

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: 4/14/16 **ONSITE SEWAGE DISPOSAL SYSTEM** P 558075
 APPROVAL DATE: 6/27/16 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 11914 Northern Bell Way
 SUBDIVISION: Greenberry LOT: 20 TAX ID: 05-598683
 CONTRACTOR: South Carroll Backhoe EMAIL: scbackhoe@comcast.net
 CONTRACTOR ADDRESS: 4410 Salem Bottom Road, Westminster, MD 21157 PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: NVR Inc. EMAIL: _____
 OWNER ADDRESS: 9720 Patuxent Woods Road PHONE: 410-379-5956

BAT UNIT MODEL: Hoot 600BNR PUMP SIZE: 0.5HP PUMP TANK CAPACITY: 750 GAL

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 1/28/16 DATE RECORDED: 1/28/16

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

TRENCHES:	LINEAR FEET REQUIRED: <u>130</u>	INLET DEPTH: <u>4</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>6.5</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4.5</u>

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

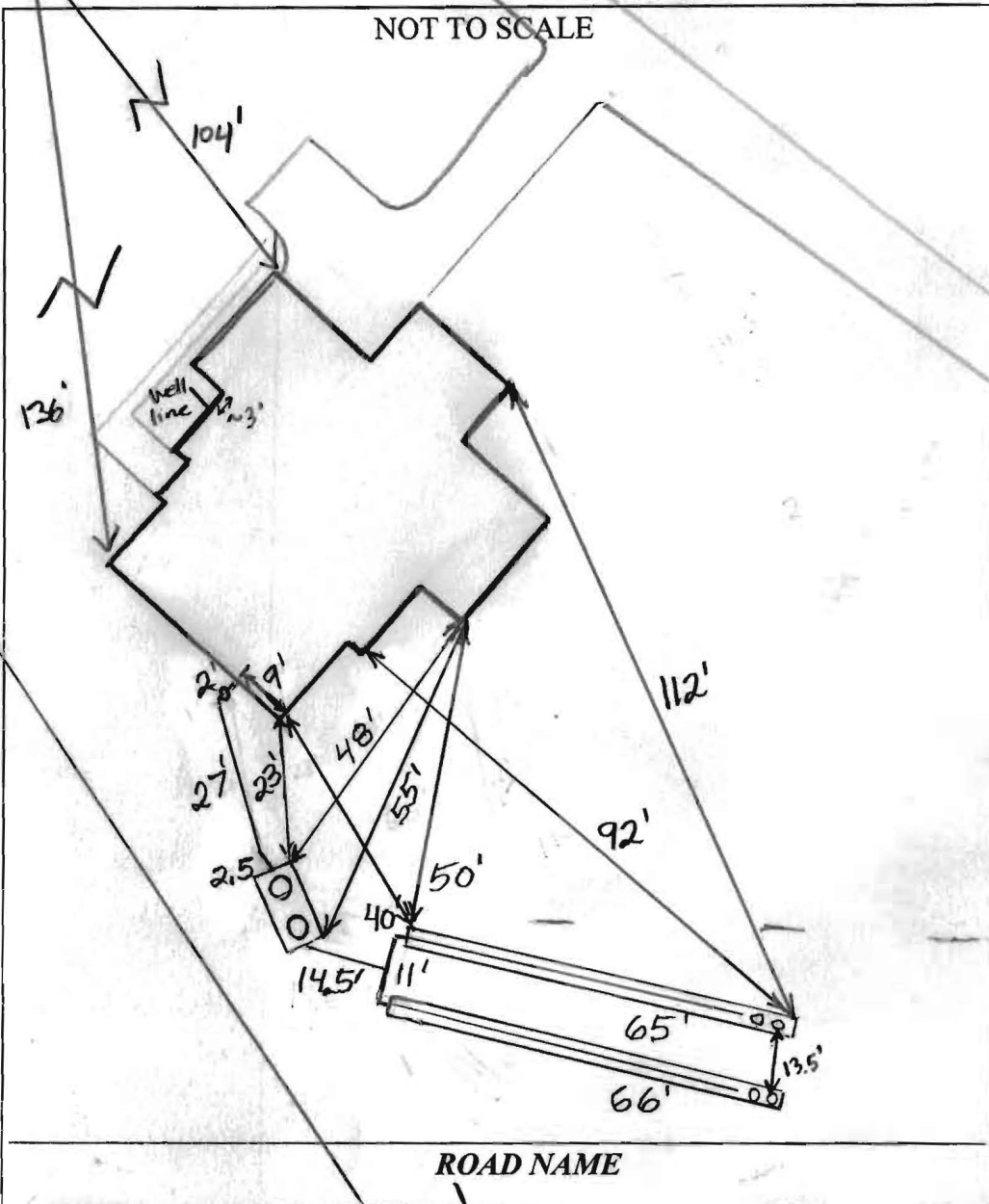
NOTES:

ISSUED BY: Robert Bricker ISSUE DATE: 4/14/16 EXPIRATION DATE: 4/14/17

- 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 16001575
- 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



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	4'	6.5'
NUMBER OF TRENCHES		2
TOTAL LENGTH		131'
ABSORPTION AREA		393 + Sidewall
DISTRIBUTION BOX LEVEL		N/A
DISTRIBUTION BOX BAFFLE		N/A
DISTRIBUTION BOX PORT		N/A

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	MAYER BROS. / HOOT
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	2'-2.5'
BAFFLES	Front
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	Dry
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:

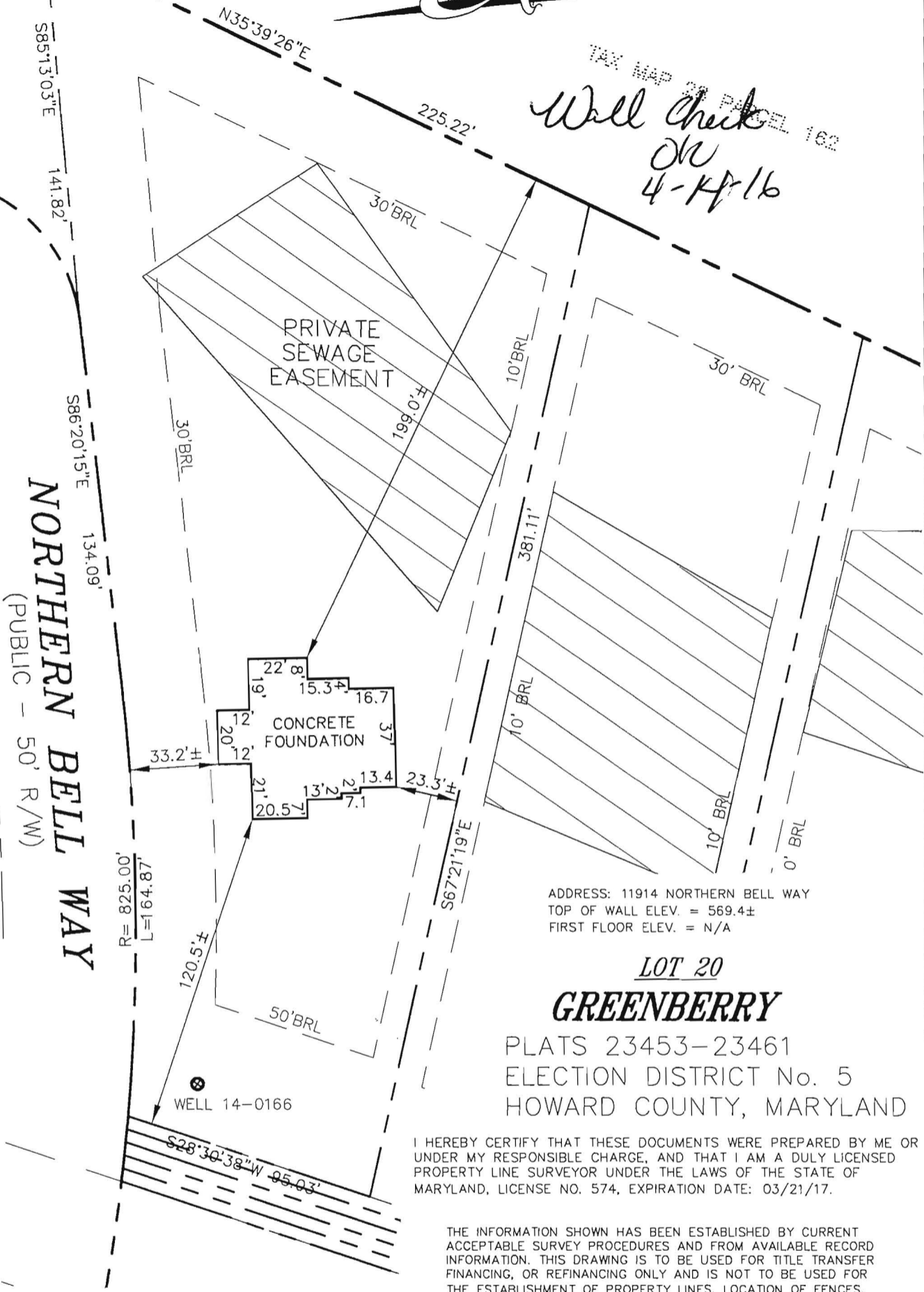
5/9/2016 Trench and tank locations staked. Contour of staked trenches close to level. Told installer that I wanted to inspect laterals before they were put in the trenches. (BP)

INSTALLATION: 5/10/16 Tank installed and house connection made. (SC)

5/12/2016 Trenches done. Around 2'-3' of head in turn-ups. Need BAT certification from HOOT inspector. (BP) 6/22/16 On site for Hoot startup. Alarm sounds, but discharge pump is no longer working. Hoot can't check recirculation b/c liquid level in tank is too high. S. Carroll notified. (SC) 6/27/16 BAT startup certification received. (SC)

NAD_83

TAX MAP 20 PAGE 162
Wall Check
OK
4-14-16



NORTHERN BELL WAY
(PUBLIC - 50' R/W)

ADDRESS: 11914 NORTHERN BELL WAY
TOP OF WALL ELEV. = 569.4±
FIRST FLOOR ELEV. = N/A

LOT 20
GREENBERRY

PLATS 23453-23461
ELECTION DISTRICT No. 5
HOWARD COUNTY, MARYLAND

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 574, EXPIRATION DATE: 03/21/17.

THE INFORMATION SHOWN HAS BEEN ESTABLISHED BY CURRENT ACCEPTABLE SURVEY PROCEDURES AND FROM AVAILABLE RECORD INFORMATION. THIS DRAWING IS TO BE USED FOR TITLE TRANSFER FINANCING, OR REFINANCING ONLY AND IS NOT TO BE USED FOR THE ESTABLISHMENT OF PROPERTY LINES, LOCATION OF FENCES, GARAGES, BUILDINGS, OR OTHER EXISTING OR FUTURE IMPROVEMENTS.

MILDENBERG
BOENDER, & ASSOC., INC.

Engineers Planners Surveyors
7350-B Grace Drive, Columbia, MD 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.



FOUNDATION	DATE: 03/17/16	FINAL LOCATION	DATE: N/A
DRAWN BY: MES	CHECKED BY: GEL	SCALE: 1"=50'	
PROJECT NO.: 15-005	LOCATION DRAWING		

GARY E. LANE
PROP. LINE SURVEYOR
MARYLAND No. 574



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

Letter of Satisfaction Hoot System Installation

Address of Property: 11914 Northern Bell Way
Clarksville, MD 21029

Date of Final Inspection: 6/27/16

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,

J. Michael Dwyer

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



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

MEMORANDUM

TO: Taylor Faris, NVR, Inc.

FROM: Robert Bricker, REHS/RS, L.E.H.S.
Well & Septic Program

RE: 11914 Northern Bell Way (Greenberry, Lot 20), Potential Basement Bedroom

DATE: March 4, 2016

I have reviewed the floor plans in support of Building Permit *[Permit]* for a new home at *[address]* and noted that there is a rough-in for a full bathroom in the unfinished basement. Please note that this makes it very likely for one or more rooms to be considered bedrooms upon conversion of the basement to finished living space.

For reference, the following is the bedroom definition in Howard County Code Section 3.801(b):

- (1) Except as provided in paragraph (2) of this subsection, a bedroom is any space in the conditioned are of a dwelling unit or accessory structure that:
 - (i) Is 90 square feet or greater in size;
 - (ii) May be used as a private sleeping area; and
 - (iii) Has at least one window and one interior door.
- (2) If a home office, library, or similar room is proposed, it may not be a bedroom if there is no closet; and
 - (i) The room contains permanently built-in bookcases around the perimeter of the room, desks, and other features that encumber the room;
 - (ii) A minimum 4 foot-wide opening, without doors, into another room;
 - (iii) A half wall (4 foot maximum height) between the room and another room; or
 - (iv) The room is a first floor room or basement area that does not have direct access to full bathrooms or "roughed in" plumbing that would provide direct access to future full bathroom facilities.

The Health Department strongly recommends sizing the onsite sewage disposal system at least one bedroom larger than the existing *five (5)*- bedroom design to accommodate a future finished basement. If you choose to only size for the existing design, any future building permit for a finished basement may be placed on hold until the system is upgraded to accommodate the proposed number of bedrooms. This memo will be retained in the Health Department file for future reference.

Bricker, Robert

From: Faris, Taylor <[REDACTED]>
Sent: Tuesday, March 08, 2016 8:38 AM
To: Bricker, Robert
Subject: RE: 11914 Northern Bell Way_floor plan_Memo

Robert,

I will keep this memo on file. Although I understand your concerns with this lot, we have to remain consistent throughout the community. Like we discussed, we are designing our BAT plans to accommodate the home that we are building. Every home that we build will have a 3 piece basement bath plumbing rough in if the customer does not finish the bath with us. We have been designing our BAT plans to include a basement bedroom only when a customer finishes the Home Office and the Basement Bathroom. If those 2 options are not selected together, then the BAT is not designed with a basement bedroom.

Thank you
Taylor

Taylor Faris
Construction Cost Manager
Maryland East Division



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, March 04, 2016 5:21 PM
To: Faris, Taylor
Subject: 11914 Northern Bell Way_floor plan_Memo

Taylor, See attached PDF.

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

----- This email is
confidential and intended solely for the use of the individual to whom it is addressed. If you have received this
email in error please contact the sender and be advised that any use, dissemination, forwarding, printing, or
copying of this email is strictly prohibited. The terms for the purchase and sale of any property referenced in
this email shall be solely determined by a ratified Purchase Agreement. Any information provided in this email,
including but not limited to, pricing, financing, features of a property and/or community, is not to be construed
as the basis of the bargain for the purchase and sale of any such property.

Bricker, Robert

From: Bricker, Robert
Sent: Friday, March 04, 2016 5:12 PM
To: [REDACTED]
Subject: Greenberry Lot 20 BAT Plan

The issue concerning the pump recommendation exists for Lot 20 as I cited for Lot 18. In essence, there is little margin for error in the design or installation. An expensive pump may be installed, and that pump may not function optimally. I have approved the BAT plan for Lot 290 and placed a signed copy for you at the Bureau counter. You may choose to stay with your recommendation or revise the BAT Plan. I have already approved the building permit for Lot 20.

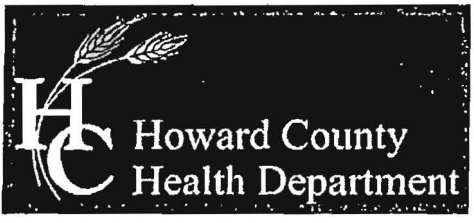
ROBERT BRICKER, REHS/R.S., L.E.H.S.
ENVIRONMENTAL SANITARIAN II
BUREAU OF ENVIRONMENTAL HEALTH, WELL AND SEPTIC PROGRAM
8930 STANFORD BLVD., COLUMBIA, MD 21045

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

E-mail: rbricker@howardcountymd.gov

GB 0020

BOOK: 16664 PAGE: 286



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Twitter: HowardCoHealthDep

RECEIVED
FEB 22 2016
NVHOMES

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 20th day of JAN, 2016, among NVR, INC., DONGFANG WANG, 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 11914 NORTHERN BELL WAY, CLARKSVILLE, MD 21029, in the 5th 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.

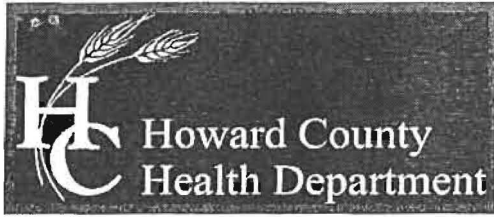
NOW, THEREFORE, the parties hereto agree as follows:

20
40
TR

- 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 be binding on Owner, their heirs, successors, and assigns to the provisions of the agreement. Owner shall inform in writing any subsequent purchaser or lessee of the Lot that the system shall

LR - Agreement 20.00
Recording Fee 20.00
Grantor/Grantee Name:
NVR
Reference/Control #:
188
Ltr - Agreement 40.00
Sub Charge 60.00
Sub Total 180.00
Total 11:37
01/28/2016 CC13-SB
#100278 CC0503 -
Howard Co.
Columbia, MD
01/28/2016 CC05.03.04 -

000118 8/8/2014



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Facebook: www.facebook.com/hocohealth
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 28th day of JAN, 2016, among NVR, INC., DONGFANG WANG, 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 11914 NORTHERN BELLWAY, CLARKSVILLE, MD 21029, in the 5th 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. FLAT # 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.

NOW, THEREFORE, the parties hereto agree as follows:

20
40
TR

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 property is in existence and after installation of the system. Owner shall inform in writing any subsequent purchaser or lessee of the Lot that the system shall require

LR - Agreement 22.00
Recording Fee 22.00
Grantor/Grantee Name:
NVR
Reference/Control #:
1199
L.P. of Agreement 40.00
S.D. Charge 60.00
501833 60.00
T.D. 11:37 100.00
01/28/2016 0013-58
#128714
Howard County
05/03/2014

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.

Beid Ripon 1/28/2016
Howard County Health Department

[Signature] 11/18/15
Owner #1 Signature Date

NVR, INC.
Owner #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

[Signature] 11-15-15
Buyer #1 Signature Date

Buyer #2 Signature Date

DONGFANG WANG
Buyer #1 Print Name

Buyer #2 Print Name

JW R/B/2014

SOILS TABLE (WITHIN LOD)

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

PRIMARY TRENCH DATA

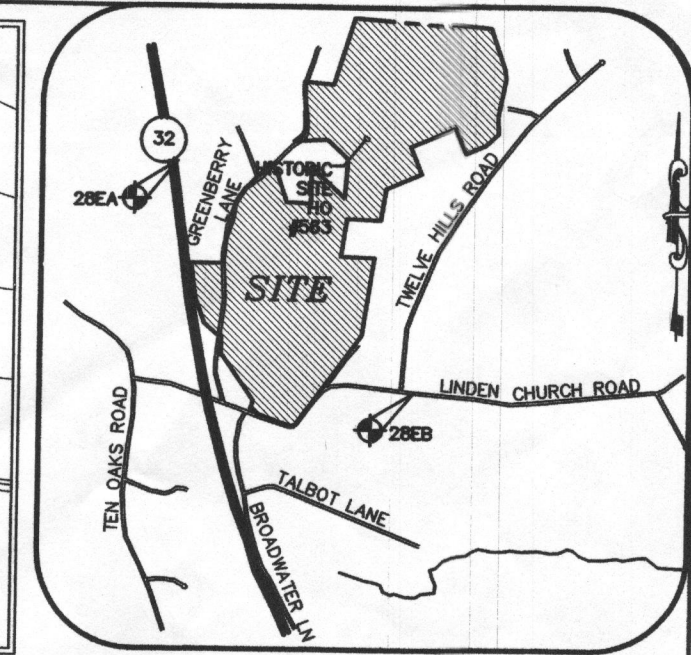
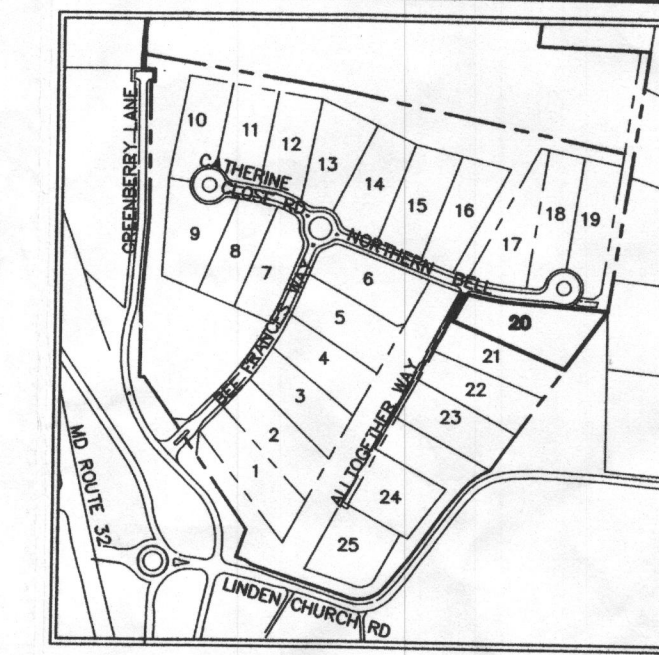
TRENCH	EX. GROUND ELEVATION	INVERT ELEVATION	BOTTOM OF TRENCH EL.
1	559.40	555.40	552.9
2	558.90	554.90	552.4

SEPTIC TRENCH SIZING

SYSTEM	APPLICATION RATE (GPD / SF)	MAXIMUM FLOW RATE (GPD)	AREA OF REQUIRED TRENCH (SF)	TRENCH WIDTH (FT)	LENGTH OF TRENCH (LF)	EFFECTIVE DEPTH BEGINS (FT)	TRENCH REDUCTION FACTOR**	ADJUSTED LENGTH OF REQUIRED TRENCH (LF)	MINIMUM SPACING (FT)	NUMBER OF TRENCHES	PROVIDED TRENCH LENGTH (FT)
PRIMARY	1.2	750	625	3	208.3	4.5	0.62	129.2	10.0'	2	65
SECONDARY	1.2	750	625	3	208.3	4.5	0.62	129.2	10.0'	2	65
TERTIARY	0.8	750	937.5	3	312.5	5.0	0.62	193.75	10.0'	2	97

LOW PRESSURE DOSING SYSTEM - INITIAL INSTALLATION

TRENCH	GROUND ELEVATION	PIPE INV. ELEVATION	TRENCH LENGTH (FT)	LATERAL LENGTH (FT)	PERFORATION DIAMETER (IN)	PRESSURE HEAD (FT)	PERFORATION FLOW RATE (GPM)	PERFORATION SPACING (FT)	NUMBER OF PERFORATIONS	TRENCH FLOW RATE (GPM)
1	559.40	555.40	65.00	61.25	5/16	2.0	1.63	3.5	18	29.34
2	558.90	554.90	64.00	62.00	5/16	2.5	1.82	4.0	16	29.12



LOCATION PLAN
SCALE: 1"=60'

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: 48; PARCEL: 48; LOT: 20; DEED REFERENCE: LIBER 5891 FOLIO 307; ELECTION DISTRICT: FIFTH; ZONING: RR-DEO; AREA: 46,700 S.F.; DPZ FILES: ECP-13-025, SP-13-010, F-14-095, GP-15-081
- TOPOGRAPHY FOR THE DEVELOPED AREAS IS BASED ON AERIAL SURVEY PLANS 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 SEWERAGE 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.

BEST AVAILABLE TECHNOLOGY SITE PLAN NOTES

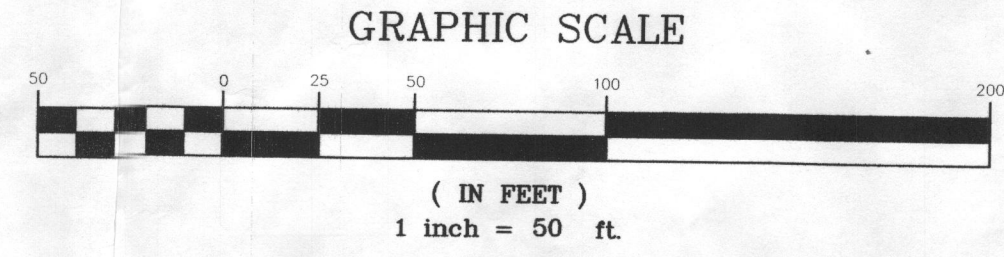
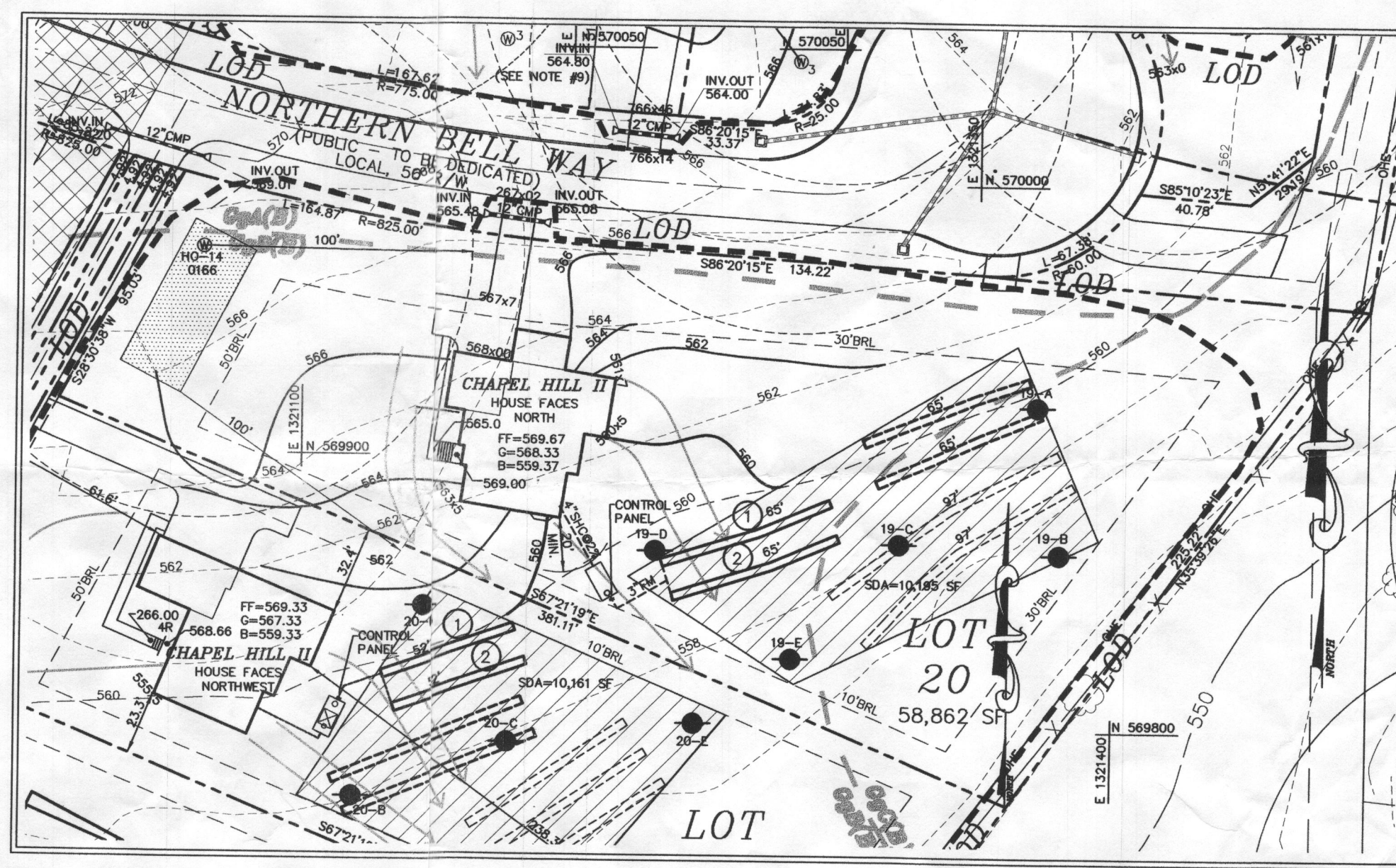
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITEPLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3.0' FEET.
- THE BLOWER MAY NOT BE LOCATED 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.

LOW PRESSURE DOSING SYSTEM

NO. OF BEDROOMS:	5
TRENCH LENGTH:	TRENCH #1 = 65.0'
FLOW METHOD:	TRENCH #2 = 66.0'
MANIFOLD TYPE:	GRAVITY TO TANK
HOLE DIAMETER:	END FEED MANIFOLD (TRENCHES LENGTH >75')
HOLE SPACING:	5/16"
LATERAL LENGTH:	LATERAL #1 = 3.5' (FIGURE 4.4)
	LATERAL #2 = 4.0'
	LATERAL #3 = 4.0'
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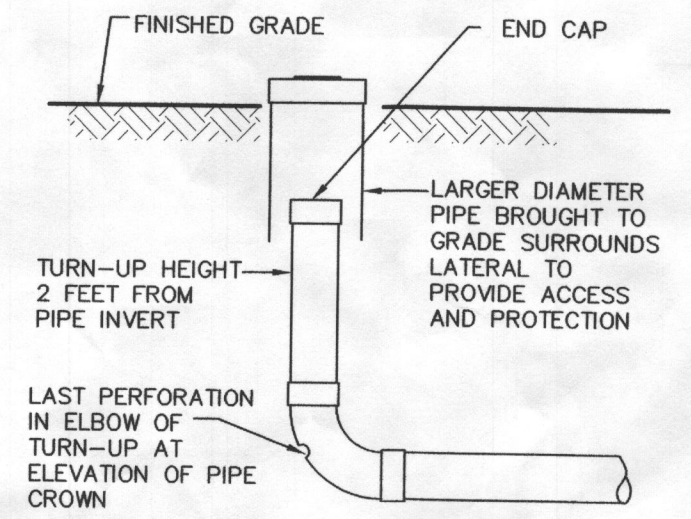
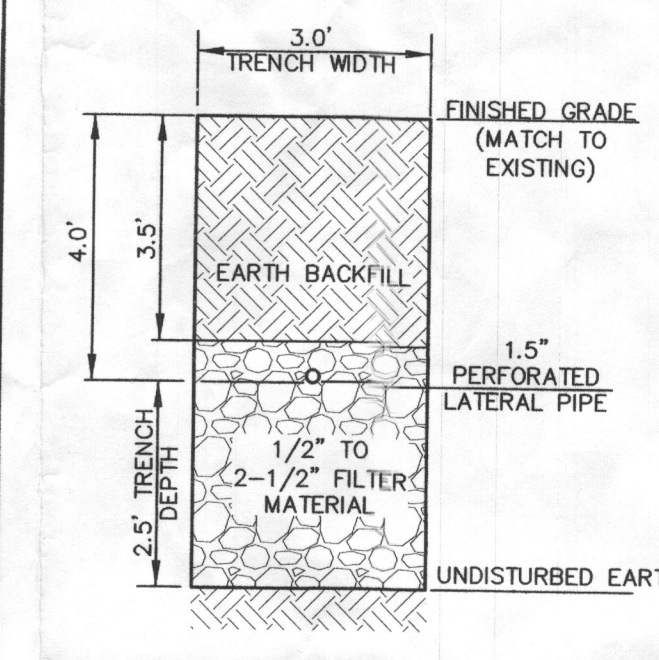
SYSTEM DISCHARGE:
5xLATERAL VOL.+MANIFOLD VOL.+FORCE MAIN VOL.
FORCE MAIN DIAMETER: 3" (TABLE 4.4)
MANIFOLD DIAMETER: 3"
LATERAL VOLUME: 13.1 CAL. (61.25x10.6)(100)+(62x10.6)(100)
MANIFOLD VOLUME: 5.0 GAL. (3x38.4)(100)
FORCE MAIN VOLUME: 11.9 GAL. (31x38.4)(100)
MINIMUM DOSE: 82.4 GAL. (5x13.1+5x11.9)
6 DISCHARGES PER DAY
VOLUME PER DISCHARGE (750x6) 125 GAL. > 82.4 GAL.

TOTAL HEAD:
DYNAMIC HEAD+STATIC HEAD+OPERATING HEAD
F. M. FRICTION LOSS: 0.17 (TABLE 4.4)
MANIFOLD FRICTION LOSS: 0.07 (TABLE 4.4)
FITTINGS FRICTION LOSS: 0.58 (6x90° ELBOW, 10' PER FITTING=60' OF PIPE)+ 1x90° TEE, 15' PER FITTING=15' OF PIPE)
75'(TABLE 4.4)
LATERAL FRICTION FACTOR: 1.5'
STATIC HEAD: 4.75'
DISTAL HEAD: 2.0'
TOTAL DYNAMIC HEAD: 9.02' (0.17+0.07+0.58+1.5+4.75+2.0)
USE GOULDS PUMP WE05HH.

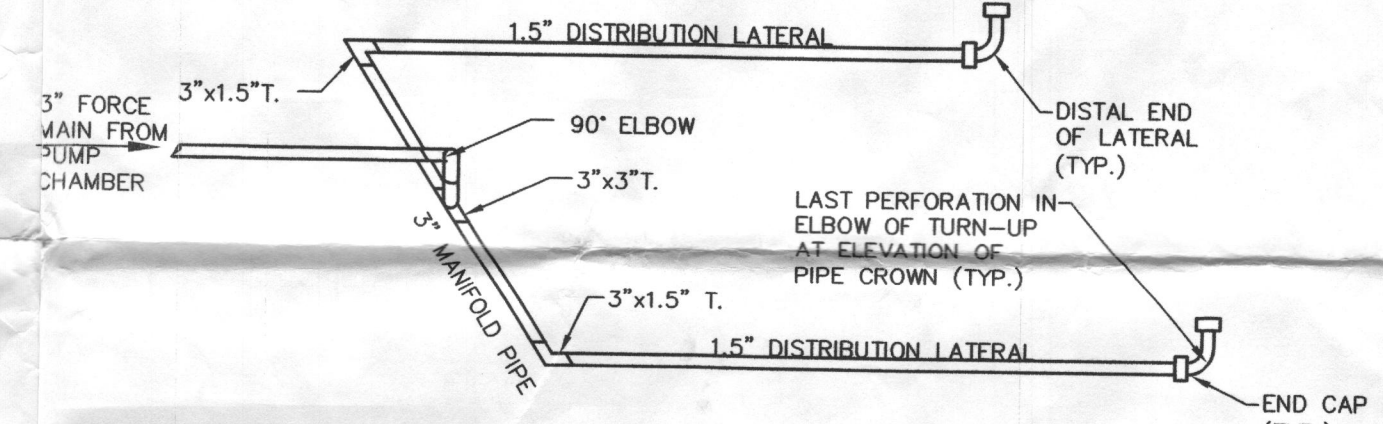


BAT SYSTEM CHART

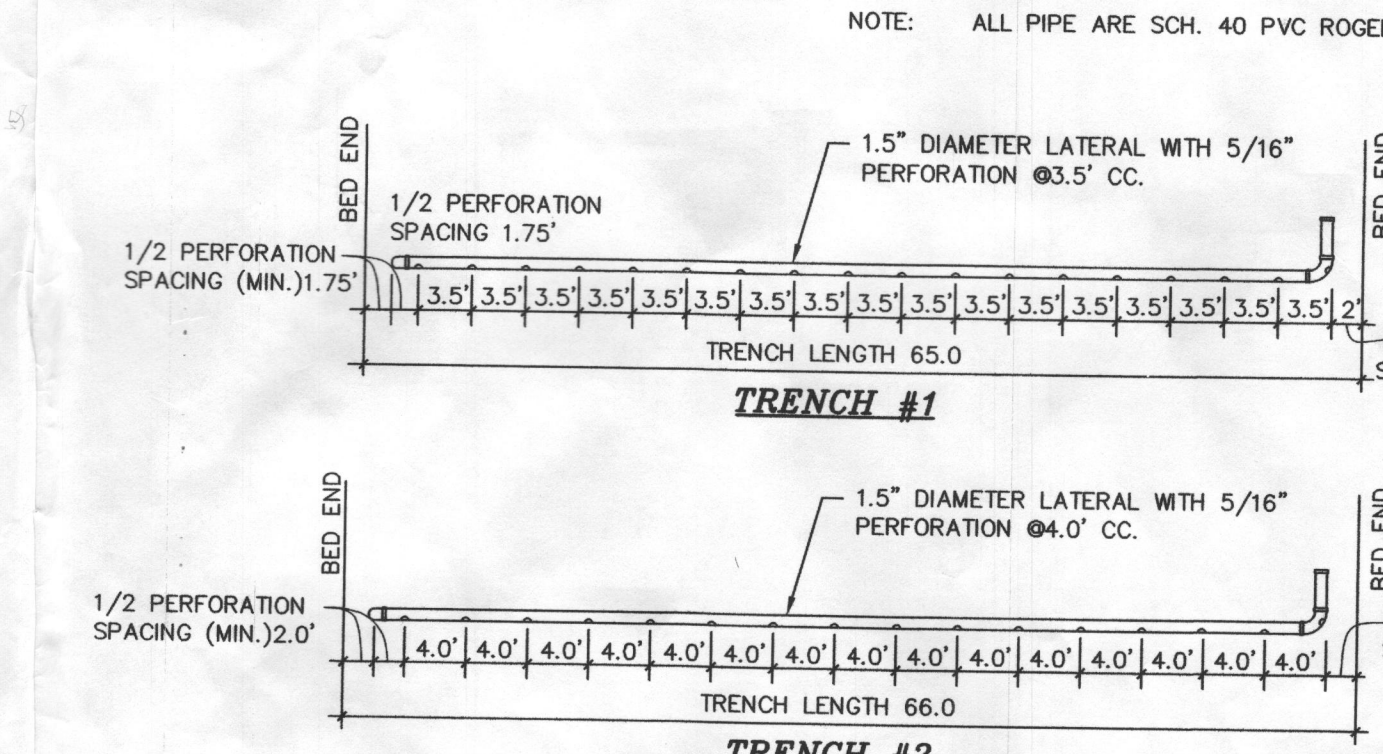
DESCRIPTION	ELEVATION
FINISHED GRADE AT SEPTIC TANK	559.00
INVERT INTO TANK	556.37
EXTERIOR BOTTOM OF TANK	551.62
INTERIOR BOTTOM OF TANK	551.95
PUMP OFF	553.20
PUMP ON	553.91
HIGH WATER ALARM	555.20
WATER LEVEL	556.20
INVERT OUT OF TANK	557.95
FINISHED GRADE AT TRENCH #1	559.40
INVERT INTO TRENCH #1	555.40
FINISHED GRADE AT TRENCH #2	558.90
INVERT INTO TRENCH #2	554.90
TOTAL DYNAMIC HEAD	9.07'
DOSED VOLUME	125 GAL.
PUMP RUNTIME	2.14 MIN.



NOTE: PLACE AN OBSERVATION PIPE IN THE GRAVEL BED AT DISTAL END OF EACH TRENCH SEGMENT



END FEED LAYOUT NOT TO SCALE



END FEED LAYOUT NOT TO SCALE

ON-SITE SEWAGE DISPOSAL SYSTEM:

RESIDENTIAL SYSTEM DESIGN: HOOT 600 BNR
5 BEDROOM HOSE (LIVING AREA = 2,288 SQ.FT.)
150 GALLONS / # OF BEDROOMS = VOLUME OF WASTEWATER / DAY
150 X 5 = 750 GPD
PERC RATE = -5 MINUTES/INCH
APPLICATION RATE = 1.2 GPD/SQ.FT.
DESIGN FLOW + APPLICATION RATE = SQ.FT. OF TRENCH REQUIRED
750 + 1.2 = 625 SQ.FT.
SQ.FT. REQUIRED + WIDTH OF TRENCH = LENGTH OF TRENCH
625 + 3.0' = 28 FT
USE 24" OF GRAVEL BELOW DRAIN PIPE
208 X 0.82 = 29
USE TWO (2) TRENCHES (65')
A MINIMUM OF 3' BETWEEN TRENCHES UTILIZING SIDEWALL REDUCTION GRIT.
MINIMUM TANK CAPACITY = 750 GALLONS

WELL CERTIFICATION:
THE EXISTING WELL, TAG NO. HO-14-0166, HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN

Goulds Water Technology

Wastewater

APPLICATIONS
Specifically designed for the following uses:
• Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS
• Solids handling capabilities: "K" maximum.
• Discharge size: 2" NPT.
• Capacities: up to 140 GPM.
• Total heads: up to 128 feet TDH.
• Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
• See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

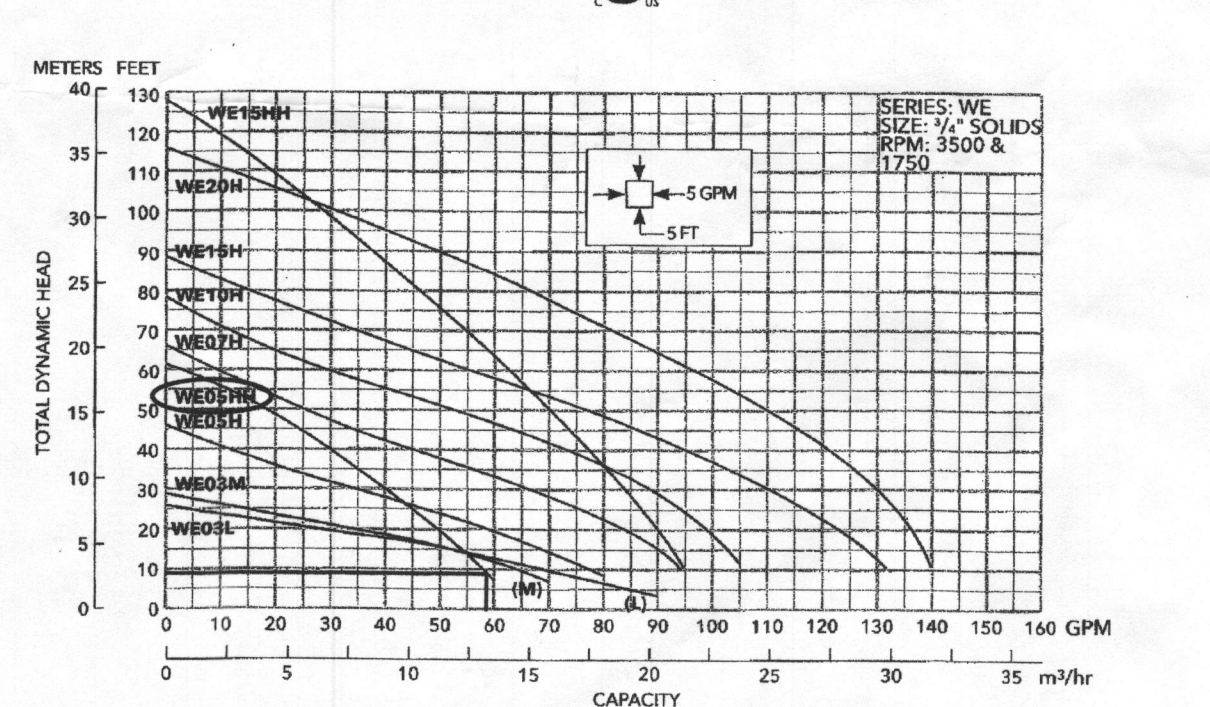
MOTORS
• Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
• Class B insulation on 1/2-1 1/2 HP models.
• Class F insulation on 2 HP models.

Single phase (60 Hz):
• Capacitor start motors for maximum starting torque.
• Built-in overload with automatic reset.

Three phase (60 Hz):
• Class 10 overload protection must be provided in separately ordered starter unit.
• STOW power cords all have bare lead cord ends.
• STOW power cords all have bare lead cord ends.
• Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
• Bearings: Upper and lower heavy duty ball bearing construction.
• Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
• O-Ring: Assures positive sealing against contaminants and oil leakage.

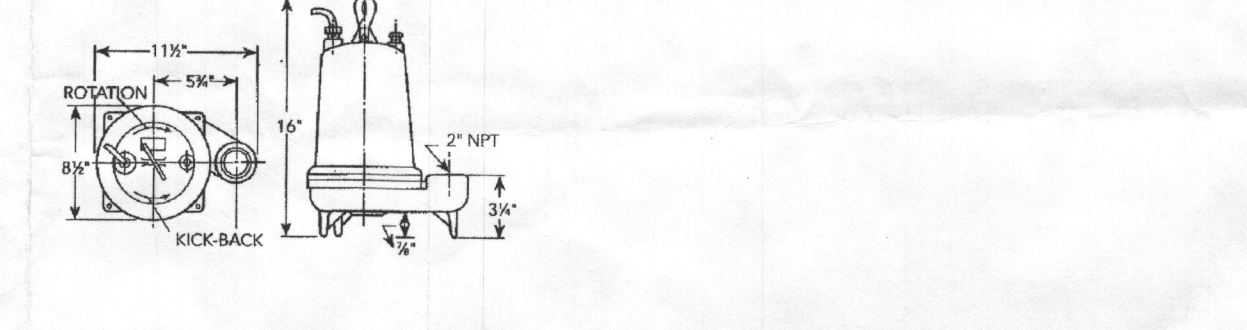
AGENCY LISTINGS

Tested to UL 178 and CSA 22.2 168 Standards
By Canadian Standards Association File #E28549



PERFORMANCE RATINGS (gallons per minute)

Order No.	1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP
1	1750	1750	3500	3500	3500
2	56	56	56	56	56
3	20	20	20	20	20
4	20	20	20	20	20
5	20	20	20	20	20
6	20	20	20	20	20
7	20	20	20	20	20
8	20	20	20	20	20



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Let's Solve Water

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NV HOMES
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COLUMBIA, MARYLAND 21046
(410)379-5956

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. DATE:

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0286 Fax: (410) 997-0286

11914 NORTHERN BELL WAY, CLARKSVILLE MD
GREENBERRY LOT 20
FIFTH ELECTION DISTRICT
SITE PLAN FOR BAT INSTALLATION

Project: 15-005
date: FEB 2016
illustration: MAM
scale: MAM
description: MAM
revisions: MAM
no.: 316000157
date: 1/2/2016
scale: 1"=50'