

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

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

RECEIPT DATE: 5/20/15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 556465

APPROVAL DATE: 8/19/15 SEC **PERMIT: CONSTRUCTION** A \_\_\_\_\_

PROPERTY ADDRESS: 15046 Double Bridges Court

SUBDIVISION: Meriwether Farm LOT: 3 TAX ID: 04-375106

CONTRACTOR: Ben Lewis 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, Landover, MD 20785 PHONE: 301-683-6268

**Hoot 600**

SEPTIC TANK SIZE (GALLONS): BNR PUMP CHAMBER CAPACITY (GALLONS): \_\_\_\_\_ PUMP SIZE: 1500

NUMBER OF BEDROOMS: 4 HOUSE SQ. FT. \_\_\_\_\_ APPLICATION RATE: \_\_\_\_\_

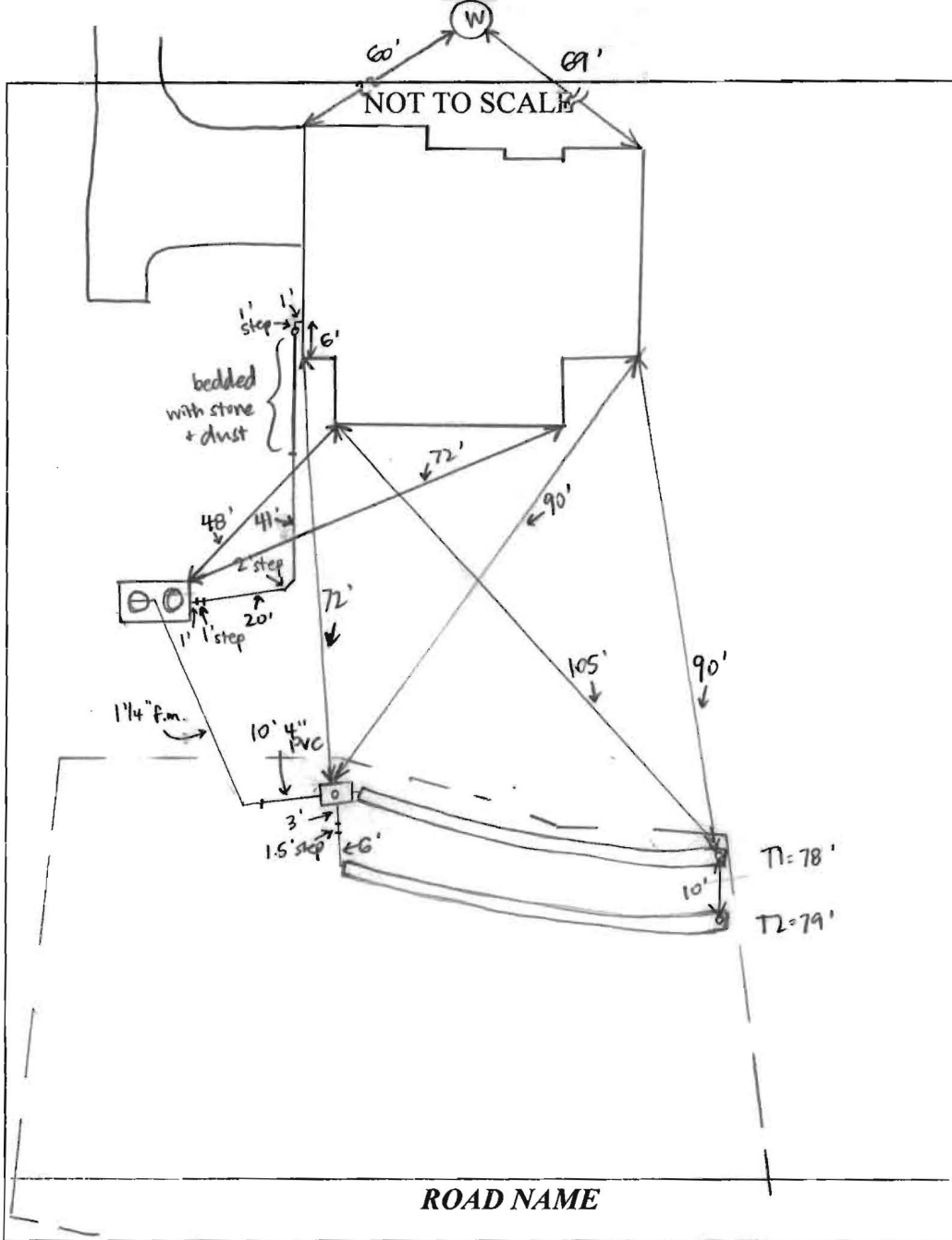
DISTRIBUTION SYSTEM: GRAVITY FED  LOW PRESSURE DOSED

TRENCHES:	LINEAR FEET REQUIRED: <u>174' 160'</u>	INLET DEPTH: <u>3</u>
	TRENCH WIDTH: <u>3' 2'</u>	MAXIMUM BOTTOM DEPTH: <u>6</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10' 9'</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.5' 4'</u>
LOCATION:	TO BE STAKED BY SANITARIAN DURING PRE-CONSTRUCTION INSPECTION.	
NOTES:	Install BAT unit per plan. original = 101 tons stone new = 63 tons stone	

ISSUED BY: Hank Oswald ISSUE DATE: \_\_\_\_\_ EXPIRATION DATE: 5/20/16

- 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 DOWNGRAIDENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM  
 ELECTRICAL PERMIT ISSUED E 15002203
- NOTE: THE HCHD DOES NOT WARRANTY ANY SYSTEM AND CANNOT GUARANTEE THE PERFORMANCE OF THIS SYSTEM AS DESIGNED. BY ACCEPTING THIS PERMIT, THE OWNER AND/OR APPLICANT ACKNOWLEDGE THAT THE SPECIFICATIONS DETAILED IN THIS DESIGN ARE ONE POSSIBLE OPTION AND THAT THE HCHD WILL REVIEW OTHER PROPOSALS. YOU HAVE THE OPTION TO SEEK THE ADVICE OF A QUALIFIED DESIGN CONSULTANT OR PROFESSIONAL ENGINEER FOR FURTHER GUIDANCE.
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.  
 PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.  
 CALL 410-313-1771 TO SCHEDULE INSPECTIONS.**



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
2'	3'	6'
NUMBER OF TRENCHES		2
TOTAL LENGTH		157'
ABSORPTION AREA		314' + SIDEWALL
DISTRIBUTION BOX LEVEL		YES
DISTRIBUTION BOX BAFFLE		YES
DISTRIBUTION BOX PORT		YES

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	MAYER BROS.
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	1-2'
BAFFLES	YES
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	NONE
<del>PUMP/SEPTIC TANK LEVEL</del>	
<del>MANUFACTURER</del>	
<del>CAPACITY</del> GAL	
<del>SEAM LOC</del>	
<del>TANK LID DEPTH</del>	
<del>BAFFLES</del>	
<del>BAFFLE FILTER</del>	
<del>MANHOLE LOC</del>	
<del>6" PORT LOC</del>	
<del>WATERTIGHT TEST</del>	
<del>SLOTTED</del>	
<del>DATE ON LID</del>	

**PRE-CONSTRUCTION:**

6/12/15 Layout with Andy from Ben Lewis. Shot contour on upper part of SDA and laid out 2 x 80' trenches. Andy requested to rotate tank 90° CW on inlet stake so that tank is parallel with grade. Russ with K Humanian on site okayed the change. House connection is hung sewer, on different wall than shown on BAT plan, per K Hov's request. (SC)

**INSTALLATION:** 6/12/15 House connection made. Hung sewer, line bedded with gravel. (SC)

6/15/15 D-box installed, with trenches complete and left open. 1 1/4" force main runs from tank location to 4" pvc before D-box. (SC) 6/16/15 Tank installed and all connections made. Line from house bedded with stone dust after 1st 20' section. Under tank and under lines on lid bedded with stone dust. Need BAT startup certification. (SC) 8/14/15 Pump and alarm with Mike Sample from Hoot. Alarm sounds, pump pumps to D-box. Mike set recirculation time + amount. (SC) 8/19/15 BAT startup certification received. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 8/19/15



**MAYER BROS., INC.**

*Precast Concrete Products*  
6264 Race Rd. Elkridge, MD 21075

## Letter of Satisfaction Hoot System Installation

Address of Property: 15046 Double Bridges Ct.  
Glenely, MD. 21737

Date of Final Inspection: 8/14/15

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,

Mike Sample  
Name of Inspector  
Mayer Bros., Inc.

PH: 410-796-1434

FX: 410-796-1438

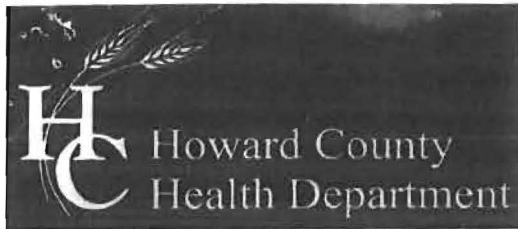
WBE

NPCA Certified Plant

[mayerbro@connect.net](mailto:mayerbro@connect.net)

[www.mayerbrosprecast.com](http://www.mayerbrosprecast.com)

Grease Interceptors, Grease Solutions, Aerobic Treatment Units, Siphon Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,  
Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Sinks, Curb Heads, Curb Bumpers, PermaEntry Basement Entries,  
Scupper Window Walls, Custom Precast Products



LIBER | 6206 FOLIO 437

Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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

www.hchealth.org

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Twitter: HowardCoHealthDep

MEOW BNR  
LOT 3

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 28<sup>th</sup> day of May, 2015, among K. Hovnanian Homes of Maryland 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 15046 Double Briars Ct. Glenelg 21738, in the 04 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 16119 Folio 300.

04/375106  
LOT 3/MEOW BNR

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 SYSTEM w/ 750 Gallon Pump Chamber.

20  
40  
K.D

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.

Beil Nyeon 5/20/2015  
Howard County Health Department

Steve Smyon 5-18-15  
Owner #1 Signature Date  
Steve Smyon  
KHOVANNIA HUNTER OF  
MAYNARD LLC  
Owner #1 Print Name

NOT AS 5/18/15  
Buyer #1 Signature Date

Buyer #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

Buyer #2 Signature Date

Buyer #2 Print Name

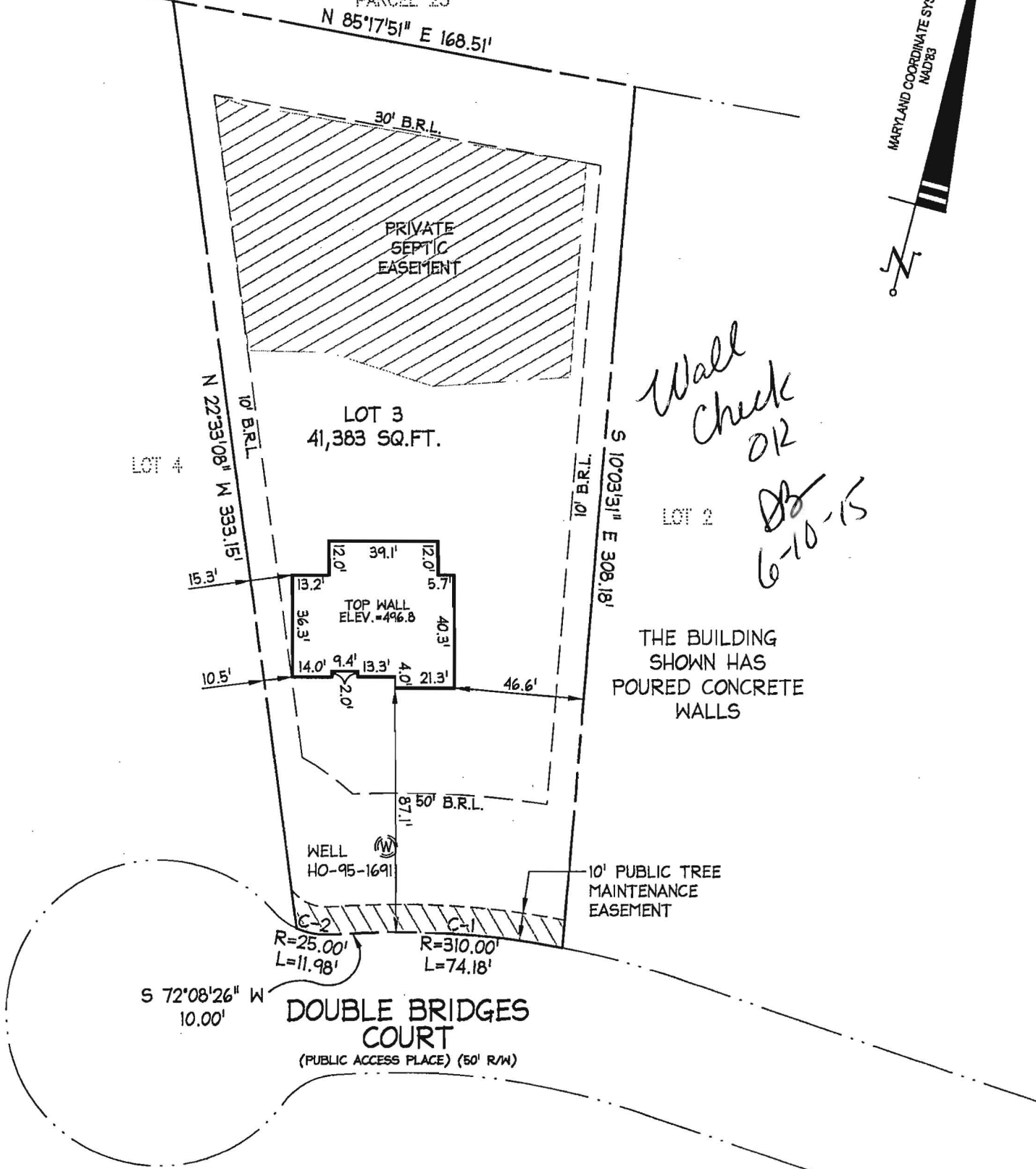
Register 09  
LR - Agreement 20.00  
Recording Fee 20.00  
Grantor/Grantee Name:  
Howard County Health  
Reference/Control #:  
141  
LR - Agreement 40.00  
Surcharge 60.00  
Subtotal: 60.00  
Total: 60.00  
05/20/2015 02:55  
CCL3-K0  
#4277924 C00503 -  
Howard Co  
Columbia/CO05-03-09 -  
Register 09

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TAN	CHD. BRG.	CHD. DIST.
C1	310.00'	74.17'	13°42'33"	37.27'	S78°59'43"W	74.00'
C2	25.00'	11.98'	27°27'29"	6.11'	N85°52'10"E	11.87'

SAMUEL SEYMOUR &  
JUDY SEYMOUR  
LIBER 1372, FOLIO 113  
TAX MAP 21  
PARCEL 23

MARYLAND COORDINATE SYSTEM  
NAD83

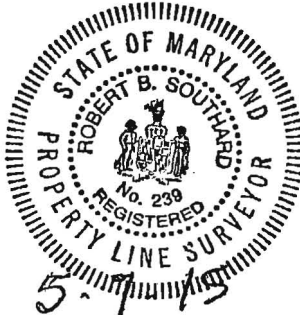


*Wall Check OK*  
*DB 6-10-15*

THE BUILDING SHOWN HAS  
POURED CONCRETE  
WALLS

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 7/6/16.



*Robert B. Southard*

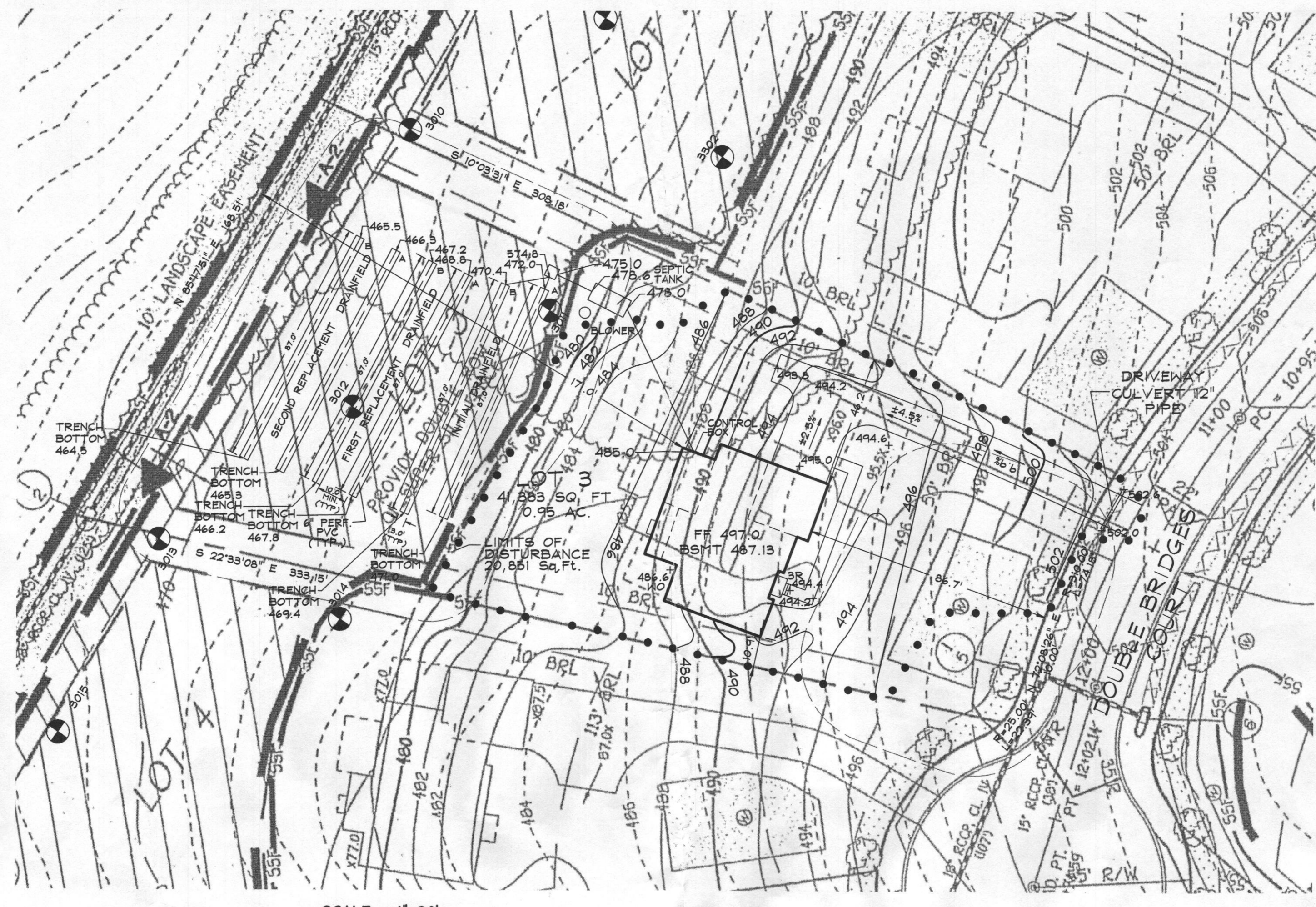
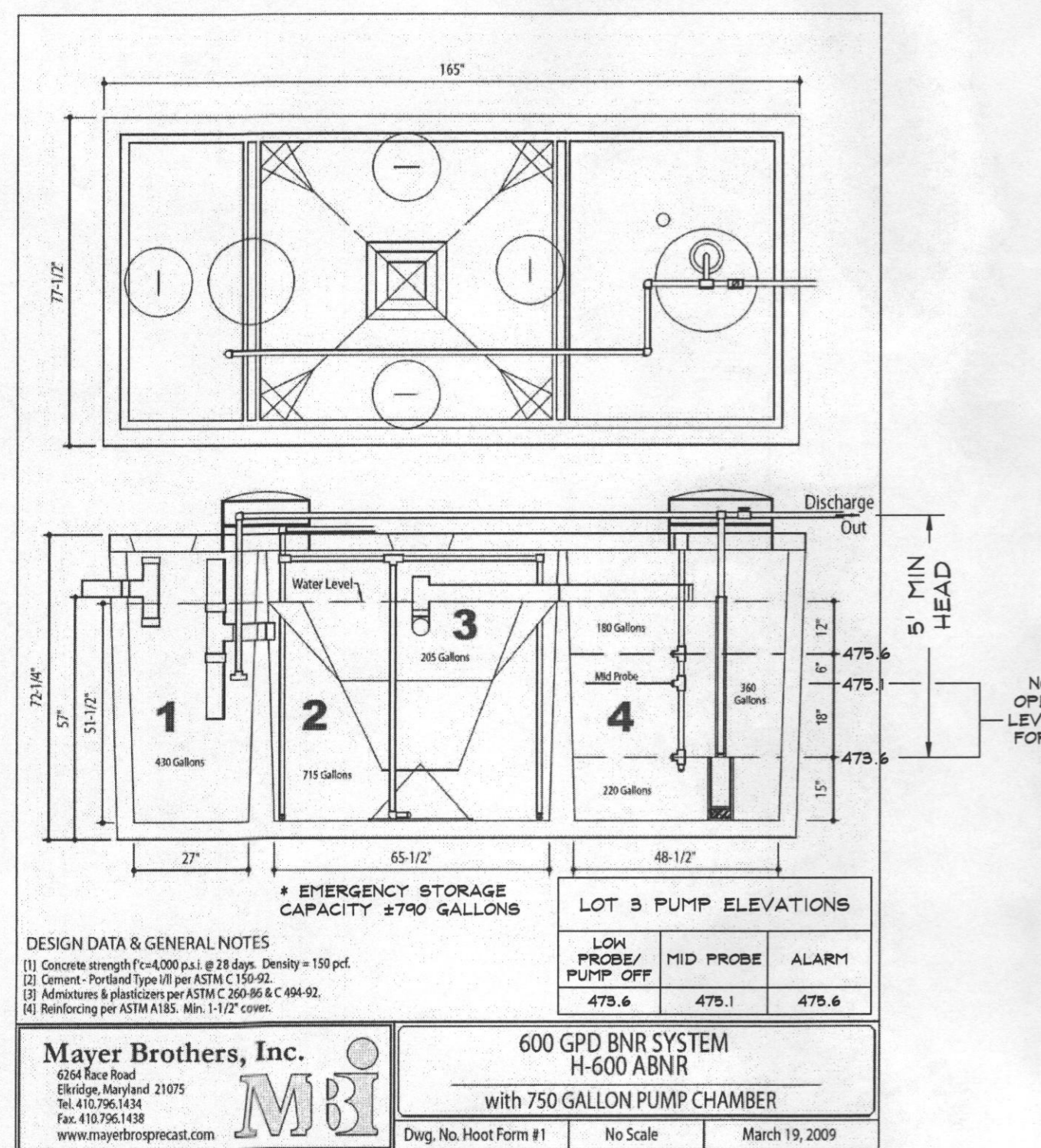


Planners  
Surveyors  
Engineers  
Landscape Architects  
  
192 East Main Street  
Westminster, MD 21157  
410.386.0560  
410.386.0564 (Fax)  
DDC@DDCinc.us  
www.DDCinc.us

WALL CHECK SURVEY #15046 DOUBLE BRIDGES COURT LOT 3 MERIWETHER FARM SECTION ONE PLAT NO. 21343 4TH ELECTION DISTRICT	HOWARD COUNTY, MD	DDC JOB#: 13085.2	DATE: 5-4-2015	SCALE: 1"=50'	DRN. BY: RC	CHK. BY: RBS
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- GENERAL NOTES**
- BASE SQUARE FOOTAGE OF HOUSE: 3,594 SQ. FT.
  - NUMBER OF BEDROOMS: 5
  - EJECTOR PUMP NOT REQUIRED TO SEWER BASEMENT
  - DRIVEWAY CULVERT SHOWN PER THE APPROVED ROAD DRAWINGS, F-08-139.
  - 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: #21339
  - BASE INFORMATION SHOWN ON THIS PLAN IS SHOWN PER THE APPROVED FINAL PLAN, F-08-139 PREPARED BY FISHER, COLLINS AND CARTER INC. AND DATED 12/17/03 (F-08-139)
  - 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 DEVELOPMENT 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: 20,851 SQ. FT. / 0.48 AC.
  - STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-08-139)
  - 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 TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
  - 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-08-139.
  - 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 SIXTH BEDROOM PER HOWARD COUNTY CODE 3.801(B).

- 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.
  - 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.



**TOTAL DYNAMIC HEAD CALCULATIONS**

STATIC HEAD	5.0'
FRICITION HEAD	3.7'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.7'
GALLONS PER MINUTE	39.0 GPM
DOSE	76 GAL
PUMP RUN TIME	2.0 MIN

**TOTAL DYNAMIC HEAD CALCULATIONS**

**STATIC HEAD**

OFF FLOAT ELEVATION	478.6'
HIGH POINT OF THE SYSTEM	+ 478.6'
VERTICAL ELEVATION CHANGE	5.0'

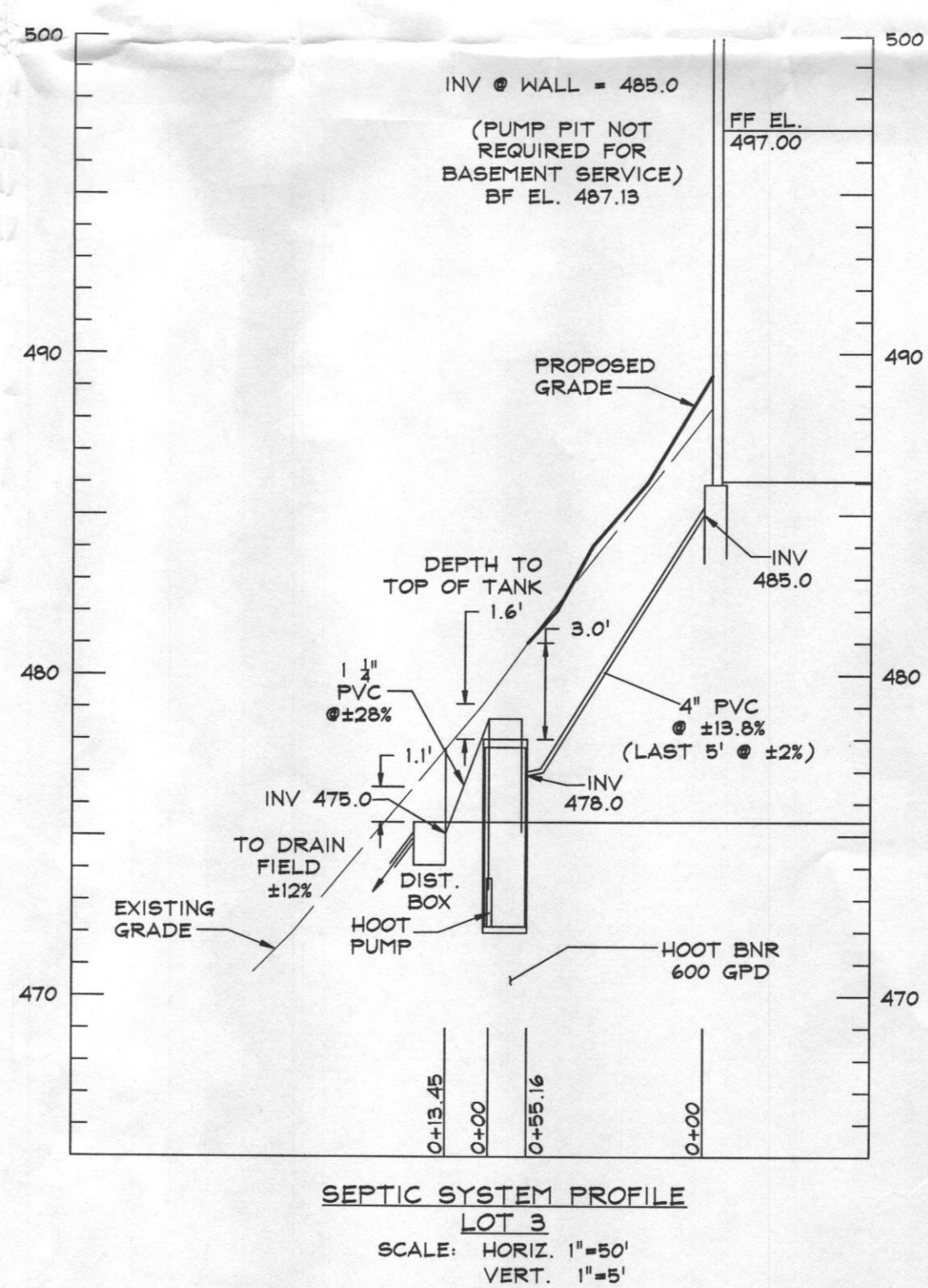
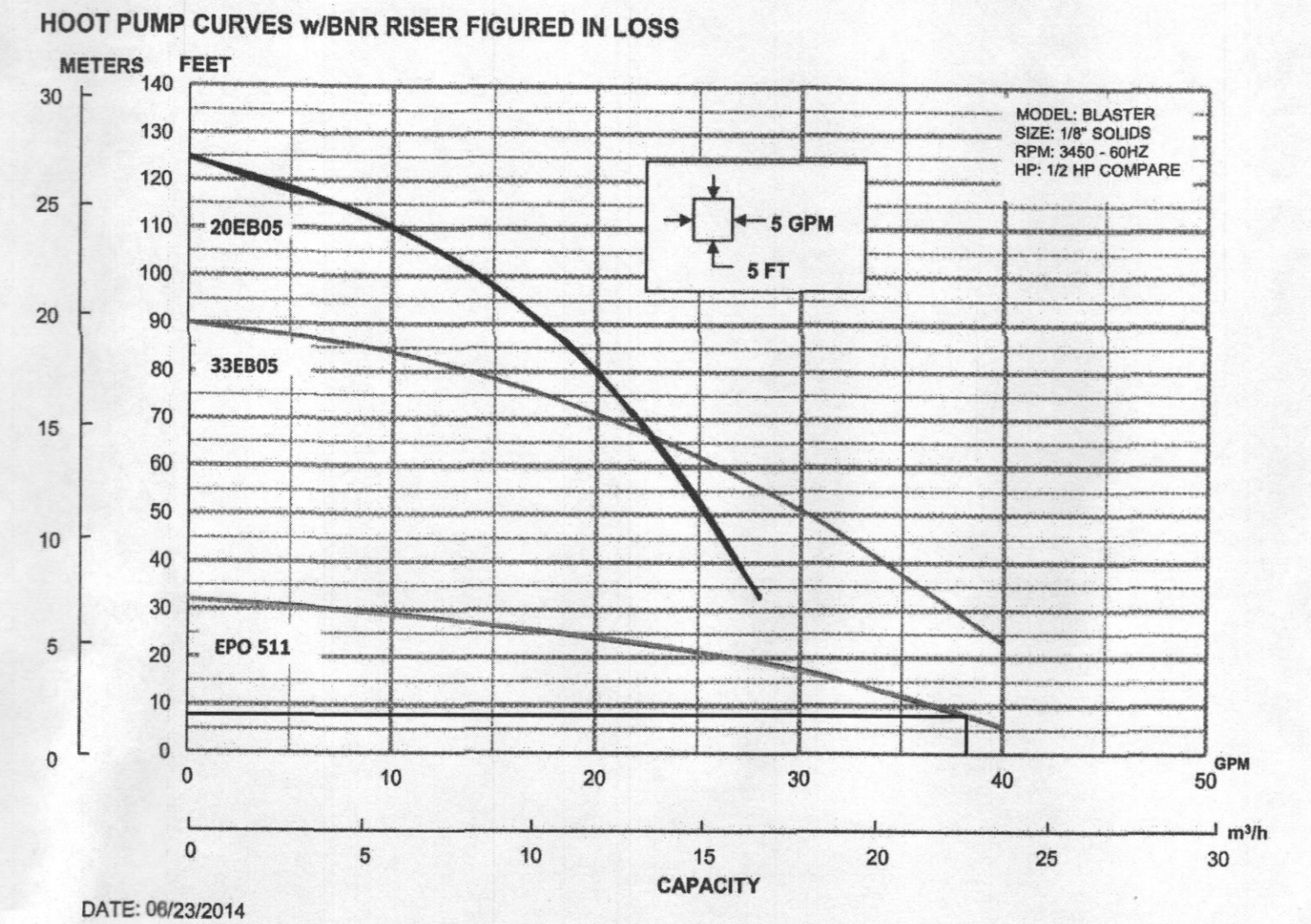
**FRICITION HEAD**

FITTINGS	13.8'
LENGTH OF PVC PIPE	+ 19.5'
TOTAL LENGTH	27.3'

27.3/100 x 13.62 = 3.7' TOTAL FRICTION LOSS

**TOTAL HEAD**

VERTICAL ELEVATION CHANGE	5.0'
TOTAL FRICTION LOSS	3.7'
SYSTEM PRESSURE REQUIREMENTS	+ 0.0'
TOTAL DYNAMIC HEAD	8.7'



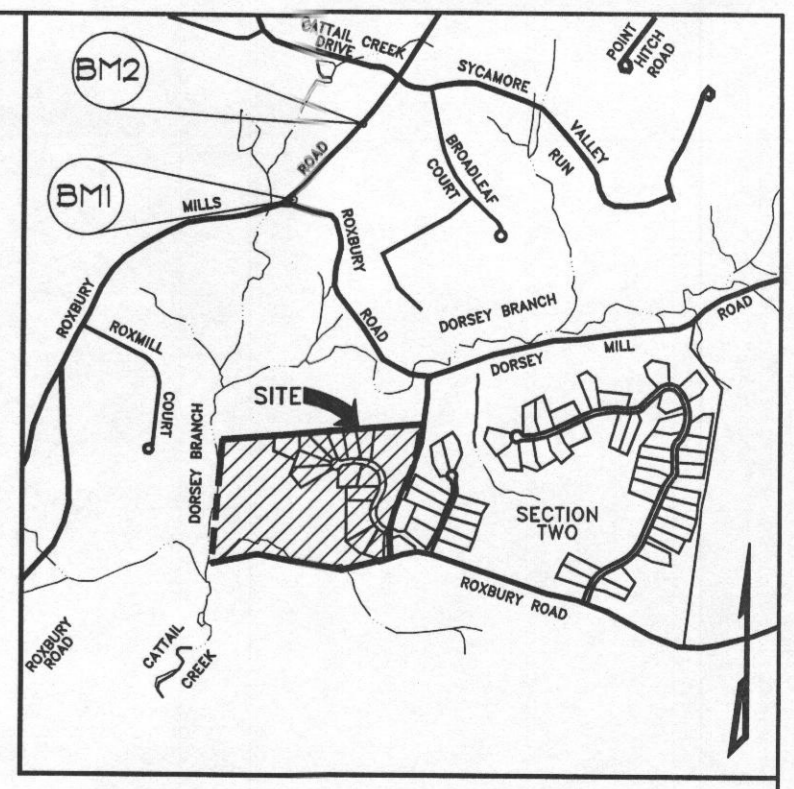
- SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):**
- INVERT @ FOUNDATION WALL: 485.0
  - 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER  
EX. GRADE OVER TANK: 481.0  
INVERT: 478.0  
PROPOSED GRADE OVER TANK: 481.0
  - DISTRIBUTION BOX  
EX. PROPOSED GRADE OVER TANK: 477.7  
INVERT: 475.0
  - TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD) INITIAL SYSTEM  
750 GPD / 1.2 GPD/SF (APP. RATE) = 625 SF  
USE 3' WIDE TRENCH W/ 12" OF GRAVEL BELOW PIPE  
625 SF / 3' WIDTH = 209 LF x 0.83 = 174 LF MIN. TRENCH  
10' MIN SPACING BETWEEN TRENCH EDGES  
USE 2 - 87' LONG TRENCH FOR INITIAL SYSTEM  
USE 2 - 87' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM  
USE 2 - 87' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

**BENCHMARK**

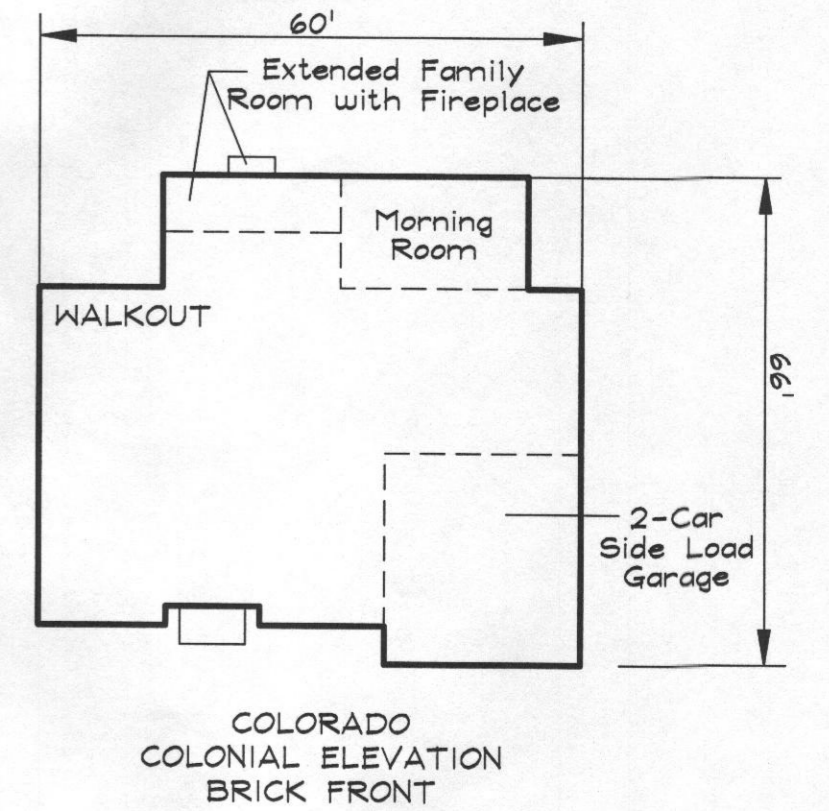
BENCHMARK #1  
N. 562715.1745  
S.T.A. 1300446.020  
ELEV. 450.23

BENCHMARK #2  
N. 583065.329  
E. 180066.477  
S.T.A. 212  
ELEV. 478.95

ADC MAP COORDINATES  
MAP 4812 DPN  
84°10'00", E 76°47'30"



Approved Septic System Plan  
Howard County Health Department  
Hank Osuch 2/2/15  
Signature Date



**DRAWING LEGEND**

- DATA SOURCES:**
- 500 PROPOSED GRADE
  - 502
  - PROPOSED LIMIT OF DISTURBANCE
  - PROPOSED 20' SEPTIC RESERVE BUFFER
  - EXISTING 30' WELL BUFFER
  - EXISTING 100' WELL BUFFER
  - BUILDING RESTRICTION LINE
  - SEPTIC RESERVE AREA
  - WELL AREA
  - EX. FAILED PERCOLATION TEST
  - EX. PASSED PERCOLATION TEST

**LOT 35 SYSTEM TRENCH SPECIFICATIONS**

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (87')	477.0	472.0	471.0
INITIAL SYSTEM TRENCH B (87')	475.4	470.4	469.4
FIRST REPLACEMENT TRENCH A (87')	473.8	468.8	467.8
FIRST REPLACEMENT TRENCH B (87')	472.2	467.2	466.2
SECOND REPLACEMENT TRENCH A (87')	471.3	466.3	465.3
SECOND REPLACEMENT TRENCH B (87')	470.5	465.5	464.5

**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. HOWANIAN HOMES  
1802 BRIGHTSTAR ROAD  
LANDOVER, MD 20785  
(301)883-6288

**BUILDER:**  
K. HOWANIAN HOMES  
1802 BRIGHTSTAR ROAD  
LANDOVER, MD 20785  
(301)883-6288

**SITE ADDRESS:**  
15046 DOUBLE BRIDGES COURT  
GLENNWOOD, MD 21738

**MERIWETHER FARM LOT 3**

**SITE PLAN FOR BAT INSTALLATION**

4TH REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

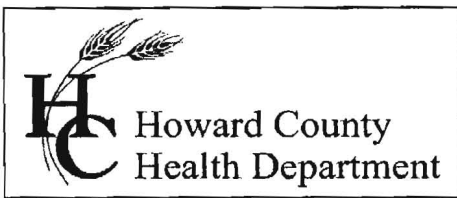
**CO. FILE #:** F-08-139 **DES. BY:** BKC  
**TAX ACC. #:** 1404375173 **DRN. BY:** BKC  
**TAX MAP:** 21 **CHK. BY:** BKC  
**BLOCK / GRID:** 21 **DATE:** 01/14/2015  
**PARCEL #:** 24 **DDC JOB #:** 13085.1  
**ZONE / USE:** RC-DEO **SHEET NUMBER:**  
**DWG. SCALE:** 1"=30' **1 of 1**

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: 01/22/16

01/14/15  
DATE

PAUL G. CAVANAUGH  
PROFESSIONAL ENGINEER

B1500068



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

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

RECEIPT DATE: \_\_\_\_\_ **ONSITE SEWAGE DISPOSAL SYSTEM** P \_\_\_\_\_  
 INSTALLATION APPROVAL DATE: \_\_\_\_\_ **PERMIT** A \_\_\_\_\_  
**CONSTRUCTION**

PROPERTY ADDRESS: 15046 Double Bridges Court  
 SUBDIVISION: Meriwether Farm LOT: 3 TAX ID: 04-375106  
 CONTRACTOR: Ben Lewis 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, Landover, MD 20785 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>174</u>	INLET DEPTH: <u>3</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>6</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.5</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.	

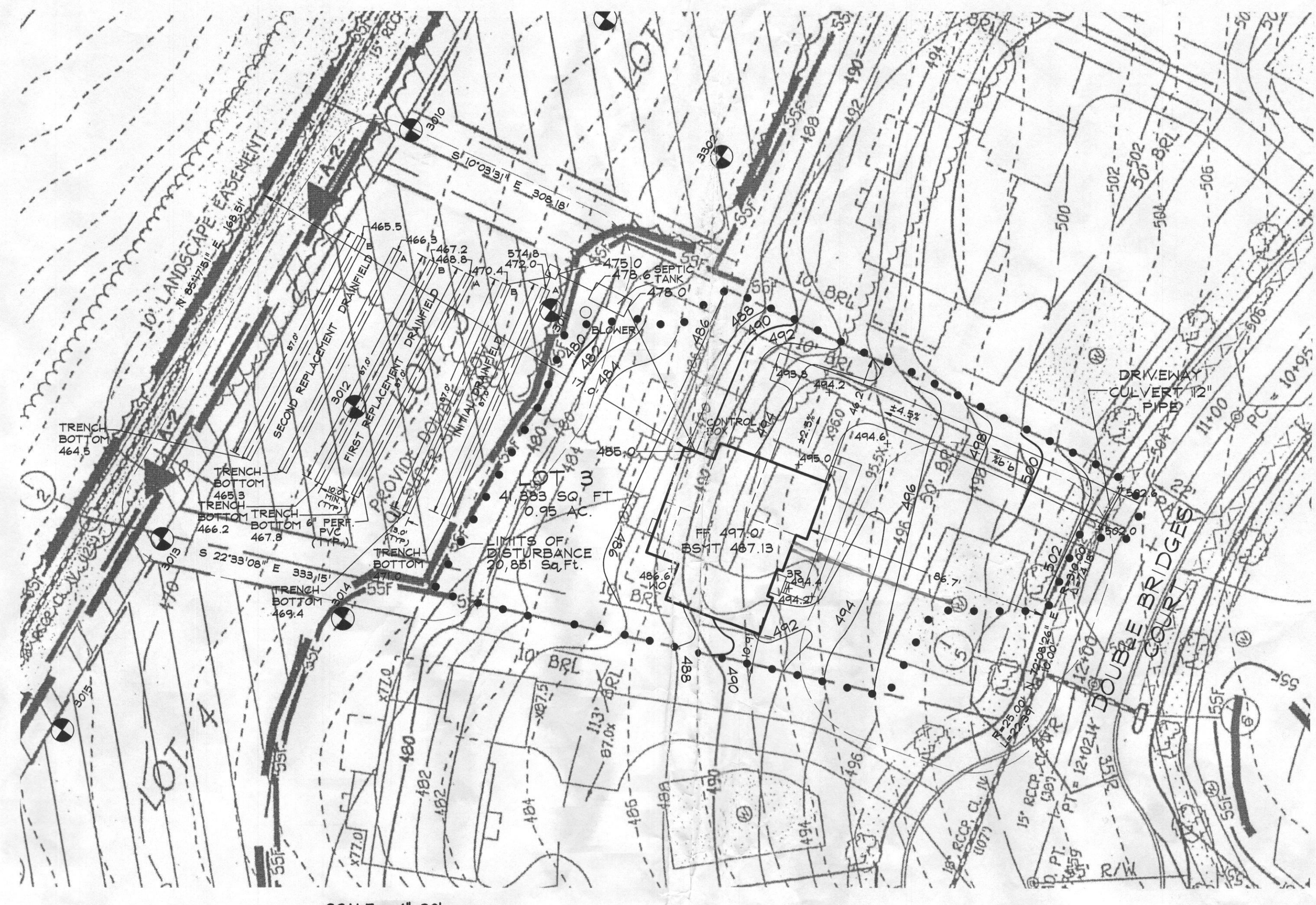
ISSUED BY: Hank Oswald ISSUE DATE: \_\_\_\_\_ EXPIRATION DATE: \_\_\_\_\_

- 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
- 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.**

- GENERAL NOTES**
1. BASE SQUARE FOOTAGE OF HOUSE: 3,594 SQ. FT.
  2. NUMBER OF BEDROOMS: 5
  3. EJECTOR PUMP NOT REQUIRED TO SEWER BASEMENT
  4. DRIVEWAY CULVERT SHOWN PER THE APPROVED ROAD DRAWINGS, F-08-139.
  5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER COM-P-LITE ZONING REGULATIONS DATED 7/28/06.
  6. PLAT REFERENCE: #21339
  7. BASE INFORMATION SHOWN ON THIS PLAN IS SHOWN PER THE APPROVED FINAL PLAN, F-08-139 PREPARED BY FISHER, COLLINS AND CARTER INC. AND DATED 12/17/08.
  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 DEVELOPMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)319-1881 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: 20,851 SQ. FT. / 0.48 AC.
  12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-08-139).
  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 THE 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 THIS 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-08-139.
  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 SIXTH 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.



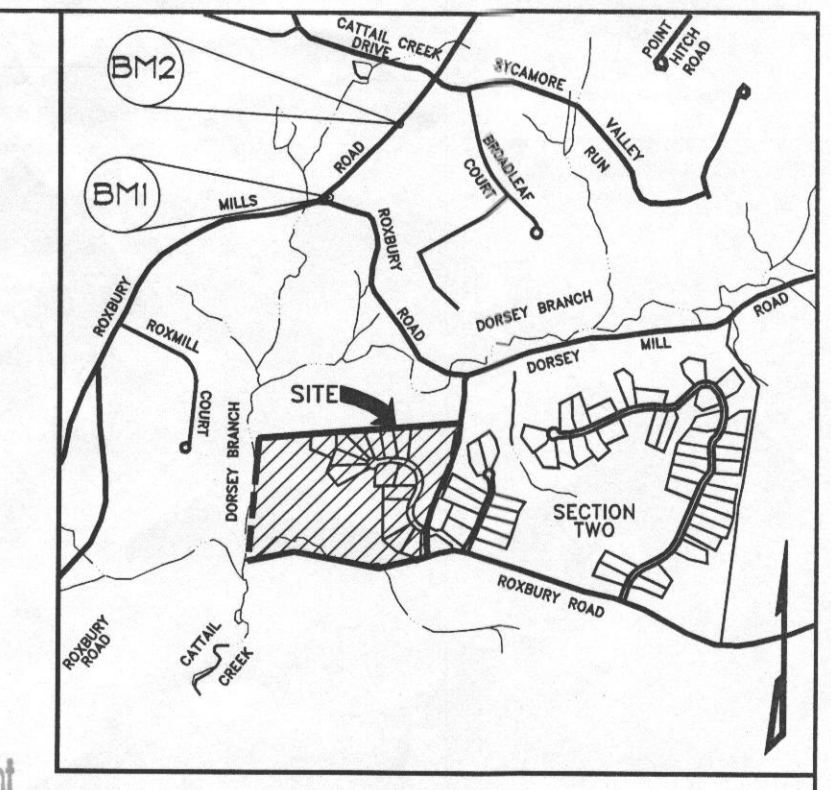
SCALE = 1"=30'

**BENCHMARK**

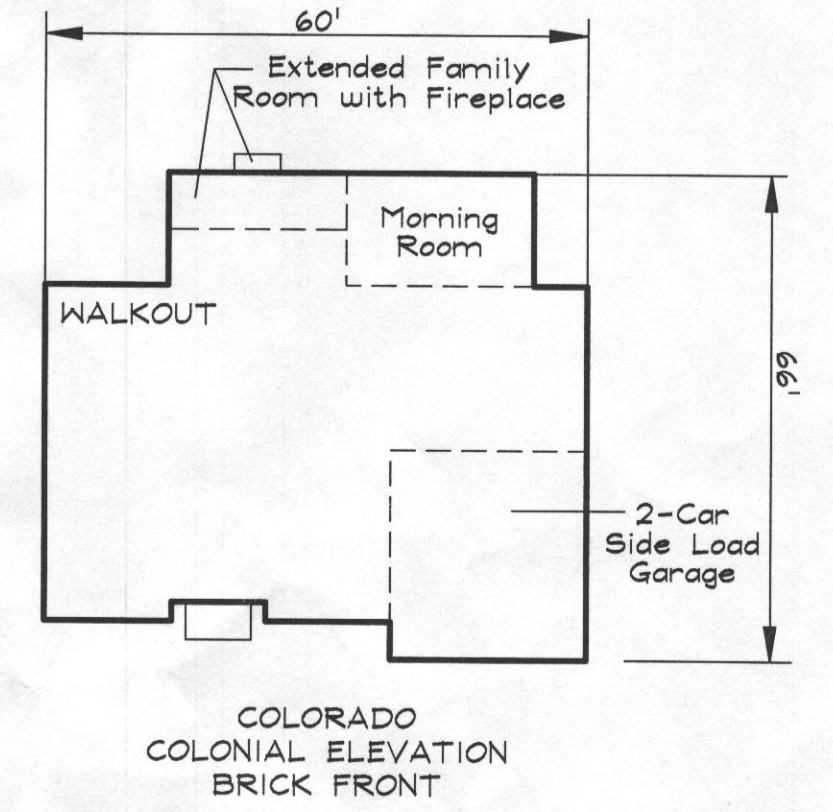
**BENCHMARK #1**  
 N. 582716.1745  
 E. 1800496.020  
 S.T.A. 216A  
 ELEV. 450.23

**BENCHMARK #2**  
 N. 583065.3294  
 E. 1800668.477  
 S.T.A. 21E2  
 ELEV. 475.95

**ADC MAP COORDINATES**  
 MAP 4812 DPN  
 89°00'00", E 76°47'30"



Approved Septic System Plan  
 Howard County Health Department  
 Date: 2/12/15  
 Signature: \_\_\_\_\_



**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
- 3011 EX. FAILED PERCOLATION TEST
- 3012 EX. PASSED PERCOLATION TEST

**DATA SOURCES:**

**TOTAL DYNAMIC HEAD CALCULATIONS**

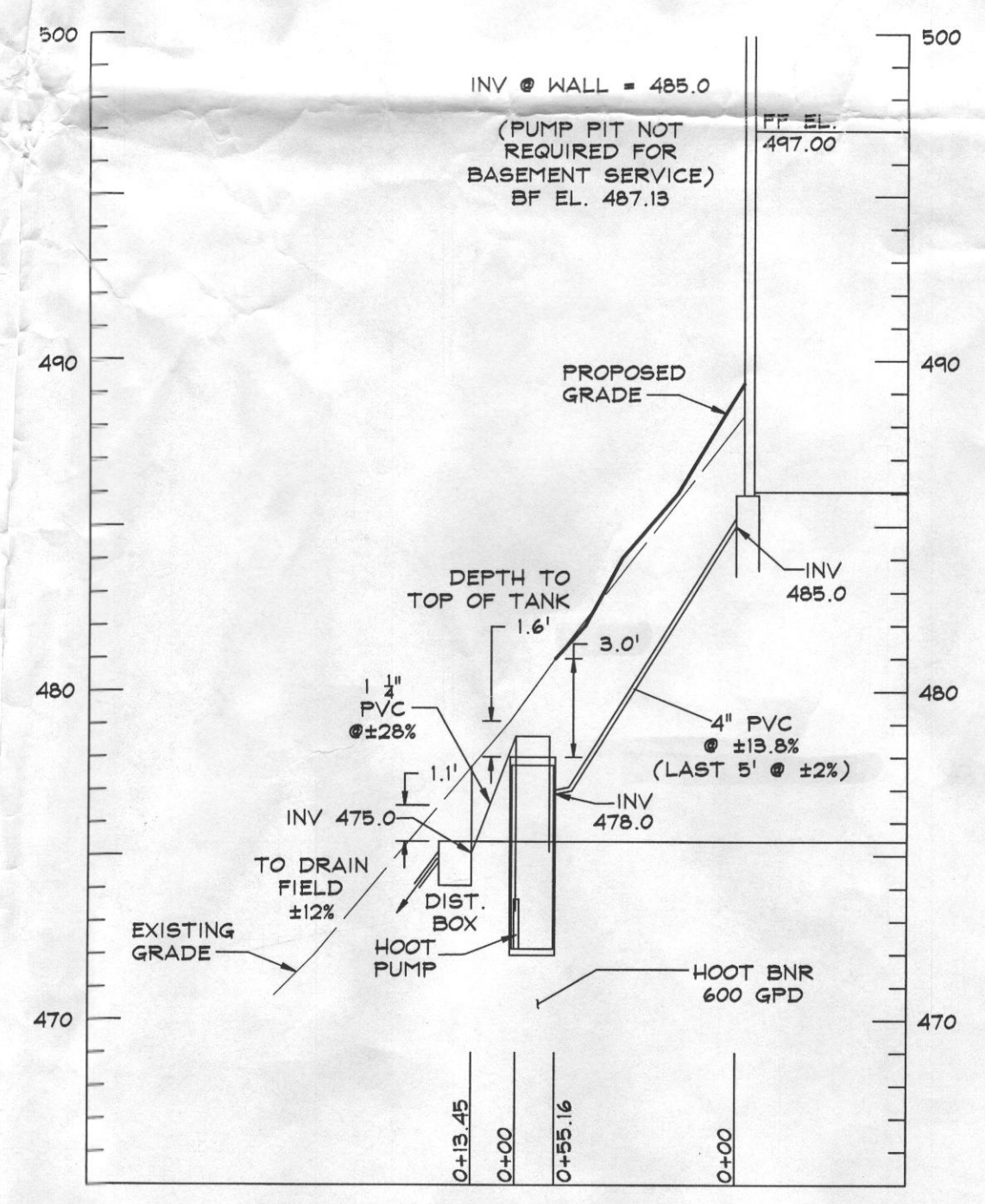
STATIC HEAD	5.0'
FRICTION HEAD	3.7'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.7'
GALLONS PER MINUTE	38.0 GPM
DOSE	76 GAL
PUMP RUN TIME	2.0 MIN

**STATIC HEAD**  
 OFF FLOAT ELEVATION: 478.6'  
 HIGH POINT OF THE SYSTEM: + 478.6'  
 VERTICAL ELEVATION CHANGE: 5.0'

**FRICTION HEAD**  
 FITTINGS: 13.8'  
 LENGTH OF PVC PIPE: + 13.5'  
 TOTAL LENGTH: 27.3'

27.3'/100 x 13.62 = 3.7' TOTAL FRICTION LOSS

**TOTAL HEAD**  
 VERTICAL ELEVATION CHANGE: 5.0'  
 TOTAL FRICTION LOSS: 3.7'  
 SYSTEM PRESSURE REQUIREMENTS: + 0.0'  
 TOTAL DYNAMIC HEAD: 8.7'



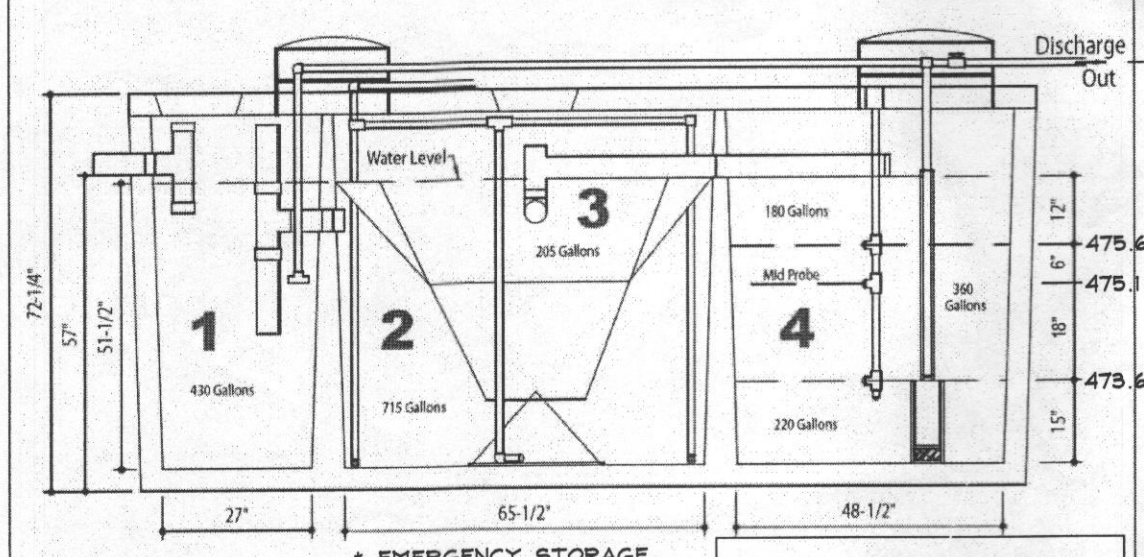
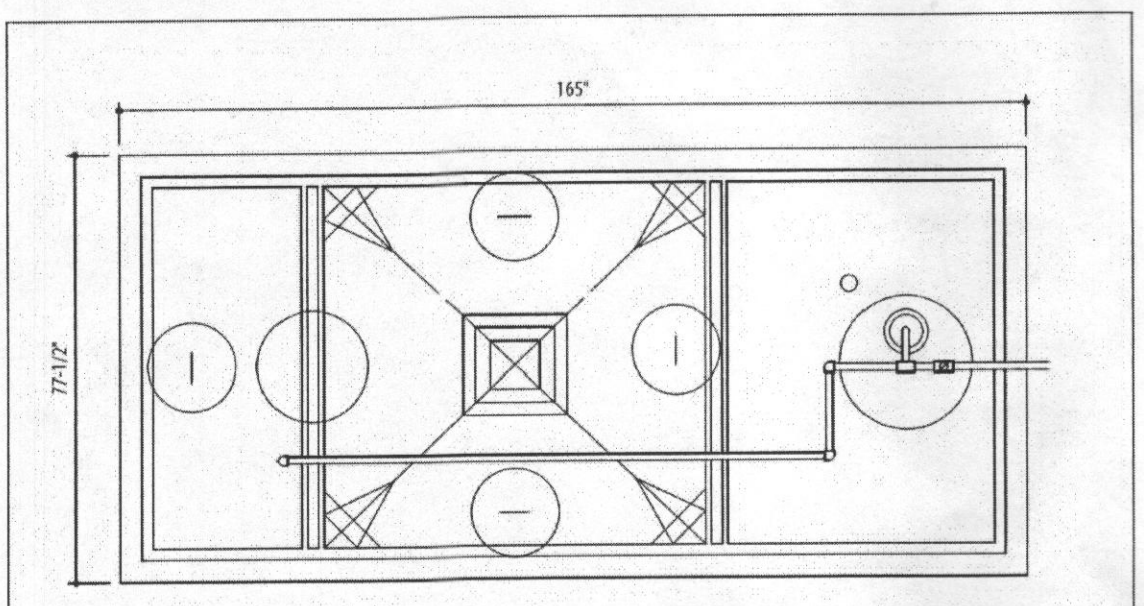
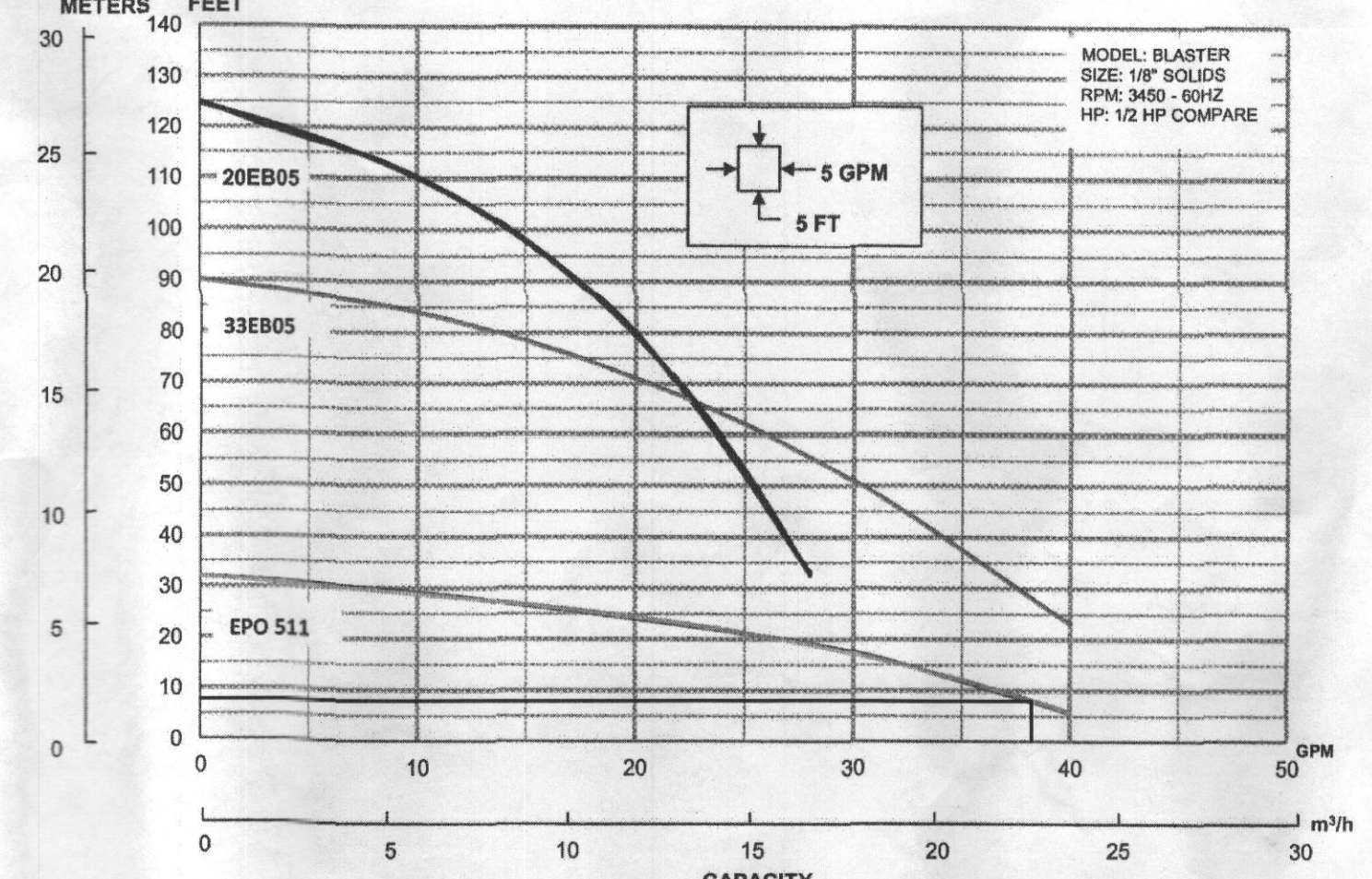
**SEPTIC SYSTEM PROFILE**  
 SCALE: HORIZ. 1"=50'  
 VERT. 1"=5'

**LOT 35 SYSTEM TRENCH SPECIFICATIONS**

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH A (87')	477.0	472.0	471.0
INITIAL SYSTEM TRENCH B (87')	475.4	470.4	469.4
FIRST REPLACEMENT TRENCH A (87')	475.5	468.5	467.5
FIRST REPLACEMENT TRENCH B (87')	472.2	467.2	466.2
SECOND REPLACEMENT TRENCH A (87')	471.5	466.3	465.3
SECOND REPLACEMENT TRENCH B (87')	470.5	465.5	464.5

- SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):**
1. INVERT @ FOUNDATION WALL: 485.0
  2. 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER  
 EX. GRADE OVER TANK: 481.0  
 INVERT: 478.0  
 PROPOSED GRADE OVER TANK: 481.0
  3. DISTRIBUTION BOX  
 EX. PROPOSED GRADE OVER TANK: 477.7  
 INVERT: 475.0
  4. TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)  
 INITIAL SYSTEM  
 750 GPD / 1.2 GPD/SF (APP. RATE) = 625 SF  
 USE 3' WIDE TRENCH W/ 12" OF GRAVEL BELOW PIPE  
 625 SF / 3' WIDTH = 209 LF x 0.83 = 174 LF MIN. TRENCH  
 10' MIN SPACING BETWEEN TRENCH EDGES
- USE 2 - 87' LONG TRENCH FOR INITIAL SYSTEM  
 USE 2 - 87' LONG TRENCH FOR FIRST REPLACEMENT SYSTEM  
 USE 2 - 87' LONG TRENCH FOR SECOND REPLACEMENT SYSTEM

**HOOT PUMP CURVES W/BNR RISER FIGURED IN LOSS**



**LOT 3 PUMP ELEVATIONS**

LOW PROBE/PUMP OFF	MID PROBE	ALARM
475.6	475.1	475.6

**DESIGN DATA & GENERAL NOTES**

- 1) Concrete strength: F-4000 psi @ 28 days, Density = 150 pcf.
- 2) Cement - Portland Type III per ASTM C150-02.
- 3) Admixtures - Refer to Section 05200-01.300-01.400-02.
- 4) Reinforcing per ASTM A615, Min. 1-1/2" cover.

**Mayer Brothers, Inc.**  
 6304 River Road  
 Elkridge, Maryland 21035  
 Tel: 410.796.1434  
 Fax: 410.796.1438  
 www.mayerbrothersinc.com

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

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

**DDC Inc.**  
 Development Design Consultants

Planners  
 Surveyors  
 Engineers  
 Landscape Architects

192 East Main Street  
 Westminster, MD 21157  
 410.388.0560  
 410.386.0564 (Fax)  
 DDC@DDCinc.us  
 www.DDCinc.us

**OWNER:**  
 K. HOWANIAN HOMES  
 1802 BRIGHTSEAT ROAD  
 LANDOVER, MD 20785  
 (301)953-6256

**BUILDER:**  
 K. HOWANIAN HOMES  
 1802 BRIGHTSEAT ROAD  
 LANDOVER, MD 20785  
 (301)953-6256

**SITE ADDRESS:**  
 18046 DOUBLE BRIDGES COURT  
 GLENWOOD, MD 21738

**MERIWETHER FARM LOT 3**  
**SITE PLAN FOR BAT INSTALLATION**

4TH HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

**CO. FILE #:** F-08-139 **DES. BY:** BKC  
**TAX ACC. #:** 1404375173 **DRN. BY:** BKC  
**TAX MAP:** 21 **CHK. BY:** BKC  
**BLOCK / GRID:** 21 **DATE:** 01/14/2016  
**PARCEL #:** 24 **DDC JOB #:** 13085.1  
**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. 271220, Expiration Date: 01/25/16

01/14/15  
 DATE

**PAUL G. CAVANAUGH**  
 PROFESSIONAL ENGINEER

B5000168