



**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: 6/15/16 **ONSITE SEWAGE DISPOSAL SYSTEM** P 558759

**PERMIT**  
**UPGRADE**

INSTALLATION APPROVAL DATE: 8/16/16 A UPGRADE

PROPERTY ADDRESS: 11954 Queen Street TAX ID: 05-433355

CONTRACTOR: T & TR Plumbing EMAIL: kristina@familyseptic.com

CONTRACTOR ADDRESS: P.O. Box 57, Liban MD 21765 PHONE: 410-489-7776

PROPERTY OWNER: Greg and Sandra Suber EMAIL: \_\_\_\_\_

OWNER ADDRESS: 11954 Queen Street, Fulton, MD 20759 PHONE: 301-490-8905

TREATMENT TANK MODEL: Hoot 600 BNR TREATMENT TANK SIZE: \_\_\_\_\_

GREASE TRAP SIZE: \_\_\_\_\_

PUMP CHAMBER CAPACITY (GALLONS): 750 gallons PUMP SIZE: 20E805

FLOW RATE (GALLONS PER DAY): \_\_\_\_\_ APPLICATION RATE: \_\_\_\_\_

DISTRIBUTION SYSTEM: GRAVITY FED  LOW PRESSURE DOSED

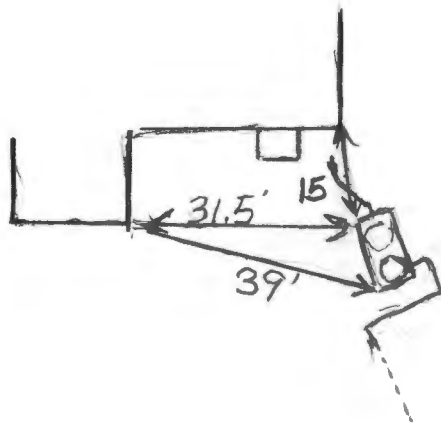
TRENCHES:	LINEAR FEET REQUIRED: <u>N/A</u>	INLET DEPTH: <u>N/A</u>
	TRENCH WIDTH: <u>N/A</u>	MAXIMUM BOTTOM DEPTH: <u>N/A</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>N/A</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>N/A</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	<u>Abandon existing septic tank &amp; pump tank. Install Hoot 600 BNR BAT unit and observation pipes at ends of trenches.</u>	

ISSUED BY: Hank Oswald ISSUE DATE: 7/22/16 EXPIRATION DATE: 7/22/17

- 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 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.**

NOT TO SCALE



ROAD NAME \_\_\_\_\_

**TRENCH/DRAINFIELD DATA**

WIDTH \_\_\_\_\_ INLET \_\_\_\_\_ BOTTOM \_\_\_\_\_

NUMBER OF TRENCHES \_\_\_\_\_

TOTAL LENGTH \_\_\_\_\_

ABSORPTION AREA \_\_\_\_\_

DISTRIBUTION BOX LEVEL \_\_\_\_\_

DISTRIBUTION BOX BAFFLE \_\_\_\_\_

DISTRIBUTION BOX PORT \_\_\_\_\_

**SEPTIC TANK DATA**

SEPTIC TANK 1 LEVEL Yes

MANUFACTURER Hoot

CAPACITY \_\_\_\_\_ GAL

SEAM LOC Top

TANK LID DEPTH 0.5-2'

BAFFLES Front

BAFFLE FILTER No

MANHOLE LOC Front + Rear

6" PORT LOC None

WATERTIGHT TEST No

SLOTTED N/A

DATE ON LID \_\_\_\_\_

**PUMP/SEPTIC TANK LEVEL N/A**

MANUFACTURER \_\_\_\_\_

CAPACITY \_\_\_\_\_ GAL

SEAM LOC \_\_\_\_\_

TANK LID DEPTH \_\_\_\_\_

BAFFLES \_\_\_\_\_

BAFFLE FILTER \_\_\_\_\_

MANHOLE LOC \_\_\_\_\_

6" PORT LOC \_\_\_\_\_

WATERTIGHT TEST \_\_\_\_\_

SLOTTED \_\_\_\_\_

DATE ON LID \_\_\_\_\_

PRE-CONSTRUCTION:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

INSTALLATION: 8/2/2016

\_\_\_\_\_

8/16/16 BAT start-up certification received.

\_\_\_\_\_

\_\_\_\_\_

FINAL INSPECTOR K. Wolf DATE OF APPROVAL 8/16/16

Add 2 BR

7/17/01  
Layout  
PM

8/29/01  
11 AM

9/20/01  
Septic Pump Test  
11:00

# PERMIT

SEWAGE DISPOSAL SYSTEM  
HOWARD COUNTY HEALTH DEPARTMENT  
BUREAU OF ENVIRONMENTAL HEALTH

P 515345-B

A 47963

ISSUE DATE 7/17/2001

410-313-2640  
**INDEXED**

APPROVAL DATE 9/20/01

Union Paving Company, Inc IS PERMITTED TO INSTALL X ALTER

ADDRESS 5977 Sandy Ridge Road, Elkridge, MD 21075 PHONE 410-379-6463

SUBDIVISION Malcolm Prop. LOT NUMBER 8 ADDRESS 11954 Queen St., Fulton MD

PROPERTY OWNER Hamilton Reed PROPERTY OWNER'S ADDRESS 8000 Main St., Ellicott City MD 21043

SEPTIC TANK CAPACITY 1000 GALLONS \*WATER TIGHT SEPTIC TANK REQUIRED\*

PUMP CHAMBER CAPACITY 1000 GALLONS \*WATER TIGHT PUMP CHAMBER REQUIRED\*

NUMBER OF BEDROOMS 3

**BUILDING PERMIT SIGNED  
AND RETURNED**

SQUARE FEET PER BEDROOM 300 5-13-04 800148158-DECK

LINEAR FEET OF TRENCH REQUIRED 225

TRENCHES: Trenches to be 2 feet wide. Inlet 5 feet below original grade. Bottom maximum depth

9 feet below original grade. 4 feet of stone below distribution ~~box~~ pipe.

LOCATION: Starting from the intersection of the 300' and 688' lot lines, place the distribution box 130' down the 688' lot line and 10' off the same lot line. Run trenches on contour in both directions. Maintain 100' minimum from all wells to all parts of the septic system.

3/20/01 OK (45)

PLANS APPROVED Mark Rifkin DATE 3/12/01

PERMIT VOID AFTER 2 YEARS

NOTE: CONTRACTOR RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION INSPECTION FOR ALL INSTALLATIONS

NOTE: TOP OF SEPTIC TANKS ARE TO BE NO DEEPER THAN 3.0 FEET BELOW FINISH GRADE

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: CLEANOUT REQUIRED EVERY 70 FEET OF SEWER LINE AND/OR AT 90° SWEEPS IN LINES FROM HOUSE TO DRAIN FIELDS, 90° ELBOWS ARE NOT ACCEPTABLE

NOTE: ALL PARTS OF SEPTIC SYSTEMS (I.E. TANK, DISTRIBUTION BOX, DRAINFIELDS) TO BE 100 FEET FROM ANY WATER WELL UNLESS OTHERWISE SPECIFICALLY AUTHORIZED

NOTE: NO ABSORPTION TRENCH TO EXCEED 100 FEET IN LENGTH UNLESS SPECIFICALLY AUTHORIZED

NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 35/40 PVC OR ABS

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES

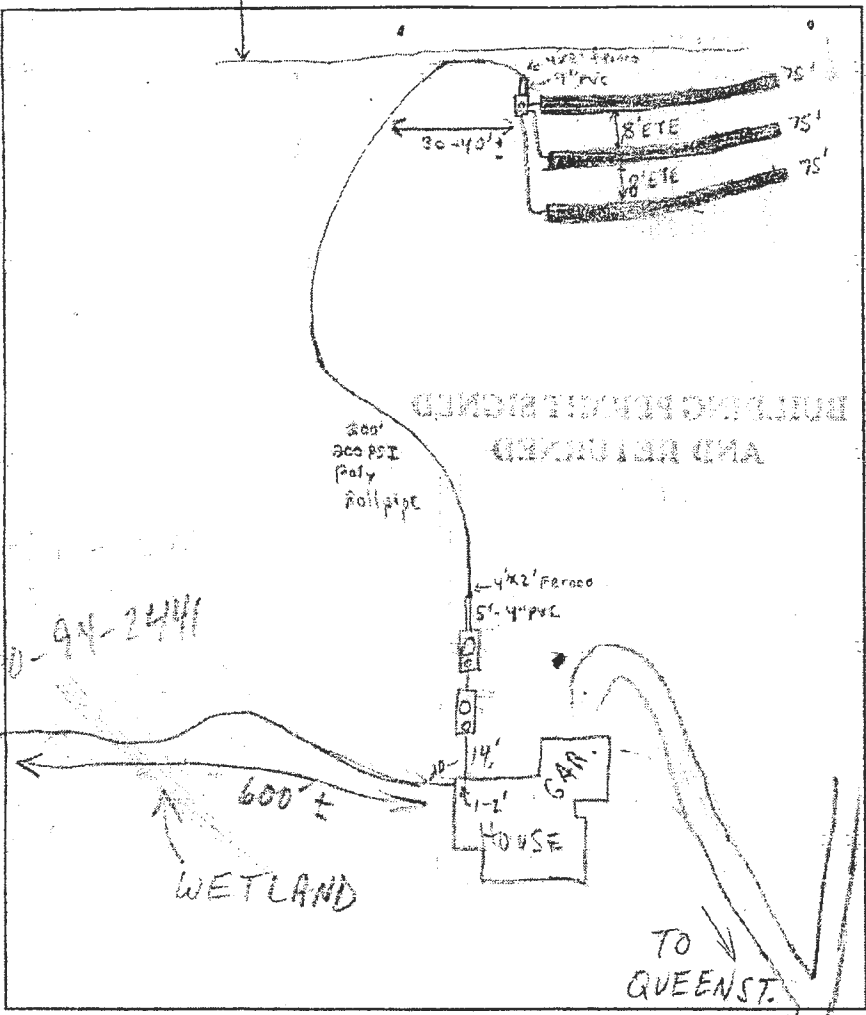
NOTE: IF PUMPED SEPTIC SYSTEM REQUIRED, (1) SEPTIC PUMP DETAIL TO BE PROVIDED BY INSTALLER PRIOR TO ISSUANCE OF SEPTIC PERMIT (2) PUMP PERFORMANCE TEST IS NECESSARY PRIOR TO HEALTH DEPARTMENT APPROVAL OF SEPTIC PERMIT

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 410-313-2640 FOR INSPECTION OF SEPTIC SYSTEM

10100570-12

Ex. Buried Power line to be disconnected new prop. location of power line

NOT TO SCALE



TRENCH DATA	
TRENCH WIDTH	2'
TRENCH INLET DEPTH	5'
TRENCH BOTTOM DEPTH	9'
DEPTH OF STONE	4'
NUMBER OF TRENCHES	3
TOTAL TRENCH LENGTH	225'
ABSORBENT AREA	ft <sup>2</sup>
DISTRIBUTION BOX LEVEL	<input checked="" type="checkbox"/>
BAFFLE IN DISTRIBUTION BOX	<input checked="" type="checkbox"/>
4" Monitoring pipe on D.BOX	

SEPTIC TANK DATA <span style="float: right;">Baffles In <input checked="" type="checkbox"/></span>	
SEPTIC TANK	1000 TS GALLONS
MANHOLE RISER	on center
6 INCH INSPECTION PORT	<input checked="" type="checkbox"/>
PUMP CHAMBER DATA	
PUMP CHAMBER GALLONS	1000 TS
MANHOLE RISER	<input checked="" type="checkbox"/> (2 FT)
ALARM	
PUMP PERFORMANCE TEST	

PRE-CONSTRUCTION INSPECTION: Looks ok - line monitor off high dist box can be seen in the wetland

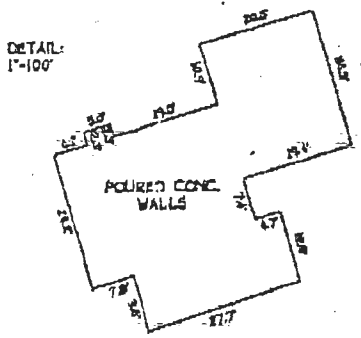
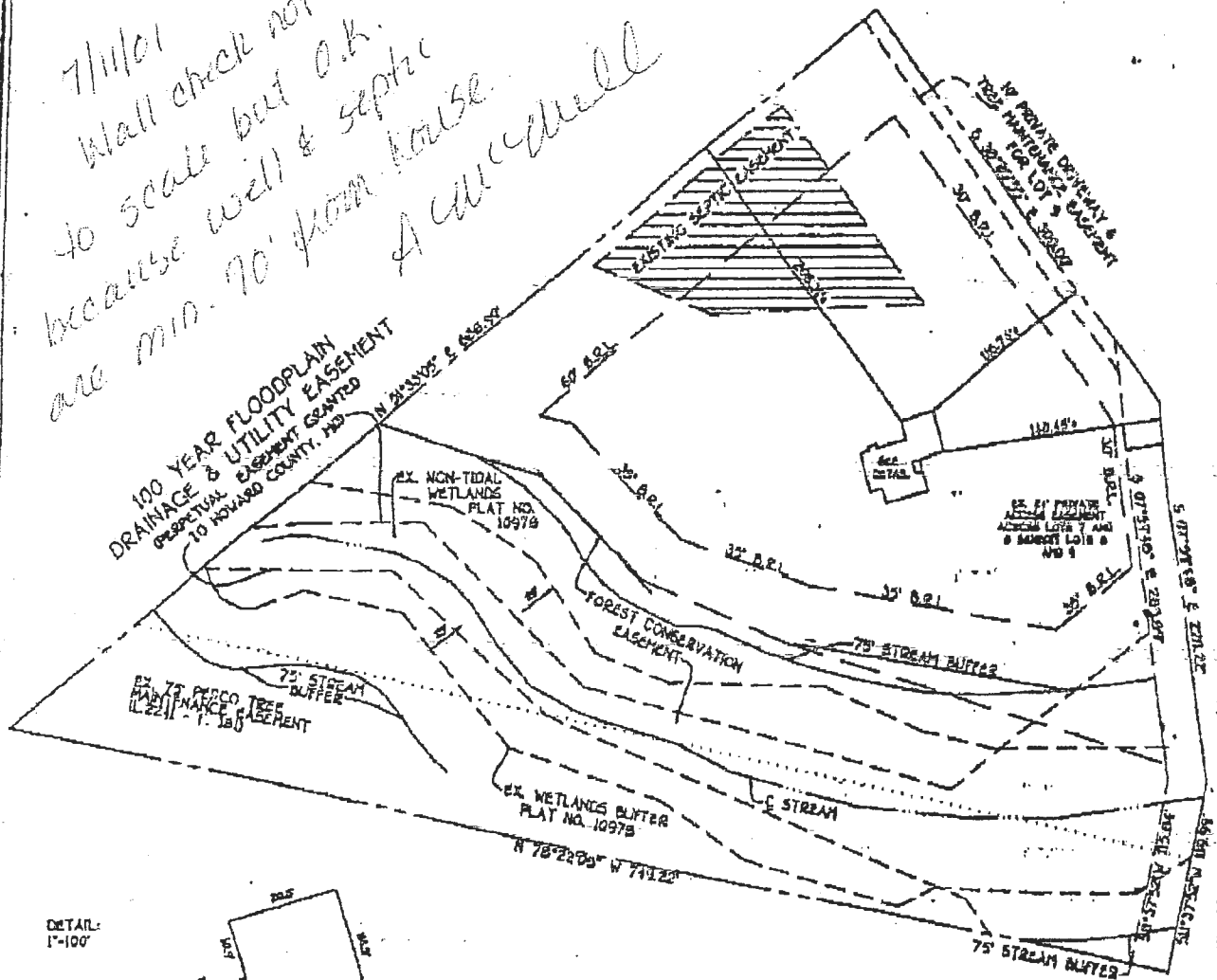
INSPECTION COMMENTS: Septic tank & Pump Chamber is installed & baffled off, then construction ok.  
Pump is set. 8/29/01 - Pump & ALARM TEST NEEDED, OK TO COVER ALL WORK (SPH)  
7/20/01 Pump and alarm working. (BA)

INSPECTOR B. Baker DATE SYSTEM APPROVED 9/20/01

### GENERAL NOTES:

- 1) THIS PLAT IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM INsofar AS IT IS REQUIRED BY A LENDER OR TITLE INSURANCE COMPANY OR ITS AGENTS IN CONNECTION WITH THE CONTEMPLATED TRANSFER, FINANCING OR RE-FINANCING. UNLESS INDICATED AS BEING A BOUNDARY SURVEY, THIS PLAT IS NOT INTENDED FOR USE IN THE ESTABLISHMENT OF PROPERTY LINES AND IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OR LOCATIONS OF FENCES, GARAGES, BUILDINGS OR OTHER EXISTING OR FUTURE IMPROVEMENTS. AS A RESULT, THIS PLAT DOES NOT PROVIDE FOR ACCURATE IDENTIFICATION OF PROPERTY LINE, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING OR RE-FINANCING.
- 2) SUBJECT PROPERTY IS SHOWN IN ZONE F ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 240044 0041 B, EFFECTIVE DATE: MARCH 13, 1977.
- 3) THE OFFSETS FROM BUILDING LINE TO PROPERTY LINE AS SHOWN ON THE PLAT HEREON ARE TO AN ACCURACY OF PLUS OR MINUS (±).
- 4) NO TITLE REPORT FURNISHED, SUBJECT TO ALL EASEMENTS AND CONDITIONS OF RECORD.

*7/11/01  
Wall check not  
to scale but o.k.  
because well & septic  
are min. 70' from house.  
A.C. McCall*



LOT B  
MALCOLM PROPERTY  
LOTS 4-12  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
PLAT REF 14071

B.R.L. = BUILDING RESTRICTION LINE  
TOP OF FOUNDATION ELEV. 119.164

# Letter of Satisfaction

## Hoot System Installation

Address of Property: 11954 Queen St.  
Fulton, MD 20759

Date of Final Inspection: 8/2/16

Installer: T+R Plumbing / mike sample present

Hoot Technician/Inspector: mike

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,

H. Michael Dargatzis  
Name of Inspector  
Mayer Bros., Inc.

PH: 410-796-1434

WBE

FX: 410-796-1438

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

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Monday, December 14, 2015 10:53 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** 11954 Queen Street, Fulton\_Septic

Hi Mr. Forney:

In order to receive a permit for 5 BRs, both tanks would have to be upgraded to a BAT unit to accommodate 5 BR's. Total trench length required is 227 FT. Existing total length trench is 225 Ft. As long as the observation ports look okay, we would not require additional trench.

I've created a file for this project in our pending records. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Thursday, June 16, 2016 8:07 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** 11954 Queen Street  
**Attachments:** WS\_Queen\_11954\_SepticPermit-2001.pdf

Mr. Forney:

Attached, you will find the septic permit for 11954 Queen Street plus the Operation and Maintenance Agreement.

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Wednesday, June 15, 2016 11:10 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** 11954 Queen Street\_BAT Plan

Mr. Forney:

I received your voicemail this morning. I just need the following items added to the plan and apply for the septic upgrade permit. Once the tank and observation ports have been installed and approved, the BP may be approved.

- A.) Add Dynamic Head Calculation -  $DH = \text{Static Head} + \text{Friction Head}$  (Plot point on pump curve)
  - 1.) Static Head = Elevation of highest component of distribution system minus the relative elevation of the pump off float switch
  - 2.) Friction Head = Head loss due to friction in pipe between pumping chamber and distribution system.
- B.) Add pump runtime (usually around 2 minutes) and dose amount to plan
- C.) Add pump make and model.
- D.) Add required BAT Site notes (8 or 9 standard notes).

Let me know if you have any questions.

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Monday, June 06, 2016 9:10 AM  
**To:** 'hrbuilder@comcast.net'  
**Cc:** Gregory Suber  
**Subject:** RE: Plot Plan / Septic-BAT Information  
**Attachments:** BAT Site Plan Requirements.pdf

Mr. Forney:

The BAT Plan submitted on June 1<sup>st</sup> has been reviewed with the following comments.

- Add total dynamic head calculation and plot point on the pump curve.
- Add runtime/dose amount
- Designate Pump on Plan
- Add Required BAT Site Plan Notes (See attachment)

You may come in to the office to add these items to the plan.

Once we have a complete BAT Plan, you will need to apply for a septic upgrade permit and have the tank put in by a certified installer. In addition, install observation-ports at the end of each trench to evaluate the drain field conditions as stated in my email dated May 5<sup>th</sup>. All of this will need to be done prior to BP approval.

Should you have any questions, please don't hesitate to ask.

Thanks,

Hank

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**From:** [hrbuilder@comcast.net](mailto:hrbuilder@comcast.net) [<mailto:hrbuilder@comcast.net>]  
**Sent:** Friday, June 03, 2016 1:11 PM  
**To:** Oswald, Hank  
**Cc:** Stephen Forney; Gregory Suber  
**Subject:** Plot Plan / Septic-BAT Information

Mr. Oswald, have you had a chance to review the drawings I dropped off on the beginning of the week, for the BAT Plan/ Septic, please if there is anything I still need to do please let me know. Thank You for all your help, Stephen Forney. 410-977-1328 cell or email [hrbuilder@comcast.net](mailto:hrbuilder@comcast.net)

DH - (ft)  
Static Head +  
↳ elevation of  
highest component  
of distr sys (-) the  
relative elevation of  
the pump off float  
switch

Friction Head (ft)

↳ head loss due to  
friction in pipe  
between pumping  
chamber & distr  
sys.

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Wednesday, May 25, 2016 8:56 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** BAT Plan\_3368 Brantly Court  
**Attachments:** BAT Site Plan Requirements.pdf

Hi Mr. Forney:

Upon review of the correspondence dropped off this week pertaining to the tank replacement located at 3368 Brantly Court, the following information is required.

- Remove Shanaberger + Lane's label on the plan
- Add your own signature block and all required BAT notes on the site plan (Please see attached document for those notes)
- Add depth of proposed tank lid and inverts on the plan (Please note tank lid cannot exceed 3 feet)
- Show pump chosen and plot point on curve
- Show dose and runtime on plan

Once we have all of the necessary information, you will need to apply for a septic upgrade permit, and have the tank put in by a certified installer. In addition, install observation ports at the end of the trenches to evaluate the drain field conditions as stated in my email on May 5, 2015 prior to building permit approval.

Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)



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

September 29, 2014

Mayer Bros., Inc. manufactures Hoot Aerobic Systems for sale and distribution in Maryland.

The question comes up as to sizing of these BAT systems. While historically Maryland sized septic tanks on the number of bedrooms, these units are treatment units and are sized on flow through them with the strength of the waste water taken into effect.

The Hoot 600 BNR unit is certified through NSF and is rated for up to 600 gallons/day. This rating assumes normal residential usage and waste strength. Hoot has a general guideline of 100 gal per bedroom per day, (More conservative than MDE's minimum of 75gal/day/bedroom) or 6 bedrooms and/or up to 8 people.

Additionally the time dosed system of a Hoot 600 BNR may be confusing and does not relate to a float system with On/Off sensors. The Hoot 600 BNR has a timed dosed system based on a standard probe that doses the field for a preset time and interval. Standard dosing is 1-2 minutes every 2 hours but can be modified by design or the engineer and set by the technician. Pump output is based on the chosen pump and Total Dynamic Head but will range from 20 to 40 gpm. The normal operating level in the pump chamber is at the low probe, 15" off the floor.

Please feel free to call with any questions.

Nancy J. Mayer  
President  
Mayer Bros., Inc.

PH: 410-796-1434  
FX: 410-796-1438

WBE [nancy@mayerprecast.com](mailto:nancy@mayerprecast.com)  
NPCA Certified Plant

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, March 24, 2016 8:24 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** Septic Specs  
**Attachments:** Septic Specs\_11954 Queen Street.pdf

Hi Mr. Forney:

Attached, please find septic specs for 11954 Queen Street.

Should you have any questions, please don't hesitate to ask.

Best Regards,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, April 21, 2016 2:07 PM  
**To:** 'Stephen Forney'  
**Subject:** RE: Waiver Queen Street / Suber Residence

I haven't seen the request. Did you drop it off?

-----Original Message-----

**From:** Stephen Forney [<mailto:hrbuilder@comcast.net>]  
**Sent:** Wednesday, April 20, 2016 3:13 PM  
**To:** Oswald, Hank  
**Cc:** Stephen F. Forney  
**Subject:** Waiver Queen Street / Suber Residence

Could you check on the Waiver Request, I submitted for Queen Street on Monday 4/18/2016 ? I don't know how long it usually takes. Thank you, Stephen.

Sent from my iPhone

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, March 24, 2016 8:24 AM  
**To:** Stephen Forney (hrbuilder@comcast.net)  
**Subject:** Septic Specs  
**Attachments:** Septic Specs\_11954 Queen Street.pdf

Hi Mr. Forney:

Attached, please find septic specs for 11954 Queen Street.

Should you have any questions, please don't hesitate to ask.

Best Regards,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
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410.313.1786 (Office)  
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# PERMIT

## SEWAGE DISPOSAL SYSTEM

HOWARD COUNTY HEALTH DEPARTMENT  
BUREAU OF ENVIRONMENTAL HEALTH

P 515345-B

A 47963

ISSUE DATE 7/17/2001

APPROVAL DATE 9/20/01

410-313-2640  
**INDEXED**

7/17/01  
Layout  
PM  
9/20/01  
Septic Pump Test  
11:00  
8/29/01  
Follow up  
11 AM

Union Paving Company, Inc IS PERMITTED TO INSTALL X ALTER

ADDRESS 5977 Sandy Ridge Road, Elkridge, MD 21075 PHONE 410-379-6463

SUBDIVISION Malcolm Prop. LOT NUMBER 8 ADDRESS 11954 Queen St., Fulton MD

PROPERTY OWNER Hamilton Feed PROPERTY OWNER'S ADDRESS 8000 Main St., Ellicott City MD 21043

SEPTIC TANK CAPACITY 1000 GALLONS \*WATER TIGHT SEPTIC TANK REQUIRED\*

PUMP CHAMBER CAPACITY 1000 GALLONS \*WATER TIGHT PUMP CHAMBER REQUIRED\*

NUMBER OF BEDROOMS 3

SQUARE FEET PER BEDROOM 300

LINEAR FEET OF TRENCH REQUIRED 225

**BUILDING PERMIT SIGNED  
AND RETURNED  
5-13-04 800148158-DECK**

TRENCHES: Trenches to be 2 feet wide. Inlet 5 feet below original grade. Bottom maximum depth

9 feet below original grade. 4 feet of stone below distribution ~~line~~ pipe.

LOCATION: Starting from the intersection of the 300' and 688' lot lines, place the distribution

box 130' down the 688' lot line and 10' off the same lot line. Run trenches on contour in both

directions. Maintain 100' minimum from all wells to all parts of the septic system.

3/20/01 OK BB

PLANS APPROVED Mark Rifkin DATE 3/12/01

PERMIT VOID AFTER 2 YEARS

NOTE: CONTRACTOR RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION INSPECTION FOR ALL INSTALLATIONS

NOTE: TOP OF SEPTIC TANKS ARE TO BE NO DEEPER THAN 3.0 FEET BELOW FINISH GRADE

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: CLEANOUT REQUIRED EVERY 70 FEET OF SEWER LINE AND/OR AT 90° SWEEPS IN LINES FROM HOUSE TO DRAIN FIELDS, 90° ELBOWS ARE NOT ACCEPTABLE

NOTE: ALL PARTS OF SEPTIC SYSTEMS (I.E. TANK, DISTRIBUTION BOX, DRAINFIELDS) TO BE 100 FEET FROM ANY WATER WELL UNLESS OTHERWISE SPECIFICALLY AUTHORIZED

NOTE: NO ABSORPTION TRENCH TO EXCEED 100 FEET IN LENGTH UNLESS SPECIFICALLY AUTHORIZED

NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 35/40 PVC OR ABS

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES

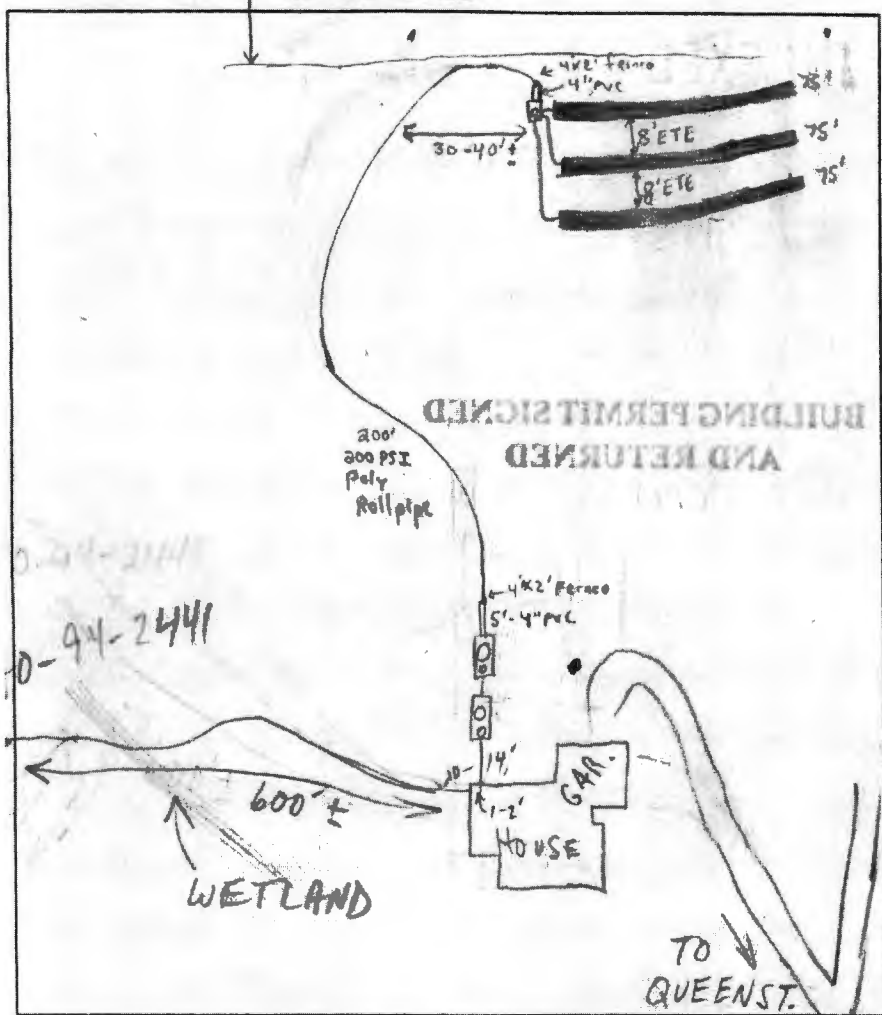
NOTE: IF PUMPED SEPTIC SYSTEM REQUIRED, (1) SEPTIC PUMP DETAIL TO BE PROVIDED BY INSTALLER PRIOR TO ISSUANCE OF SEPTIC PERMIT (2) PUMP PERFORMANCE TEST IS NECESSARY PRIOR TO HEALTH DEPARTMENT APPROVAL OF SEPTIC PERMIT

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 410-313-2640 FOR INSPECTION OF SEPTIC SYSTEM

7010570-1

Ex. Buried power line to be disconnected ——— new prop. location of power line

NOT TO SCALE



TRENCH DATA	
TRENCH WIDTH	<u>3'</u>
TRENCH INLET DEPTH	<u>5'</u>
TRENCH BOTTOM DEPTH	<u>9'</u>
DEPTH OF STONE	<u>4'</u>
NUMBER OF TRENCHES	<u>3</u>
TOTAL TRENCH LENGTH	<u>225'</u>
ABSORBENT AREA	<u>FT<sup>2</sup></u>
DISTRIBUTION BOX LEVEL	<input checked="" type="checkbox"/>
BAFFLE IN DISTRIBUTION BOX	<input checked="" type="checkbox"/>
4" Monitoring pipe on DBOX	

SEPTIC TANK DATA	
SEPTIC TANK	<u>1000 TS</u> GALLONS
MANHOLE RISER	<u>on center</u>
6 INCH INSPECTION PORT	<input checked="" type="checkbox"/>
Baffles In <input checked="" type="checkbox"/>	
PUMP CHAMBER DATA	
PUMP CHAMBER GALLONS	<u>1000 TS</u>
MANHOLE RISER	<input checked="" type="checkbox"/> (2 FT)
ALARM	_____
PUMP PERFORMANCE TEST	_____

PRE-CONSTRUCTION INSPECTION: Layout ok - line excavation high but not any way to see it

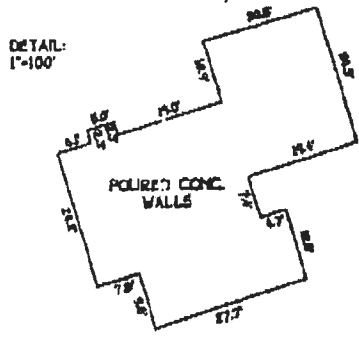
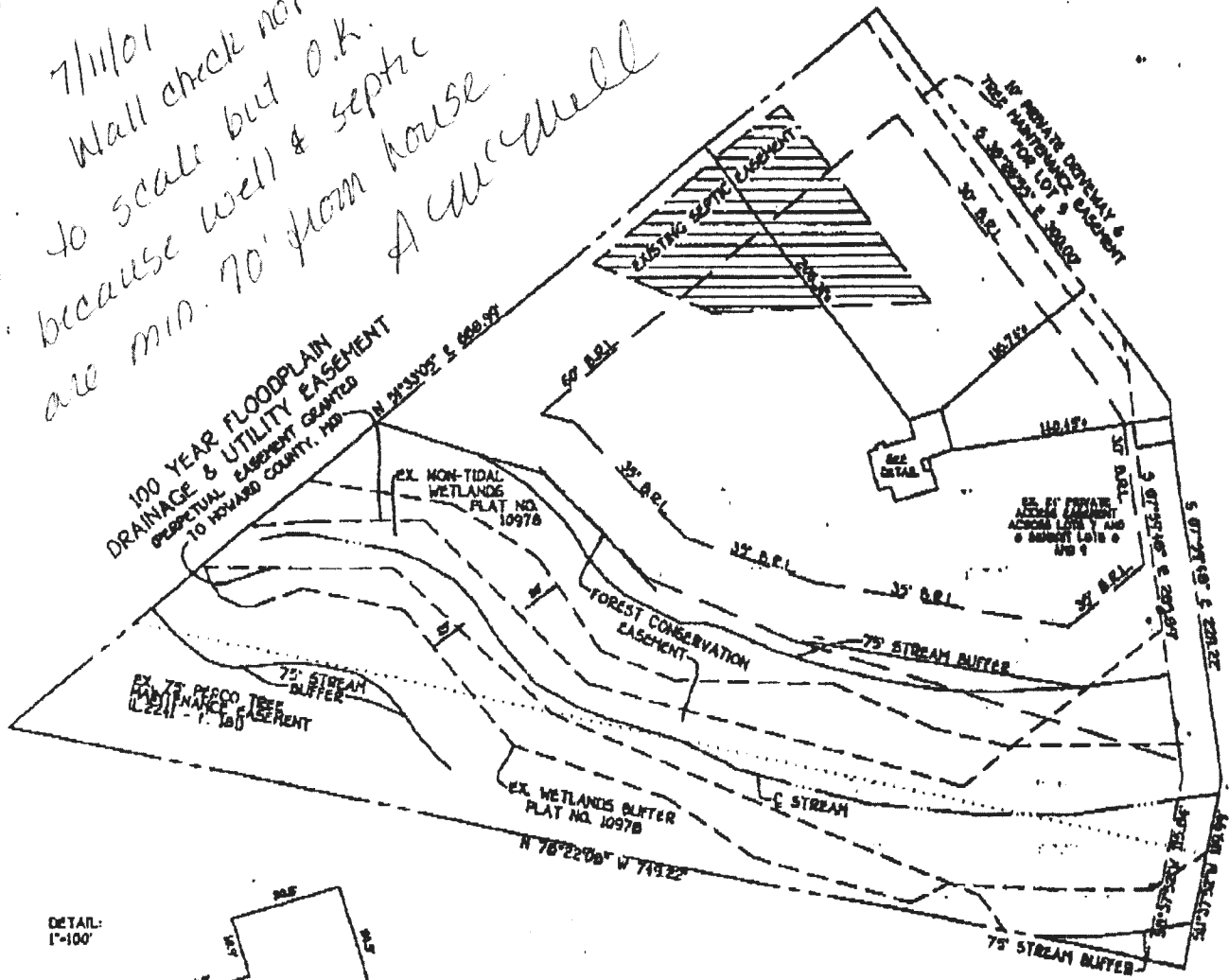
INSPECTION COMMENTS: Septic Tank & Pump Chamber is installed & capped off, then excavation ok  
Pump is set, 8/29/01 - Pump & ALARM TEST NEEDED, OK TO COVER ALL WORK - (SR)  
9/20/01 Pump and alarm working. (BB)

INSPECTOR B. Baker DATE SYSTEM APPROVED 9/20/01

### GENERAL NOTES:

- 1) THIS PLAT IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM INsofar AS IT IS REQUIRED BY A LENDER OR TITLE INSURANCE COMPANY OR ITS AGENTS IN CONNECTION WITH THE CONTEMPLATED TRANSFER, FINANCING OR RE-FINANCING. UNLESS INDICATED AS BEING A BOUNDARY SURVEY, THIS PLAT IS NOT INTENDED FOR USE IN THE ESTABLISHMENT OF PROPERTY LINES AND IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OR LOCATIONS OF FENCES, GARAGES, BUILDINGS OR OTHER EXISTING OR FUTURE IMPROVEMENTS. AS A RESULT, THIS PLAT DOES NOT PROVIDE FOR ACCURATE IDENTIFICATION OF PROPERTY LINE, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING OR RE-FINANCING.
- 2) SUBJECT PROPERTY IS SHOWN IN ZONE C ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 240044 00A1 B, EFFECTIVE DATE: MARCH 15, 1977.
- 3) THE OFFSETS FROM BUILDING LINE TO PROPERTY LINE AS SHOWN ON THE PLAT HEREON ARE TO AN ACCURACY OF PLUS OR MINUS (±).
- 4) NO TITLE REPORT FURNISHED, SUBJECT TO ALL EASEMENTS AND CONDITIONS OF RECORD.

*7/11/01  
 Wall check not  
 to scale but o.k.  
 because well & septic  
 are min. 70' from house.  
 A. McClellan*



LOT B  
 MALCOLM PROPERTY  
 LOTS 4-12  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 PLAT REF 14071

B.R.L. = BUILDING RESTRICTION LINE  
 TOP OF FOUNDATION ELEV. 119.16'

11954 Queen St.  
Suber  
Clerk of the District Court for  
Howard County  
Land Records/Licensing Prospect

The Thomas Dorson Building  
9250 Bendis  
Columbia, MD  
410-313-5000

LR - Agreement Recording  
1x 20.00 20.00  
Grantor/Grantee Name: Suber  
Reference/Control #: 213

LR - Assessment Surcharge  
1x 40.00 40.00

SubTotal: 60.00  
Total: 60.00

CRD-Credit 60.00  
Credit Card Confirmation: 173282

06/24/2016 12:40 CC13-SB  
#6403029 /496/109  
Thank you for visiting us today~

CIRCUIT COURT HOUSE  
8360 COURT AVE  
ELLICOTT CITY, MD 21043

06/24/2016

12:38:43

CREDIT CARD

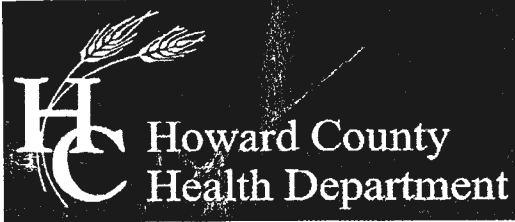
VISA SALE

CARD # XXXXXXXXXXXX9399  
Chip Card: VISA DEBIT  
Chip Card AID: A000000031010  
ATC: 0016  
TC: FC2BD937CA478A51  
INVOICE 0013  
SEQ #: 0013  
Batch #: 000236  
CLERK 0004  
Approval Code: 173282  
Entry Method: Chip Read  
Mode: Issuer

SALE AMOUNT \$60.00

NO REFUND WITHOUT COURT ORDER

CUSTOMER COPY



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

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 23<sup>rd</sup> day of JUNE 2016, among Gregory  
AND SANDRA SUBER, 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  
11954 DUSEN STREET, in the 5th Election District of Howard  
County, Maryland, and the deed and subdivision plat of the property is recorded among the Land  
Records of Howard County, Maryland, Tax Map # 41, Block #     , Parcel # 67, Deed  
Reference # 14671 and Tax Account #      ("the Property").

WHEREAS, The Property 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  
HOCT 600 GPD BNR SYSTEM.

NOW, THEREFORE, the parties hereto agree as follows:

- A. Owner hereby grants to the County the right to enter upon the Property at any reasonable time with prior notice 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.
- 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 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 Property that the system shall require maintenance or other attention. Upon taking title to the Property, 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.

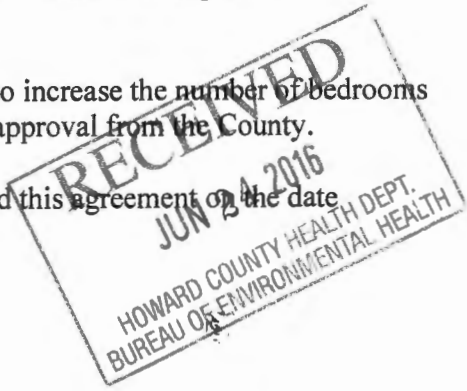
G. This agreement may be voided at any time at the discretion of the County.

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 Nijer* 6/23/2016  
Howard County Health Department

*Gregory F. Suber* 6/23/2016  
Owner #1 Signature                      Date

GREGORY F. SUBER  
Owner #1 Print Name

*Sandra Suber* 6-23-2016  
Owner#2 Signature                      Date

Sandra Suber  
Owner #2 Print Name

\_\_\_\_\_  
Buyer #1 Signature                      Date

\_\_\_\_\_  
Buyer #1 Print Name

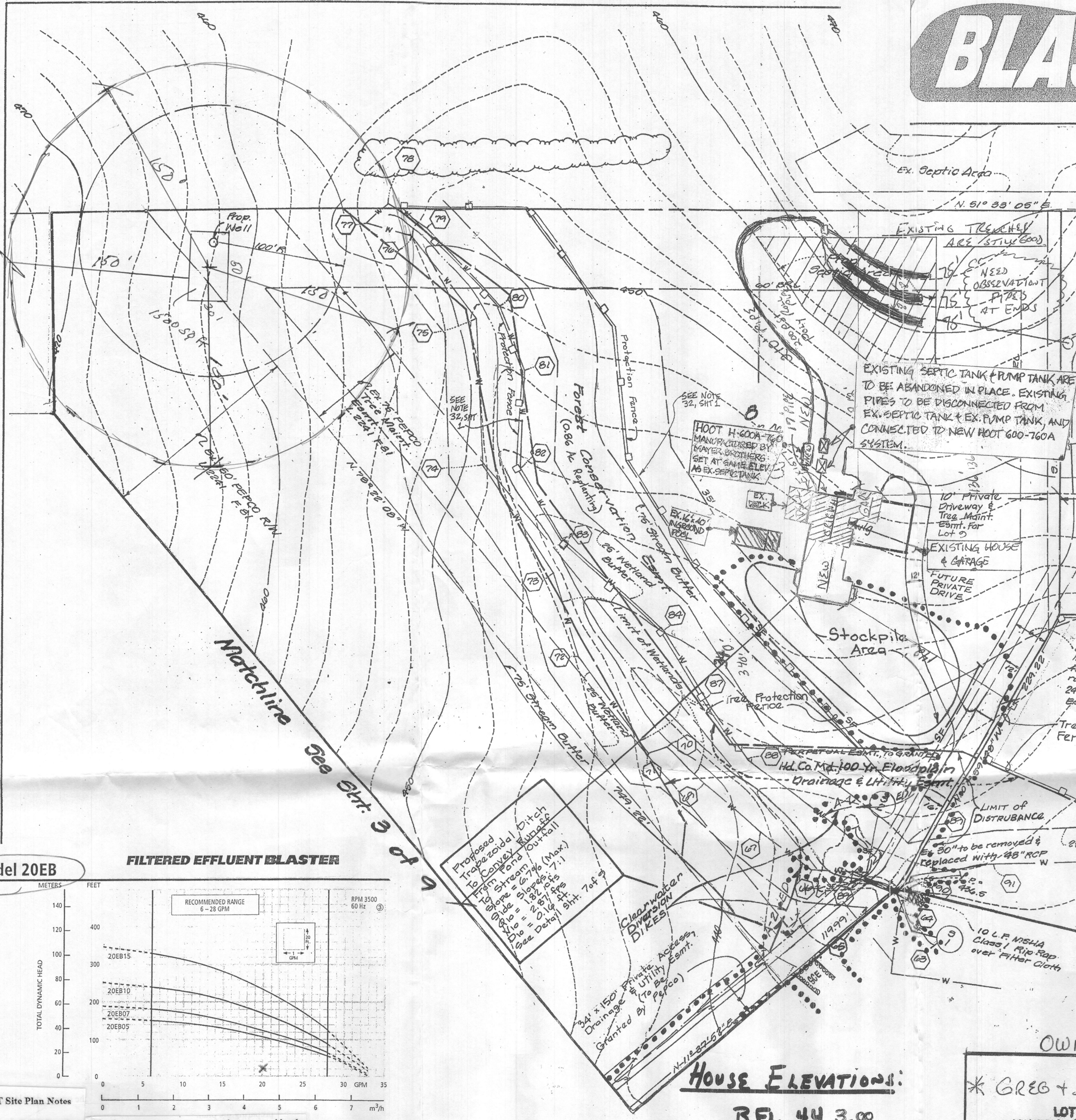
\_\_\_\_\_  
Buyer #2 Signature                      Date

\_\_\_\_\_  
Buyer #2 Print Name

# BLASTER

## Filtered Effluent Pump

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



**SPECIFICATIONS**

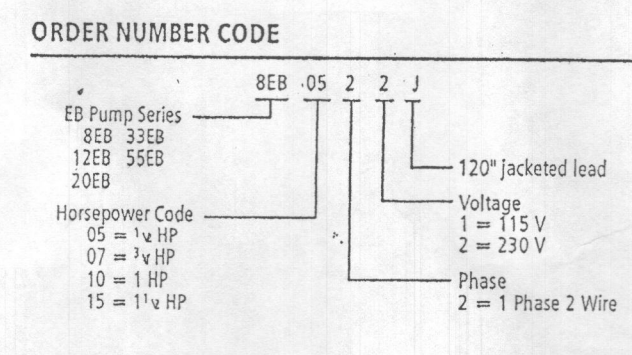
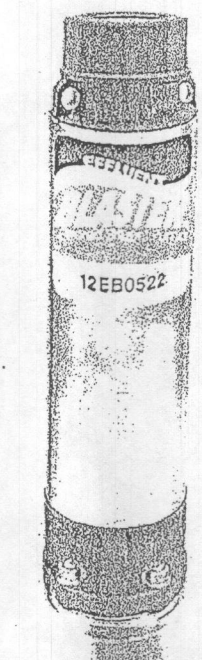
Model	Flow Range GPM	Horsepower Range	Best Eff. GPM	Discharge Connection	Maximum Solids Size	Rotation
8EB	1.5-10	1/2-1	7	1 1/4"	1/4" dia.	CCW
12EB	3-16	1/2-1 1/2	10	1 1/4"	1/4" dia.	CCW
20EB	6-28	1/2-1 1/2	18	1 1/4"	1/4" dia.	CCW
33EB	10-50	1/2-1 1/2	33	1 1/4"	1/4" dia.	CCW
55EB	20-80	1/2-1 1/2	55	1 1/4"	1/4" dia.	CCW

Rotation is counterclockwise when observed from pump discharge end.

**"EB" SERIES MATERIALS OF CONSTRUCTION**

Part Name	Material
Discharge Head	Glass Filled Eng. Composite
Bearing Spider - Upper	Noryl®/GFN2
Bearing	Proprietary Eng. Polymer
Shaft Retaining Ring	AlSi 301 SS
Diffuser	Noryl®/GFN2
Impeller	Noryl®/GFN2
Bowl	AlSi 304 SS
Shim	AlSi 304 SS
Inlet Strainer	Glass Filled Eng. Composite
Screws - Cable Guard	AlSi 304 SS
Motor Adapter	Glass Filled Eng. Composite
Casing	AlSi 304 SS
Shaft	AlSi 304 SS
Coupling	AlSi 304 SS, Powder Metal
Cable Guard	AlSi 304 SS

Lexan® and Noryl® are trademarks of GE Plastics.  
 Delrin® is a trademark of Dupont.



- FEATURES**
- Designed for pumping filtered effluent from processed septic systems only.
  - Field Serviceable: Pump can be rebuilt in the field to like new condition with common tools and readily available spare parts.
  - NOTE: The pump has left hand casing threads.
  - Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.
  - Metal Parts are Stainless Steel: AISI types 301 and 304 are corrosion resistant, non-toxic and non-leaching.
  - Non-Metallic Parts: Impellers and diffusers are constructed of glass filled polycarbonate or Noryl, engineered composites. Both materials are corrosion and effluent resistant.
  - Discharge Head: Engineered composite material for superior strength and corrosion resistance. Loops for safety line molded into head.
  - Motor Adapter: Engineered composite material with high rigidity to provide accurate alignment of liquid end to motor. Generous space for removal of motor mounting nuts with regular open-end wrench.
  - Bowls: Stainless steel for strength and abrasive resistance.
  - 120° 3 wire jacketed motor lead standard.
  - Warranted for one year against failure due to workmanship and materials. Solids plugged pumps are not covered. Pump used for liquids other than filtered effluent are not covered.
  - Stainless Steel Casing: Polish stainless steel is strong, attractive and corrosion resistant.
  - Hex Shaft Design: Six sided shaft for positive impeller drive.
  - Inlet Strainer: Molded suction strainer built into motor adapter.
  - Engineered Polymer Bearing: The proprietary, engineered polymer bearing material is extremely strong and highly resistant to abrasion and wear. The enclosed design upper bearing is mounted a durable Noryl bearing spider for excellent abrasion resistance.
  - NEMA Motor:
  - Corrosion resistant stainless steel construction.
  - Built-in surge arrestor is provided on single phase motors.
  - Stainless steel splined shaft.
  - Hematically sealed windings.
  - Replaceable motor lead assembly.
  - UL 778 recognized.
  - NEMA mounting dimensions.
  - Agency Listings: All complete pump/motor assemblies are UL778 and CSA listed. All 4" Motors are UL778 recognized.
  - All models have 1/2" diameter bypass in discharge head to ensure venting on start up.
  - See curves and note.

Ernst Environmental Services, Inc.  
 1907 Midland Road  
 Baltimore, MD 21222  
 (410)288-5081

Approved Septic System Plan  
 Howard County Health Department  
 Hank Oswald  
 Signature Date

Gregory & Sondra Suber  
 11954 Queen Street  
 Fulton, MD 20795

**PUMP SIZING FLOW**  
 FLOW = 20 GPM

**DESIGN HEAD**  
 DESIGN HEAD = STATIC + FRICTION + DISTAL HEADS  
 STATIC HEAD = DISTRIBUTION BOX INLET - PUMP INTAKE = 462 FT - 442.5 FT = 19.5 FT

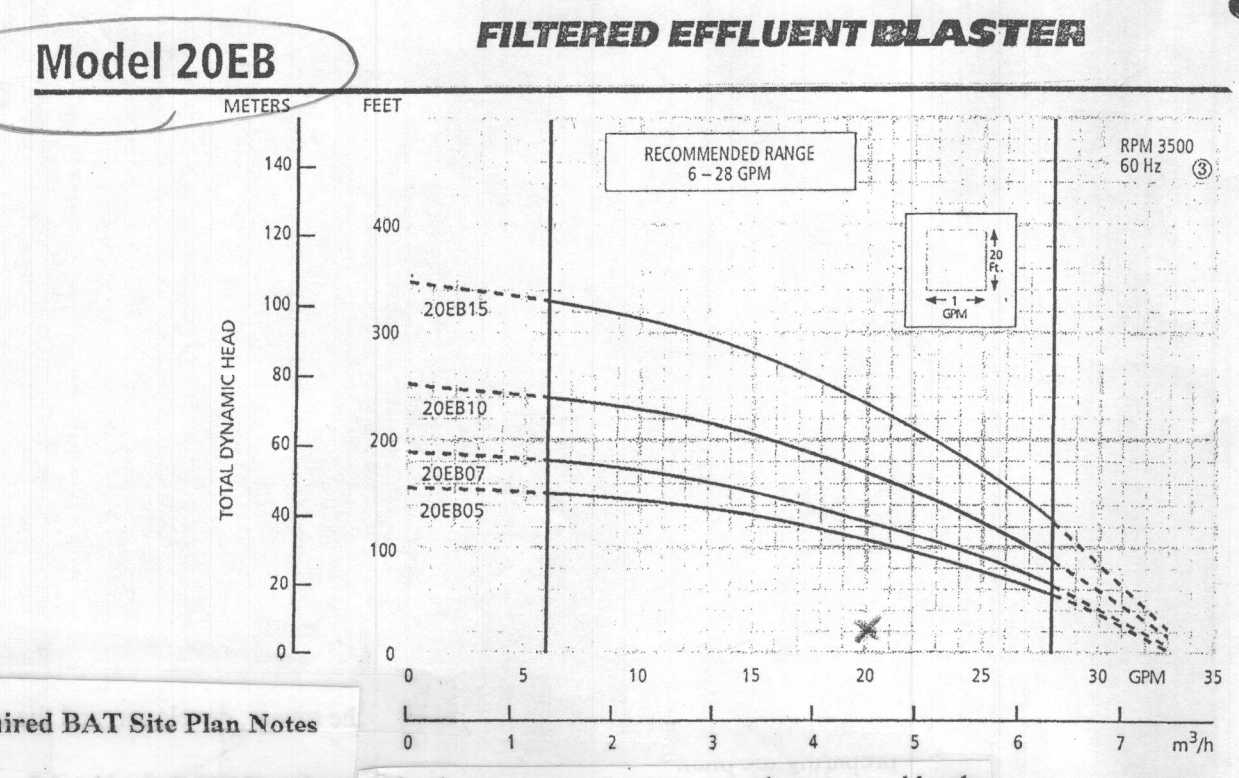
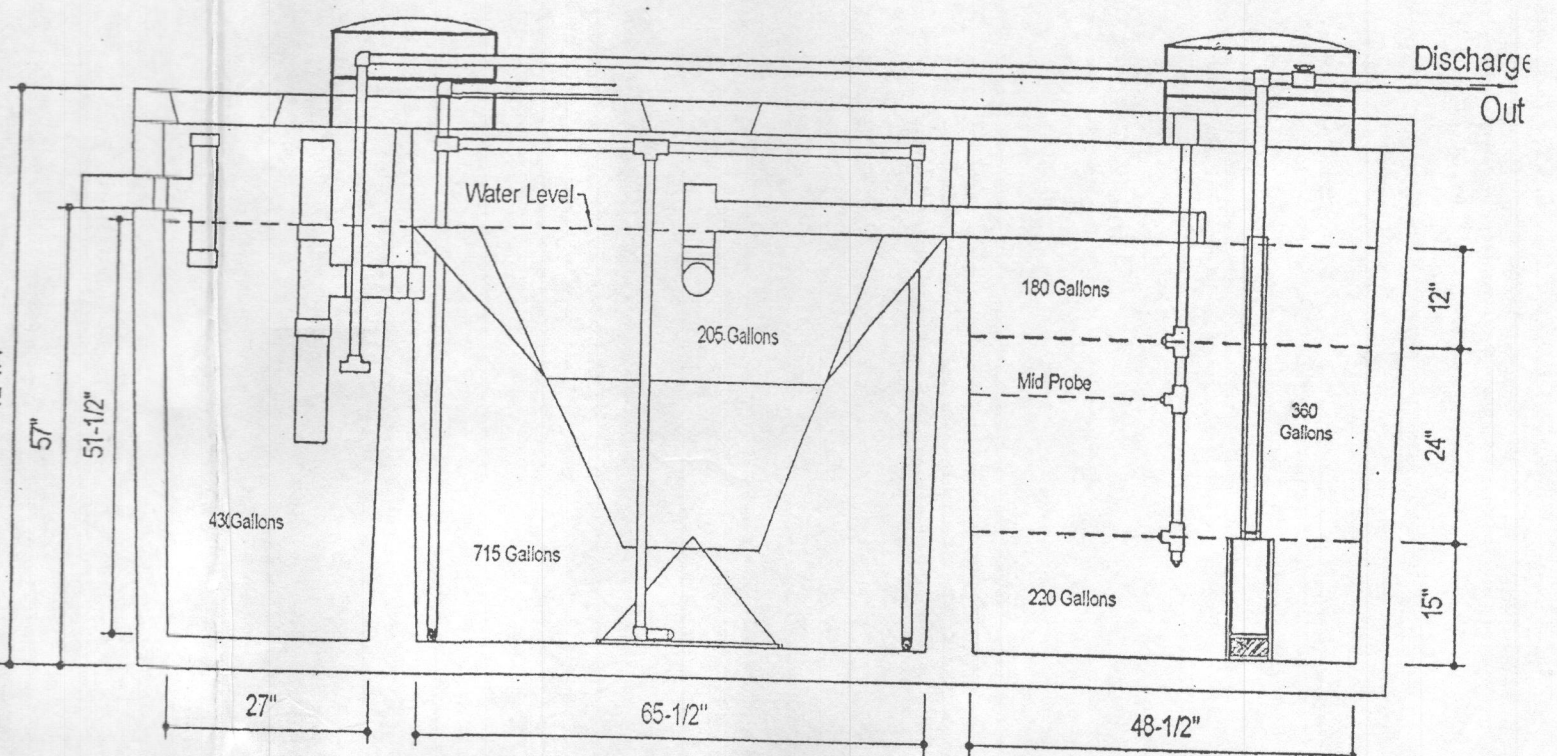
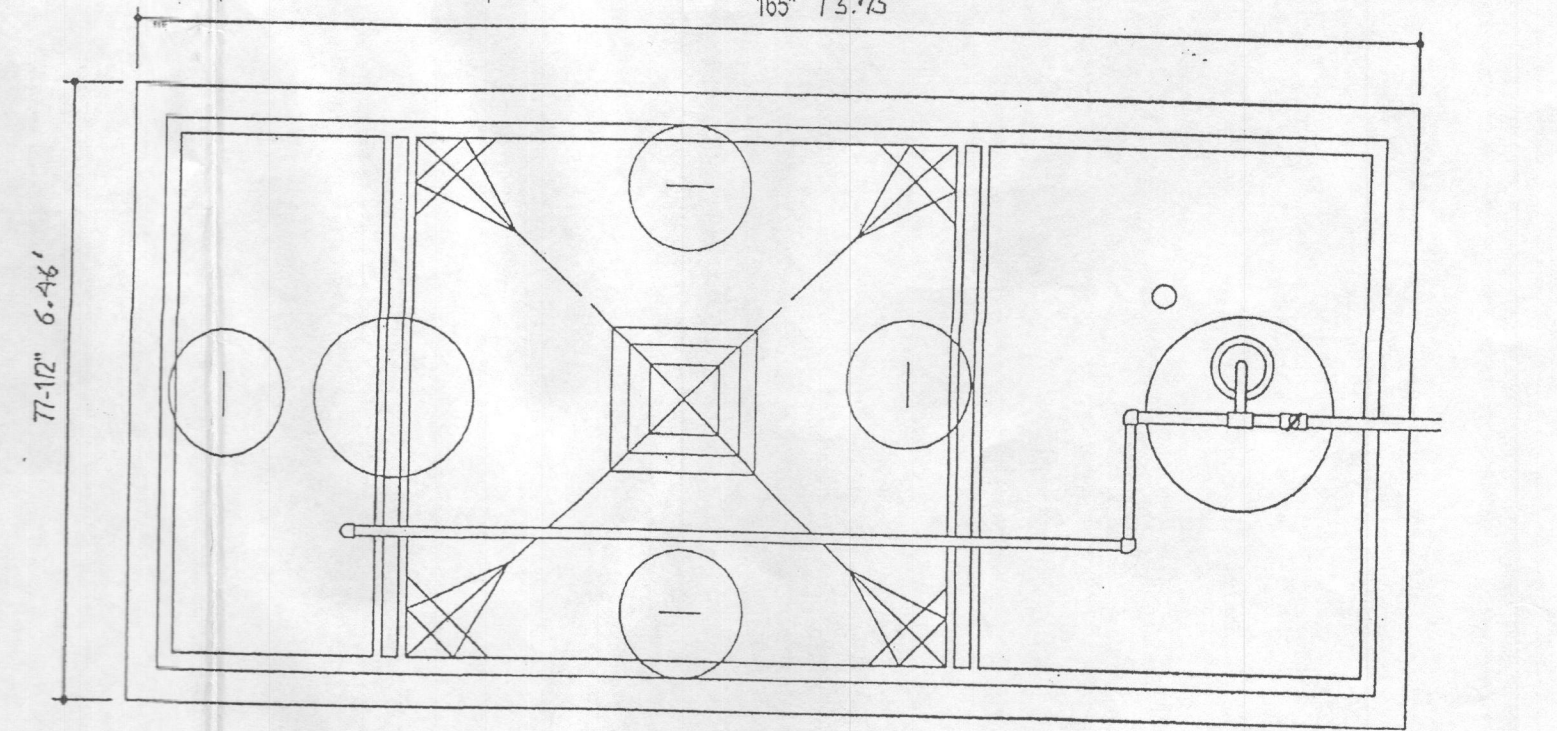
**FRICTION HEAD (PIPE)**  
 310 FT (2 IN PIPE FORCE MAIN)  
 2 FT (1 - UNION)  
 4 FT (2 - COUPLING)  
 2 FT (1 - BALL VALVE)  
 8 FT (EQUIVALENT LENGTH)

**PIPE LENGTH = REAL LENGTH + EQUIV LENGTH**  
 = 310 FT + 8 FT = 318 FT

2 IN PIPE HAS FRICTION LOSS OF (.74 FT/100 FT) @ 20 GPM  
 FRICTION HEAD = (0.74 FT/100 FT) x 318 FT = 2.4 FT

**DISTAL HEAD = 3 FT**  
 DESIGN HEAD = 19.5 FT + 2.4 FT + 3 FT = 24.9 FT - 25 FT

**DOSE DESIGN**  
 ELECT TO USE TIME DOSING  
 HOOT CONTROLLER TO BE SET FOR TWELVE (12) DOSES/DAY  
 DESIGN FLOW = 750 GAL / DAY  
 750 GPD / 12 DOSES = 62.5 GAL / DOSE  
 FLOW = 20 GPM  
 DOSE DURATION (MIN) = 62.5 GAL / DOSE / 20 GPM = 3.125 MIN  
 USE THREE (3) MINUTES / DOSE  
 PUMP MUST DELIVER 20 GALLONS PER MINUTE AT TOTAL HEAD OF 25 FT  
 RECOMMEND Goulds Model 20EB05 BLASTER  
 THIS PUMP SUPPLIED AS STANDARD TO HOOT BNR 600 TREATMENT SYSTEM (SEE ATTACHED SPECIFICATION SHEET)

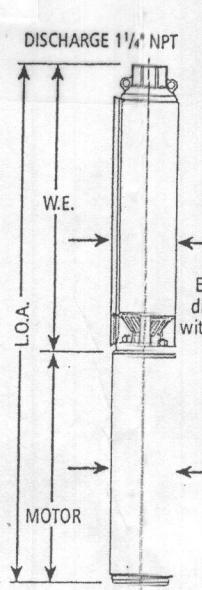


- Required BAT Site Plan Notes**
- Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised site plan may be required.
  - The maximum depth of the BAT per the manufacturer's specification is 3 feet.
  - The blower may not be located more than 50 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.

**DIMENSIONS AND WEIGHTS**

Order Number	HP	Phase	Stages	W.E.①	Motor	Length (inches)	L.O.A.②	W.E.	Motor	Weight (lbs.)	Total
20EB05221, 20EB05211	1/2	1	5	9.6	9.5	19.1	3	18	21	18	21
20EB07221	3/4	1	6	11.3	10.7	22.0	4	20	24	20	24
20EB10221	1	1	8	13.0	11.8	24.8	5	23	28	23	28
20EB15221	1 1/2	1	11	15.5	15.1	30.6	6	31	37	31	37
33EB05221, 33EB05211	3/4	1	3	11.0	9.5	20.5	4	18	22	18	22
33EB07221	1	1	4	12.2	10.7	22.9	5	20	25	20	25
33EB10221	1	1	6	14.7	11.8	26.4	6	23	29	23	29
33EB15221	1 1/2	1	8	17.1	15.1	32.2	7	31	38	31	38

① W.E. = water end of pump without motor.  
 ② L.O.A. = length of assembly - complete pump - water end and motor.  
 Performance curves are based on running pumps without W discharge head weephole. Actual performance will be slightly lower unless weep hole is plugged.



**HOUSE ELEVATIONS:**  
 BFl. 44 3.00  
 1st Fl. 45 3.50  
 2nd Fl. 46 3.20

**SCALE: 1" = 50'**

**TANK INFO**  
 DEPTH OF TANK ELEVATION: 28" 445.5"  
 INLET ELEVATION: 43" 441.10"  
 OUTLET ELEVATION: 22" 443.3"

**Building Permit # B 16000812**

**DRAWING PREPARED BY: STEPHEN F. FORNEY**  
 ADDRESS OF PREPARING: 3368 BRANTLY CT.  
 GREENWOOD, MD 21798  
 PHONE: CELL 410-977-1328  
 E-MAIL: hrbuilder@comcast.net

**OWNERS**  
 \* GREG & SONDRASUBER  
 LOT 8  
 MALCOLM PROPERTY  
 LOTS 4-12  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 PLAT REF 14071  
 11954 QUEEN STREET  
 FULTON, MD. 20795  
 LOT 8

**DESIGN DATA & GENERAL NOTES**

- Concrete strength f'c = 4,000 ps.i. @ 28 days. Density = 150 pcf.
- Concrete - Portland Type III per ASTM C 150-92.
- Admixtures & plasticizers per ASTM C 209-95 & C 494-92.
- Reinforcing per ASTM A195, Min. 1-1/2" cover.

**Mayer Brothers, Inc.**  
 6264 Race Road  
 Elkridge, Maryland 21075  
 Tel: 410.796.1434  
 Fax: 410.796.1433  
 www.mayerbrosprecast.com

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

**MBI**

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



# BLASTER

## Filtered Effluent Pump

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

Ernst Environmental Services, Inc.  
1907 Midland Road  
Baltimore, MD 21222  
(410)288-5081

Approved Septic System Plan  
Howard County Health Department  
Wank Oswald  
Signature Date

Gregory & Sondra Suber  
11954 Queen Street  
Fulton, MD 20795

### PUMP SIZING FLOW

FLOW = 20 GPM

### DESIGN HEAD

DESIGN HEAD = STATIC + FRICTION + DISTAL HEADS  
STATIC HEAD = DISTRIBUTION BOX INLET - PUMP INTAKE  
= 462 FT - 442.5 FT = 19.5 FT

### FRICTION HEAD (PIPE)

310 FT (2 IN PIPE FORCE MAIN)  
2 FT (1 - UNION)  
4 FT (2 - COUPLING)  
2 FT (1 - BALL VALVE)  
8 FT (EQUIVALENT LENGTH)

PIPE LENGTH = REAL LENGTH + EQUIV LENGTH  
= 310 FT + 8 FT  
= 318 FT

2 IN PIPE HAS FRICTION LOSS OF (.74 FT/100 FT) @ 20 GPM  
FRICTION HEAD = (0.74 FT/100 FT) x 318 FT = 2.4 FT

DISTAL HEAD = 3 FT  
DESIGN HEAD = 19.5 FT + 2.4 FT + 3 FT  
= 24.9 FT - 25 FT

### DOSE DESIGN

ELECT TO USE TIME DOSING  
HOOT CONTROLLER TO BE SET FOR TWELVE (12) DOSES/DAY  
DESIGN FLOW = 750 GAL / DAY  
750 GPD / 12 DOSES = 62.5 GAL / DOSE  
FLOW = 20 GPM  
DOSE DURATION (MIN) = 62.5 GAL / DOSE / 20 GPM  
= 3.125 MIN  
USE THREE (3) MINUTES / DOSE  
PUMP MUST DELIVER 20 GALLONS PER MINUTE AT TOTAL HEAD OF 25 FT  
RECOMMEND GOULDS MODEL 20EB05 BLASTER  
THIS PUMP SUPPLIED AS STANDARD TO HOOT BNR 600 TREATMENT SYSTEM (SEE ATTACHED SPECIFICATION SHEET)

### SPECIFICATIONS

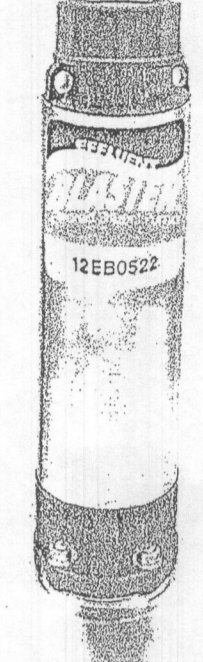
Model	Flow Range GPM	Horsepower Range	Best Eff. GPM	Best Eff. 1/4" dia. CCW	Maximum Solids Size	Rotation
8EB	1.5 - 10	1/2 - 1	7	1 1/4"	1/2" dia.	CCW
12EB	3 - 16	1/2 - 1 1/2	10	1 1/4"	1/2" dia.	CCW
20EB	6 - 28	1/2 - 1 1/2	18	1 1/4"	1/2" dia.	CCW
33EB	10 - 50	1/2 - 1 1/2	33	1 1/4"	1/2" dia.	CCW
55EB	20 - 80	1/2 - 1 1/2	55	1 1/4"	1/2" dia.	CCW

Rotation is counterclockwise when observed from pump discharge end.

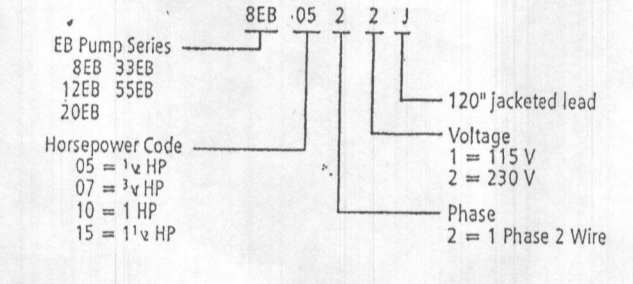
### "EB" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	Glass Filled Eng. Composite
Bearing Spider - Upper	Noryl®/GFN2
Bearing	Proprietary Eng. Polymer
Shaft Retaining Ring	AISI 304 SS
Diffuser	Lexan®
Impeller	Noryl®/GFN2
Bowl	AISI 304 SS
Shim	AISI 304 SS
Inlet Strainer	Glass Filled Eng. Composite
Screws - Cable Guard	AISI 304 SS
Motor Adapter	Glass Filled Eng. Composite
Casing	AISI 304 SS
Shaft	AISI 304 SS
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS

Lexan® and Noryl® are trademarks of GE Plastics.  
Defin® is a trademark of Dupont.



### ORDER NUMBER CODE



### FEATURES

- Designed for pumping filtered effluent from processed septic systems only.
- Field Serviceable: Pump can be rebuilt in the field to like new condition with common tools and readily available spare parts. NOTE: The pump has left hand casing threads.
- Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.
- Metal Parts are Stainless Steel: AISI types 301 and 304 are corrosion resistant, non-toxic and non-leaching.
- Non-Metallic Parts: Impellers and diffusers are constructed of glass filled polycarbonate or Noryl, engineered composites. Both materials are corrosion and effluent resistant.
- Discharge Head: Engineered composite material for superior strength and corrosion resistance. Loops for safety line molded into head.
- Motor Adapter: Engineered composite material with high rigidity to provide accurate alignment of liquid end to motor. Generous space for removal of motor mounting nuts with regular open-end wrench.
- Bowls: Stainless steel for strength and abrasive resistance.
- 120" 3 wire jacketed motor lead standard.

- Warranted for one year against failure due to workmanship and materials. Solids plugged pumps are not covered. Pump used for liquids other than filtered effluent are not covered.
- Stainless Steel Casing: Polished stainless steel is strong, attractive and corrosion resistant.
- Hex Shaft Design: Six sided shaft for positive impeller drive.
- Inlet Strainer: Molded suction strainer built into motor adapter.
- Engineered Polymer Bearing: The proprietary, engineered polymer bearing material is extremely strong and highly resistant to abrasion and wear. The enclosed design upper bearing is mounted on a durable Noryl bearing spider for excellent abrasion resistance.
- NEMA Motor:
  - Corrosion resistant stainless steel construction.
  - Built-in surge arrestor is provided on single phase motors.
  - Stainless steel splined shaft.
  - Hermetically sealed windings.
  - Replaceable motor lead assembly.
  - UL 778 recognized.
  - NEMA mounting dimensions.
- Agency Listings: All complete pump/motor assemblies are UL778 and CSA listed. All 4" Motors are UL778 recognized.
- All models have 1/4" diameter bypass in discharge head to ensure venting on start-up.
- See curves and note.

### AGENCY LISTINGS

- Underwriters Laboratories File no. E174426
- Canadian Standards Association File no. 38549

### DESIGN DATA & GENERAL NOTES

- Concrete strength Fc=4,000 p.s.i. @ 28 days. Density = 150 pcf.
- Concrete - Portland Type III per ASTM C 150-82.
- Admixtures & elastomers per ASTM C 260-86 & C 494-92.
- Reinforcing per ASTM A108. Min. 1/4" cover.

Mayer Brothers, Inc.  
6264 Race Road  
Elkridge, Maryland 21075  
Tel. 410.796.1434  
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