



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

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

RECEIPT DATE: 11-10-15 **ONSITE SEWAGE DISPOSAL SYSTEM**

P 557454

APPROVAL DATE: 1/20/16 **PERMIT: CONSTRUCTION**

A _____

PROPERTY ADDRESS: 11905 Northern Bell Way, Clarksville, MD 21029

SUBDIVISION: Greenberry LOT: 15 TAX ID: 05-598678

CONTRACTOR: South Carrol EMAIL: _____

CONTRACTOR ADDRESS: _____ PHONE: _____

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: NRV, Inc. EMAIL: _____

OWNER ADDRESS: _____ PHONE: _____

BAT UNIT MODEL: Hoot 600 BNR ^{#1-1000} _{reb 12/3/15} PUMP SIZE: 0.4 HP PUMP TANK CAPACITY: 1500 gal ²⁰⁰⁰ _{reb 12/3/15}

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 9/1/2015 DATE RECORDED: 9/1/2015

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>156</u>	INLET DEPTH: <u>4'</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:	<u>3 x 52' Trenches</u>	

ISSUED BY: Robert Bricker ISSUE DATE: 11/10/15 EXPIRATION DATE: 11/10/16

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 _____

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

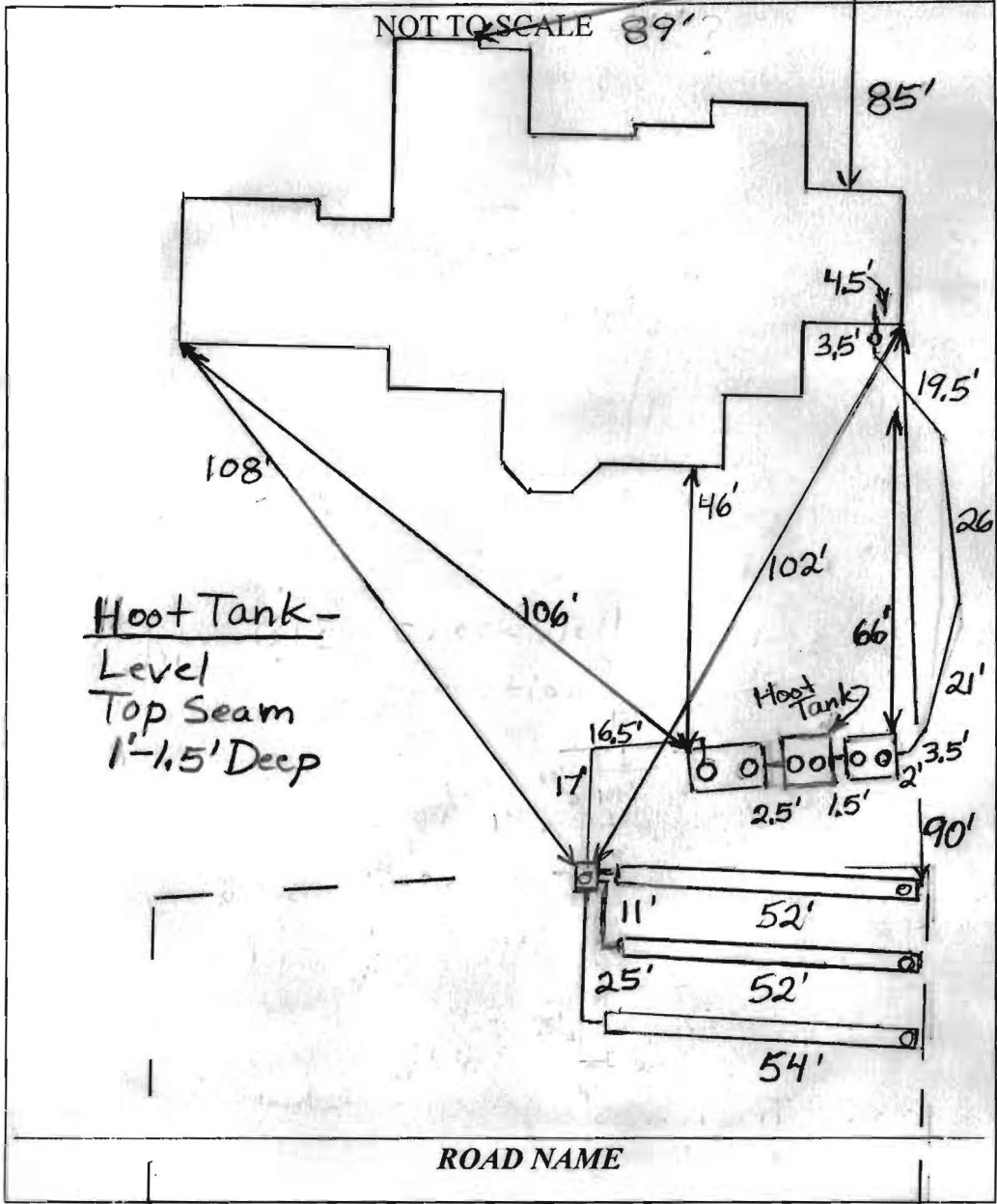
NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

HO-14-0161

NOT TO SCALE 89'?



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	4'	6'
NUMBER OF TRENCHES		3
TOTAL LENGTH		158'
ABSORPTION AREA		474 + Sidewall
DISTRIBUTION BOX LEVEL		
DISTRIBUTION BOX BAFFLE		
DISTRIBUTION BOX PORT		Yes

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	Yes
MANUFACTURER	Mayer
CAPACITY	1000 GAL
SEAM LOC	Top
TANK LID DEPTH	0.5'-1'
BAFFLES	
BAFFLE FILTER	No
MANHOLE LOC	Front + Rear
6" PORT LOC	None
WATERTIGHT TEST	No
SLOTTED	No
DATE ON LID	Dry
PUMP/SEPTIC TANK LEVEL	Yes
MANUFACTURER	Mayer Bros.
CAPACITY	1500 GAL
SEAM LOC	Top
TANK LID DEPTH	1'-1.5'
BAFFLES	
BAFFLE FILTER	No
MANHOLE LOC	Front + Rear
6" PORT LOC	None
WATERTIGHT TEST	No
SLOTTED	No
DATE ON LID	Nov 2015

PRE CONSTRUCTION:

12/9/2015 Three 52' trenches laid out on contour across the top western part of the septic easement. Put the dist. box near the top middle of the easement. Septic tank locations are staked. (BB)

INSTALLATION:

12/11/2015 First two tanks set. (BB) 12/17/2015 Pump chamber installed. (BB) 12/18/2015 (AM) Top two trenches done. (BB) 12/18/2015 (PM) Bottom trench finished. Need plumbing from tank to house and from tank to trenches. Need pump and alarm test and BAT approval. (BB)

1/6/16 House connection made. D-box installed and connected to pump tank and trenches. Need Hoot startup. (SC) 1/7/16 On site for Hoot startup. Pump pumps effluent to D-box. Recirculation line bent while backfilling - S. Carroll must fix before startup. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 1/20/16

1/20/16 Hoot startup received. (SC)

Letter of Satisfaction

Hoot System Installation

Address of Property: 11905 Northern Bell Way
Clarksville, MD, 21029

Date of Final Inspection: 1/10/19

Installer: South Carroll Backhoe Service

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,

N. Michael Sample
Name of Inspector
Mayer Bros., Inc.

PH: 410-796-1434

WBE

FX: 410-796-1438

www.mayerbrosprecast.com

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

Bricker, Robert

From: Faris, Taylor <tfaris@nvrinc.com>
Sent: Friday, September 18, 2015 4:08 PM
To: Bricker, Robert; Johnson, Ryan
Cc: Hanauer, Brent
Subject: RE: Greenberry homes

Robert,

Ryan is out of the office today, but I wanted to respond as quickly as possible. We have discussed the possibility of a customer finishing additional areas in their home, but do not want to design our plans speculating what they may do in the future. For lot 15, we would like to keep the Hoot 600 in the design for a true 6 bedroom home.

Hopefully this answers any concerns, but please let me know if you have any further questions. Please let me know if you have an idea when this BAT plan will be approved.

Have a good weekend

Taylor

Taylor Faris
Construction Cost Manager
Maryland East Division

Stays in file



P: 410-379-5956
C: 443-864-3479
F: 410-379-2430

9720 Patuxent Woods Drive
Columbia, MD 21046

tfaris@nvrinc.com
www.nvhomes.com
Follow us on [Facebook](#)

From: Bricker, Robert [mailto:RBricker@howardcountymd.gov]
Sent: Friday, September 18, 2015 3:51 PM
To: Johnson, Ryan
Cc: Faris, Taylor
Subject: RE: Greenberry homes

Ryan,

Thank you for the fast turn-around on that last question. Now I have another question, this time concerning the selection of the BAT unit.

For a six-bedroom residence either the HOOT-600 or the HOOT-1000 may be installed. When the sixth bedroom is a room in the basement that matches the Code definition of 'bedroom' (whether finished or unfinished), the HOOT-600 is an appropriate selection. When there are six bedrooms total on the Upper Level and Main Level, there remains a possibility of a 'bedroom' being created in the basement if and when the basement is finished. This would be a seventh bedroom, and would require a larger capacity BAT unit, e.g. the HOOT-1000.

So, my question: Do you want to install the HOOT-1000 under these circumstances(?), or install the HOOT-600?

Like the earlier question this also is prompted by the design of the proposed residence on Lot 15. I have already approved the Building Permit proposal. I will approve the BAT Plan if you want to stay with the HOOT-600 for this situation.

Robert Bricker, REHS/R.S., L.E.H.S.

From: Johnson, Ryan [<mailto:ryjohnso@nvrinc.com>]
Sent: Wednesday, September 09, 2015 3:53 PM
To: Bricker, Robert
Cc: Faris, Taylor
Subject: RE: Greenberry homes

Robert,

Good afternoon. Thanks for reaching out. I think we will opt to not install the add'l trench absorption based on speculation of future bath/bedroom in the basement. If, however, we did want to pursue this add'l absorption, what would the revision process consist of (time frame)?

I am cc'ing Taylor Faris as well as he is working closely with Jim Kerwin on these Greenberry permits.

Thank you again for your time in reviewing these lots at Greenberry.

Ryan

Ryan Johnson
Production Manager

P: 410-379-3396

C: 443-309-5572

F: 410-379-2430

ryjohnso@nvrinc.com

www.nvhomes.com

Follow us on [Facebook](#)



From: Bricker, Robert [<mailto:RBricker@howardcountymd.gov>]
Sent: Wednesday, September 09, 2015 3:15 PM
To: Johnson, Ryan
Subject: Greenberry homes

Ryan,
Having reviewed several floor plans for Greenberry it is apparent that when an 'unfinished' basement may in the future be finished, and includes the full bath, there will be another bedroom (by Code definition) in the basement. Do you want to install trench absorption area for these situations.
If you opt to not install trench area for an extra bedroom, a note will be placed in the file stating that the builder opted not to install additional trench area.
For current reviews this applies to Lot 15.

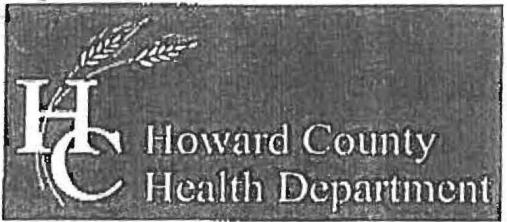
ROBERT BRICKER, REHS/R.S., L.E.H.S.
ENVIRONMENTAL SANITARIAN II
BUREAU OF ENVIRONMENTAL HEALTH, WELL AND SEPTIC PROGRAM
8930 STANFORD BLVD., COLUMBIA, MD 21045

Phone: Desk, 410-313-2691; Program, 410-313-1771; Bureau, 410-313-1774
Fax: 410-313-2648

E-mail: rbricker@howardcountymd.gov

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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 15th day of SEPTEMBER, among NVR, Inc., 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 11905 Northern Bell Way, in the Election District of Howard County, Maryland, and the deed to same is recorded or shall be recorded among the Land Records of Howard County, Maryland in Liber Folio PLAT # 23453

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 HOOT 600 GPD BNR.

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.

Beel Nifon 9/1/2015
Howard County Health Department

[Signature] 8/16/15
Owner #1 Signature *NUM* Date

Owner #1 Print Name

[Signature] 06/16/15
Buyer #1 Signature Date

SAJID ARAIN
Buyer #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

[Signature] 6/16/15
Buyer #2 Signature Date

NAUSHEEN ARAIN
Buyer #2 Print Name

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: PERSON
Reference/Control #: 96

LR - Agreement Surcharge
1x 40.00 40.00

SubTotal: 60.00
Total: 60.00

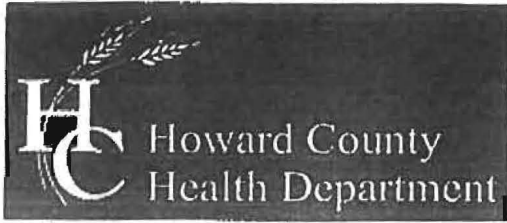
REV-Check-BOA 60.00
Number : 878015

09/01/2015 10:46 CC13-ES
#4777663 /1247/109
***** DUPLICATE #001 *****

09/01/2015 10:47 CC13-ES
Thank you for visiting us today

LOT 15
GREEN BERRY

GB-0015



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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 6 day of June 2015, among NVR, Inc., 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 11905 Northern Bell Valley, in the Election District of Howard County, Maryland, and the deed to same is recorded or shall be recorded among the Land Records of Howard County, Maryland in Liber Folio PLAT # 23453

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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

SOILS TABLE (WITHIN LOD)

SYMBOL	RATING	NAME	K FACTOR
GgB	(B)	GLENELG LOAM, 0-3% SLOPES.	.20
GgB	(B)	GLENELG LOAM, 3-8% SLOPES.	.20

PRIMARY TRENCH DATA

TRENCH	EX. GROUND ELEVATION	INVERT ELEVATION	BOTTOM OF TRENCH EL.
1	563.00	559.50	557.5
2	563.00	559.50	557.
3	562.25	558.75	556.75

BAT SYSTEM ELEVATIONS

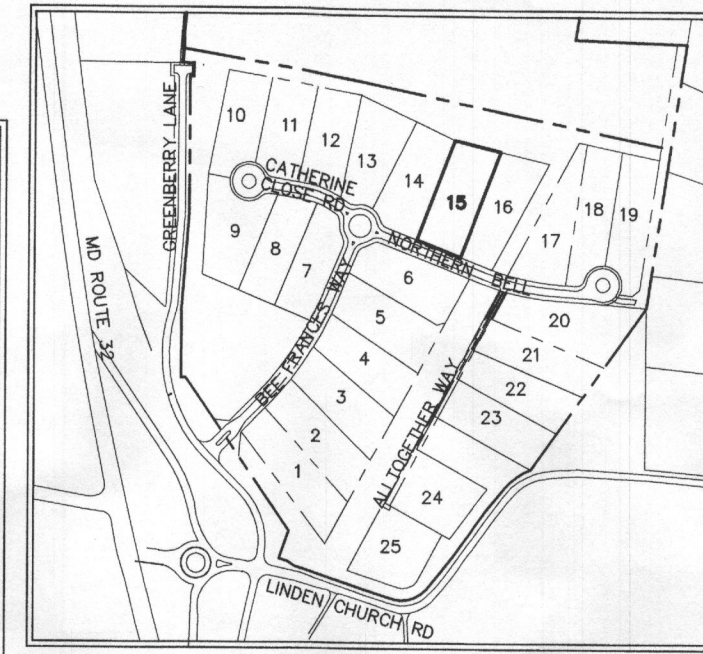
DESCRIPTION	ELEVATION
FINISHED GRADE AT SEPTIC TANK	564.00
INVERT INTO TANK	561.83
EXTERIOR BOTTOM OF TANK	556.98
INTERIOR BOTTOM OF TANK	557.48
PUMP OFF	558.73
HIGH WATER ALARM	560.73
WATER LEVEL	561.73
DEPTH OF TANK	12"
INVERT OUT OF TANK	563.25
STATIC HEAD	6.1'
DOSED RATE	50 GPM
PUMP RUNTIME	3 MIN.

SEPTIC TRENCH SIZING

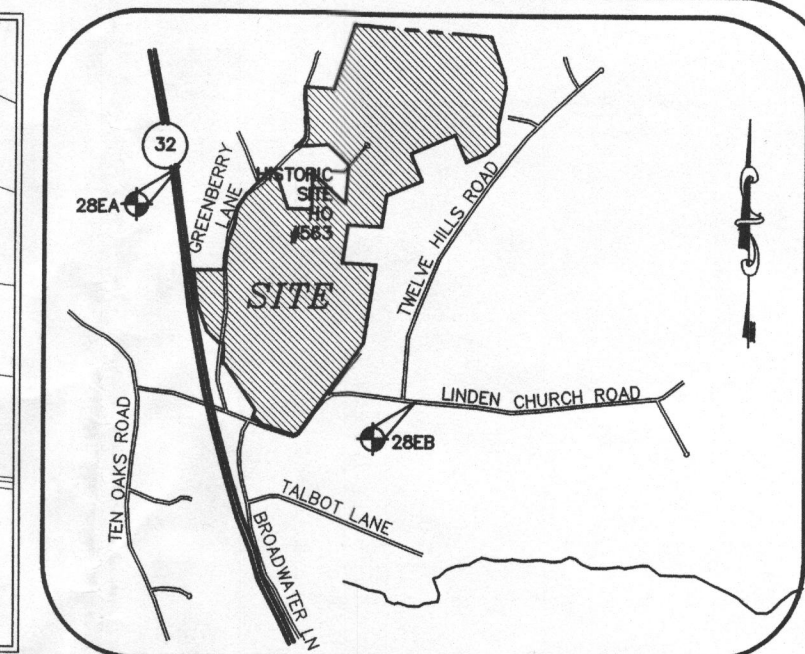
SYSTEM	APPLICATION RATE (GPD / SF)	MAXIMUM FLOW RATE (GPD)	AREA OF REQUIRED TRENCH (SF)	TRENCH WIDTH (FT)	LENGTH OF REQUIRED TRENCH (LF)	EFFECTIVE DEPTH BEGINS (FT)	TRENCH BOTTOM DEPTH (FT)	TRENCH REDUCTION FACTOR**	ADJUSTED LENGTH OF REQUIRED TRENCH (LF)	MINIMUM TRENCH SPACING (FT)	PROVIDED TRENCH LENGTH (FT)
PRIMARY	1.2	900	750	3	250	3.5	5.5	0.62	52	10.0'	52
SECONDARY	1.2	900	750	3	250	5.5	7.5	0.62	52	10.0'	52
TERTIARY	1.2	900	750	3	250	5.5	7.5	0.62	52	10.0'	52

BEST AVAILABLE TECHNOLOGY (BAT) SITE PLAN 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 3.0' FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON 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 (1) 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 THE 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.



LOCATION PLAN
SCALE: 1"=600'



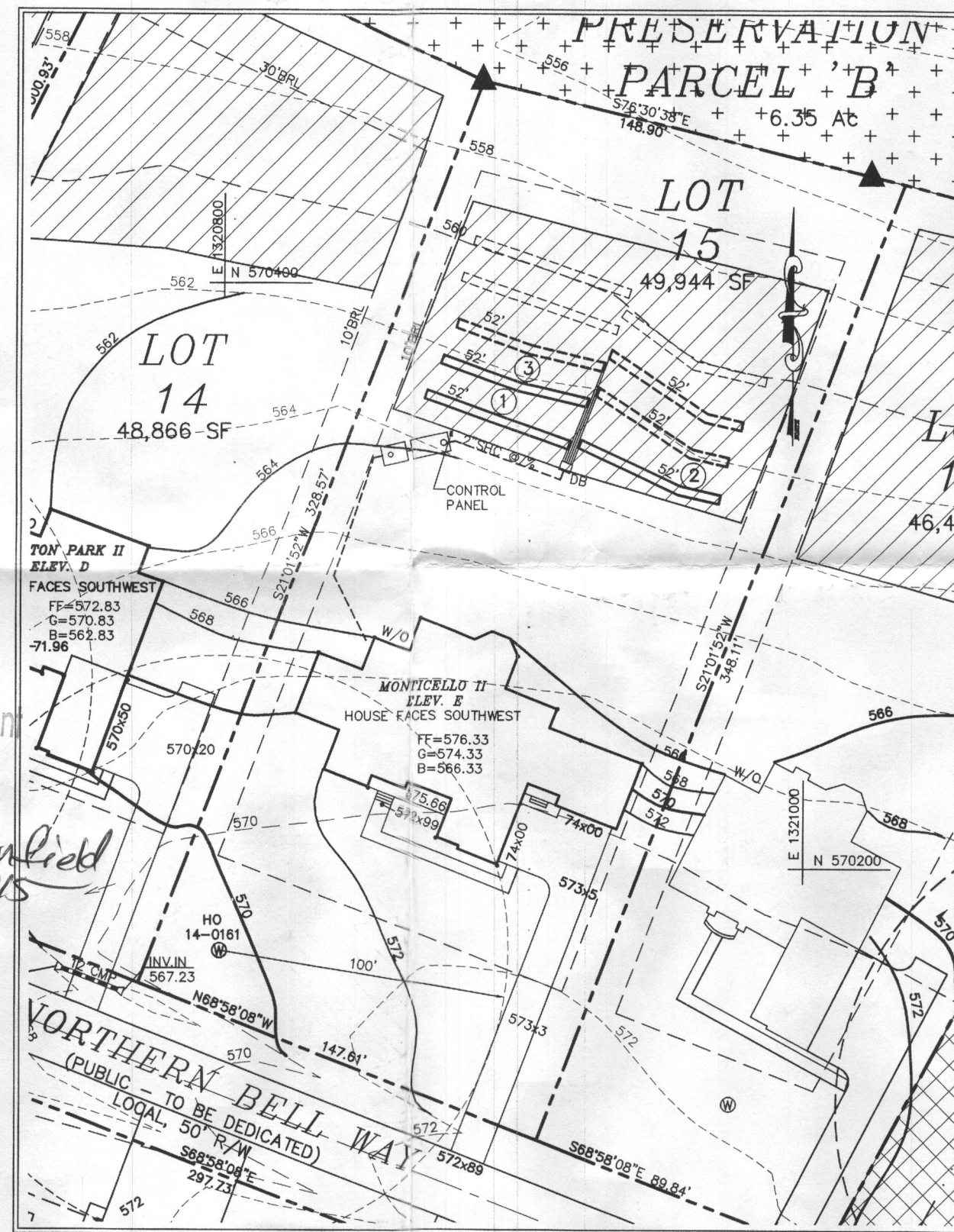
VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 24 GRID F6

GENERAL NOTES:

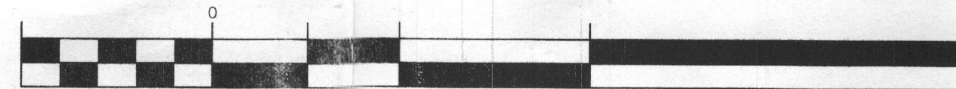
- THE SUBJECT PROPERTY IS ZONED RR-DEO PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- PARCEL BACKGROUND:
TAX MAP : 28
GRID : 9
PARCEL : 48
LOT : 15
DEED REFERENCE: LIBER 5891 FOLIO 307
ELECTION DISTRICT : FIFTH
ZONING : RR-DEO.
AREA : 49,944 S.F.
DPZ FILES: ECP-13-025, SP-13-010, F-14-095, GP-15-081
- 2' TOPOGRAPHY FOR THE DEVELOPED AREAS IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. ON OR ABOUT MARCH 2007.
- PRIVATE WELL AND SEPTIC WILL BE UTILIZED.
- SOILS DATA BASED ON THE USDA SOIL SURVEY OF HOWARD COUNTY, MD, DATED MAY, 2008.
- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- ANY CHANGES TO A PRIVATE SEWERAGE EASEMENT SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- 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.
- THE WELL SHALL BE DRILLED PRIOR TO HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO APPLYING FOR A BUILDING PERMIT. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT.

ON-SITE SEWAGE DISPOSAL SYSTEM:

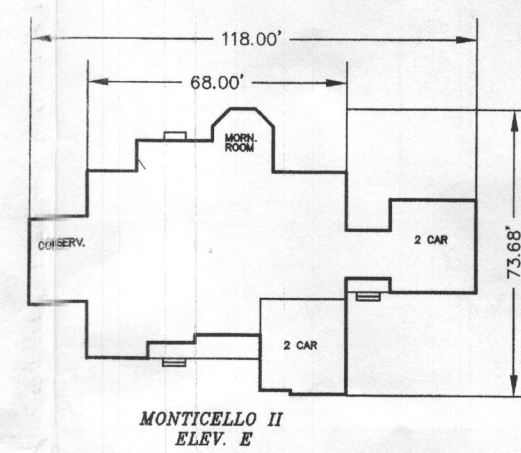
RESIDENTIAL SYSTEM DESIGN: HOOT 600 BNR
6 BEDROOM HOUSE (LIVING AREA = 3,500 SQ.FT.)
150 GALLONS X # OF BEDROOMS = VOLUME OF WASTEWATER / DAY
150 X 6 = 900 GPD
APPLICATION RATE = 1.2 GPD/SQ.FT.
DESIGN FLOW ÷ APPLICATION RATE = SQ.FT. OF TRENCH REQUIRED
900 ÷ 1.2 = 750 SQ.FT.
SQ.FT. REQUIRED ÷ WIDTH OF TRENCH = LENGTH OF TRENCH
750 ÷ 3.0' = 250 FT
USE 24" OF GRAVEL BELOW DRAIN PIPE
250 X 0.62 = 155
USE THREE (3) 52' LONG TRENCHES
A MINIMUM OF 10' BETWEEN TRENCHES UTILIZING SIDEWALL REDUCTION CREDIT.
MINIMUM TANK CAPACITY = 1,500 GALLONS
PUMP: GOULDS MODEL 3871, EP04 SERIES



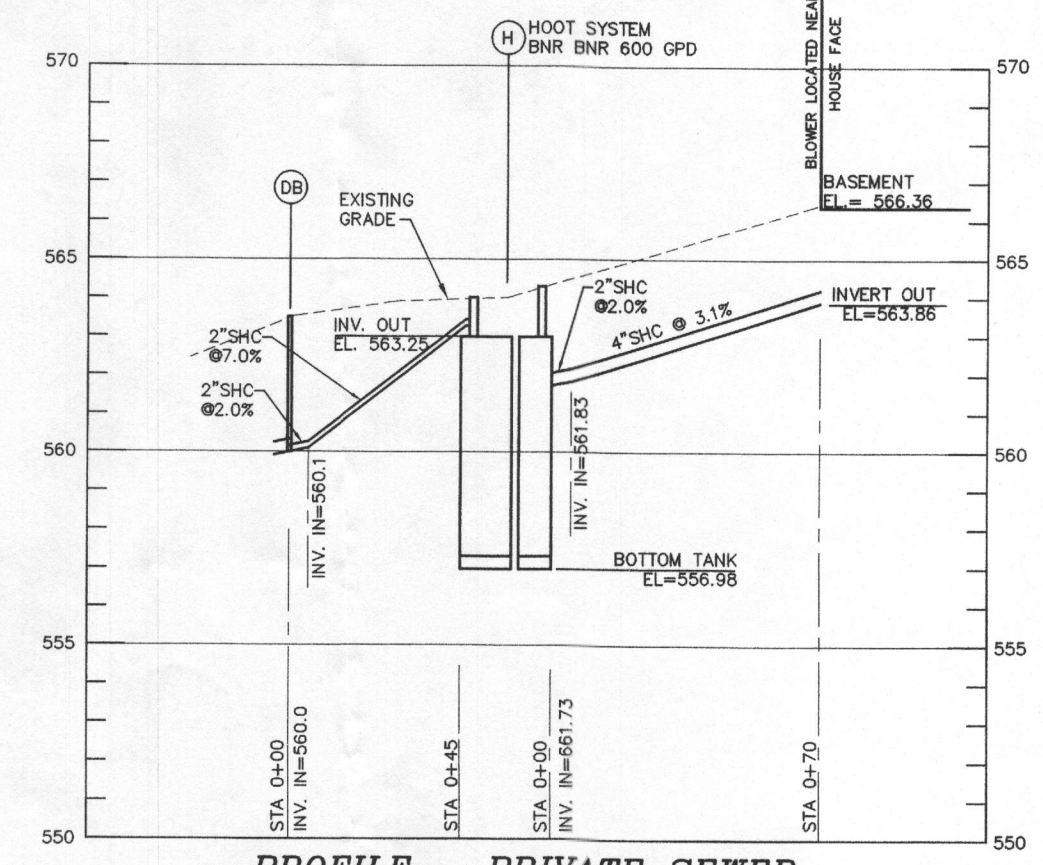
GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

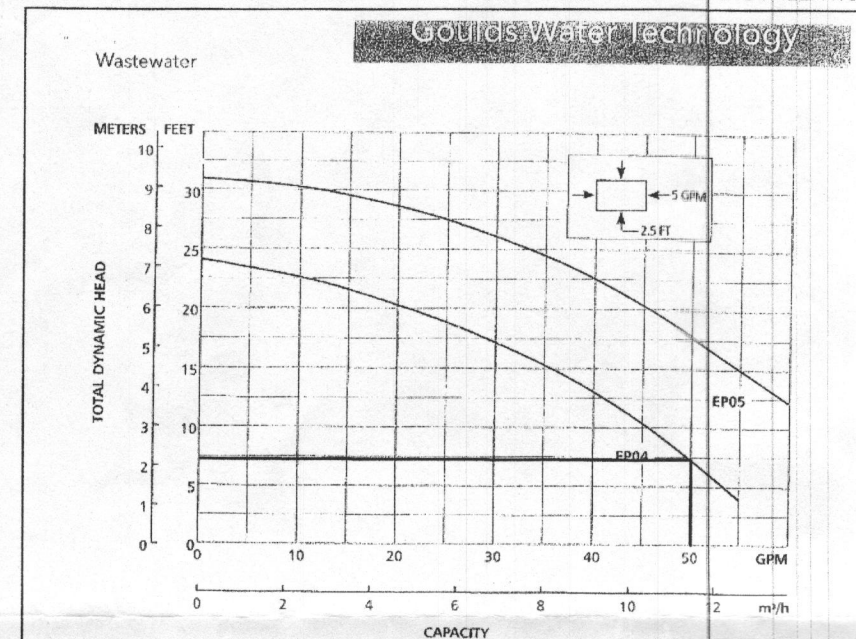


MONTICELLO II ELEV. E



PROFILE - PRIVATE SEWER

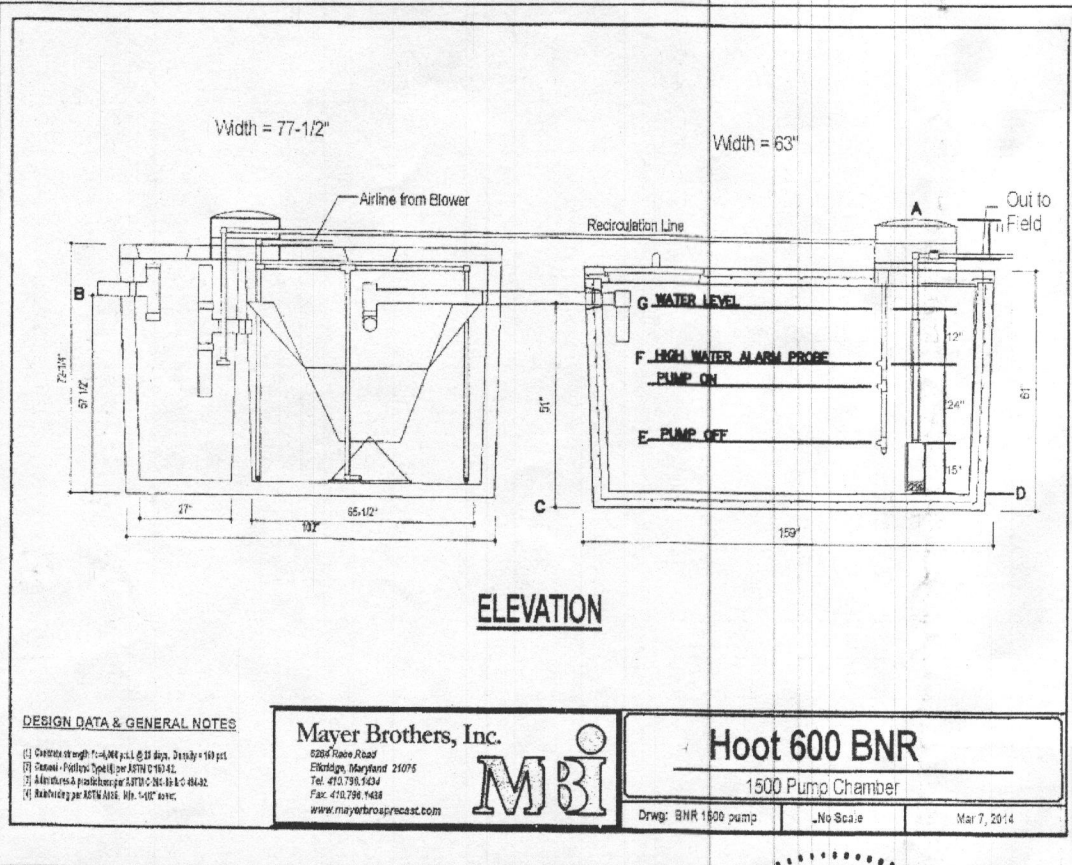
SCALE: 1"=50' HOR
1"=5' VER



MODEL INFORMATION

Order No.	HP	Volts	Amperes	Minimum Circuit Breaker	Float Switch Style	Cord Length	Discharge Connection	Minimum On Level	Minimum Off Level	Minimum Basin Diameter	Minimum Side Slope	Shipping Weight (lbs)
EP0411A	115	12	20	15	10"	15'	12"	6"	15"	15"	15"	21.9
EP0411B	115	12	20	15	10"	15'	12"	6"	15"	15"	15"	21.9
EP0411C	115	12	20	15	10"	15'	12"	6"	15"	15"	15"	21.9
EP0412	230	6	10	10	10"	15'	12"	6"	15"	15"	15"	20.9
EP0412P	230	6	10	10	10"	15'	12"	6"	15"	15"	15"	20.9
EP0511A	115	13	20	15	10"	15'	12"	6"	15"	15"	15"	22.1
EP0511B	115	13	20	15	10"	15'	12"	6"	15"	15"	15"	22.1
EP0512	230	6.5	10	10	10"	15'	12"	6"	15"	15"	15"	22.1

Approved Septic System Plan
Howard County Health Department
HOOT 600 BNR
gravity drained
R. Buckner
Signature
9/18/2015
Date



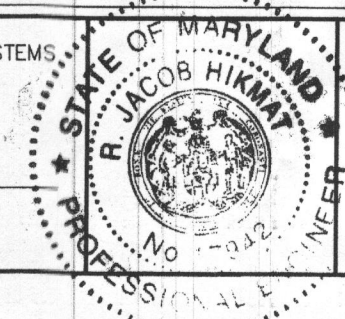
ELEVATION

DESIGN DATA & GENERAL NOTES:
Mayer Brothers, Inc.
Hoot 600 BNR
1500 Pump Chamber
Drawn: BMR 1000 pump No. 004 Mar 7, 2014

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

DATE



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. 17942, EXP DATE 09/03/2016.

R. JACOB HIKMAT, P.E.

9/11/15
DATE:

Project date: SEP 2015
15-005
Illustration: engineering
Scale: M/M
Approval: M/M
1"=60'
R/JH

Approved by: [Signature]
Description: [Text]
Revisions: [Text]

GREENBERRY, LOT 15
11905 NORTHERN BELL WAY, CLARKSVILLE MD
TAX MAP 28, PARCEL 48, LOT 15
HOWARD COUNTY
FIRST ELECTION DISTRICT
SITE PLAN FOR BAT INSTALLATION

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Bat. (410) 997-0298 Fax.

SOILS TABLE (WITHIN LOD)

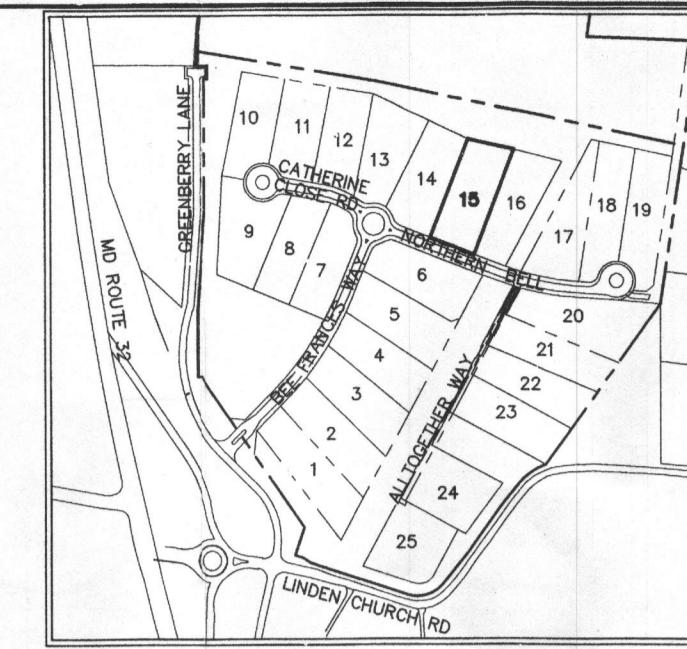
SYMBOL	RATING	NAME	K FACTOR
GgB	(B)	GLENELG. LOAM, 3-8% SLOPES.	.20

PRIMARY TRENCH DATA

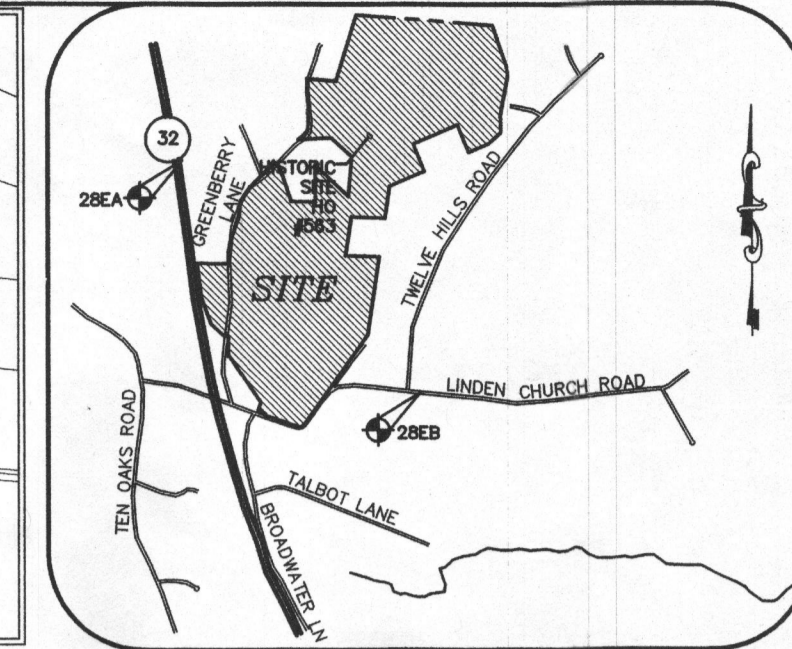
TRENCH	EX. GROUND ELEVATION	INVERT ELEVATION	BOTTOM OF TRENCH EL.
1	563.00	559.50	557.5
2	563.00	559.50	557.5
3	562.25	558.75	556.75

SEPTIC TRENCH SIZING

SYSTEM	APPLICATION RATE (GPD / SF)	MAXIMUM FLOW RATE (GPD)	AREA OF REQUIRED TRENCH (SF)	TRENCH WIDTH (FT)	LENGTH OF REQUIRED TRENCH (LF)	EFFECTIVE DEPTH BEGINS (FT)	TRENCH BOTTOM DEPTH (FT)	TRENCH REDUCTION FACTOR**	ADJUSTED LENGTH OF REQUIRED TRENCH (LF)	MINIMUM TRENCH SPACING (FT)	NUMBER OF TRENCHES	PROVIDED TRENCH LENGTH (FT)
PRIMARY	1.2	900	750	3	250	3.5	5.5	0.62	155	10.0'	3	52
SECONDARY	1.2	900	750	3	250	5.5	7.5	0.62	155	10.0'	3	52
TERTIARY	1.2	900	750	3	250	5.5	7.5	0.62	155	10.0'	3	52



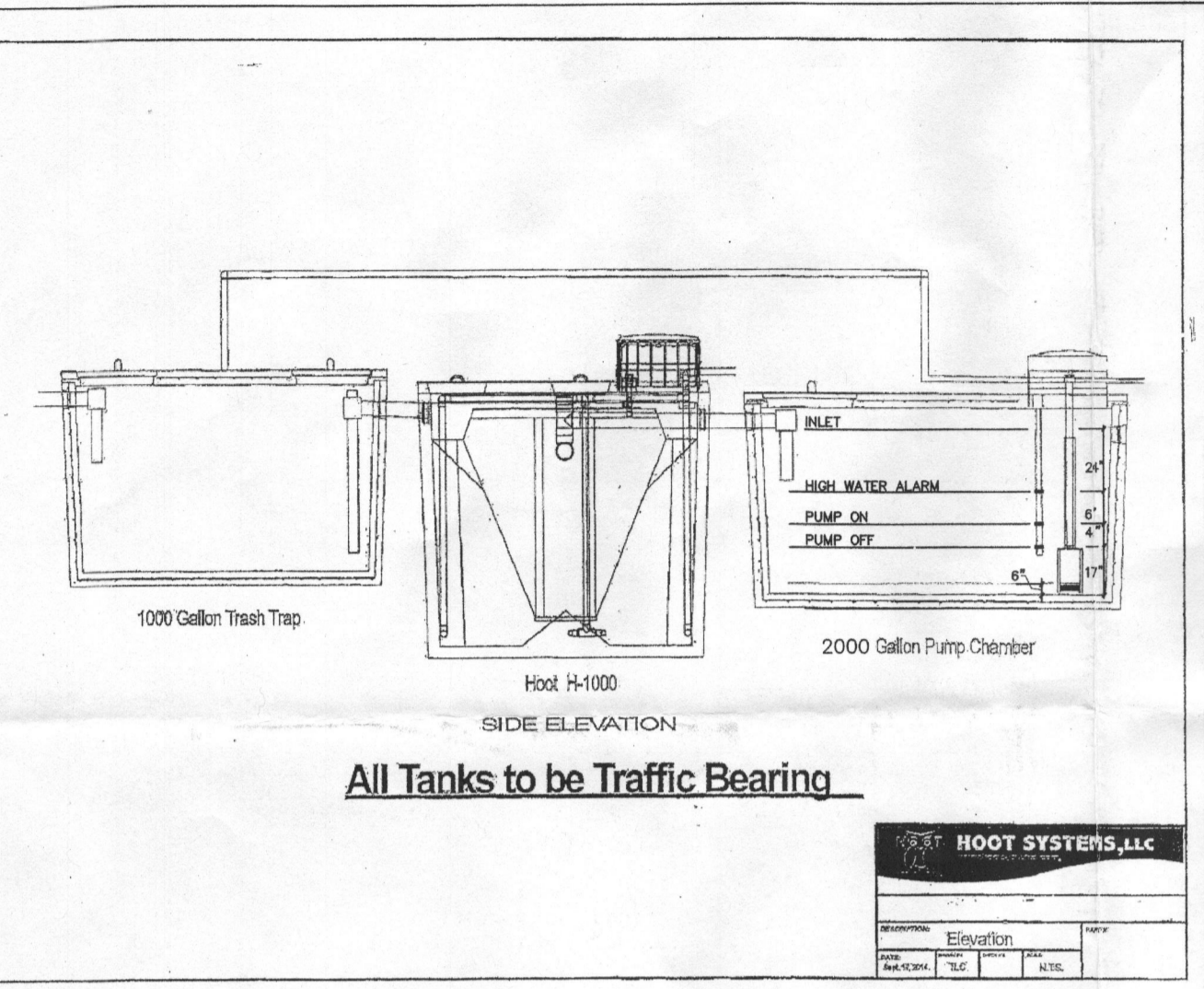
LOCATION PLAN
SCALE: 1"=600'



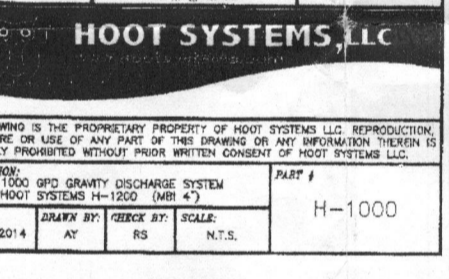
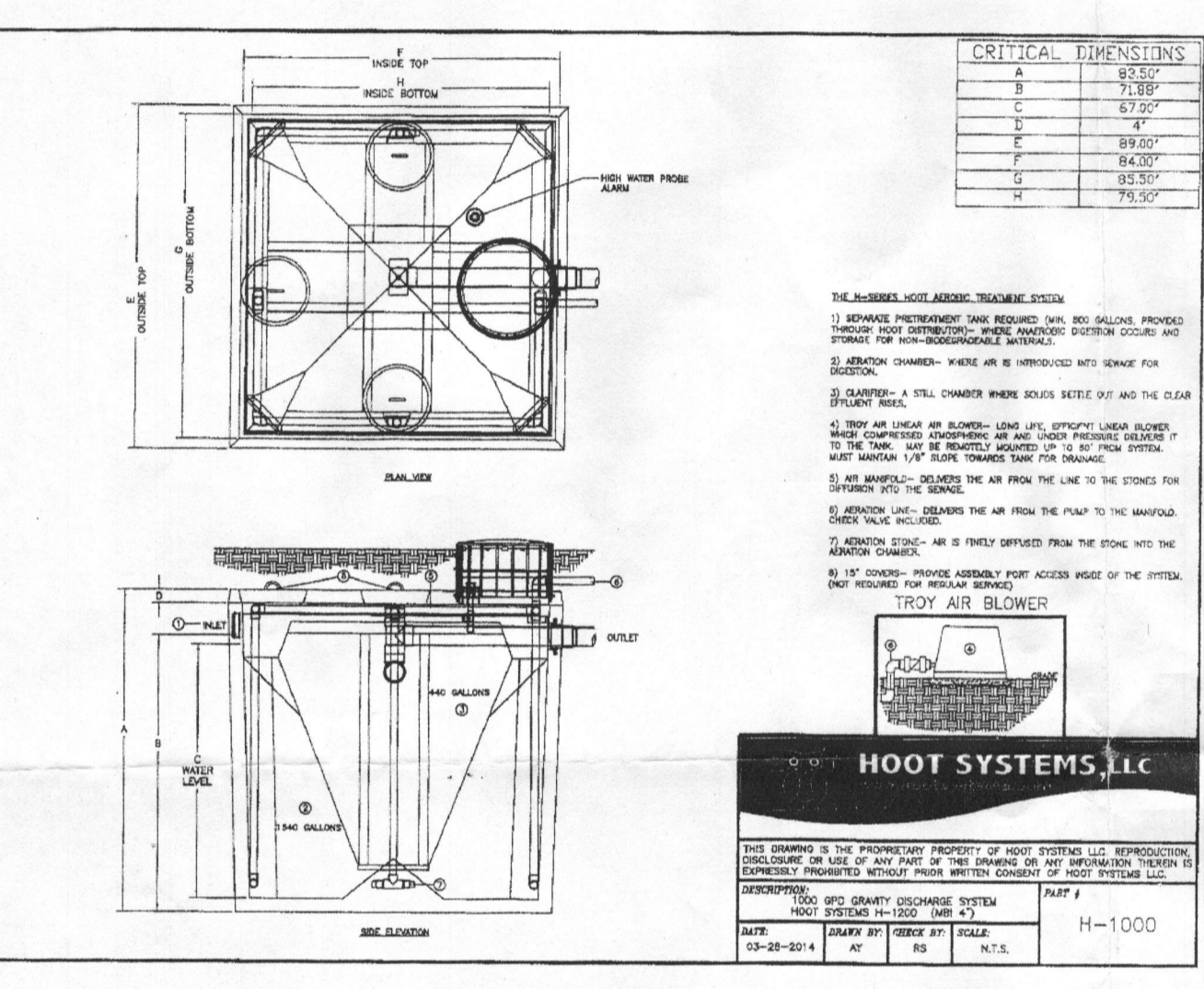
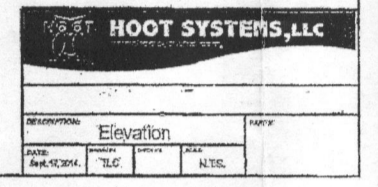
VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 24 GRID F6

GENERAL NOTES:

- THE SUBJECT PROPERTY IS ZONED RR-DEO PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- PARCEL BACKGROUND:
TAX MAP 25
GRID: 9
PARCEL: '48
LOT: 15
DEED REFERENCE: LIBER 5891 FOLIO 307
ELECTION DISTRICT: FIFTH
ZONING: RR-DEO
AREA: 49,944 SF.
DPZ FILES: ECP-13-025, SP-13-010, F-14-095, GP-15-081
- TOPOGRAPHY FOR THE DEVELOPED AREAS IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. ON OR ABOUT MARCH 2007.
- PRIVATE WELL AND SEPTIC WILL BE UTILIZED.
- SOILS DATA BASED ON THE USDA SOIL SURVEY OF HOWARD COUNTY, MD, DATED MAY, 2008.
- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- ANY CHANGES TO A PRIVATE SEWERAGE EASEMENT SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- 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.

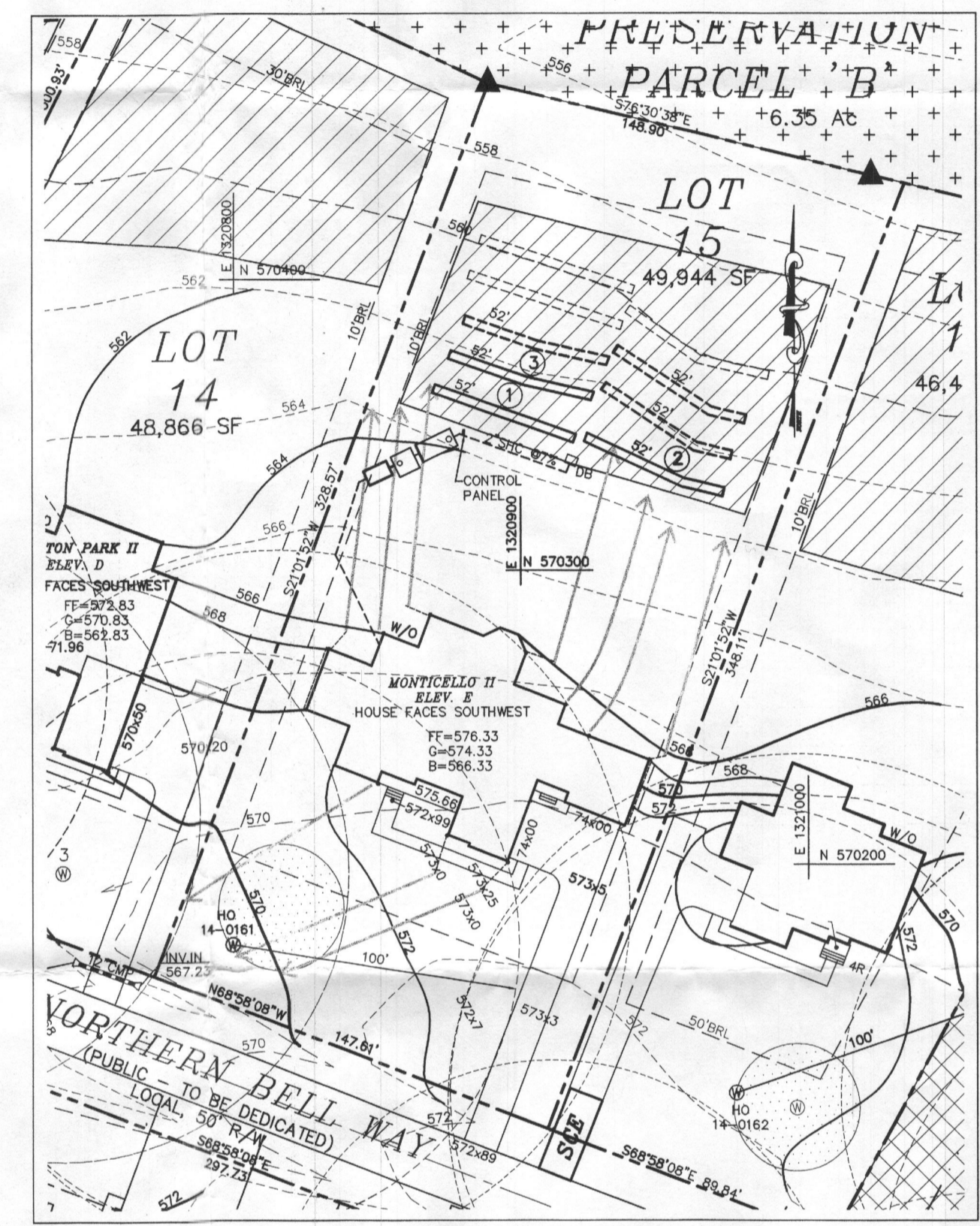


All Tanks to be Traffic Bearing



SEWER SYSTEM CHART

DESCRIPTION	ELEVATION
BASEMENT ELEVATION	566.36
INVERT OUT OF THE HOUSE	563.86
FINISHED GRADE AT SEPTIC TANK	564.20
INVERT INTO SEPTIC TANK	561.82
INVERT OUT OF SEPTIC TANK	561.57
FINISHED GRADE AT HOOT SYSTEM	564.00
INVERT INTO HOOT SYSTEM	561.53
INVERT OUT OF HOOT SYSTEM	561.40
FINISHED GRADE AT PUMP TANK	564.00
INVERT INTO PUMP TANK	561.36
INVERT OUT OF PUMP TANK	562.94
PUMP TANK FLOOR	557.11
FINISHED GRADE AT DISTRIBUTION BOX	563.50
INVERT INTO DISTRIBUTION BOX	560.00
PUMP OFF	558.53
PUMP ON	558.86
HIGH WATER ALARM	559.46
DOSED RATE	50 GPM
PUMP RUNTIME	3 MIN.



GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

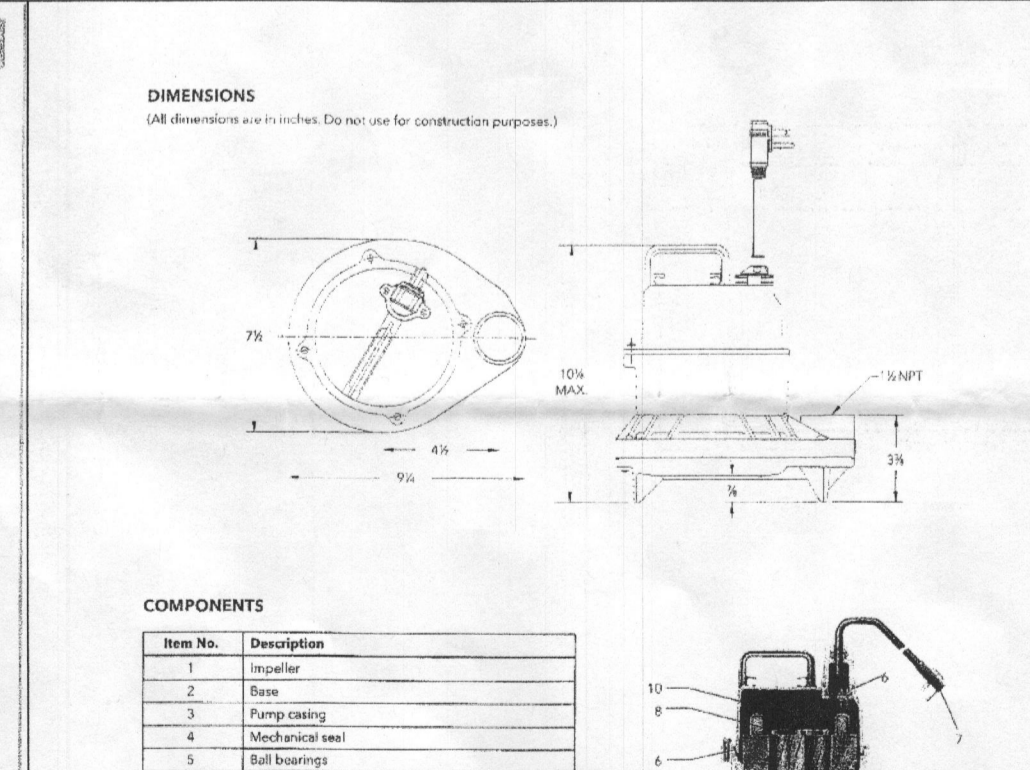
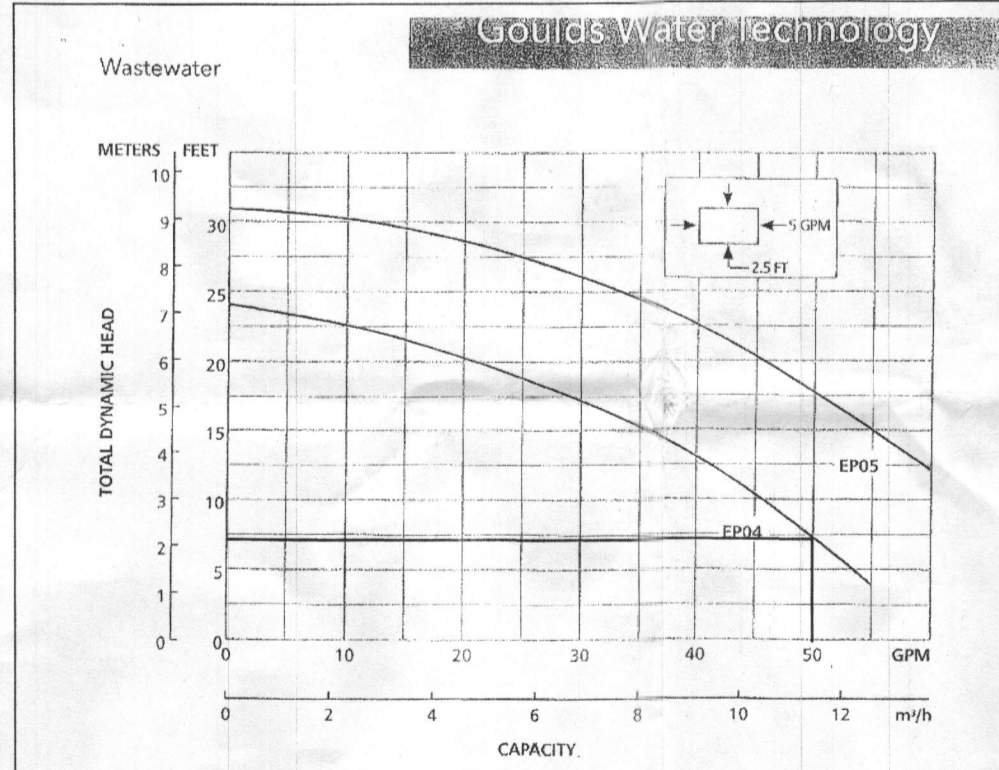
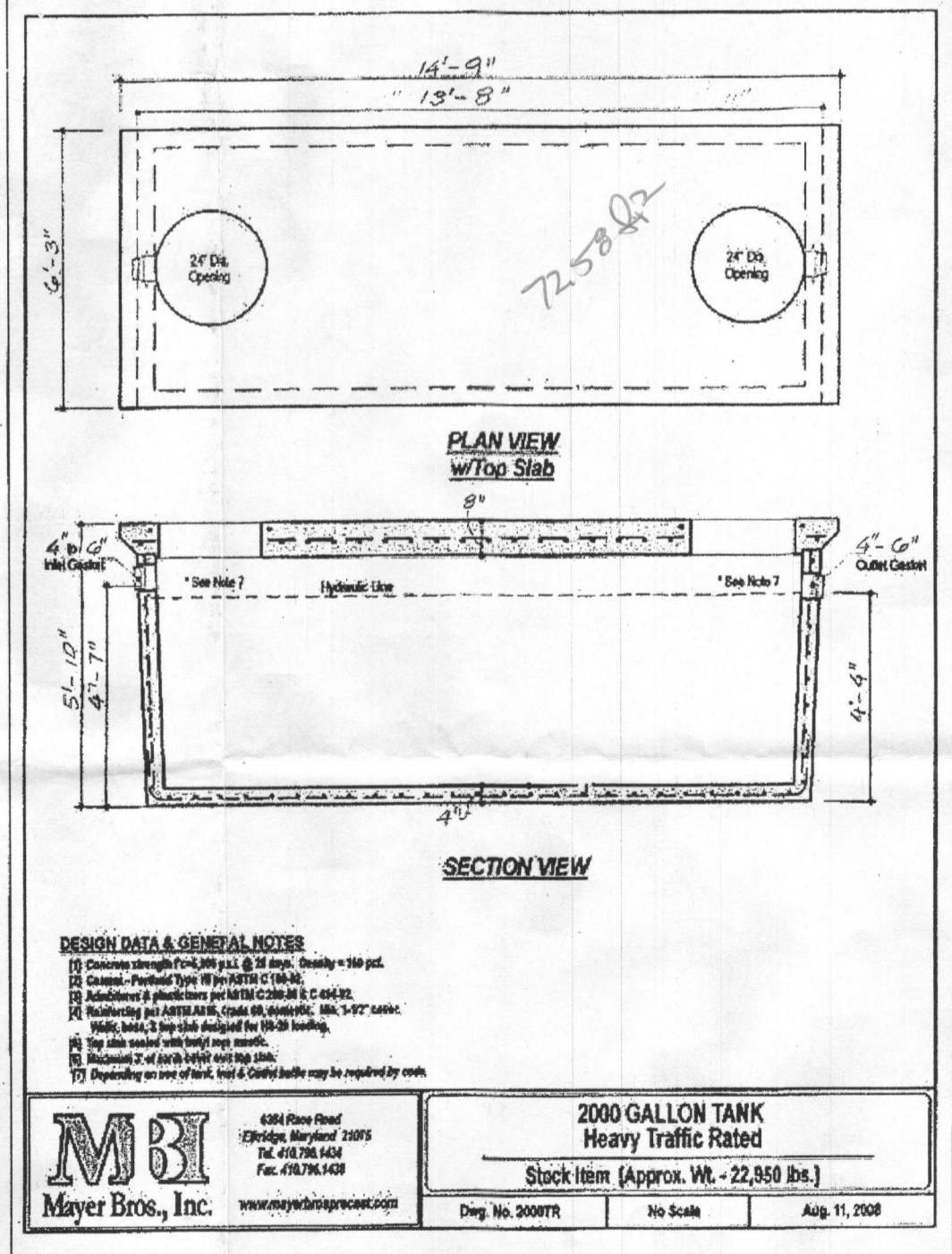
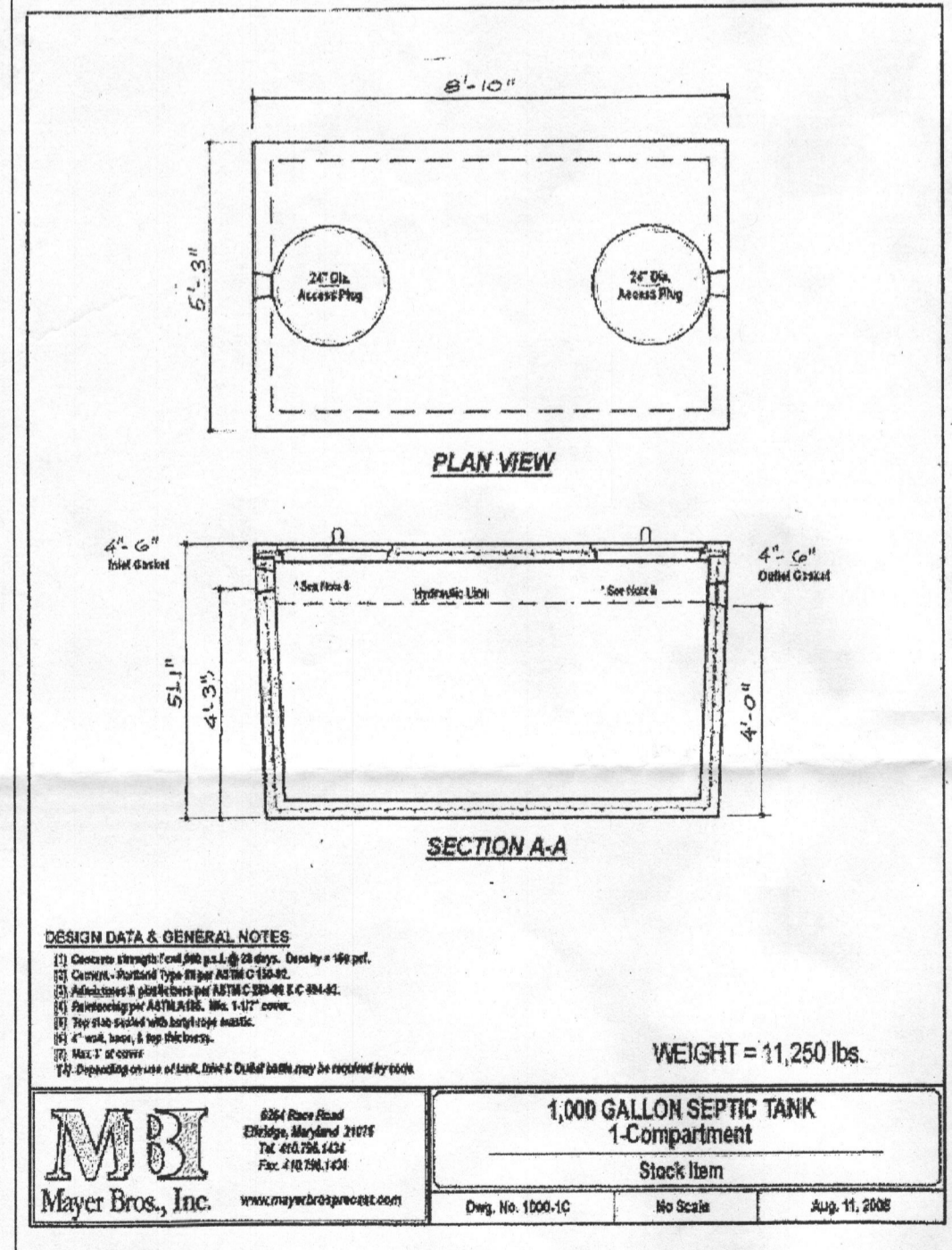
ON-SITE SEWAGE DISPOSAL SYSTEM:

RESIDENTIAL SYSTEM DESIGN: HOOT 1,000 BNR
6 BEDROOM HOUSE (LIVING AREA = 3,500 SQ.FT.)
150 GALLONS X # OF BEDROOMS = VOLUME OF WASTEWATER /DAY
150 X 6 = 900 GPD
APPLICATION RATE = 1.2 GPD/SQ.FT.
DESIGN FLOW + APPLICATION RATE = SQ.FT. OF TRENCH REQUIRED
900 + 1.2 = 750 SQ.FT.
SQ.FT. REQUIRED + WIDTH OF TRENCH = LENGTH OF TRENCH
750 + 3.0' = 250 FT
USE 24" OF GRAVEL BELOW DRAIN PIPE
250 X 0.62 = 155
USE THREE (3) 52' LONG TRENCHES
A MINIMUM OF 10' BETWEEN TRENCHES UTILIZING SIDEWALL REDUCTION CREDIT.
MINIMUM TANK CAPACITY = 1,500 GALLONS
PUMP: GOULDS MODEL 3871, EP04 SERIES

BEST AVAILABLE TECHNOLOGY (BAT) SITE PLAN NOTES

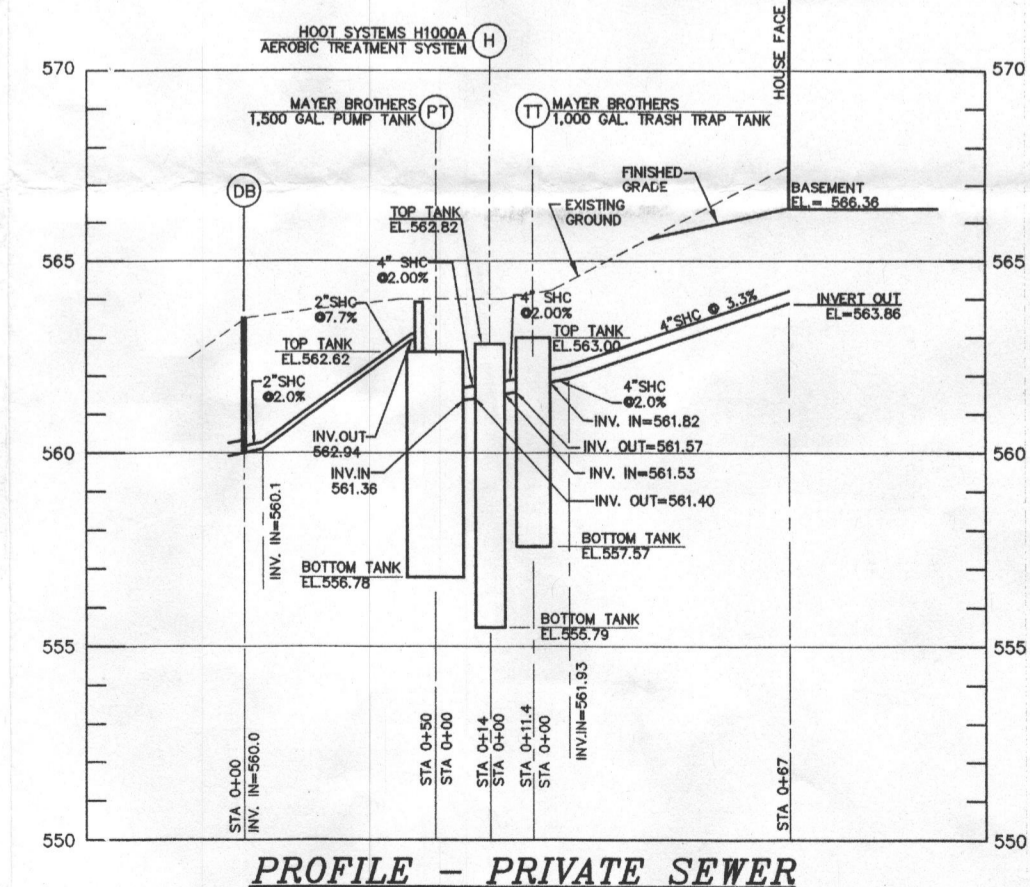
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3.0' FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON 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 (1) 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 THE 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.

Approved Septic System Plan
Howard County Health Department
Hoot H-1000
& 2000 gal Pump Chamber
w/ EP04 pump or equal.
Buckles
12/3/15
Date



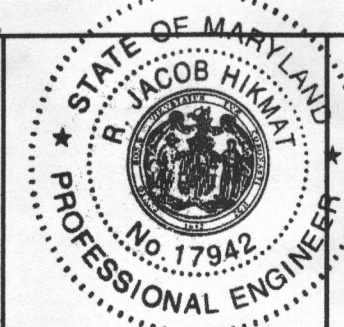
MODEL INFORMATION

Order No.	HP	Volts	Amperes	Minimum Capacity	Maximum Capacity	Flow Rate	Head	Discharge Connection	Minimum Level	Maximum Level	Minimum Basin Diameter	Maximum Basin Diameter	Shipping Weight
EP0411	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	20/11
EP0412	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0413	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0414	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0415	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0416	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0417	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0418	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0419	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12
EP0420	1/2	115	12	20	10	10'	15'	1 1/2"	12"	15"	18"	24"	21/12



PROFILE - PRIVATE SEWER
SCALE: 1"=50' HOR
1"=5" VER

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT



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. 17942, EXP. DATE 09/03/2016.

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7850-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Fax: (410) 997-0298 Fax

11905 NORTHERN BELL WAY, CLARKSVILLE MD
GREENBERRY LOT 15
HOWARD COUNTY
FIRST ELECTION DISTRICT
SITE PLAN FOR BAT INSTALLATION

Project: 15-005
date: NOV 2015
illustration: MAM
scale: MAM
approval: MAM
date: 11/25/15

1 OF 1