



Howard County  
Health Department

Bureau of Environmental Health  
7178 Gateway Drive Columbia, MD 21046  
(410) 313-2640 Fax (410) 313-2648  
TDD (410) 313-2323 Toll Free 1-866-313-6300  
website: www.hchealth.org

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

RECEIPT DATE: 7/24/14

**ONSITE SEWAGE DISPOSAL SYSTEM**

P 554553

INSTALLATION

APPROVAL DATE: 7/24/14 A.D.

**PERMIT  
CONSTRUCTION**

A \_\_\_\_\_

PROPERTY ADDRESS: 2914 Winterhazel Court

SUBDIVISION: Belle Haven Estates

LOT: 30

TAX ID: \_\_\_\_\_

CONTRACTOR: Ben Lewis Plumbing

EMAIL: \_\_\_\_\_

CONTRACTOR ADDRESS: 23407 Frederick Road, Clarksburg, MD 20871

PHONE: 301-674-3324

PROPERTY OWNER: K Hovnanian Homes

EMAIL: \_\_\_\_\_

OWNER ADDRESS: 1802 Brightseat Road, Landover, MD 20785

PHONE: 301-683-6268

BAT UNIT MODEL: HOOT ABNR 600

BAT UNIT SIZE: 600 GPD

PUMP CHAMBER CAPACITY (GALLONS): 750

PUMP SIZE: \_\_\_\_\_

NUMBER OF BEDROOMS: 4

HOUSE SQ. FT. \_\_\_\_\_

APPLICATION RATE: 1.2

DISTRIBUTION SYSTEM: GRAVITY FED ☒

LOW PRESSURE DOSED ☐

TRENCHES:	LINEAR FEET REQUIRED: <u>SEE BAT PLAN</u> <u>120</u>	INLET DEPTH: <u>SEE BAT PLAN</u> <u>3</u>
	TRENCH WIDTH: <u>SEE BAT PLAN</u> <u>2'</u>	MAXIMUM BOTTOM DEPTH: <u>SEE BAT PLAN</u> <u>7'</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>SEE BAT PLAN</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>SEE BAT PLAN</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:	Set BAT unit and pump tank per plan. Install 70' length trenches on contour. <u>2x60'</u> <u>~60 feet</u>	

ISSUED BY: Andrew Geisert

ISSUE DATE: 7-30-14

EXPIRATION DATE: 7-30-15

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

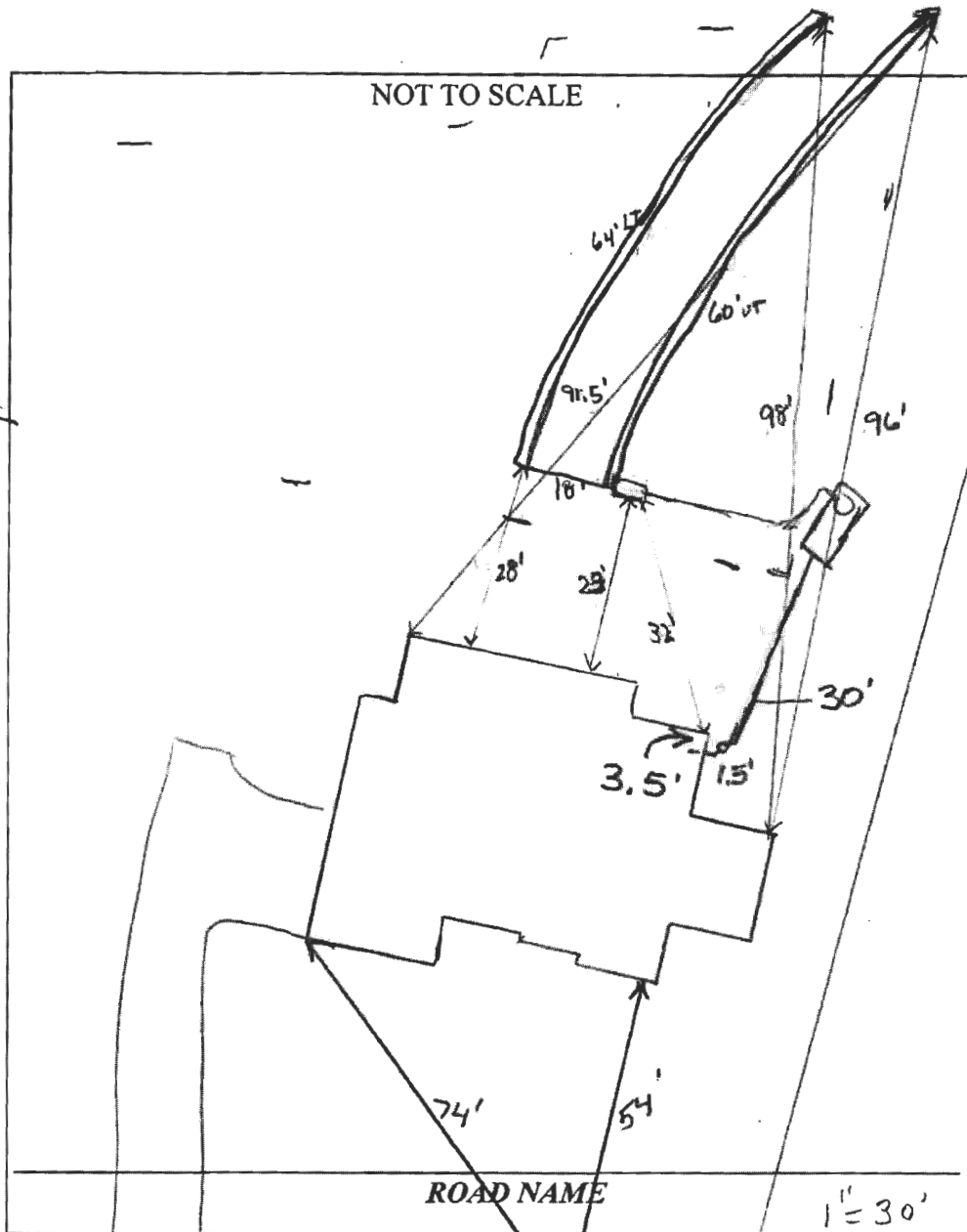
NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM

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
2'	3'	7'
NUMBER OF TRENCHES		2
TOTAL LENGTH		124'
ABSORPTION AREA		
DISTRIBUTION BOX LEVEL		yes
DISTRIBUTION BOX BAFFLE		yes
DISTRIBUTION BOX PORT		yes

**SEPTIC TANK DATA**

SEPTIC TANK 1 LEVEL	Yes
MANUFACTURER	Mayer Bros.
CAPACITY	1400 GAL
SEAM LOC	Top
TANK LID DEPTH	1.5'-2'
BAFFLES	Front
BAFFLE FILTER	No
MANHOLE LOC	Front + Rear
6" PORT LOC	None
WATERTIGHT TEST	No
SLOTTED	N/A
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:

H0-95-0638

9/15/14 BAT unit staked per approved sit plan. Contours shot. close to sit plan. Adjusted slightly. Install 2x60' trenches, 2' wide Inlet @ 3' below grade, bottom depth @ 7' below grade. Trenches staked in field. INSTALLATION: Call for insp. (KWO) 9/29/14 - upper trench open, shot bottom trench elevation and was level throughout verified w/ K. Wolf on site, shot invert elevation for lower trench and was level throughout, lower trench pipe installed w/ stone and geotextile cloth installed; stone tickets provided stone looks good and soil is a good sandy loam - ok to continue. (KWO) 9/30/14 - upper trench complete pipe laid uniform at 3' inlet stone & geotextile cloth in place. looks good ok to continue (KWO) 10/3/2014

FINAL INSPECTOR

Hank Oswald

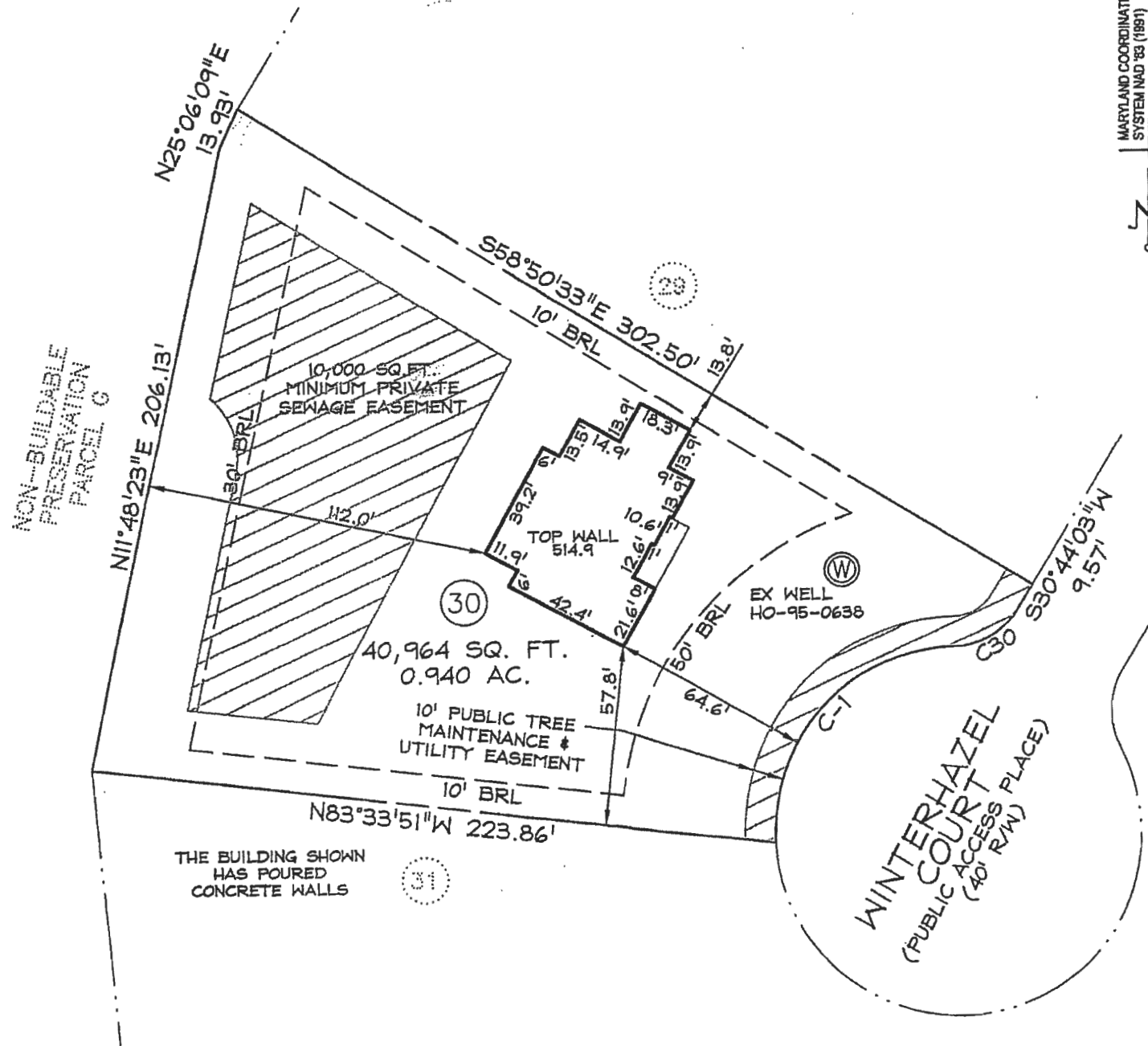
DATE OF APPROVAL

10/14/14

Back dated approval of septic permit for recent waiver request dated 7.28.20 and approved on 7.29.20.

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TAN	CHD. BRG.	CHD. DIST.
C-1	60.00'	95.50'	91°11'20"	61.26'	S43°10'26"W	85.73'
C30	25.00'	25.32'	58°02'03"	13.87'	S59°45'04"W	24.25'

MARYLAND COORDINATE  
SYSTEM NAD 83 (1981)



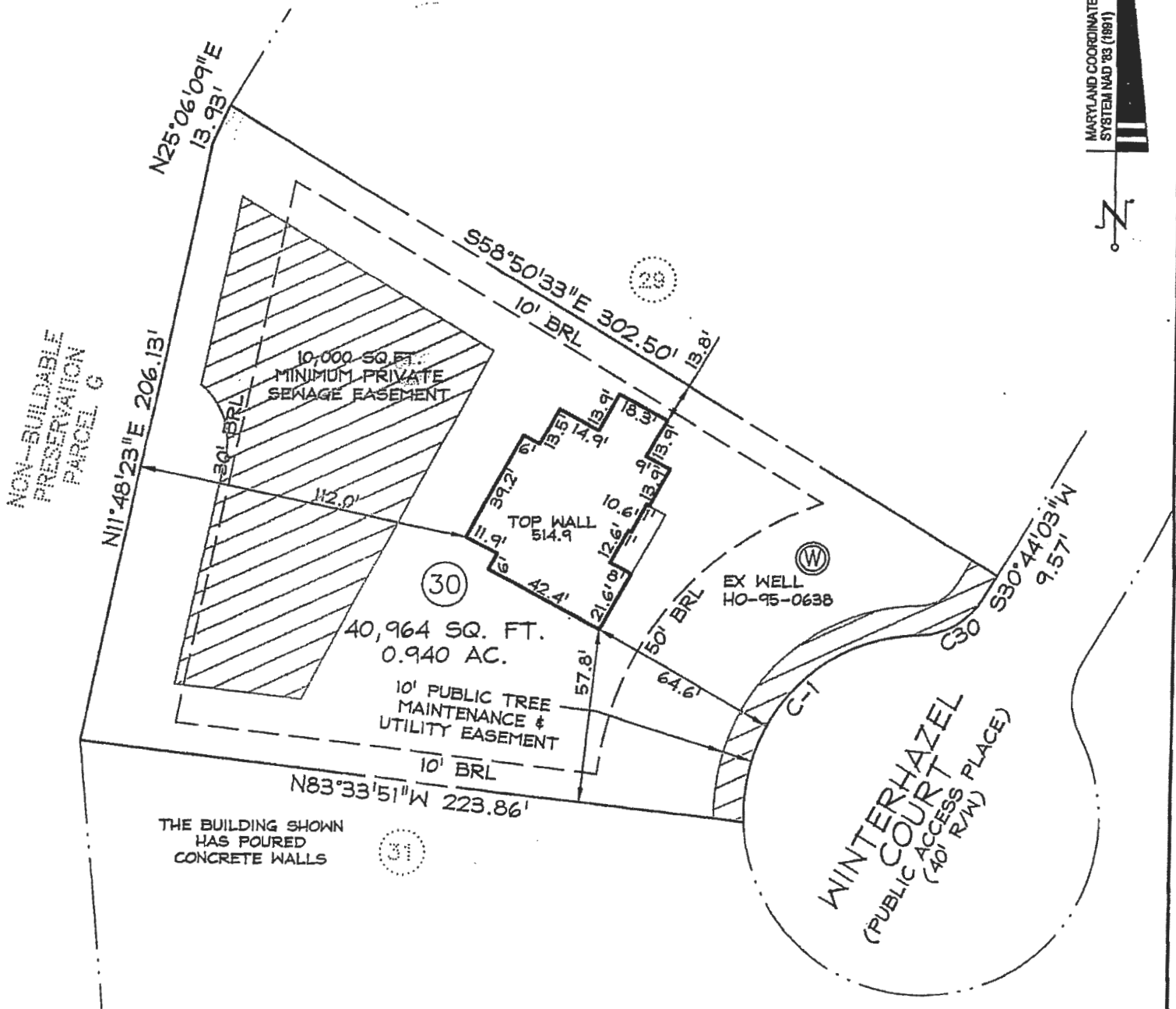
### SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I EITHER PERSONALLY PREPARED OR WAS IN RESPONSIBLE CHARGE OVER THE PREPARATION OF THIS DRAWING AND THE SURVEYING WORK REFLECTED IN IT, AND THAT IT IS IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION .12 OF CHAPTER 06, MINIMUM STANDARDS OF PRACTICE.

I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 239, EXPIRATION DATE 7/6/16.

STATE OF MARYLAND  
*Andrew B. Sautter* 7-17-14

CURVE TABLE						
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MARYLAND COORDINATE SYSTEM NAD 83 (1981)



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I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 239, EXPIRATION DATE 7/6/16.

STATE OF MARYLAND  
*Michael B. Gauthier* 7-17-14

BQ

*We are an Equal Opportunity Employer*  
**S.W. Barrick & Sons**  
WOODSBORO, MARYLAND

INSPECTOR'S COPY

Barrick Dispatch  
301-845-6343Barrick Sale  
301-845-6341Mailing Address:  
P.O. Box 1504  
Laurel, Maryland 20725BILLING INQUIRIES  
1-800-762-2294

TICKET #01071812

STATION B

DATE 09/29/14 TIME 11:12:27

CUSTOMER LEWEN  
BEN LEWIS INC.  
23407 FREDERICK RD  
CLARKSBURG, MD 20871JOB BELHAV : BELL HAVEN  
P.O. # 30903 PROJECT #1  
70- R 975- R UNION CHAPEL RD-  
L BRIDALWREATH CT. TO ADD "2803"TRUCK 649E LICENSE  
DRIVER: HUFFER TRUCKING

3 AXLES

LOT 29

	SCALE B	
GROSS	69800 lb	
TARE IN (STORED)	23800 lb	
NET	46000 lb	
NET	23.00	

	Loads	Tons
DAILY	2	45.24
TOTAL	13	277.44
TIME IN 11:12:27		TIME OUT 11:12:27

MAT'L 22W : DBL WSHED MD#2 STONE  
HAUL ZONE H09

WEIGHMASTER

Sally Gardner

RECEIVED BY  
LOT 30  
301-674-3324

A.R.D.

Have a Nice Day!

BQ

*We are an Equal Opportunity Employer*  
**S.W. Barrick & Sons**  
 WOODSBORO, MARYLAND

INSPECTOR'S COPY

Barrick Dispatch    Barrick Sale  
 11-845-6343    301-845-6341

BILLING INQUIRIES  
 1-800-762-2294

Mailing Address:  
 P.O. Box 1504  
 Laurel, Maryland 20725

TICKET #01071798

STATION B

DATE 09/29/14 TIME 10:44:17

STOMER LEW BEN  
 N LEWIS INC.  
 407 FREDERICK RD  
 ARKS BURG, MD 20871

JOB BELHAV : BELL HAVEN  
 P.O. # 30903 PROJECT #:  
 70- R 975- R UNION CHAPEL RD-  
 L BRIDALWREATH CT. TO ADD "2803"

UCK 6968 LICENSE  
 IVER: MANNY TRANSPORT

3 AXLES

LOT 29

	SCALE A	69660 lb
DSS		
RE IN (STORED)		25180 lb
T		44480 lb
T		22.24 t

	Loads	Tons
DAILY	1	22.24
TOTAL	12	254.44
TIME IN 10:44:17		TIME OUT 10:44:17

T'L 22W : DBL WSHED MD#2 STONE  
 UL ZONE H09

IGHMASTER  
 Sally Gardner

RECEIVED BY  
 LOT 30  
 301-674-3324

va a Nice Day!

AR 995

BQ

# S.W. Barrick & Sons

WOODSBORO, MARYLAND

INSPECTOR'S COPY

Barrick Dispatch 301-845-6343  
Barrick Sale 301-845-6341

BILLING INQUIRIES  
1-800-762-2294

Mailing Address:  
P.O. Box 1504  
Laurel, Maryland 20725

TICKET #01071821

STATION B

DATE 09/29/14 TIME 11:28:25

CUSTOMER LEWIS  
IN LEWIS INC.  
5407 FREDERICK RD  
ARLINGTON, MD 20871

JOB BELHAV : BELL HAVEN  
P.O. # 30903 PROJECT #1  
70- R 975- R UNION CHAPEL RD-  
L BRIDALWREATH CT. TO ADD "2803"

TRUCK 513C LICENSE  
DRIVER: KENLEY HUBBLE

3 AXLES


LOT 29

WGT	SCALE	WGT
ROSS	SCALE B	68320 lb
WRE	IN (STORED)	20860 lb
CT		47460 lb
CT		23.73 t

	Loads	Tons
DAILY	3	68.97
TOTAL	74	301.17
TIME IN 11:28:25		TIME OUT 11:28:25

WTL 22W : DBL WSHED MD42 STONE  
WUL ZONE H09

WIGHMASTER  
Sally Gardner

RECEIVED BY   
301-674-3324 ANDY

Have a Nice Day!

*First Load*



**MAYER BROS., INC.**

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

## Letter of Satisfaction Hoot System Installation

Address of Property: 2914 Winterhazel Ct. Lot # 30  
Woodbine, MD. 21797

Date of Final Inspection: 10/14/14

Installer: Ben Lewis Plumbing

Hoot Technician/Inspector: Mike Sample

I hereby certify that the Hoot system installed at the property listed above has been installed according to proper Hoot installation practices. I have also verified the startup of the system and it is in proper working order.

Sincerely,

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

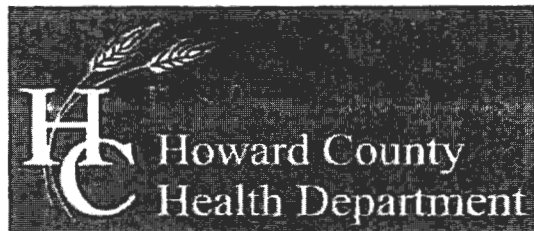
PH: 410-796-1434

FX: 410-796-1438

**WBE**  
**NPCA Certified Plant**

mayerbro@comcast.net  
www.mayerbrosprecast.com

Grease Interceptors, Grease Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,  
Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Hubs, Curb Seats, Curb Bumpers, PermEntry Basement Entries,  
Seapool Window Wells, Custom Precast Products



## Bureau of Environmental Health

7178 Columbia Gateway Drive, Columbia, MD 21046-2147

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](https://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 July, 2014, among K. ANNAMANN HOME OF MARYLAND LLC, hereinafter collectively referred to as "Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at 2914 WINTERHAZE COURT WOODBINE, MD 21797, in the 04 Election District of Howard County, Maryland, and the deed to same is recorded or shall be recorded among the Land Records of Howard County, Maryland in Liber 15596 Folio 4451. Billionaire 30

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.

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

2914 WIN/VAH/CO  
Clerk of the Circuit Court for <sup>Woodson</sup> MD 21797  
Howard County  
Land Records/Licensing

The Thomas Dorsey Building  
9250 Bendix Road  
Columbia, MD 21045  
410-313-5850

=====

R - Agreement Recording Fee		
1x	20.00	20.00

Grantor/Grantee Name: Khovnanian  
Reference/Control #: 158

=====

R - Agreement Surcharge		
1x	40.00	40.00

=====

SubTotal:	60.00
Total:	60.00

=====

REV-Check-BOA	60.00
Number : 16925	

07/23/2014 14:00 CC13-NN

3076290 /494/109

Thank you for visiting us today~

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.

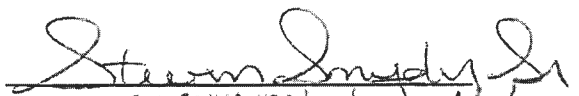
G. This agreement may be voided at any time at the discretion of the County.

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.

  
Owner P. K. RAJAN Date 6/24/14  
HUMAN CONSTRUCTION STEVEN S. JAYANTA

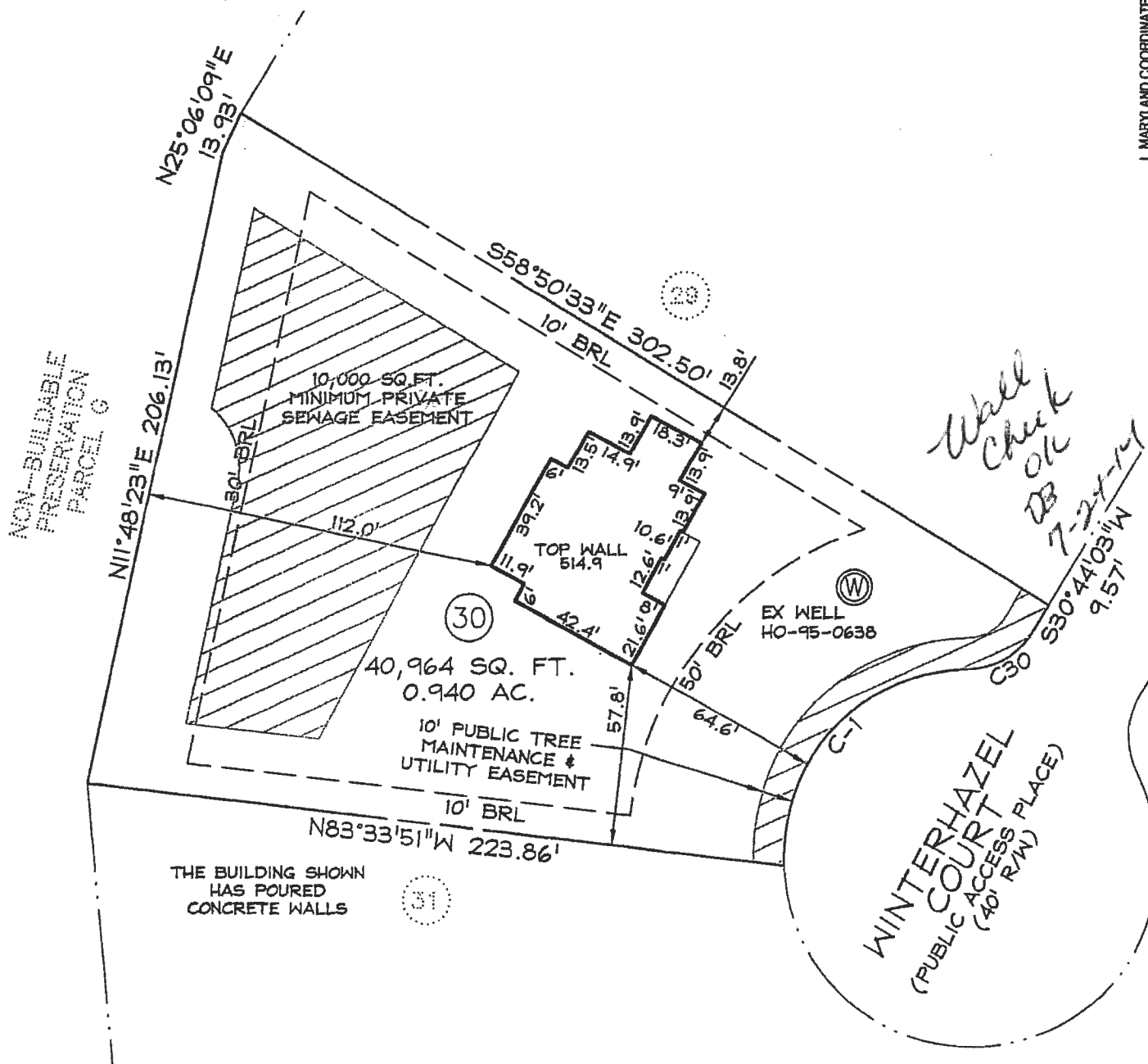
Owner

Date

  
Howard County Health Department 7/23/14

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TAN	CHD. BRG.	CHD. DIST.
C-1	60.00'	95.50'	91°11'20"	61.26'	S43°10'26"W	85.73'
C30	25.00'	25.32'	58°02'03"	13.87'	S59°45'04"W	24.25'

MARYLAND COORDINATE  
SYSTEM NAD 83 (1991)



### SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I EITHER PERSONALLY PREPARED OR WAS IN RESPONSIBLE CHARGE OVER THE PREPARATION OF THIS DRAWING AND THE SURVEYING WORK REFLECTED IN IT, AND THAT IT IS IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION .12 OF CHAPTER 06, MINIMUM STANDARDS OF PRACTICE.

I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 239, EXPIRATION DATE 7/6/16.

DATE OF SURVEY 7-17-14  
 O.B. Smith





# LETTER OF TRANSMITTAL

DATE	4/16/14	JOB NO.
ATTENTION		
RE:	Belle Haven Estates lot (30)	
	2914 Winter Hazel Ct.	

K. Hovnanian Homes of MD, LLC  
802 Brightseat Rd. • Landover, MD 20785  
301-772-8900 • 301-772-8925 Fax

TO Howard County Health Department

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via \_\_\_\_\_ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications  
☐ Copy of letter ☐ Change Order ☐ \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
3			BAT SITE plans FOR INITIAL REVIEW

THESE ARE TRANSMITTED as checked below:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> For approval                | <input type="checkbox"/> Approved as submitted            | <input type="checkbox"/> Resubmit _____ copies of approval    |
| <input type="checkbox"/> For your use                | <input type="checkbox"/> Approved as noted                | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As requested                | <input type="checkbox"/> Returned for corrections         | <input type="checkbox"/> Return _____ corrected prints        |
| <input type="checkbox"/> For review and comment -    | <input type="checkbox"/> _____                            |   |
| <input type="checkbox"/> FOR BIDS USE _____ 20 _____ | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

REMARKS These plans are to go along with a Building permit application  
SUBMITTED TO Howard County, 4/16, Permit # TBD

COPY TO \_\_\_\_\_

SIGNED: \_\_\_\_\_

CHASKEY  
WILLIAMS  
KHOVNANIAN HOMES  
240-375-4575

If enclosures are not as noted, kindly notify us at once.

April 24<sup>th</sup>, 2014

Mr. Jeffrey Williams  
Well & Septic Program Supervisor  
Howard County Health Department  
8930 Stanford Blvd.  
Columbia, MD 21045

Reference: Belle Haven Estates, Lot 30  
2914 Winterhazel Court  
BAT Site Plan  
DDC Project No.: 06116.5

Mr. Williams,

The following are responses to comments issued on April 23<sup>rd</sup>, 2014 (via email) for the above referenced project.

**Comment:** The BAT tank is less than 100' from the well box. It must be relocated outside of 100'


**Response:** The BAT tank has been shifted outside of the 100' well box setback per your request.

**Comment:** Please indicate in the pump notes that the pump will be set to run for 1 minute at a time for a dose of 47g.

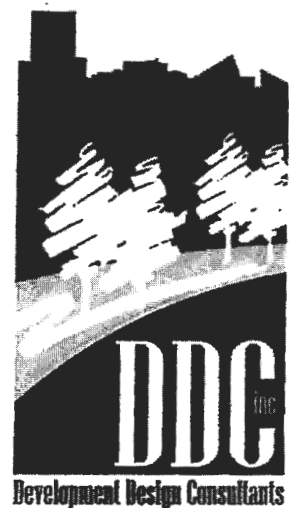
**Response:** The dose of 47 gal, with a pump run time of 1 minute was added to the pump notes per your request.

We believe these responses adequately address your comments. Should you have any questions please do not hesitate to contact this office.

Very truly yours,  
Development Design Consultants, Inc.



Joshua H. Kline, E.I.  
Engineer



Planners  
Surveyors  
Engineers  
Landscape Architects

192 East Main Street  
Westminster, MD 21157

410 386 0560  
Fax 410 386 0564

DDC@DDCinc.us  
www.DDCinc.us





# LETTER OF TRANSMITTAL

K. Hovnanian Homes of MD, LLC  
302 Brightseat Rd. • Landover, MD 20785  
301-772-8900 • 301-772-8925 Fax

TO Howard County Health Department

DATE	<u>4/16/14</u>	JOB NO.	
ATTENTION			
RE:	<u>Belle Haven Estate lot (30)</u>		
	<u>2914 Winter Haze Ct.</u>		

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via \_\_\_\_\_ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change Order ☐ \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
<u>3</u>			<u>BAT SITE PLANS FOR INITIAL REVIEW</u>

THESE ARE TRANSMITTED as checked below:

- |  |   |   |
|--|---|---|
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| <input type="checkbox"/> For your use                | <input type="checkbox"/> Approved as noted                | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As requested                | <input type="checkbox"/> Returned for corrections         | <input type="checkbox"/> Return _____ corrected prints        |
| <input type="checkbox"/> For review and comment -    | <input type="checkbox"/> _____                            |   |
| <input type="checkbox"/> FOR BIDS USE _____ 20 _____ | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

REMARKS These plans are to go along with a building permit application  
submitted to Howard County 4/16, permit # TBD

COPY TO \_\_\_\_\_

SIGNED: \_\_\_\_\_

checked  
with  
K. Hovnanian Homes

240-375-4575

## Williams, Jeffrey

---

**From:** Williams, Jeffrey  
**Sent:** Wednesday, April 23, 2014 12:18 PM  
**To:** Brian Collins  
**Cc:** 'cwillett@khov.com'  
**Subject:** Belle Haven Lot 30

I've reviewed the BAT plan for lot 30 and have the following comments for revision:

- The BAT tank is set less than 100' from the well box. It must be relocated outside of 100'
- Please indicate in the pump notes that the pump will be set to run for 1 minute at a time for a dose of 47g.

Thanks

Jeff Williams  
Program Supervisor, Well & Septic Program  
Bureau of Environmental Health  
Howard County Health Dept.  
410-313-4261  
[jewilliams@howardcountymd.gov](mailto:jewilliams@howardcountymd.gov)

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## Geisert, Andrew

---

**From:** Geisert, Andrew  
**Sent:** Friday, May 02, 2014 3:42 PM  
**To:** 'ddc@DDCinc.us'  
**Subject:** Belle Haven Estates Lot 30 BAT Plan review

Joshua Kline,

The following are my review comments for Belle Haven Lot 30.

- Scale label 1"=30'
- Include 507.2' trench ground elevation at the beginning of trench.
- Pipe slope % from tank to D-box
- Pipe slope % from d-box to field
- Show riser and top tank elevation on septic system profile

Andrew Geisert  
Environmental Sanitarian Supervisor  
Howard County Health Department  
Bureau of Environmental Health  
Office: 410-313-6287  
Fax: 410-313-2648  
[ageisert@howardcountymd.gov](mailto:ageisert@howardcountymd.gov)

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Planners  
Surveyors  
Engineers  
Landscape Architects

192 East Main Street  
Westminster, MD 21157

410 386 0560  
Fax 410 386 0564

DDC@DDCinc.us  
www.DDCinc.us

## LETTER OF TRANSMITTAL

TO: Howard County Health Department  
Attn: Jeff Williams  
8930 Stanford Boulevard  
Columbia, MD 21045

DATE: 04/25/2014 PROJECT NO: 06116.5

PROJECT: Belle Haven Estates – Lot 30

WE ARE SENDING: ☒ ( X ) HEREWITH  
☐ ( ) UNDER SEPARATE COVER

SENT VIA: ☐ ( ) REGULAR MAIL ☐ ( ) FEDERAL EXPRESS ☐ ( ) YOUR MESSENGER  
☐ ( ) EXPRESS MAIL ☐ ( ) OUR MESSENGER ☐ ( ) \_\_\_\_\_

NO. COPIES	DWG. NO.	DWG. DATE	DESCRIPTION / TITLE	PRINT	MYLAR	OTHER
2	1 of 1	04/25/14	Revised BAT Site Plan – Lot 30	X		
1			Comment Response Letter			X

### REMARKS:

Received By: \_\_\_\_\_

CC: Chester Willett By: Joshua H. Kline, E.I.

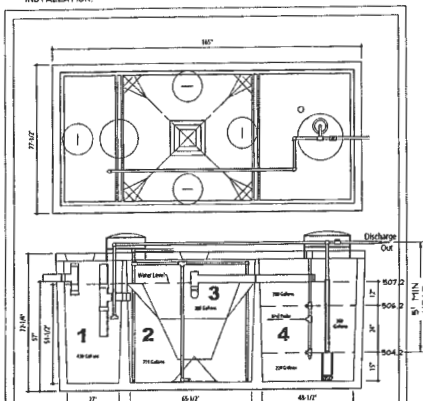
Brian K. Collins, R.L.A

# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 9,720 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
4. DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS: 7-07-36
5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 22/04 COMPREHENSIVE ZONING PLAN AND PER COM-LITE ZONING REGULATIONS DATED 7/28/04.
6. PLAT REFERENCE: 819945
7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DPA, AND DATED 06/29/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DEPAUL DESIGN CONSULTANTS DATED 07/09/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC. IN JAN. 2007.
8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STARTUP FOR CONSTRUCTION FOR B.S. BE THE OWNER/BUILDER RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)381-8851 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
10. THE CONTRACTOR SHALL NOTIFY "PRESS UTILITY" AT 1-800-287-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
11. TOTAL LIMIT OF DISTURBANCE: 14,495 SQ. FT. / 0.58 AC.
12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (7-07-36).
13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAY" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
16. THE LOT'S BOUNDARY HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL.
18. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL REMAIN AS IS AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL. RECONSTRUCTION OF A REVISED SEWAGE DISPOSAL SHALL NOT BE NECESSARY.
19. 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.
20. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
21. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
22. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER 7-07-36.

## SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

1. ANY CHANGE TO THE LOCATION OR DEPTH TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 9 FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A SMALL REPORT TO THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



LOT 30 PUMP ELEVATIONS		
OFF	ON	ALARM
504.2	509.2	507.2

600 GPD BNR SYSTEM  
H-600 ABRN  
WITH 750 GALLON PUMP CHAMBER

May 18, 2007

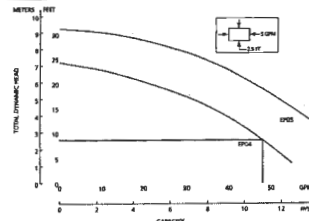


## GOULDS PUMPS Wastewater

### PERFORMANCE RATINGS

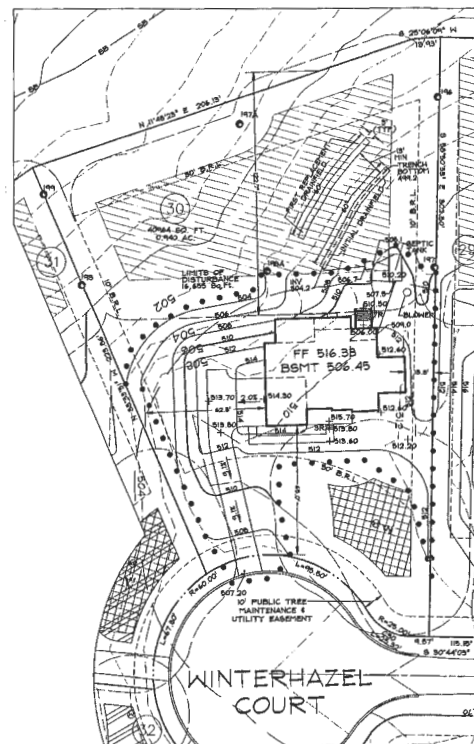
Head (ft. of water)	Gallons Per Minute (GPM)
15	47
10	52
5	57
0	62

STATIC HEAD	5.0 (FIN)
FRICTION HEAD	8.6'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.6'
GALLONS PER MINUTE	47 GPM
DOSE	47 GAL
PUMP RUN TIME	1 MIN



### TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	5.0'
OFF FLOAT ELEVATION	504.2'
HIGH POINT OF THE SYSTEM	509.2'
VERTICAL ELEVATION CHANGE	8.6'
FRICTION HEAD	8.6'
FITTINGS	15.8'
LENGTH OF PVC PIPE	10.7'
TOTAL LENGTH	25.9'
25.9' / 100' x 0.62 = 9.6'	TOTAL FRICTION LOSS
TOTAL HEAD	18.2'
VERTICAL ELEVATION CHANGE	5.0'
TOTAL FRICTION LOSS	8.6'
SYSTEM PRESSURE REQUIREMENTS	0.0'
TOTAL DYNAMIC HEAD	8.6'

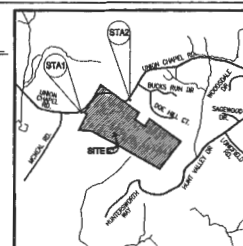


## BENCHMARK

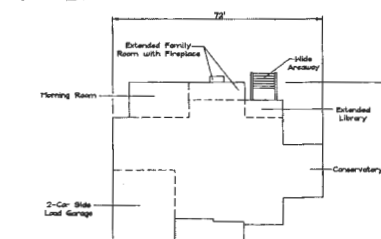
PROJECT: HARVY CONTROL #1	10/10/07
DATE: 10/10/07	10/10/07
BY: J. J. J.	10/10/07
PROJECT: HARVY CONTROL #2	10/10/07
DATE: 10/10/07	10/10/07
BY: J. J. J.	10/10/07
PROJECT: HARVY CONTROL #3	10/10/07
DATE: 10/10/07	10/10/07
BY: J. J. J.	10/10/07

Approved Seal: System Plan  
Howard County Health Department

Signature: [Signature]  
Date: [Date]



VICINITY MAP  
SCALE: 1"=2000'



COLORADO  
ELEVATION 'A'  
BRICK AND STONE FRONT

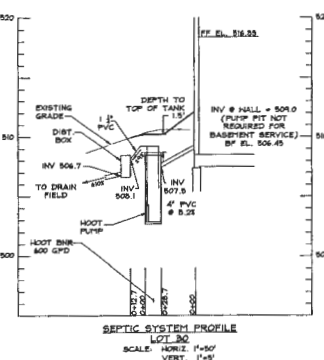
DATA SOURCE:

## DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED GRADE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED 30' HELL RESERVE
- EXISTING 30' HELL BUFFER
- EXISTING 100' HELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- HELL AREA
- PARSED PERCOLATION TEST
- PAIRED PERCOLATION TEST

LOT 30 INITIAL SYSTEM TRENCH SPECIFICATIONS			
INITIAL SYSTEM TRENCH (40')	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
	507.30	504.2	499.3

- SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM)
1. INVERT # FOUNDATION WALL: 509.0 (BASEMENT PUMP REQUIRED)
  2. 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER  
EX. GRADE OVER TANK: 510.5  
PROPOSED GRADE OVER TANK: 510.2  
INVERT: 507.5
  3. DISTRIBUTION BOX  
EX. # PROPOSED GRADE OVER TANK: 509.5  
INVERT: 508.1
  4. TRENCH DESIGN (4 BDRM x 100 GPD/BDRM = 400 GPD)  
400 GPD / 12 GPD/SF (APP. RATE) = 500 SF  
USE 3' WIDE TRENCH W/ 40' OF GRAVED BELLOU PIPE  
15' FIN SPACING BETWEEN TRENCH EDGES  
500 SF / 3' WIDTH = 166.67 LF x 0.58 = 80 LF MIN TRENCH  
USE 1 - 60' LONG TRENCHES = 80 LF FOR INITIAL SYSTEM  
USE 1 - 60' LONG TRENCHES = 80 LF FOR FIRST REPLACEMENT SYSTEM



Planners  
Surveyors  
Engineers  
Landscape Architects

192 Elm Street  
Westminster, MD 21157  
410.384.6540  
410.384.6544 (Fax)  
DDC@DDCinc.us  
www.DDCinc.us

Development Design Consultants

OWNER:  
LOT 30  
192 Elm Street  
Westminster, Maryland 21157

DEVELOPER:  
LOT 30  
192 Elm Street  
Westminster, Maryland 21157

## SITE PLAN FOR BAT INSTALLATION

NO. DESCRIPTION OF CHANGES		DATE
CO. FILE #	DES. BY: JJK	
TAX MAP #	DRN. BY: JJK	
BLOCK / GRD.	CHK. BY: POC/BCD	
PARCEL #	DATE: 05/08/04	
ZONE / USE: R-100	DDC JOB #011615	
DWG. SCALE: 1"=30'	SHEET NUMBER:	
		1 of 1

Professional Certification:

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22020, Expiration Date 02/28/10.

05/08/2014  
DATE

PAUL G. CAVANAUGH, P.E.

# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 9,730 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. SECTOR PUMP REQUIRED TO SEWER BASEMENT
4. DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, P-07-35.
5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER CORP-LITE ZONING REGULATIONS DATED 7/29/04.
6. PLAT REFERENCE: M9948
7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DDM, AND DATED 08/25/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DETARIO DESIGN CONSULTANTS DATED 07/01/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDM INC. IN JAN. 2002.
8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDER'S RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF CONSTRUCTION INSPECTION DIVISION AT (410)381-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
10. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
11. TOTAL LIMIT OF DISTURBANCE: 16,655 SQ. FT. / 0.38 AC.
12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED FOR THE PREVIOUSLY APPROVED FINAL PLAN (P-07-35).
13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAYS" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
16. THE LOTS SHOWN HEREON CORRELATE WITH THE MINIMUM LOT AREA AND OWNERSHIP (HUT) AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL.
18. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL. RECONSTRUCTION OF A REVISED SEWAGE DISPOSAL AREA SHALL NOT BE NECESSARY.
19. 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.
20. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
21. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
22. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER P-07-35.

## SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

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

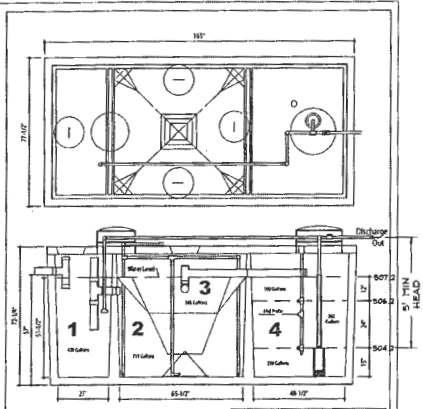
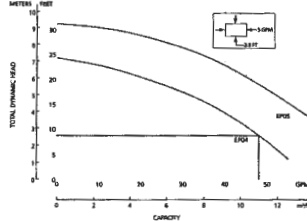


## GOULDS PUMPS Wastewater

### PERFORMANCE RATINGS

Flow Rate (GPM)	Head (Feet)	Efficiency (%)
10	42	42
15	38	40
20	34	38
25	30	36
30	26	34

STATIC HEAD	5.0 (MIN)
FRICTION HEAD	5.6'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	5.6'
GALLONS PER MINUTE	47 GPM
DOSE	47 GAL
PUMP RUN TIME	1 MIN



DESIGN DATA & GENERAL NOTES

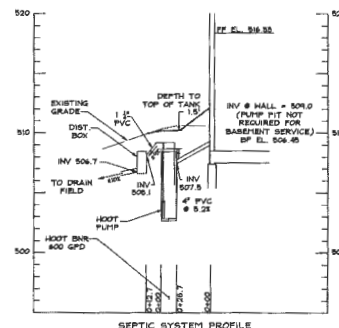
1. See General Notes for additional information.
2. See General Notes for additional information.
3. See General Notes for additional information.
4. See General Notes for additional information.
5. See General Notes for additional information.
6. See General Notes for additional information.
7. See General Notes for additional information.
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9. See General Notes for additional information.
10. See General Notes for additional information.
11. See General Notes for additional information.
12. See General Notes for additional information.
13. See General Notes for additional information.
14. See General Notes for additional information.
15. See General Notes for additional information.
16. See General Notes for additional information.
17. See General Notes for additional information.
18. See General Notes for additional information.
19. See General Notes for additional information.
20. See General Notes for additional information.

**LOT 30 PUMP ELEVATIONS**

OFF	ON	ALARM
504.2	506.2	507.2

**600 GPD BNR SYSTEM**  
H-600 ABN  
WITH 750 GALLON PUMP CHAMBER  
Mayer Brothers, Inc.  
2015 Northwood Court  
Baltimore, MD 21206  
Tel: 410.766.1118  
www.mayerbrothers.com

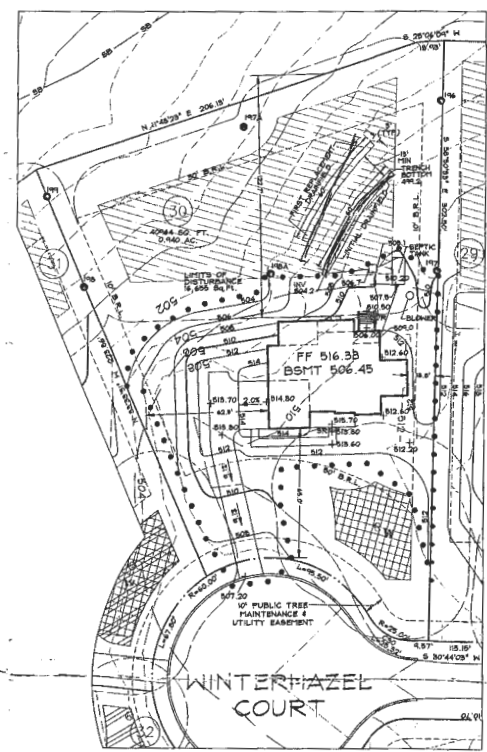
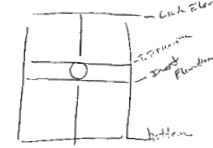
DDC Form 100-1  
No Scale  
March 19, 2009



LOT 30 INITIAL SYSTEM TRENCH SPECIFICATIONS

	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH (60')	507.30	504.2	499.2

- SEWAGE DISPOSAL SYSTEM DATA (4 BEDROOM):
1. INVERT & FOUNDATION SHALL BE 60" (BARELY PUMP REQUIRED) DP EL. 504.45
  2. 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER EX. GRADE OVER TANK: 510.9
  3. DISTRIBUTION BOX EX 4 PROPOSED GRADE OVER TANK: 510.2
  4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD) 600 GPD / 12 GPD/8" (APP. RATE) = 500 BF USE 3" WIDE TRENCH W/ 40' OF GRAVEL BELLOW PIPE 15" MIN SPACING BETWEEN TRENCH EDGES 500 BF / 3" WIDTH = 166 BF LP x 0.38 = 60 LF MIN. TRENCH USE 1 - 40' LONG TRENCHES x 60 LF FOR INITIAL SYSTEM USE 1 - 40' LONG TRENCHES x 60 LF FOR FIRST REPLACEMENT SYSTEM

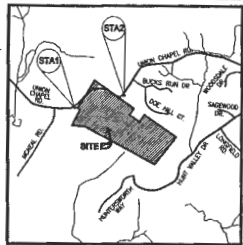


## BENCHMARK

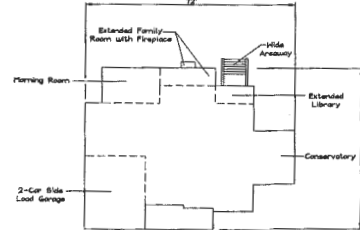
PROJECT: HARVEY CONTROL, INC.	DATE: 08/25/07
BY: DDM	SCALE: 1"=20'
CHECKED: HARVEY CONTROL, INC.	DATE: 08/25/07
BY: DDM	SCALE: 1"=20'
APPROVED: HARVEY CONTROL, INC.	DATE: 08/25/07
BY: DDM	SCALE: 1"=20'

Approved Seal - System Plan  
Howard County Health Department

Under Seal  
Signature  
Seal



VICINITY MAP  
SCALE: 1"=200'



COLORADO ELEVATION 1A  
BRICK AND STONE FRONT

## DATA SOURCES

## DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED LIST OF DISTURBANCE
- 645.5 PROP. SPOT ELEV./FLSH ANCH
- 60' DEPTH OF SEPTIC RESERVE
- EXISTING 30" WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- WELL AREA
- 64 PASSED PERCOLATION TEST
- 67 FAILED PERCOLATION TEST

**DDC**  
Development Design Consultants

Planners  
Surveyors  
Engineers  
Landscape Architects

192 East Main Street  
Washington, MD 21153  
410.386.8540  
410.386.8544 (fax)  
DDC@DDCinc.com  
www.DDCinc.com

OWNER: K. HOWARD HENRY  
192 East Main Street  
Washington, Maryland 21153  
410.386.8540

DEVELOPER:

**SITE PLAN FOR BAT INSTALLATION**

3rd ELECTION DISTRICT

HOWARD COUNTY

REVISIONS

NO.	DESCRIPTION OF CHANGES	DATE	REV.	DATE
1				

CO. FILE #

TAX MAP #

BLOCK / GRID

PARCEL #

ZONE / USE CODE

DATE: 08/25/07

DES. BY: JHK

CHK. BY: JHK

DATE: 08/25/07

DOC JOB# 001165

SHEET NUMBER

ONE SCALE 1"=30'

1 of 1

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20020, Expiration Date 02/28/16.

DATE: 08/25/2014

PAUL G. CAVANAUGH, P.E.

# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 5,720 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SEWER BASIN
4. DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, 7-07-08.
5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER COM-116 ZONING REGULATIONS DATED 7/28/08.
6. PLAT REFERENCE: #19948
7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DPM, AND DATED 04/28/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DEHARDO DESIGN CONSULTANTS DATED 07/07/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC. IN JAN. 2012.
8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDER'S RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
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10. THE CONTRACTOR SHALL NOTIFY "MISB UTILITY" AT 1-800-257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
11. TOTAL LIMIT OF DISTURBANCE: 16,605 SQ. FT. / 0.38 AC.
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14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
16. THE LOT'S SHOWN HEREON CORRELATE WITH THE FINISH LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICE SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL. RECORDATION OF A REVISED SEWAGE DISPOSAL SHALL NOT BE NECESSARY.
18. EXISTING WELLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEM OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
19. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
20. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER 7-07-08.

## SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

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



ITT

GOULDS PUMPS  
Wastewater

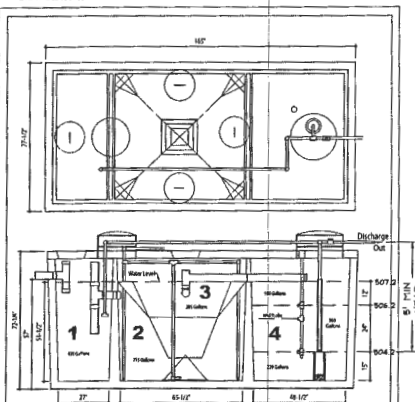
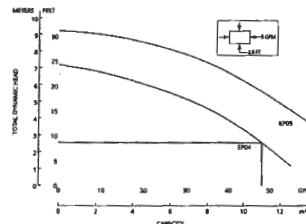
### PERFORMANCE RATINGS

Total Head (ft. of water)	Gallons Per Minute (GPM)	Feet Per Second (FPS)
1	33	1
10	46	12
15	36	13
20	21	16
25	8	20
30	-	-

STATIC HEAD	9.0' (71")
FRICTION HEAD	3.5'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	9.5'
GALLONS PER MINUTE	47 GPM

### TOTAL DYNAMIC HEAD CALCULATIONS

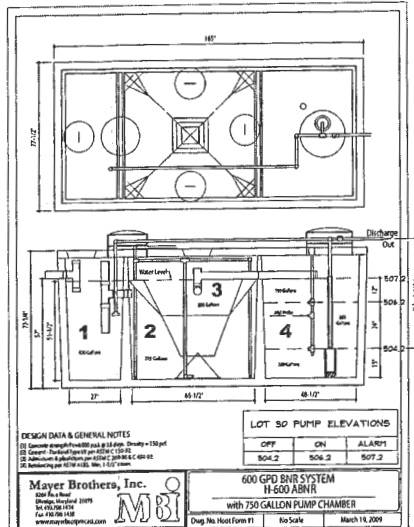
STATIC HEAD	9.0'
OFF FLAT ELEVATION	504.2'
ISSUE POINT OF THE SYSTEM	503.5'
VERTICAL ELEVATION CHANGE	0.7'
FRICTION HEAD	3.5'
LENGTH OF PVC PIPE	120'
TOTAL LENGTH	25.8'
25.8/100 x 15.42 = 3.98' TOTAL FRICTION LOSS	
TOTAL HEAD	9.5'
VERTICAL ELEVATION CHANGE	0.7'
TOTAL FRICTION LOSS	3.5'
SYSTEM PRESSURE REQUIREMENTS	0.0'
TOTAL DYNAMIC HEAD	9.5'



DESIGN DATA & GENERAL NOTES  
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334. General design & layout by DDC, Inc. Date: 04/28/07  
335. General design & layout by DDC, Inc. Date:

# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 3,720 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SEWER BASEMENT
4. DRIVEWAY CURVE IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-88
5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER COM-LITE ZONING REGULATIONS DATED 7/26/06.
6. PLAT REFERENCE: 100448
7. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DDC, AND DATED 06/25/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DEHARD DESIGN CONSULTANTS DATED 07/04/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC. IN JAN. 2007.
8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STARTUP FOR CONSTRUCTION, IT SHALL BE THE OWNER'S RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)315-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
10. THE CONTRACTOR SHALL NOTIFY "P888 UTILITY" AT 1-800-297-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
11. TOTAL LIMIT OF DISTURBANCE: 16,655 SQ. FT. / 0.35 AC.
12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-88).
13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAY" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
16. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND CHAINSHIP WIDTH AS REQUIRED BY THE "HARTLAND DEPARTMENT OF THE ENVIRONMENT".
17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE HARTLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME HILL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL. RECORDATION OF A REVISED SEWAGE DISPOSAL SHALL NOT BE NECESSARY.
18. EXISTING HILLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE HILLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
19. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED FERTILIZATION CERTIFICATION PLAN.
20. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER F-07-88.



## GOULDS PUMPS Wastewater

### PERFORMANCE RATINGS

Head (ft.)	Flow (GPM)
10	10
15	10
20	10
25	10
30	10
35	10
40	10
45	10
50	10

Static Head	Flow (GPM)
10	10
15	10
20	10
25	10
30	10
35	10
40	10
45	10
50	10

PUMP RUN TIME: 1 MIN

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### TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	504.2'
OFF FLIGHT ELEVATION	+ 505.2'
HIGH POINT OF THE SYSTEM	+ 505.2'
VERTICAL ELEVATION CHANGE	5.0'
FRICTION HEAD	15.8'
LENGTH OF PVC PIPE	+ 12.1'
TOTAL LENGTH	28.3'
26.5/100 = 0.265 = 3.2' TOTAL FRICTION LOSS	
TOTAL DYNAMIC HEAD	509.4'

VERTICAL ELEVATION CHANGE	5.0'
TOTAL FRICTION LOSS	3.2'
SYSTEM PRESSURE REQUIREMENTS	+ 0.0'
TOTAL DYNAMIC HEAD	509.4'

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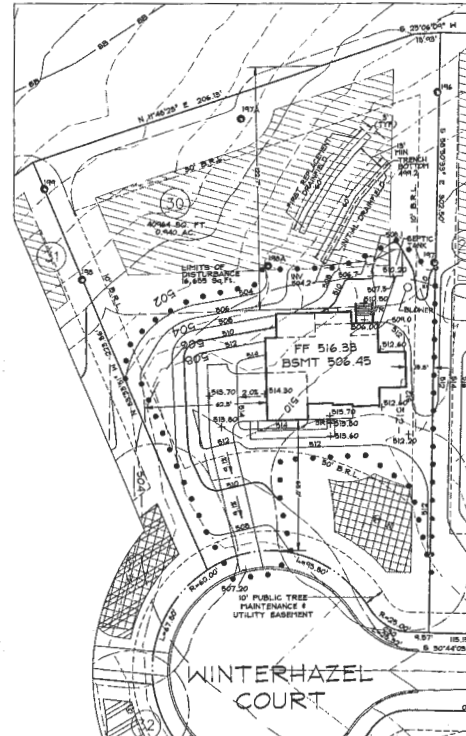
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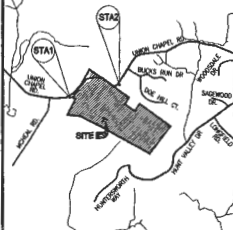
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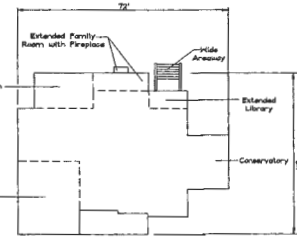


### BENCHMARK

GEODETIC BENCHMARK #1	100.00
1. 100.00	100.00
2. 100.00	100.00
3. 100.00	100.00
4. 100.00	100.00
5. 100.00	100.00
6. 100.00	100.00
7. 100.00	100.00
8. 100.00	100.00
9. 100.00	100.00
10. 100.00	100.00



### VICINITY MAP SCALE: 1" = 200'



### COLORADO ELEVATION 'A' BRICK AND STONE FRONT

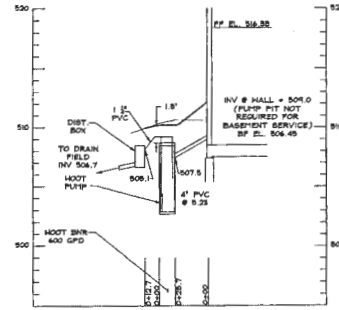
DATA SOURCES:

### DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED GRADE
- PROPOSED LIMIT OF DISTURBANCE
- 665.5 PROP. SPOT ELEV./FLSH. ANCH.
- EXISTING 30' SEPTIC RESERVE
- EXISTING 30' HELL BUFFER
- EXISTING 100' HELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- HELL AREA
- PAVED PERCOLATION TEST
- PAVED PERCOLATION TEST

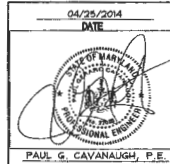
INITIAL SYSTEM TRENCH (60')	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
	507.30	504.2	499.2

1. INVERT @ FOUNDATION WALL: 504.0 (BASEMENT PUMP REQUIRED)
2. 600 GPD BNR SYSTEM W/ 750 GALLON PUMP CHAMBER  
EX. GRADE OVER TANK: 510.5  
PROPOSED GRADE OVER TANK: 510.2  
INVERT: 507.3
3. DISTRIBUTION BOX  
EX. 4 PROPOSED GRADE OVER TANK: 508.5  
INVERT: 508.1
4. TRENCH DESIGN (4 BDRM x 150 GPD/BDRM = 600 GPD)  
600 GPD / 1.2 GPD/BDRM (AMP. RATE) = 500 SP  
USE 8" WIDE TRENCH W/ 60" OF GRAVEL BELOW PIPE  
18" MIN SPACING BETWEEN TRENCH EDGES  
800 SF / 3' WIDTH = 266.67 LF x 0.36 = 60 LF MIN. TRENCH  
USE 1 - 60' LONG TRENCHES = 60 LF FOR INITIAL SYSTEM  
USE 1 - 40' LONG TRENCHES = 60 LF FOR FIRST REPLACEMENT SYSTEM



SEPTIC SYSTEM PROFILE  
LOT 30  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'

Professional Certification:  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21222. Expiration Date: 06/28/14



**DDC**  
Development Design Consultants

192 East Main Street  
Westminster, MD 21157  
410.386.8568  
410.386.8564 (Fax)  
DDC@DDCinc.com  
www.DDCinc.com

OWNER:  
Belle Haven Estates  
1000 West Street  
Suite 100  
Westminster, Maryland 21157

DEVELOPER:  
Belle Haven Estates  
LOT 30

### SITE PLAN FOR BAT INSTALLATION

NO.	DESCRIPTION OF CHANGES	DATE	REV.	DATE
1	CO. FILE #	04/25/2014		
2	TAX MAP: 14			
3	BLOCK / GRD:			
4	PARCEL #:			
5	ZONE / USE: RC-DEO			
6	DWG. SCALE: 1" = 30'			

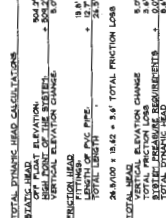
DES. BY: JNK	CHK. BY: JNK
DATE: 04/25/14	DOC. NO: 00116.5
SHEET NUMBER:	1 of 1

## GENERAL NOTES

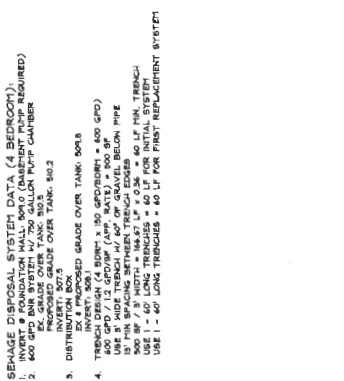
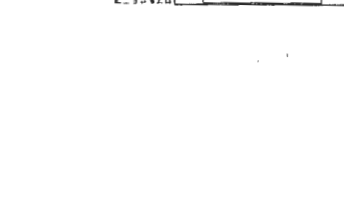
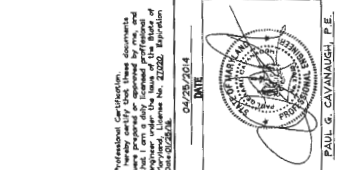
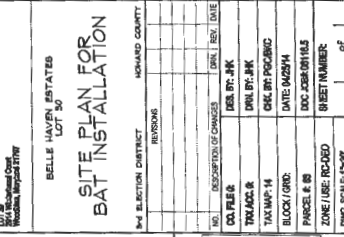
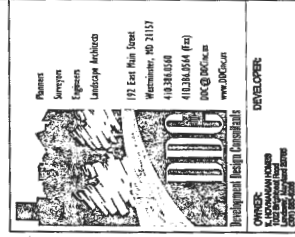
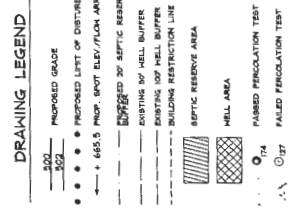
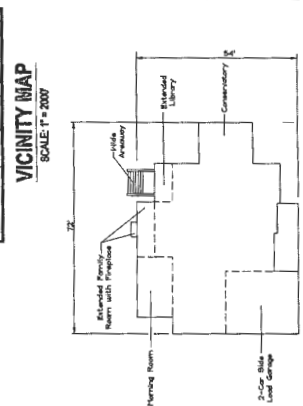
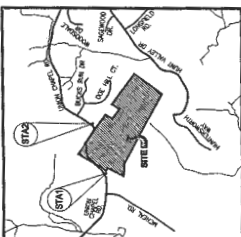
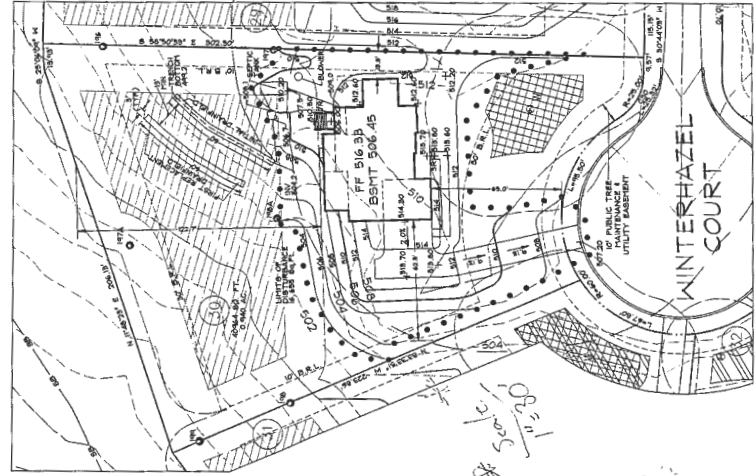
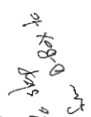
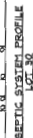
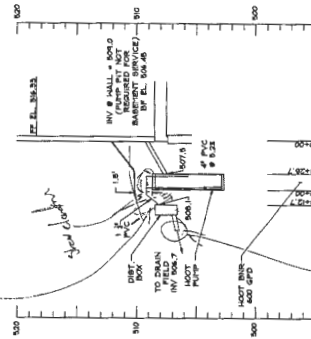
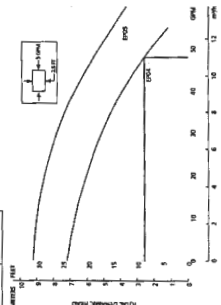
- 
- Top View Dimensions: 30" x 30" (overall), 18" x 18" (central section).
- Side Elevation Dimensions: 30" (total height), 18" (pump height), 12" (float valve height), 12" (float switch height).
- Table 1: Pump and System Specifications
- | LOT 50 PUMP ELEVATION | ON | OFF |
|-----------------------|----|-----|
| 600 GPD BWR SYSTEM    | ON | OFF |
| H-400 ABR             | ON | OFF |
- Table 2: System Specifications
- | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|-----------------|-----------------|-----------------|
| 600             | 600             | 600             |
- Table 3: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 4: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 5: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 6: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 7: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 8: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 9: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 10: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 11: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 12: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 13: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 14: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 15: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 16: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 17: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 18: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 19: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 20: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 21: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 22: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 23: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 24: System Notes
- | Notes                                      |
|--|
| 1. The flow rate of the system is 600 GPM. |
| 2. The flow rate of the system is 600 GPD. |
| 3. The flow rate of the system is 600 GPH. |
- Table 25: System Components
- | Component          | Flow Rate (GPM) | Flow Rate (GPD) | Flow Rate (GPH) |
|--------------------|-----------------|-----------------|-----------------|
| 600 GPD BWR SYSTEM | 600             | 600             | 600             |
| H-400 ABR          | 600             | 600             | 600             |
- Table 26: System Notes
- | Notes |
|-------|
|-------|



**GOULDS PUMPS**  
Wastewater



PERFORMANCE RATINGS	Static Head	Friction Head	Distal End Head	S.D. (%)	S.D. (%)
Dead Weight (N. at mouth)	5	10	15	20	25
1974	52	67	34	46	8
1975	-	71	53	66	12
	-	-	-	-	11

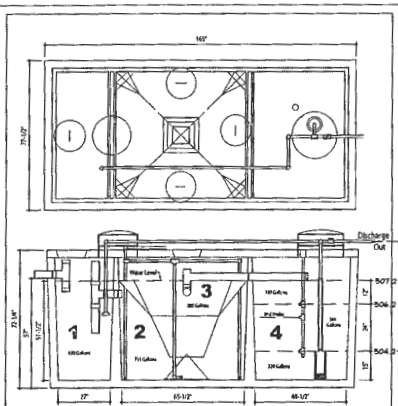


# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 3,720 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO REVERSE BASEMENT DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-38.
4. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER CORP-LITE ZONING REGULATIONS DATED 7/28/06.
5. PLAT REFERENCE: #9948
6. BASE INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DPH, AND DATED 06/29/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DESIGN CONSULTANTS DATED 07/04/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC IN JAN. 2002.
7. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDER'S RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
8. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)383-8881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
9. THE CONTRACTOR SHALL NOTIFY "PESB UTILITY" AT 1-800-267-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
10. TOTAL LIMIT OF DISTURBANCE: 16,490 SQ. FT. / 0.38 AC.
11. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-38).
12. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAY" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
13. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DDC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
14. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
15. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
16. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL. RECORDATION OF A REVISED SEWAGE DISPOSAL SHALL NOT BE NECESSARY.
17. 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.
18. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
19. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
20. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER F-07-38.

## SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

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



DESIGN DATA & GENERAL NOTES  
 1. All dimensions are in feet and inches (F'-IN).  
 2. All elevations are in feet above mean sea level (FMSL).  
 3. All dimensions are to the center of the pipe or structure unless otherwise noted.  
 4. All dimensions are to the center of the pipe or structure unless otherwise noted.

Mayer Brothers, Inc.  
 10000 Rte. 1  
 Silver Spring, MD 20914  
 Tel: 410-261-1111  
 www.mayerbrothers.com

### LOT 30 PUMP ELEVATIONS

	OFF	ON	ALARM
600 GPD BNR SYSTEM	504.3	506.2	507.3

600 GPD BNR SYSTEM  
 with 750 GALLON PUMP CHAMBER  
 Dog-Mat Model Form #1 No Scale March 18, 2008

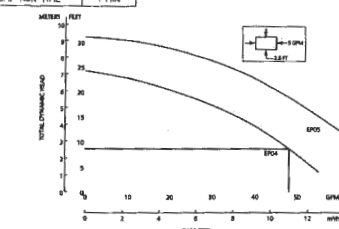


## GOULDS PUMPS Wastewater

### PERFORMANCE RATINGS

Head (ft.)	Flow (GPM)	Efficiency (%)
10	40	65
15	30	75
20	20	85
25	15	90
30	10	95

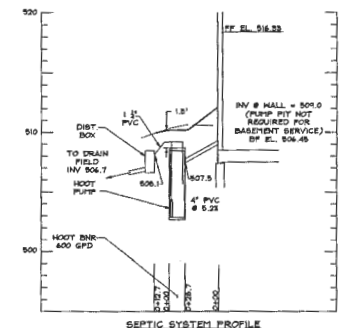
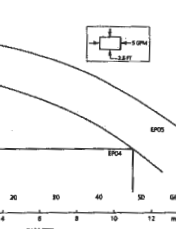
STATIC HEAD	5.0 (MIN)
FRICTION HEAD	9.4'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.4'
GALLONS PER MINUTE	47 GPM
DOSE	27 GAL
PUMP RUN TIME	1 MIN



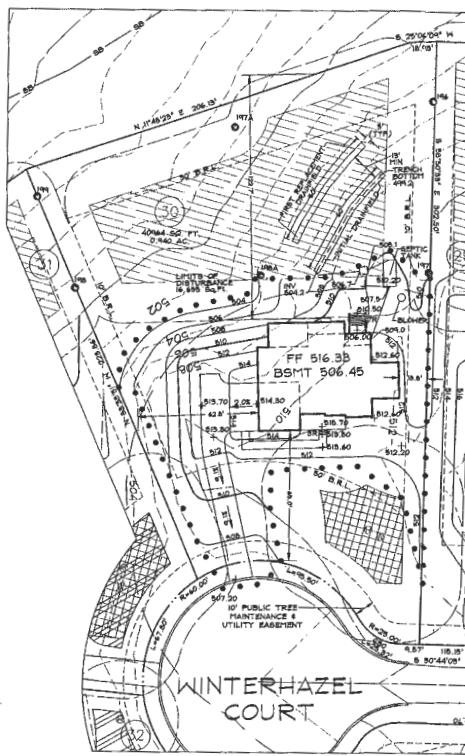
### TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	5.0'
OFF FLOW ELEVATION	504.3'
HEAD LOSS OF THE SYSTEM	9.4'
VERTICAL ELEVATION CHANGE	9.4'
FRICTION HEAD	9.4'
LENGTH OF PVC PIPE	13.8'
TOTAL LENGTH	13.8'
26.5/100 x 13.82 = 3.6' TOTAL FRICTION LOSS	
TOTAL HEAD	9.4'
VERTICAL ELEVATION CHANGE	9.4'
TOTAL FRICTION LOSS	3.6'
SYSTEM PRESSURE REQUIREMENTS	0.2'
TOTAL DYNAMIC HEAD	8.4'

STATIC HEAD	5.0 (MIN)
FRICTION HEAD	9.4'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	8.4'
GALLONS PER MINUTE	47 GPM
DOSE	27 GAL
PUMP RUN TIME	1 MIN

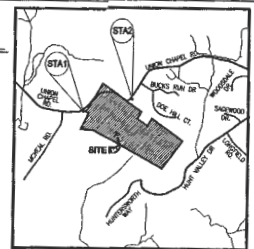


SEPTIC SYSTEM PROFILE  
 LOT 30  
 SCALE: HORIZ. 1"=30'  
 VERT. 1"=8'

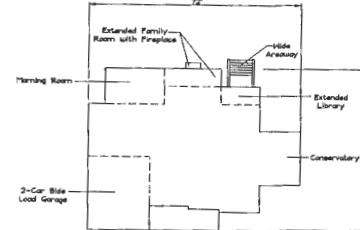


### BENCHMARK

RECENT SURVEY CONTROL #1	BRIDGE
E	10071.25
N.A.	10071.25
W	10071.25
E	10071.25
RECENT SURVEY CONTROL #2	BRIDGE
E	10071.25
N.A.	10071.25
W	10071.25
E	10071.25
ADJ. INFO. COORDINATOR	DDC



### VICINITY MAP SCALE 1"=2000'



### COLORADO ELEVATION 'A' BRICK AND STONE FRONT

### DATA SOURCES

### DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED LIMIT OF DISTURBANCE
- 645.5 PROP. SPOT ELEV./FINCH ANCHOR
- EXISTING 30" REPTIC RESERVE
- EXISTING 30" WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- REPTIC RESERVE AREA
- WELL AREA
- PAVED PERCOLATION TEST
- FAILED PERCOLATION TEST

LOT 30 INITIAL SYSTEM TRENCH SPECIFICATIONS			
	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH (60')	507.20	504.2	499.3

1. INVERT 6" FOUNDATION WALL: 507.0 (GRADIENT PUMP REQUIRED)
2. 600 GPD BNR SYSTEM 1/4" 780 GALLON PUMP CHAMBER
3. PROPOSED GRADE OVER TANK: 502.5
4. DISTRIBUTION BOX
5. INVERT: 507.5
6. EX 4" PROPOSED GRADE OVER TANK: 501.8
7. TRENCH DESIGN (4 BORN x 150 GPD/BORN) = 600 GPD
8. 600 GPD / 12 GPD/HR (APP. RATE) = 500 GPD
9. USE 8" HIDE TRENCH 1/4" 60' OF GRAVEL, SILICON PIPE
10. 15" FIN SPACING BETWEEN TRENCH EDGES
11. 500 BP / 5" WIDTH = 16.67 LF x 0.38 = 6.4 LF FIN. TRENCH
12. USE 1 - 60' LONG TRENCHES = 60 LF FOR INITIAL SYSTEM
13. USE 1 - 60' LONG TRENCHES = 60 LF FOR FIRST REPLACEMENT SYSTEM

Professional Certification  
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 232520, Expiration Date 2/28/2016.

04/28/2014  
 DATE  
 PAUL G. CAVANAUGH, P.E.



Development Design Consultants

Planner  
 Surveyor  
 Engineer  
 Landscape Architect

192 East Main Street  
 Westminster, MD 21157  
 410.384.0560  
 410.384.0564 (fax)  
 DDC@DDCinc.com  
 www.DDCinc.com

OWNER:  
 BELLE HAVEN ESTATES  
 1000 Rte. 1  
 Silver Spring, Maryland 20914

DEVELOPER:  
 BELLE HAVEN ESTATES  
 LOT 30

SITE ADDRESS:  
 LOT 30  
 1000 Rte. 1  
 Silver Spring, Maryland 20914

SHEET PLAN FOR BAT INSTALLATION	
3rd ELECTION DISTRICT	HOWARD COUNTY
REVENUES	
NO.	DESCRIPTION OF CHANGES
DRN.	REV. DATE
DDC FILE #	DRN. BY: JMK
TAX MAP #	DRN. BY: JMK
TAX MAP: 14	CHK. BY: POCBND
BLOCK / GRID:	DATE: 04/28/14
PARCEL R. 80	DDC JOB #: 05116.5
ZONE / USE: RC-DEO	SHEET NUMBER:
DWG. SCALE: 1"=30'	1 of 1

# GENERAL NOTES

1. BASE SQUARE FOOTAGE OF HOUSE: 3,750 SQ. FT.
2. NUMBER OF BEDROOMS: 4
3. EJECTOR PUMP REQUIRED TO SERVE BASEMENT
4. DRIVEWAY CULVERT IS NOT REQUIRED PER THE APPROVED ROAD DRAWINGS, F-07-08
5. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER CORP-LITE ZONING REGULATIONS DATED 7/28/06
6. FLAT REFERENCE: #1948
7. NAME INFORMATION SHOWN ON THIS PLAN IS BASED ON PLANS PREPARED BY DMH, AND DATED 06/25/07. EXISTING TOPOGRAPHY BASED ON GRADING PLAN PREPARED BY DYNAMIC DESIGN CONSULTANTS DATED 07/09/07 AND FIELD RUN TOPOGRAPHY PREPARED BY DDC INC. IN JAN. 2002.
8. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DESIGN DETAILS. PRIOR TO STAKEOUT FOR CONSTRUCTION, IT SHALL BE THE OWNER/BUILDER'S RESPONSIBILITY TO PROVIDE DDC, INC. WITH THE MOST RECENT SET OF HOUSE PLANS.
9. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410)318-1881 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
10. THE CONTRACTOR SHALL NOTIFY "P&B UTILITY" AT 1-800-297-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
11. TOTAL LIMIT OF DISTURBANCE IS 625 SQ. FT. / 0.35 AC.
12. STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED PER THE PREVIOUSLY APPROVED FINAL PLAN (F-07-30).
13. ANY DAMAGE TO PUBLIC "RIGHT-OF-WAYS" OR PAVED PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
14. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER (DCC, INC.) MAY CAUSE THE WORK TO BE UNACCEPTABLE.
15. THE DIMENSIONED DISTANCES SHALL GOVERN IF SCALED AND DIMENSIONED DISTANCES ON THIS PLAN ARE FOUND TO BE IN DISAGREEMENT.
16. THE LOT'S BOUNDARY HEREON COMPLY WITH THE MINIMUM LOT AREA AND OWNERSHIP WIDTH AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
17. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 6,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL AREA OF A REVISED SEWAGE BASINMENT SHALL NOT BE NECESSARY. REGULATION OF A REVISED SEWAGE BASINMENT SHALL NOT BE NECESSARY.
18. EXISTING WELLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
19. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
20. UPON BUILDING PERMIT REVIEW THE SEPTIC SYSTEMS OF ALL PROPOSED STRUCTURES AND OR EXISTING STRUCTURE EXPANSIONS SHALL BE RE-EVALUATED TO DETERMINE SUFFICIENT SYSTEM CAPACITY.
21. THE DEVELOPMENT OF THIS LOT DOES NOT REQUIRE AN ENVIRONMENTAL CONCEPT PLAN SINCE STORMWATER MANAGEMENT HAS PREVIOUSLY APPROVED UNDER F-07-30.

## SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 5 FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (DDE) IN A MANNER ACCEPTABLE TO DDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.



ITT

GOULDS PUMPS  
Wastewater

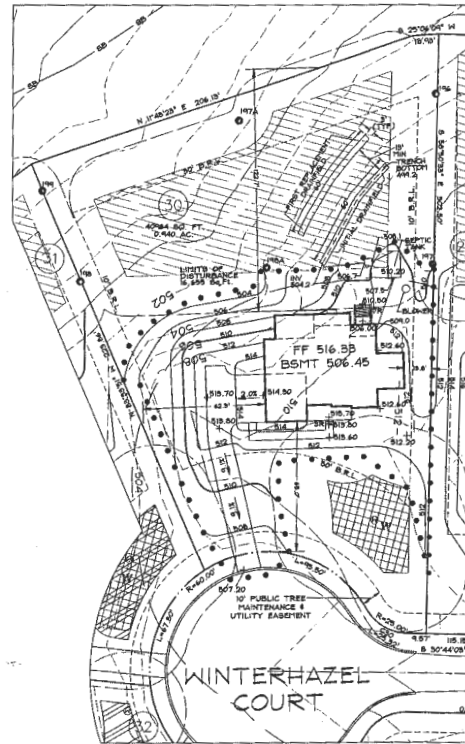
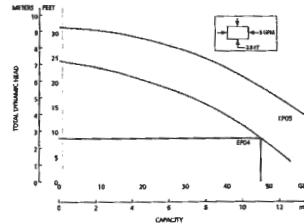
### PERFORMANCE RATINGS

Head (ft. of water)	Gallons Per Minute
10	1.0
15	0.7
20	0.5
25	0.4
30	0.3

STATIC HEAD	9.0 (MIN)
FRICTION HEAD	3.5'
DISTAL END HEAD	0'
TOTAL DYNAMIC HEAD	6.5'
GALLONS PER MINUTE	47 GPM
DOSE	47 GAL
PUMP RUN TIME	1 MIN

### TOTAL DYNAMIC HEAD CALCULATIONS

STATIC HEAD	9.042'
OFF FLOAT ELEVATION	904.2'
HIGH POINT OF THE SYSTEM	902.5'
VERTICAL ELEVATION CHANGE	8.5'
FRICTION HEAD	3.5'
FITTINGS	15.8'
LENGTH OF PVC PIPE	12.2'
TOTAL LENGTH	26.3'
26.3/100 x 13.62 = 3.5'	TOTAL FRICTION LOSS
TOTAL HEAD	12.042'
VERTICAL ELEVATION CHANGE	8.5'
TOTAL FRICTION LOSS	3.5'
SISTED PRESSURE REQUIREMENTS	0.0'
TOTAL DYNAMIC HEAD	8.5'



SCALE = 1"=30'

### BENCHMARK

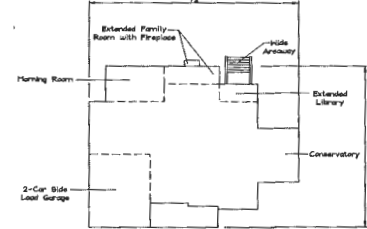
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7. 10001.28	
8. 10001.28	
9. 10001.28	
10. 10001.28	

Approved Seal: System Plan  
Howard County Health Department

Signature: [Signature]  
Date: 3/10/14

### VICINITY MAP

SCALE: 1"=200'



COLORADO ELEVATION 'A'  
BRICK AND STONE FRONT

DATA SOURCES:

### DRAWING LEGEND

- 500 PROPOSED GRADE
- 502 PROPOSED LIST OF DISTURBANCE
- + 665.5 PROP. SPOT ELEV./FLY ARCH
- EXISTING 30" SEPTIC RESERVE
- EXISTING 80' WELL BUFFER
- EXISTING 100' WELL BUFFER
- BUILDING RESTRICTION LINE
- SEPTIC RESERVE AREA
- WELL AREA
- PAIRED PERCOLATION TEST
- PAIRED PERCOLATION TEST

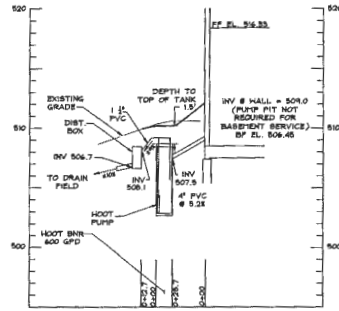
LOT 30 INITIAL SYSTEM TRENCH SPECIFICATIONS			
	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM TRENCH (40')	507.20	504.2	499.2

1. INVERT # FOUNDATION WALL: 504.0 (PUMP FIT NOT REQUIRED FOR BASEMENT SERVICE) BY EL. 506.48
2. 600 GPD RNR SYSTEM W/ 750 GALLON PUMP CHAMBER EX. GRADE OVER TANK: 510.5 PROPOSED GRADE OVER TANK: 510.2 INVERT: 507.5
3. DISTRIBUTION BOX EX. 4 PROPOSED GRADE OVER TANK: 508.5 INVERT: 508.1
4. TRENCH DESIGN (4 BORH x 150 GPD/BORH = 600 GPD) 600 GPD / 1.2 GPD/SF (APP. RATE) = 500 SF USE 3" WIDE TRENCH W/ 60" OF GRAVEL BELOW PIPE 15" MIN SPACING BETWEEN TRENCH EDGES 500 SF / 3" WIDTH = 166.67 LF x 0.36 = 60 LF MIN. TRENCH USE 1 - 60' LONG TRENCHES = 60 LF FOR INITIAL SYSTEM

### SEPTIC SYSTEM PROFILE

SCALE: HORIZ. 1"=30'

VERT. 1"=5'



### LOT 30 PUMP ELEVATIONS

OFF	ON	ALARM
504.2	506.2	507.2

600 GPD RNR SYSTEM  
H-600 ABNR  
with 750 GALLON PUMP CHAMBER

Design No. 1000 Form #1 No Scale March 18, 2008

### DESIGN DATA & GENERAL NOTES

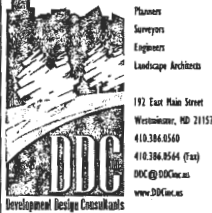
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2. Designer: [Designer Name]
3. Date: [Date]
4. Project: [Project Name]
5. Location: [Location]
6. Notes: [Notes]

Mayer Brothers, Inc.

10001.28

10001.28

10001.28



OWNER: [Owner Name]

DEVELOPER: [Developer Name]

SITE ADDRESS: [Site Address]

192 East Main Street

Westminster, MD 21157

410.384.6540

410.384.6544 (fax)

DDC@DDCinc.com

www.DDCinc.com

2nd ELECTION DISTRICT

HOWARD COUNTY

REVISIONS

NO. DESCRIPTION OF CHANGES DRN. REV. DATE

00. FILE #

TAX MAP #

TAX MAP 14

BLUCK / GRID

PARCEL # 06

ZONE / USE: RC-DEO

DWG. SCALE: 1"=30'

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

DATE: 05/08/2014

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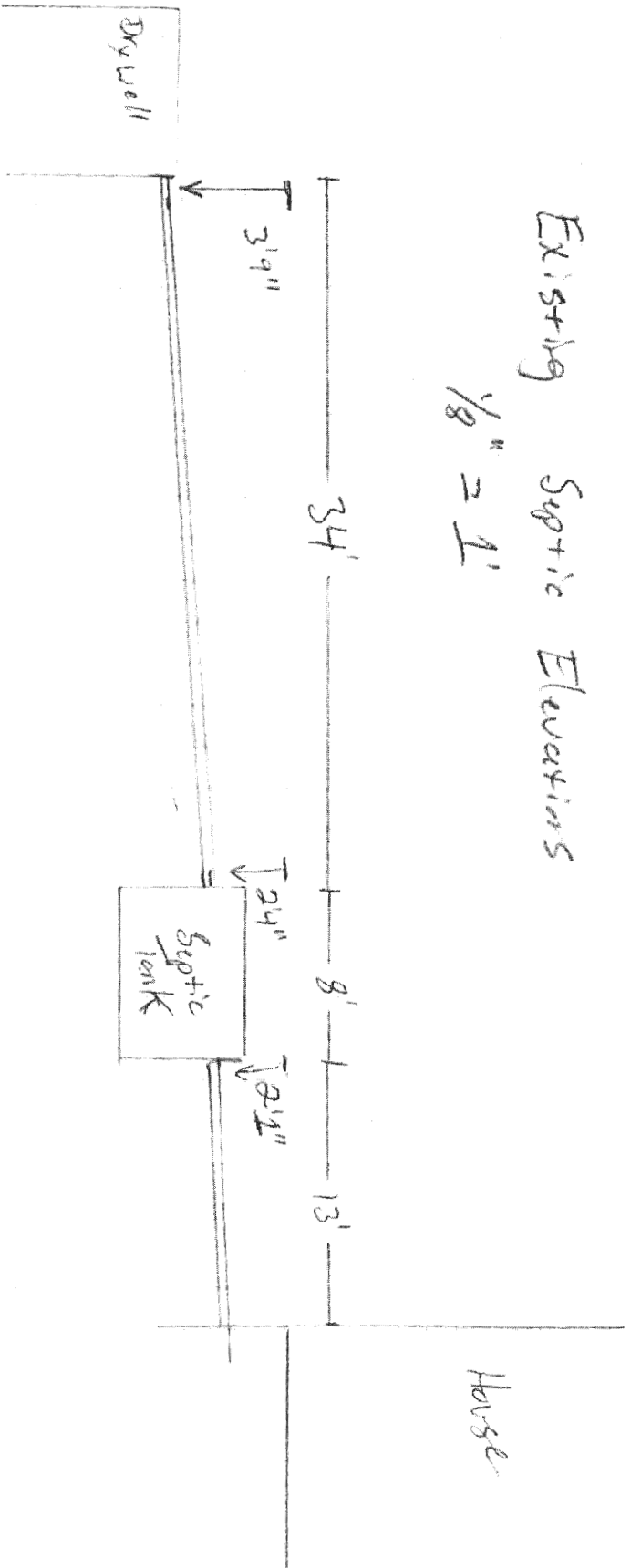
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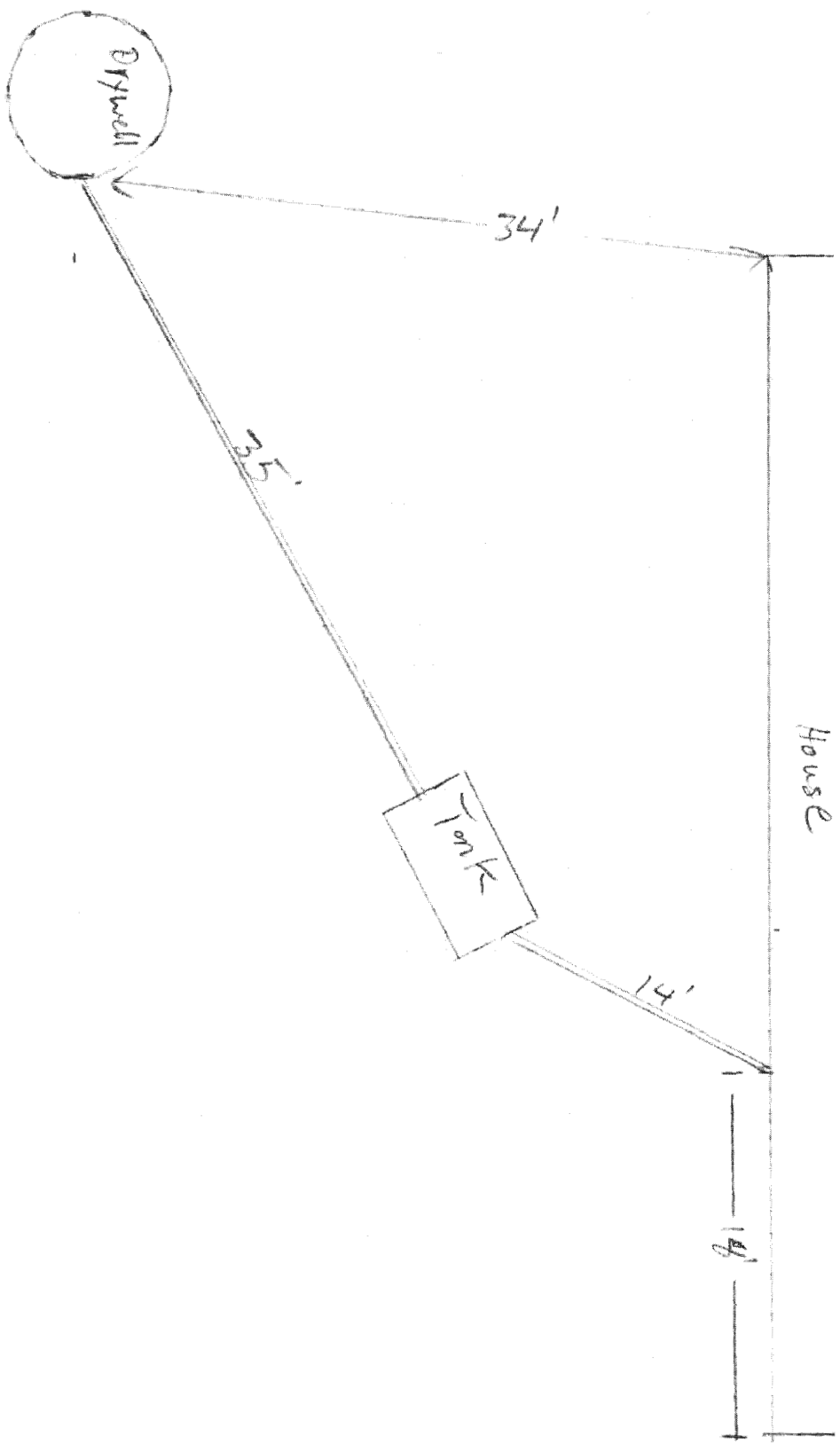
DATE: 05/08/2014

DATE: 05/08/2014

# Existing Septic Elevations

$$\frac{1}{8}'' = 1'$$



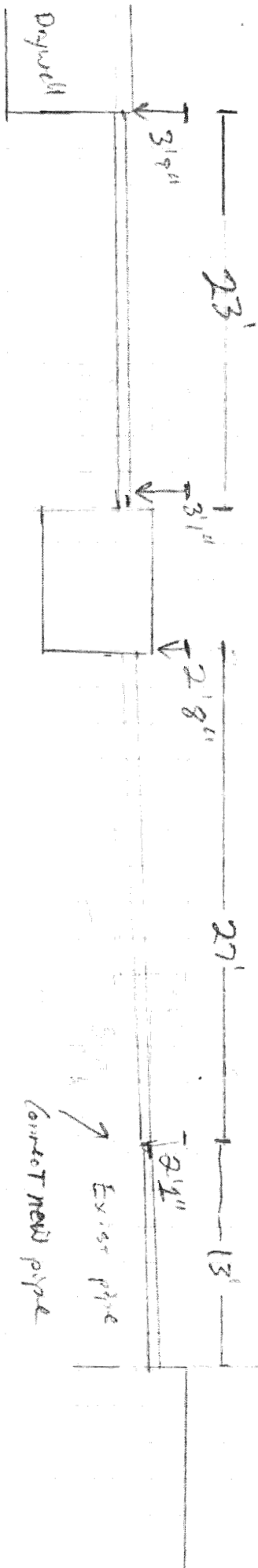


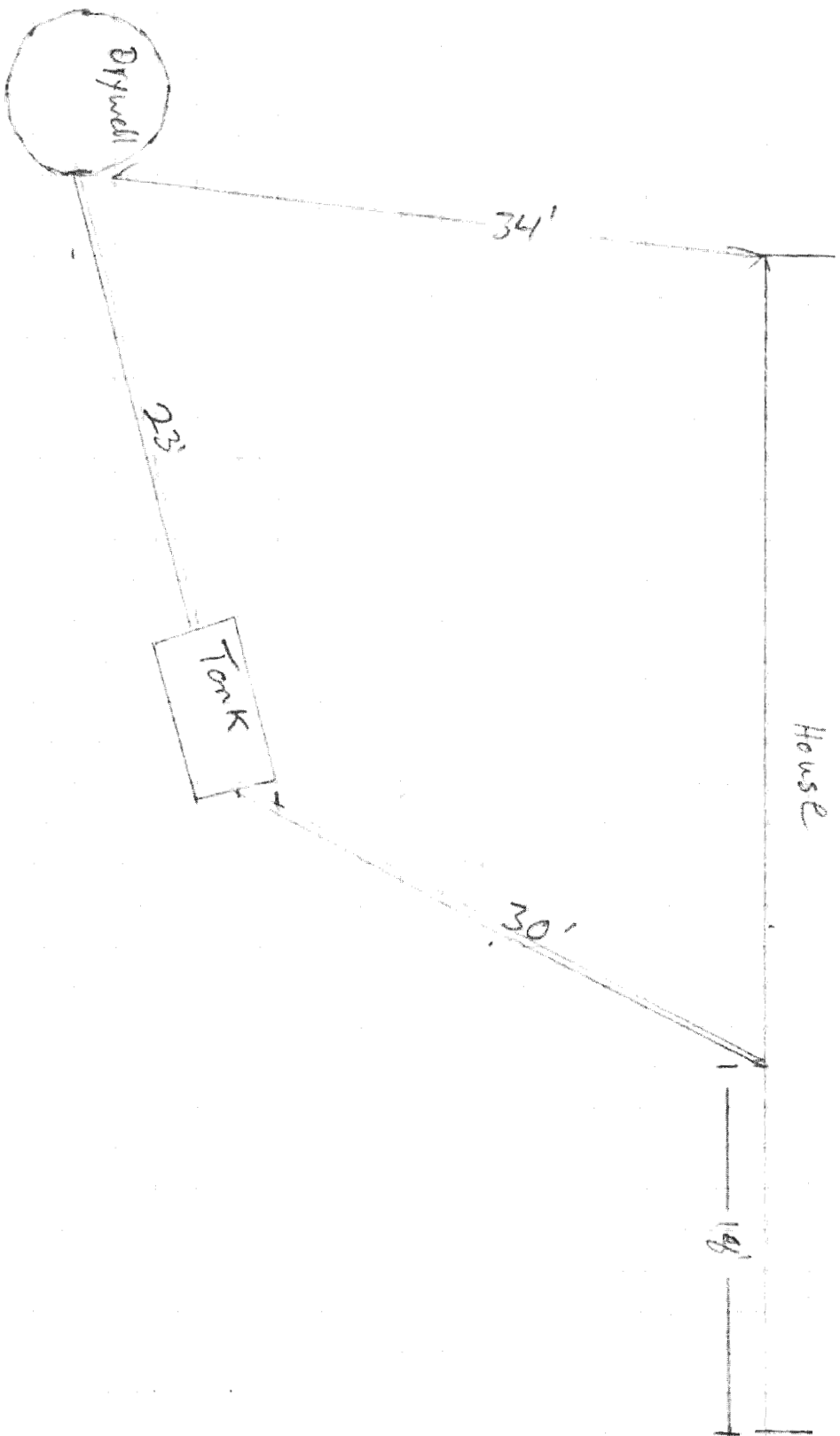
Existing Septic

$$\frac{1}{8}'' = 1'$$

# Proposed Septic Elevations

$$\frac{1}{8}'' = 1'$$





Proposed Septic

$$\frac{1}{8}'' = 1$$