY STREET, WOODBINE 21794, 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 16326 Folio 448. 04/314134

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 LOW GDF BNR SYSTEM / W/ 750 GPM 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

maintenance or other attention. Upon taking title to the Lot, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

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

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

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

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

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

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

Bert Nyefer 8/18/15
Howard County Health Department

Steven J. Smyke 8/18/15
Owner #1 Signature Date

STEVEN SMYKE / VP HOUSE CUSTODIAN
Owner #1 Print Name K. HOSKINS / H. H. H.

N/A
Buyer #1 Signature Date

N/A
Buyer #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

Buyer #2 Signature Date

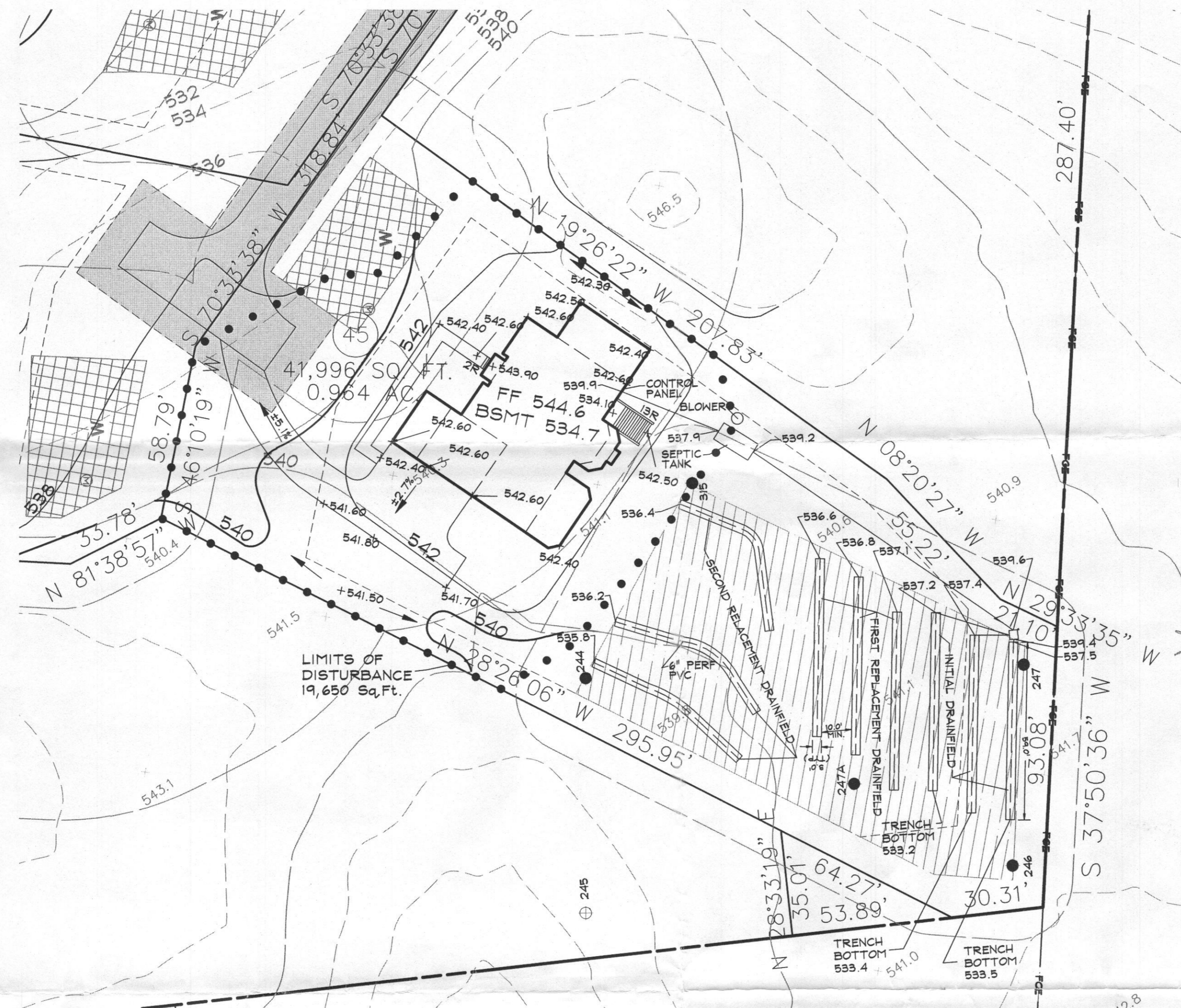
Buyer #2 Print Name

GENERAL NOTES

- BASE SQUARE FOOTAGE OF HOUSE: 5,625 SQ.FT.
- NUMBER OF BEDROOMS: 5
- EJECTOR PUMP REQUIRED TO SENIOR BASEMENT
- PER THE APPROVED ROAD DRAWINGS, F-07-38, A DRIVEWAY CULVERT IS NOT REQUIRED
- 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
- PLAT REFERENCE: #19498
- 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 DENARIO DESIGN CONSULTANTS DATED 07/09/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC IN JAN. 2012.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE
- TOTAL LIMIT OF DISTURBANCE: 19,650 SQ. FT. / 0.45 AC.
- STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
- 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.
- DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
- THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- 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.
- 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.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- 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
- 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:

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
- ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN. THE CONTROL PANEL SHALL BE PROVIDED ON THE FOUNDATION WALL ABOVE THE APPROXIMATE LOCATION OF THE SHC LEAVING THE HOUSE OR AT THE BAT LOCATION.
- AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



SCALE = 1"=30'

DRAWING LEGEND

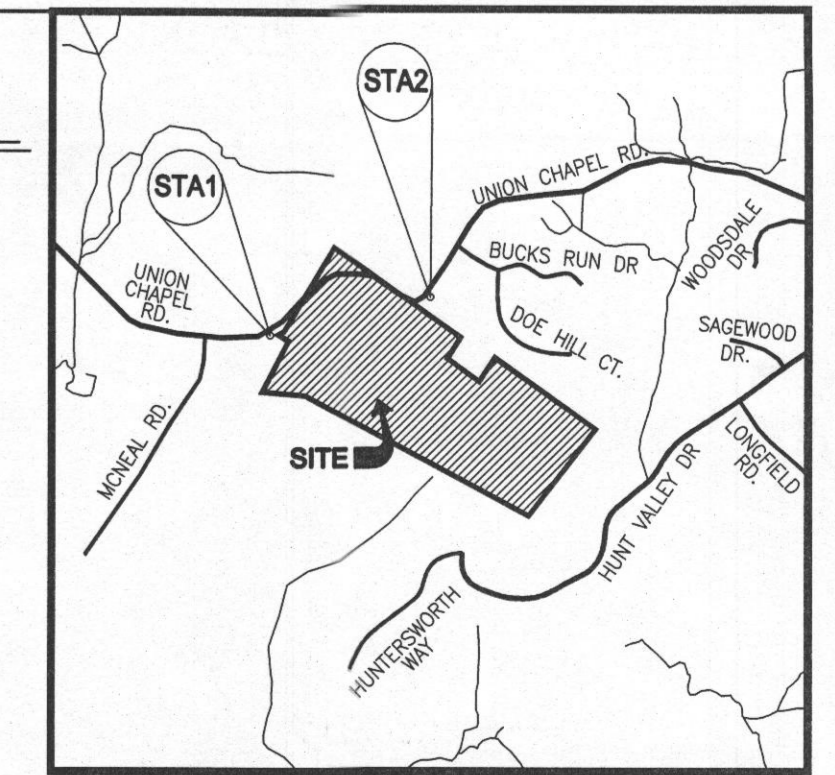
- 500 PROPOSED GRADE
- 502 PROPOSED LIMIT OF DISTURBANCE
- PROF. SPOT ELEV./FLOW ARROW
- PROPOSED 20' SEPTIC RESERVE BUFFER
- EXISTING 30' WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- WELL AREA
- 174 PASSED PERCOLATION TEST
- 127 FAILED PERCOLATION TEST

BENCHMARK

GEODETIC SURVEY CONTROL #1
 N. 891480.42
 E. 1291571.25
 A.A. 146A
 ELEV. 636.43

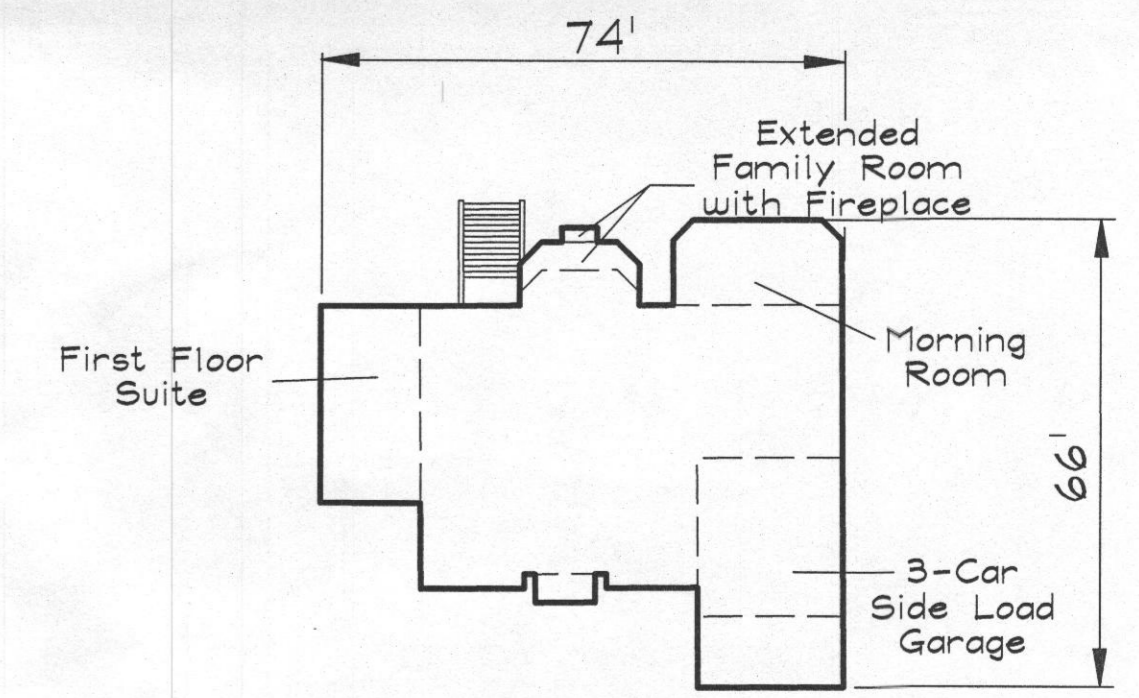
GEODETIC SURVEY CONTROL #2
 N. 891863.38
 E. 1298121.80
 B.M. 146B
 ELEV. 642.23

ADG MAP COORDINATES
 461264



VICINITY MAP

SCALE: 1" = 2000'



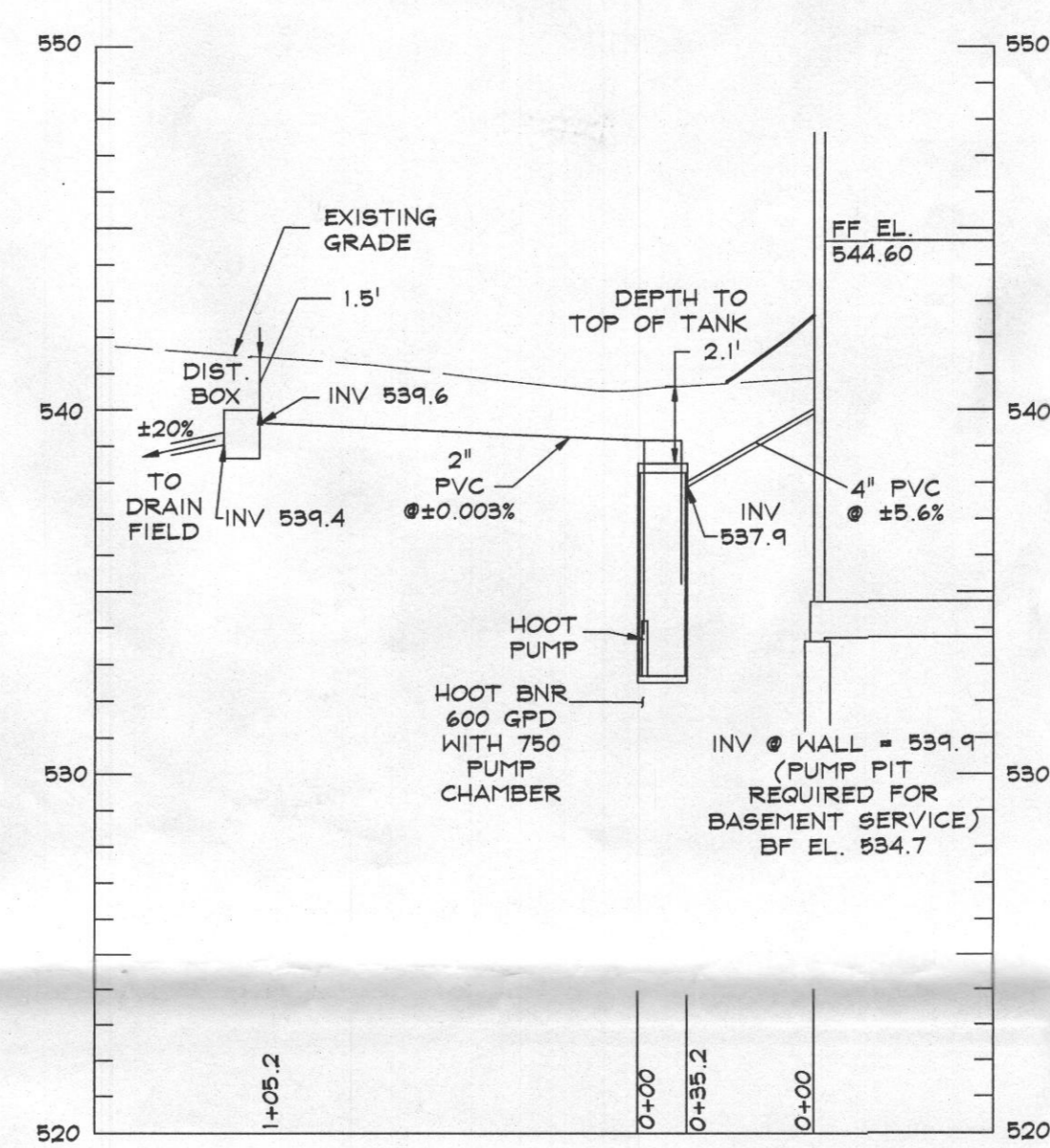
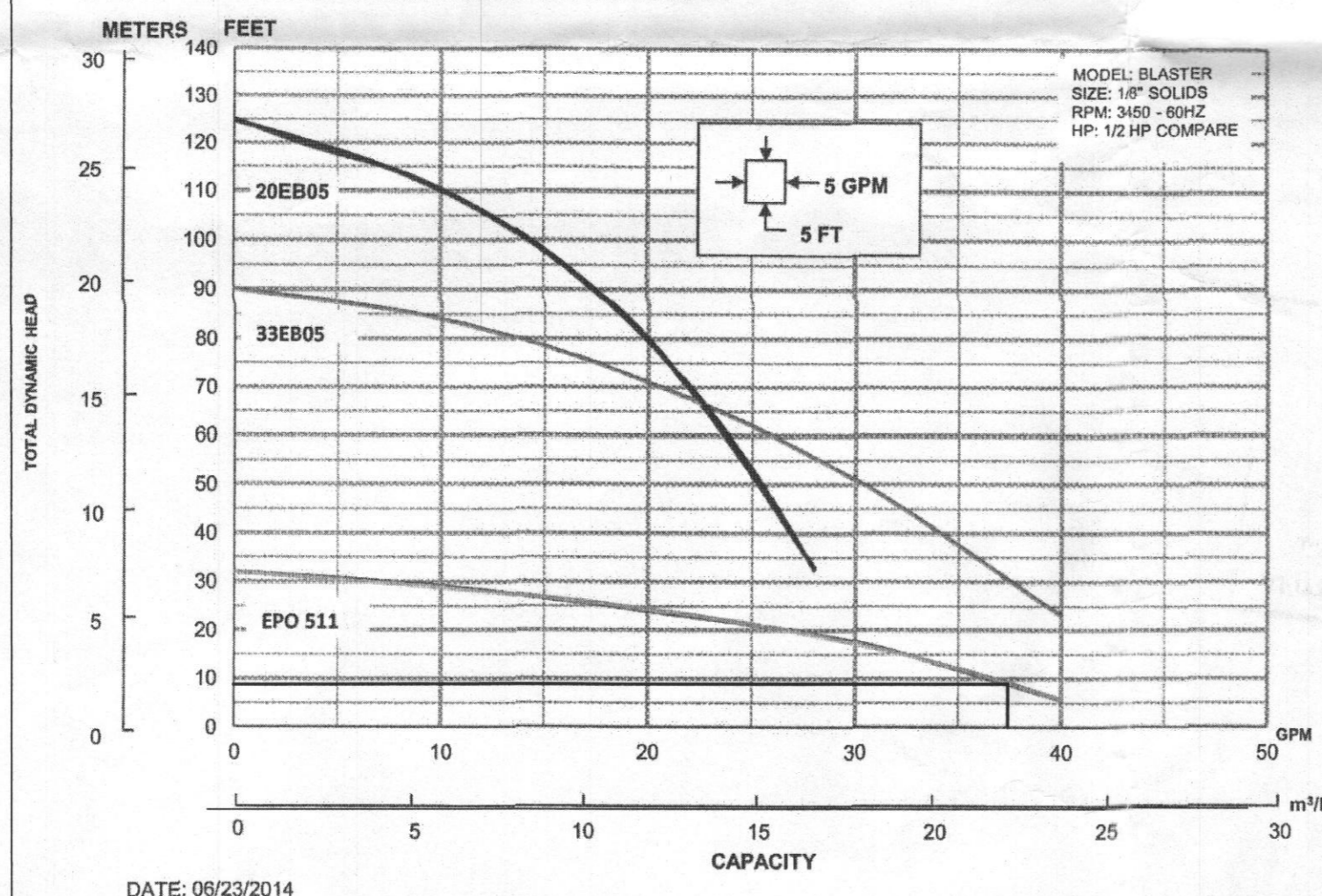
MANHATTAN ELEVATION 'C'
 BRICK & STONE FRONT, FIRST FLOOR SWEET MORNING ROOM, EXTENDED FAMILY ROOM, WIDE AREA WAY
 DATA SOURCES:

TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	
OFF FLOAT ELEVATION:	534.2'
HIGH POINT OF THE SYSTEM:	+ 539.6'
VERTICAL ELEVATION CHANGE:	5.4'
FRICITION HEAD	
FITTINGS:	13.8'
LENGTH OF PVC PIPE:	+ 105.2'
TOTAL LENGTH:	119.0'
119.0'/100 x 3.4 = 4.1' TOTAL FRICTION LOSS	
TOTAL HEAD	
VERTICAL ELEVATION CHANGE:	5.4'
TOTAL FRICTION LOSS:	4.1'
SYSTEM PRESSURE REQUIREMENTS:	+ 0.0'
TOTAL DYNAMIC HEAD:	9.5'

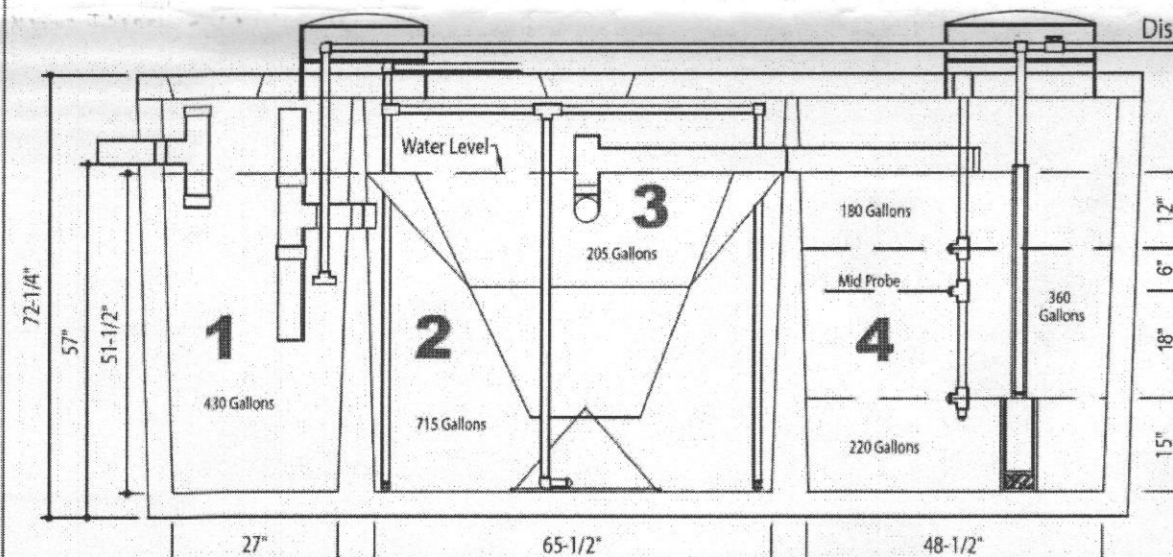
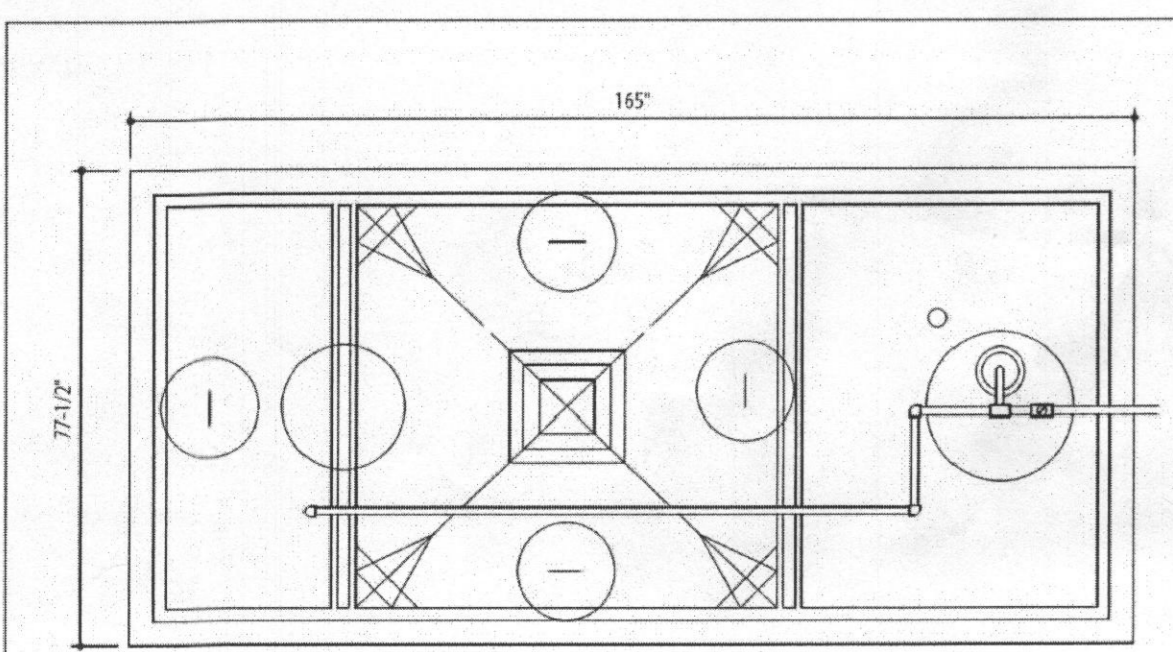
STATIC HEAD	5.4'
FRICTION HEAD	4.1'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	9.5'
GALLONS PER MINUTE	37.5 GPM
DOSE	93.75
PUMP RUN TIME	2.5 MIN

HOOT PUMP CURVES w/BNR RISER FIGURED IN LOSS



LOT 45 TRENCH SYSTEMS SPECIFICATIONS			
	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (59')	541.5	537.5	533.5
INITIAL SYSTEM TRENCH B (59')	541.4	537.4	533.4
INITIAL SYSTEM TRENCH C (59')	541.2	537.2	533.2
FIRST REPLACEMENT TRENCH A (59')	541.1	537.1	533.1
FIRST REPLACEMENT TRENCH B (59')	540.8	536.8	532.8
FIRST REPLACEMENT TRENCH C (59')	540.5	536.5	532.5
SECOND REPLACEMENT TRENCH A (59')	540.4	536.4	532.4
SECOND REPLACEMENT TRENCH B (59')	540.2	536.2	532.2
SECOND REPLACEMENT TRENCH C (59')	539.8	535.8	531.8

- SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):**
- INVERT @ FOUNDATION WALL: 539.9 (BASEMENT PUMP REQUIRED)
 - 600 GPD BNR SYSTEM w/ 750 GALLON PUMP CHAMBER
 EX. GRADE OVER TANK: 540.6
 PROPOSED GRADE OVER TANK: 540.6
 INVERT: 537.9
 - DISTRIBUTION BOX
 EX. GRADE OVER TANK: 541.4
 INVERT: 539.6
 - TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)
 10' MIN SPACING BETWEEN TRENCH EDGES
 USE 3' WIDE TRENCH w/ 48" OF GRAVEL BELOW PIPE
 INITIAL TRENCH 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
 937.5 SF / 3' WIDTH = 312.5 LF x 0.96 = 175 LF MIN.
 USE 3 - 59' LONG TRENCHES FOR INITIAL TRENCH
 USE 3 - 59' LONG TRENCHES FOR FIRST REPLACEMENT SYSTEM
 USE 3 - 59' LONG TRENCHES FOR SECOND REPLACEMENT SYSTEM



DESIGN DATA & GENERAL NOTES

- Concrete strength 1-4000 psi @ 28 days. Density = 150 pcf.
- Cement - Portland Type III per ASTM C 150-92.
- Admixtures & plasticizers per ASTM C 360 & 404-92.
- Reinforcing per ASTM A 618, Min. 1-1/2" cover.

Mayer Brothers, Inc.
 6264 Race Road
 Bowie, Maryland 21075
 Tel: 410.756.1434
 Fax: 410.756.1338
 www.mayerbrosprecast.com

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

DDC Inc.
 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
 1622 Brightwood Road
 Landover, Maryland 20785
 (301) 683-6268

DEVELOPER:
 BELLE HAVEN ESTATES
 LOT 45

SITE ADDRESS:
 LOT 45
 16215 Swallowtail Street
 Woodstock, Maryland 21787

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: 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 26, 2016

10/28/2014
 DATE

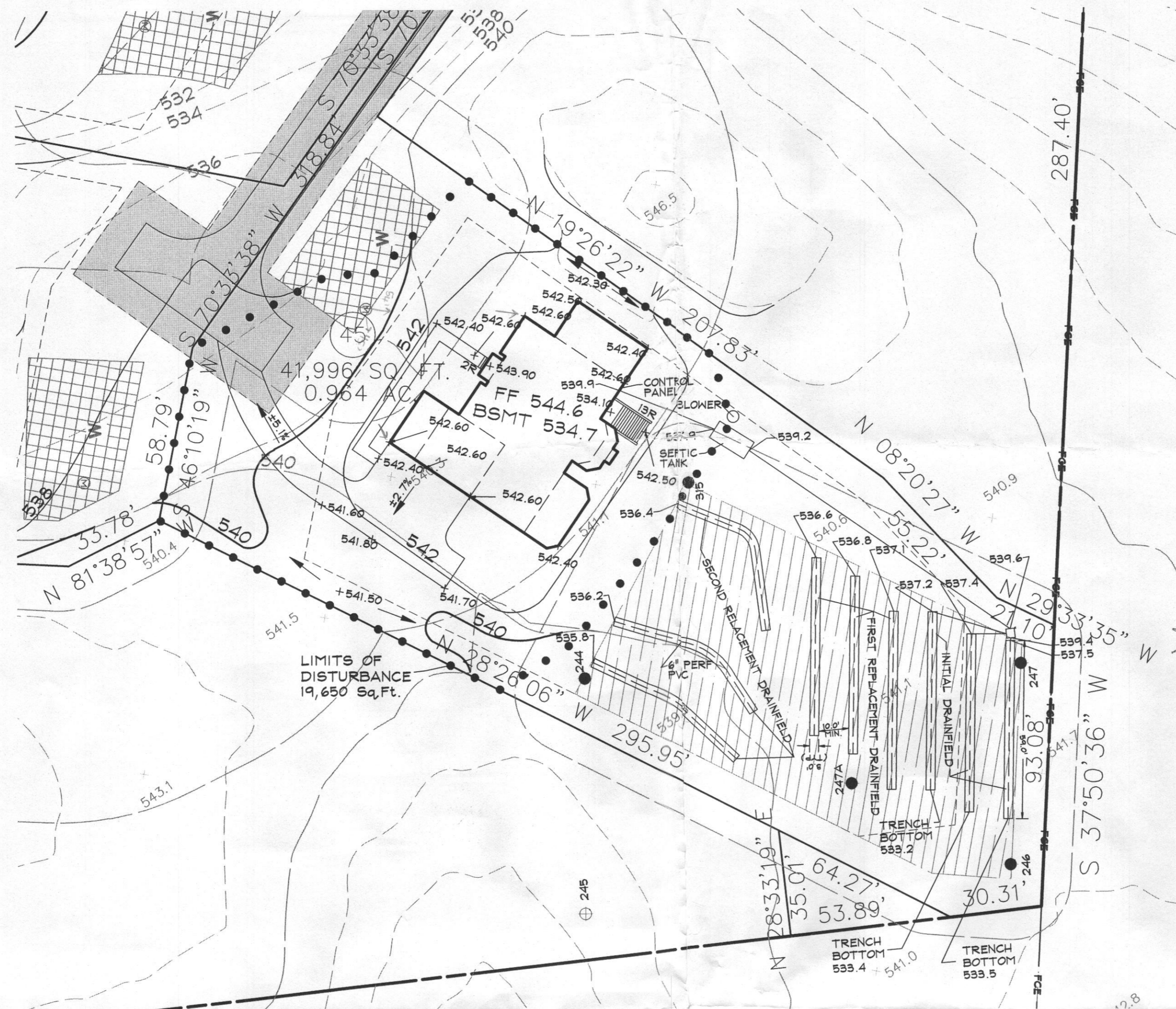
PAUL G. CAVANAUGH

GENERAL NOTES

- BASE SQUARE FOOTAGE OF HOUSE: 5,625 SQ.FT.
- NUMBER OF BEDROOMS: 5
- EJECTOR PUMP REQUIRED TO SENIOR BASEMENT
- PER THE APPROVED ROAD DRAWINGS, F-07-38, A DRIVEWAY CULVERT IS NOT REQUIRED
- 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.
- PLAT REFERENCE: #19948
- BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DMK, 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.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TOTAL LIMIT OF DISTURBANCE: 19,650 SQ. FT. / 0.45 AC.
- STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
- 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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- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- 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.
- 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.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- 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
- 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:

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
- ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICAL. THE CONTROL PANEL SHALL BE PROVIDED ON THE FOUNDATION WALL ABOVE THE APPROXIMATE LOCATION OF THE SHC LEAVING THE HOUSE OR AT THE BAT LOCATION.
- AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



SCALE = 1"=30'

DRAWING LEGEND

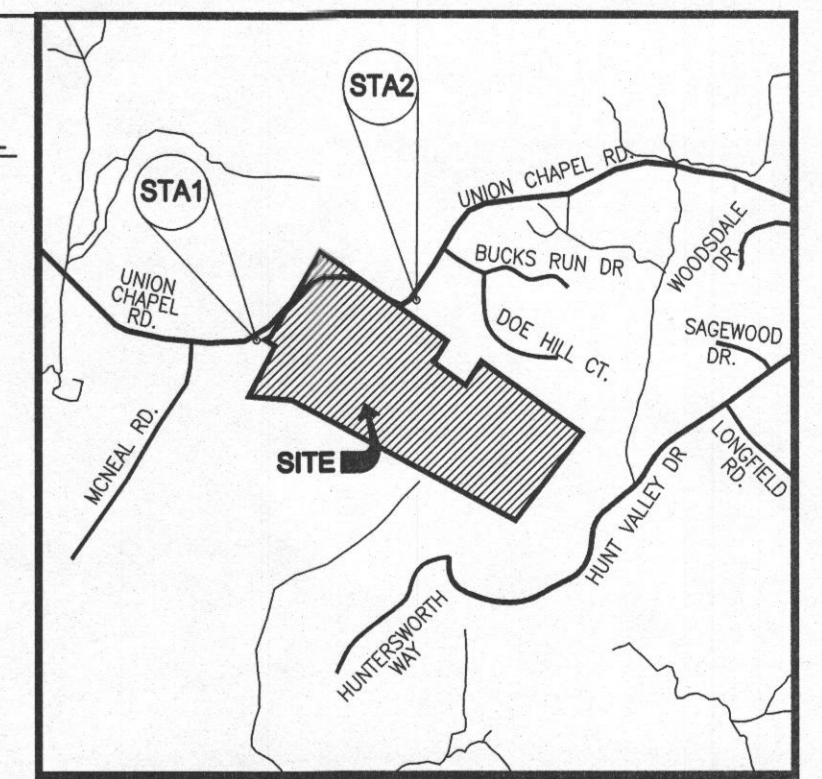
- 500 PROPOSED GRADE
- 502 PROPOSED GRADE
- PROPOSED LIMIT OF DISTURBANCE
- + 665.5 PROP. SPOT ELEV./FLOW ARROW
- PROPOSED 20' SEPTIC RESERVE BUFFER
- EXISTING 30' WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- WELL AREA
- 174 PASSED PERCOLATION TEST
- 127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

BENCHMARK

GEODETIC SURVEY CONTROL #1
 N. 591460.42
 E. 1297571.25
 A.A. 146A
 ELEV. 535.43

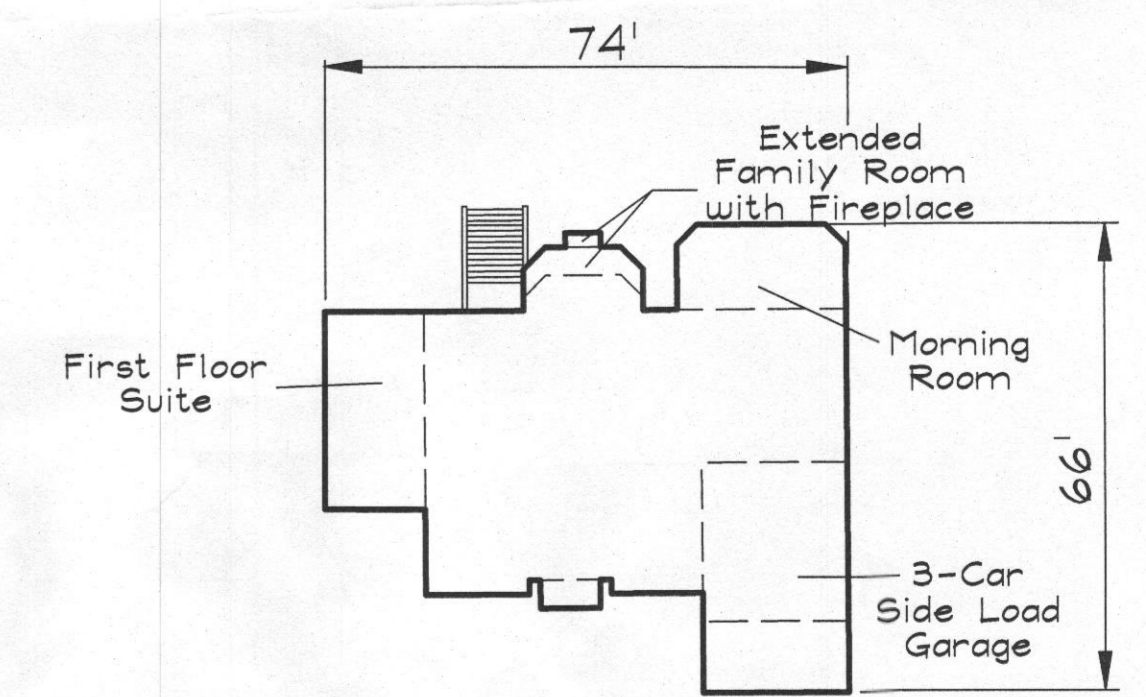
GEODETIC SURVEY CONTROL #2
 N. 601863.86
 E. 1299121.80
 B.M. 140B
 ELEV. 542.23

ADC MAP COORDINATES
 481204



VICINITY MAP

SCALE: 1" = 2000'

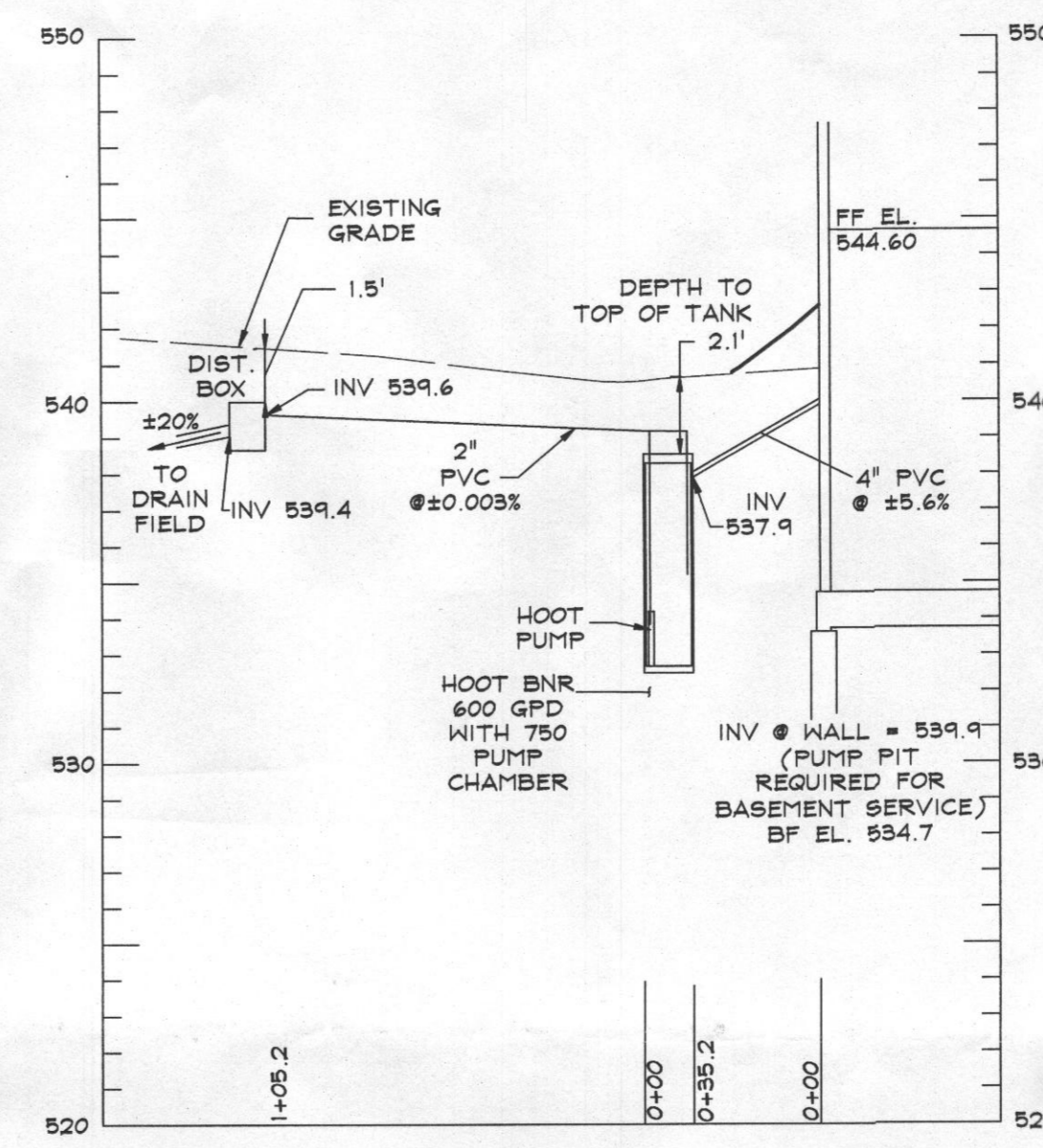


MANHATTAN ELEVATION 'C'
 BRICK & STONE FRONT, FIRST FLOOR SWEET MORNING ROOM, EXTENDED FAMILY ROOM, WIDE AREA WAY
 DATA SOURCES:

TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	
OFF FLOAT ELEVATION:	534.2'
HIGH POINT OF THE SYSTEM:	+ 539.6'
VERTICAL ELEVATION CHANGE:	5.4'
FRICTION HEAD	
FITTINGS:	13.8'
LENGTH OF PVC PIPE:	+ 105.2'
TOTAL LENGTH:	119.0'
119.0'/100 x 3.4 = 4.1' TOTAL FRICTION LOSS	
TOTAL HEAD	
VERTICAL ELEVATION CHANGE	5.4'
TOTAL FRICTION LOSS	4.1'
SYSTEM PRESSURE REQUIREMENTS	+ 0.0'
TOTAL DYNAMIC HEAD	9.5'

STATIC HEAD	5.4'
FRICTION HEAD	4.1'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	9.5'
GALLONS PER MINUTE	37.5 GPM
DOSE	93.75
PUMP RUN TIME	2.5 MIN

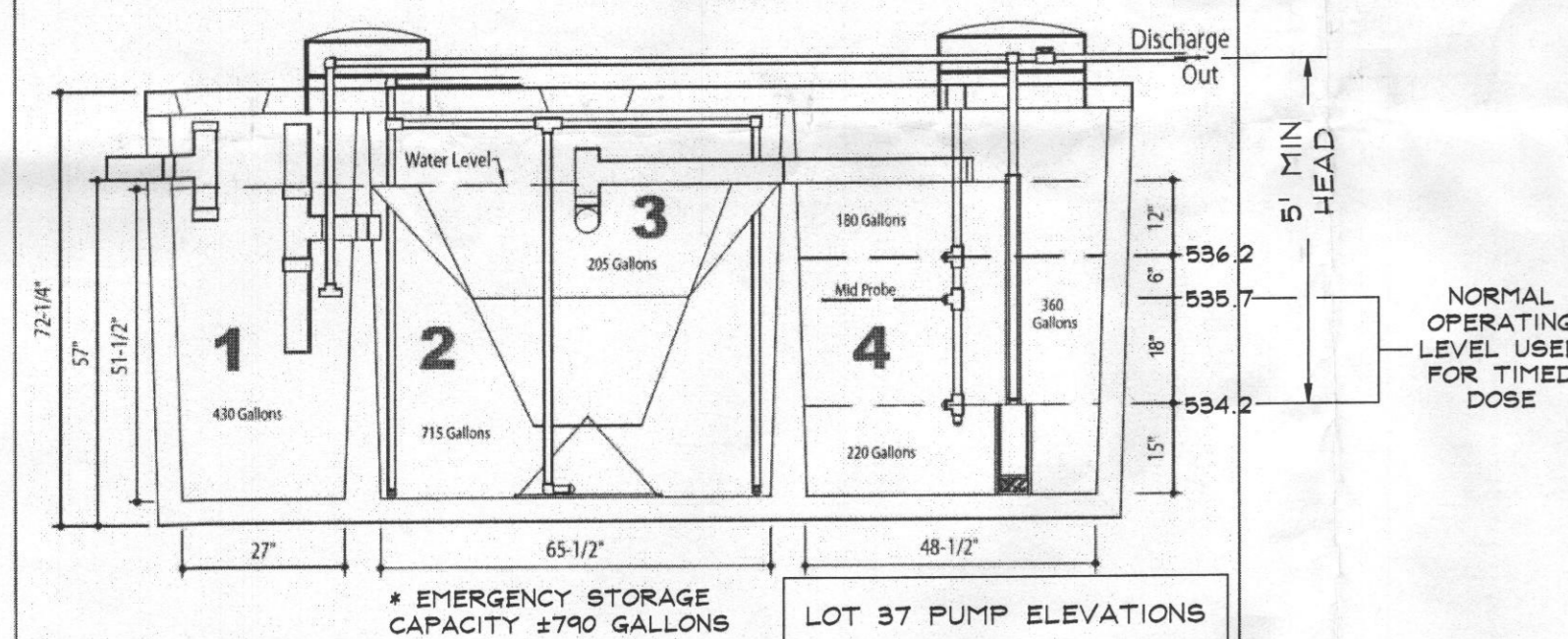
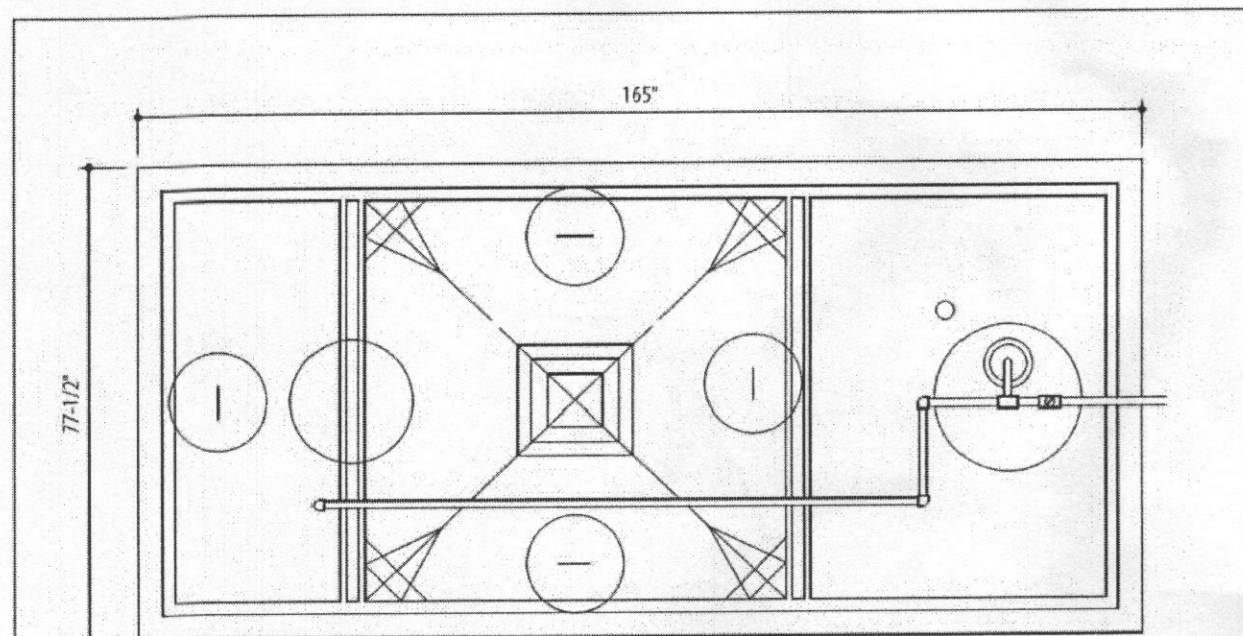
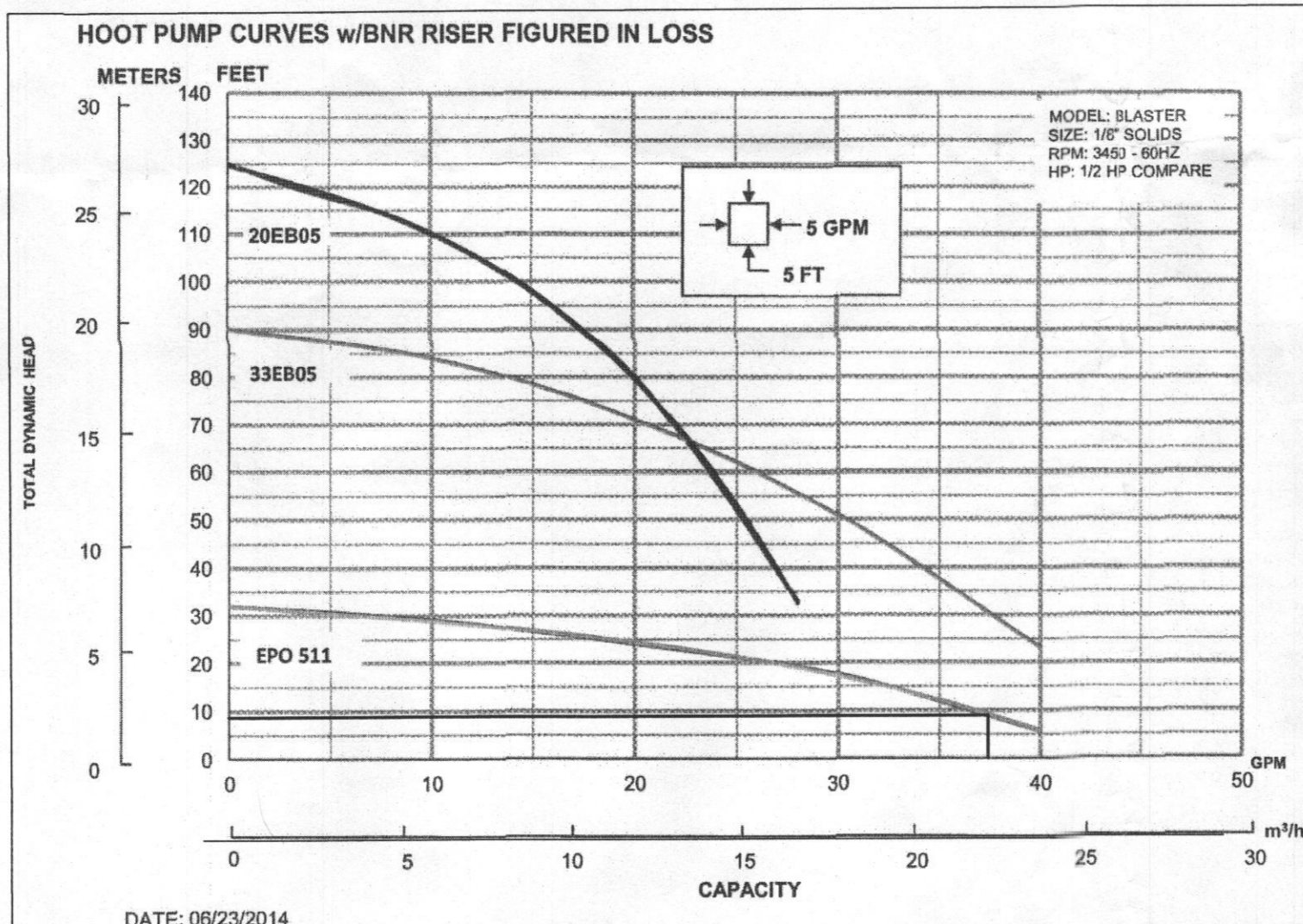


SEPTIC SYSTEM PROFILE

LOT 45
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'

- SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):**
- INVERT @ FOUNDATION WALL: 539.9 (BASEMENT PUMP REQUIRED)
 - 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER
 EX. GRADE OVER TANK: 540.6
 PROPOSED GRADE OVER TANK: 540.6
 INVERT: 537.9
 - DISTRIBUTION BOX
 EX. GRADE OVER TANK: 541.4
 INVERT: 539.6
 - TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)
 10' MIN SPACING BETWEEN TRENCH EDGES
 USE 3' WIDE TRENCH W/ 48" OF GRAVEL BELOW PIPE
 INITIAL TRENCH 750 GPD / 0.8 GPD/SF (APP. RATE) = 937.5 SF
 937.5 SF / 3' WIDTH = 312.5 LF x 0.56 = 175 LF MIN.
 USE 3 - 59' LONG TRENCHES FOR INITIAL TRENCH
 USE 3 - 59' LONG TRENCHES FOR FIRST REPLACEMENT SYSTEM
 USE 3 - 59' LONG TRENCHES FOR SECOND REPLACEMENT SYSTEM

LOT 45 TRENCH SYSTEMS SPECIFICATIONS			
	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (59')	541.5	537.5	533.5
INITIAL SYSTEM TRENCH B (59')	541.4	537.4	533.4
INITIAL SYSTEM TRENCH C (59')	541.2	537.2	533.2
FIRST REPLACEMENT TRENCH A (59')	541.1	537.1	533.1
FIRST REPLACEMENT TRENCH B (59')	540.8	536.8	532.8
FIRST REPLACEMENT TRENCH C (59')	540.5	536.5	532.5
SECOND REPLACEMENT TRENCH A (59')	540.4	536.4	532.4
SECOND REPLACEMENT TRENCH B (59')	540.2	536.2	532.2
SECOND REPLACEMENT TRENCH C (59')	539.8	535.8	531.8



DESIGN DATA & GENERAL NOTES

- Concrete strength f'c=4000 psi @ 28 days. Density = 150 pcf.
- Concrete Reinforcing Steel per ASTM C 478.
- Admixtures & plasticizers per ASTM C 360.96 & C 494-92.
- Reinforcing per ASTM A118. Min. 1/2" cover.

LOT 37 PUMP ELEVATIONS

LOW PROBE/ PUMP OFF	MID PROBE	ALARM
534.2	535.7	536.2

Mayer Brothers, Inc.
 6164 Race Road
 Elkridge, Maryland 21075
 Tel: 410.796.1438
 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

DDC INC.
 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 Brightseat Road
 Landover, Maryland 20785
 (301) 655-6255

DEVELOPER:
 BELLE HAVEN ESTATES
 LOT 45

SITE ADDRESS:
 LOT 45
 15213 Sweetbay Street
 Woodbine, Maryland 21787

**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: 10/28/14**
PARCEL # / 68: **DDC JOB#: 0811615**
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 25, 2016

10/28/2014
 DATE

PAUL G. CAVANAUGH
 PROFESSIONAL ENGINEER