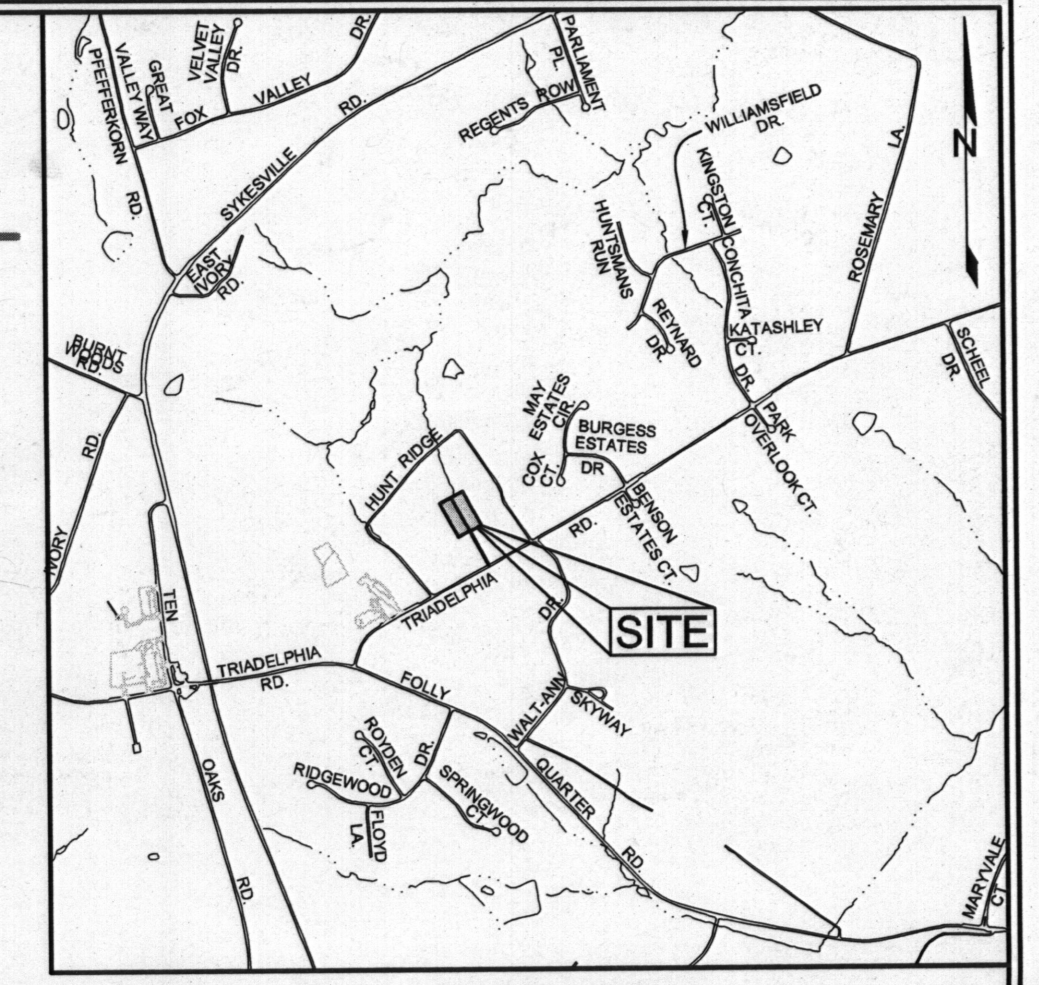


**LEGEND**

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING TREELINE
- SOIL BOUNDARY
- PERCOLATION TEST HOLES, FAILED
- PERCOLATION TEST HOLES, PASSED
- EXISTING SEPTIC EASEMENT
- PROPOSED SEWAGE AREA FOR LOT 13-B
- PROPOSED SEWAGE AREA FOR LOT 13-C
- EXISTING SEWAGE AREA TO BE REMOVED
- TO BE REMOVED
- PROPOSED PRIVATE EASEMENT FOR LOCATING AND ACCESSING SEPTIC DRAINFIELDS THAT SERVE LOT 13-C (17,755 SQ. FT.)
- PROPOSED DRAINAGE ARROW
- SEPTIC TANK
- NITROGEN REDUCING PRETREATMENT TANK



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

**GENERAL NOTES**

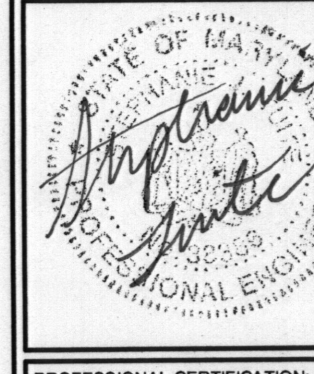
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11. ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADE OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN FIELD LOCATED.
12. BEFORE THE HEALTH DEPARTMENT APPROVES THE BUILDING PERMIT FOR 13358 TRIADELPHIA ROAD, THE WELL TO SERVE THE PROPOSED NEW RESIDENCE MUST BE DRILLED AND THE WELL COMPLETION REPORT APPROVED BY THE HEALTH DEPARTMENT.
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16. AN ADVANCE PRETREATMENT SYSTEM, WHICH UTILIZES BEST AVAILABLE TECHNOLOGY TO PERFORM NITROGEN REDUCTION, MUST BE INSTALLED ON THE SEPTIC SYSTEM LOCATED AT 13358 TRIADELPHIA ROAD AS THE SOIL RESOURCE AVAILABLE FOR SEWAGE DISPOSAL AND TREATMENT IS ONLY LARGE ENOUGH TO ACCOMMODATE AN INITIAL SYSTEM AND ONE REPAIR. A SUPPLEMENTAL SITE PLAN WITH ALL OF THE NECESSARY DETAILS FOR INSTALLATION OF THE SYSTEM WILL BE REQUIRED PRIOR TO THE RELEASE OF THE BUILDING PERMIT AND SEPTIC SYSTEM INSTALLATION PERMIT.
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SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	GROUP
GmB	GLENNVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B

*Signed copy*

**PERCOLATION CERTIFICATION PLAN**  
**13358 & 13360 TRIADELPHIA ROAD**  
**TRIADELPHIA FARMS II**  
**LOTS 13B & 13C**

TAX MAP 22 GRID 9  
 THIRD ELECTION DISTRICT  
 PARCEL 439  
 HOWARD COUNTY, MARYLAND



**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
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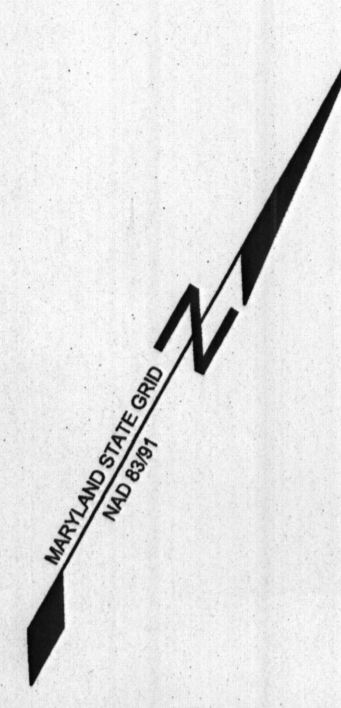
DESIGN BY: SJT  
 DRAWN BY: SJT  
 CHECKED BY: SJT  
 SCALE: AS SHOWN  
 DATE: JULY 27, 2012  
 PROJECT #: 11-078  
 SHEET #: 1 of 1

**OWNER**  
 RYAN & HEATHER JOHNSON  
 13360 TRIADELPHIA ROAD  
 ELICOTT CITY, MARYLAND 21042  
 443-309-5572

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS IN ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY

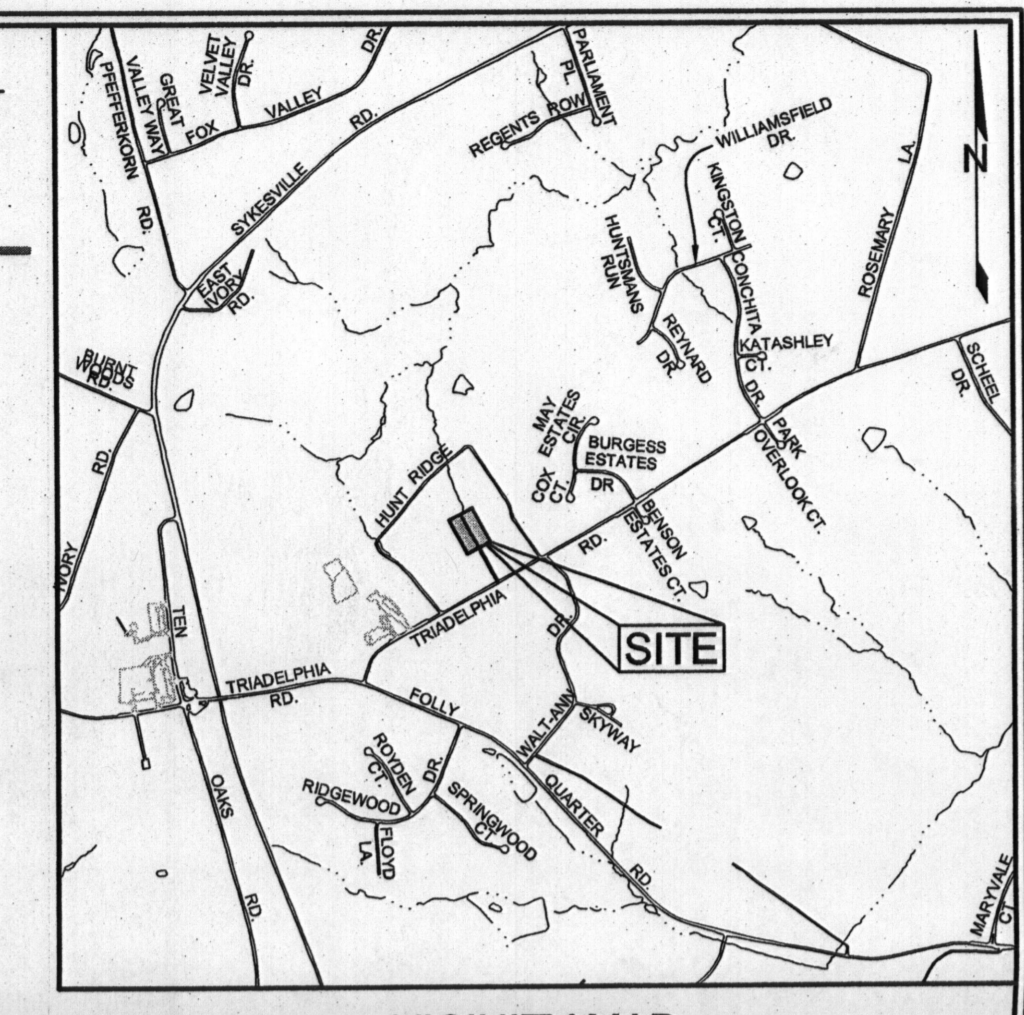
*By: Brian Lee Oster Beilman* 8/15/2012  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT 790

**PLAN VIEW**  
SCALE: 1"=50'



**LEGEND**

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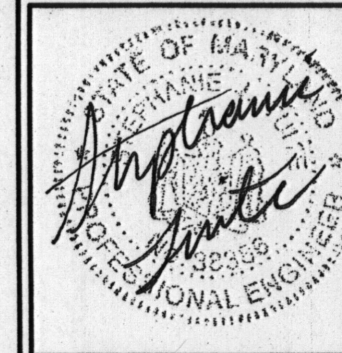
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*Signed copy*

**PERCOLATION CERTIFICATION PLAN**  
**13358 & 13360 TRIADELPHIA ROAD**  
 TRIADELPHIA FARMS II  
 LOTS 13B & 13C

TAX MAP 22 GRID 9 PARCEL 439  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
 Email: info@silladcock.com

DESIGN BY: SJT  
 DRAWN BY: SJT  
 CHECKED BY:  
 SCALE: AS SHOWN  
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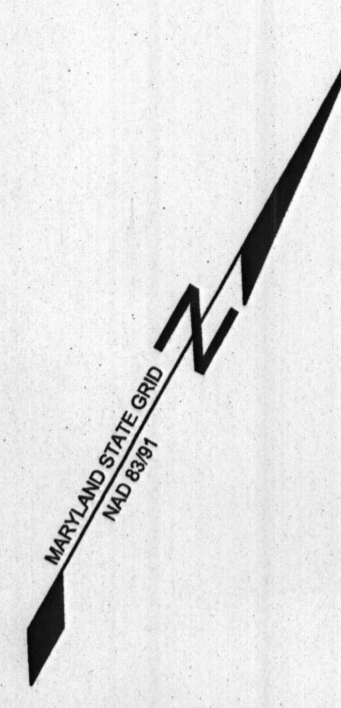
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 ELICOTT CITY, MARYLAND 21042  
 443-309-5572

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWER SYSTEMS IN ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY  
 [Signature] 8/15/2012  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT 1790

**PLAN VIEW**  
 SCALE: 1"=50'

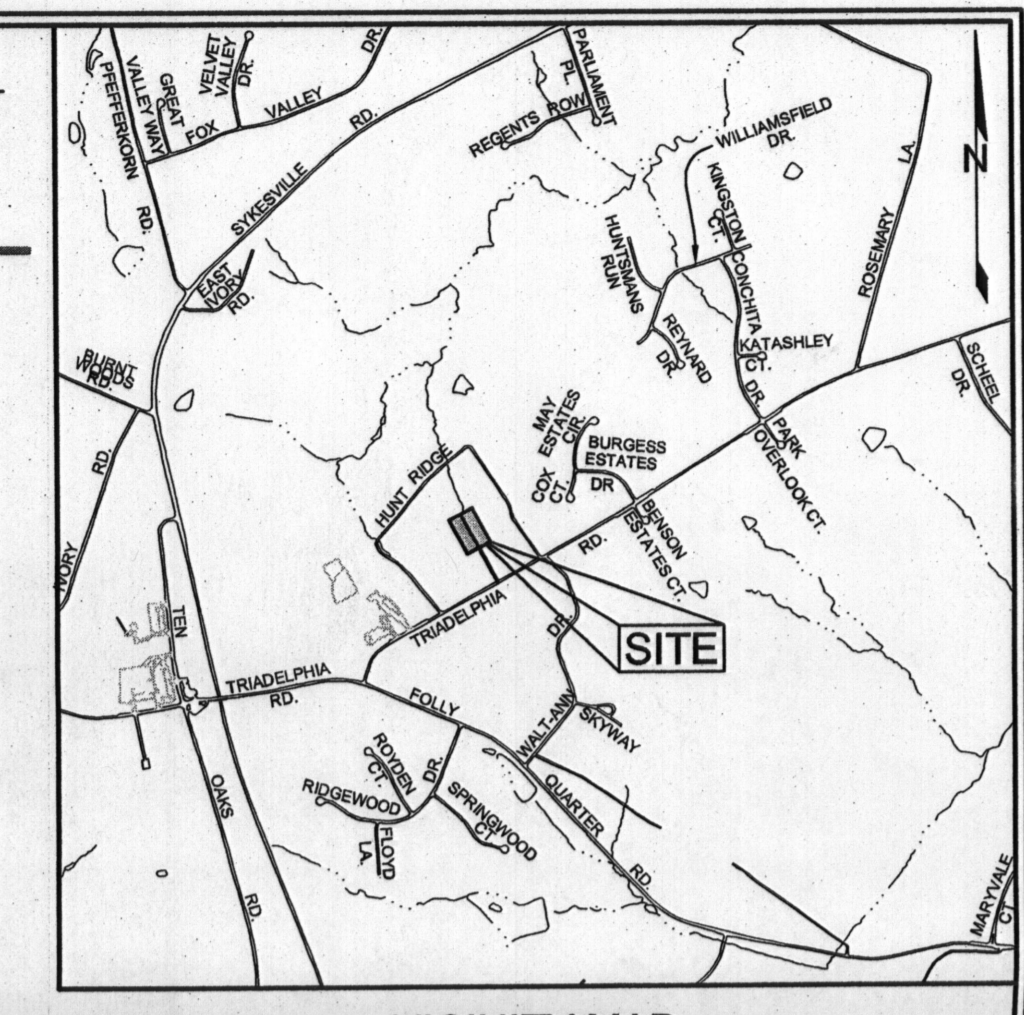
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30368, EXPIRATION DATE: JANUARY 12, 2014

PC 536672



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- EXISTING TREELINE
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SYMBOL	NAME / DESCRIPTION	GROUP
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*Signed copy*

**PERCOLATION CERTIFICATION PLAN**  
**13358 & 13360 TRIADELPHIA ROAD**  
 TRIADELPHIA FARMS II  
 LOTS 13B & 13C  
 TAX MAP 22 GRID 9  
 THIRD ELECTION DISTRICT  
 PARCEL 439  
 HOWARD COUNTY, MARYLAND

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DESIGN BY: SJT  
 DRAWN BY: SJT  
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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWER SYSTEMS IN ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY

*Richard Peter Biedeman* 8/15/2012  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

PLAN VIEW  
 SCALE: 1"=50'

**OWNER**  
 RYAN & HEATHER JOHNSON  
 13360 TRIADELPHIA ROAD  
 ELICOTT CITY, MARYLAND 21042  
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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. 30368, EXPIRATION DATE: JANUARY 12, 2014

PC 536672

**FISHER, COLLINS  
& CARTER, INC.**

**CIVIL ENGINEERING CONSULTANTS  
and LAND SURVEYORS**

Terrell A. Fisher, P.E., L.S.  
Earl D. Collins, P.E.  
Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.  
Mark L. Robel, P.L.S.  
Aldo M. Vitucci, P.E.

May 23, 2013

Mr. Robert Bricker, CPSS, REHS/RS  
Bureau of Environmental Health  
Howard County Health Dept.  
7178 Columbia Gateway Dr.  
Columbia, MD 21046-4544

RE: BAT Site Plan Revisions  
13358 Triadelphia Road  
Bldg Permit # B13001260

Dear Robert:

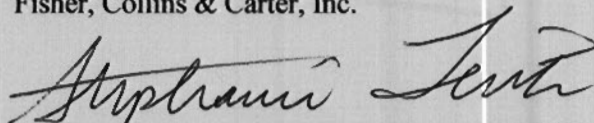
On behalf of our clients, Ryan and Heather Johnson, we are submitting the attached two (2) copies of the revised BAT Site Plan for your review in conjunction with the Building Permit review.

The following is a point by point response to your May 22, 2013 comments:

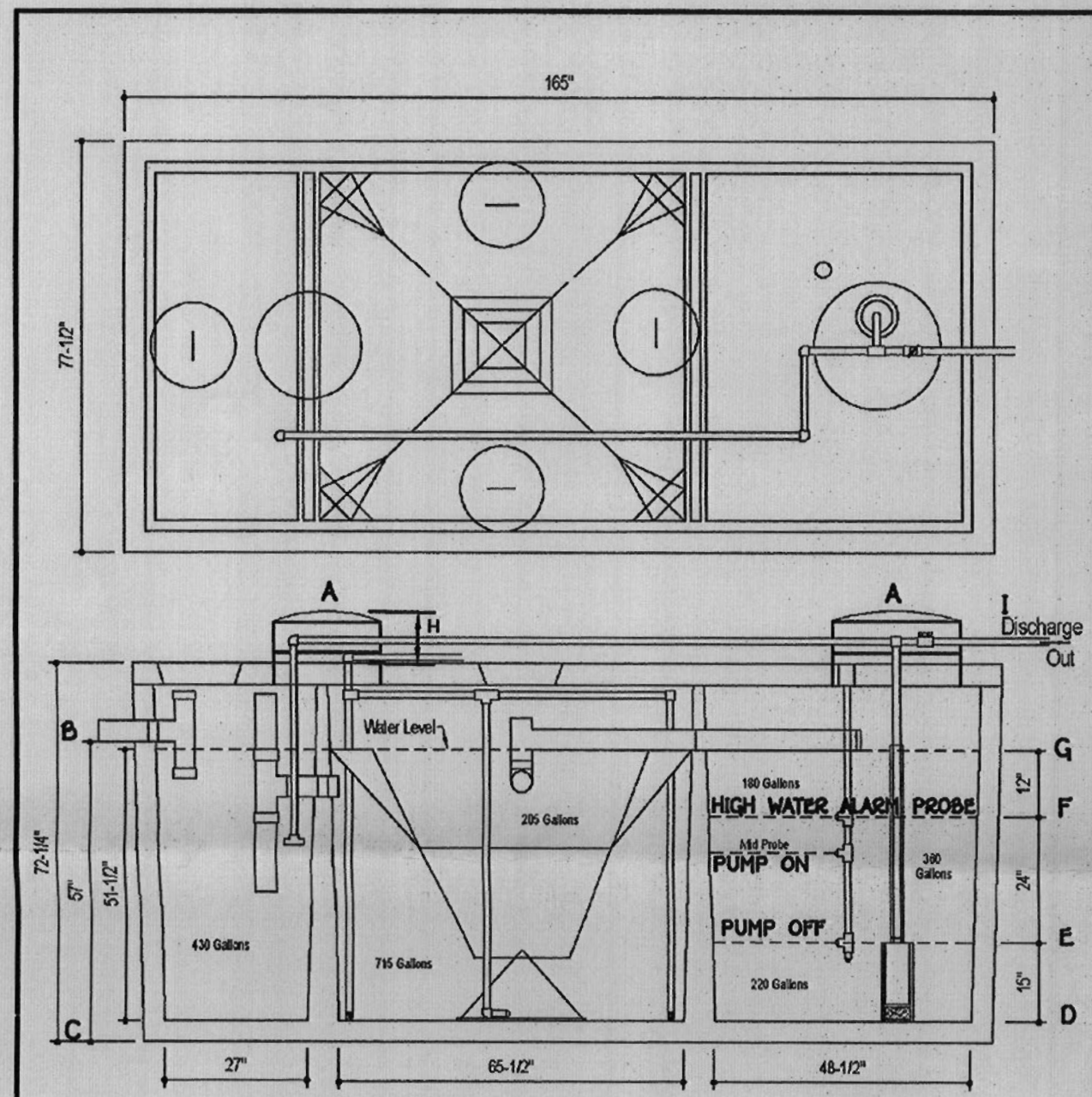
1. a. Understood.
  - b. The interior tank dimensions less the interior concrete walls are approximately 159" x 69", equivalent to approximately 76 square feet. The area above the labeled water level on the tank details on the plan is approximately 14" or 1.17 feet (clearance from the water level to the bottom of the tank lid).  
  
 $76 \text{ sf} \times 1.17 \text{ ft} = 89 \text{ cubic feet} = 665 \text{ gallons}$   
 $665 \text{ gallons} + 180 \text{ gallons (on detail)} = 845 \text{ gallons of storage between the high water alarm probe and the bottom of the tank lid.}$
  - c. Understood.
  - d. Understood. The bottom of the tank lid is at an elevation of approximately 577.30, which is 0.5 feet below the invert out of the house.
  - e. Label removed as requested.
  - f. Tank lid has been shown and top of tank has been labeled on the profile as requested.
2. Notes 11 and 12 have been revised as necessary.
  3. Note added as requested.

Thank you for your time and consideration of this submission. If you should have any questions or comments regarding this response, please do not hesitate to call.

Very truly yours,  
Fisher, Collins & Carter, Inc.

  
Stephanie J. Tuite, RLA, PE, LEED AP BD&C

WO #13010-6001  
c.c. Ryan & Heather Johnson



**SEPTIC SYSTEM ELEVATIONS**  
 A = 580.00  
 B = 576.35 (INV. INTO TANK)  
 C = 571.60  
 D = 571.93  
 E = 573.18  
 F = 575.18  
 G = 576.18  
 H = 2.38' (7' MIN.)  
 I = 578.74 (INV. OUT OF TANK)  
 FFE = 590.14  
 BSE = 580.30  
 INV. OUT OF HOUSE = 577.80  
 INV. INTO DISTRIBUTION BOX = 578.33

**SEPTIC SYSTEM DESIGN**  
 5 BEDROOM HOUSE  
 18.8 FEET PER BEDROOM  
 TRENCH LENGTH = 5 X 18.8 = 94 FEET  
 TRENCH INVERT = 2 FEET  
 TRENCH T1 INVERT = 478.00  
 TRENCH T2 INVERT = 476.00  
 TRENCH DEPTH = 6 FEET

- BAT NOTES**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
  - THE MAXIMUM COVER OVER THE BAT FOR THE MANUFACTURER'S SPECIFICATION IS 3 FEET. IF COVER EXCEEDS 3 FEET, THEN A TRAFFIC BEARING TANK IS REQUIRED.
  - THE BLOWER MAY NOT BE LOCATED MORE THAN 100 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 HAS BEEN COMPLETED AND THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
  - SURFACE RUNOFF SHALL BE DIRECTED AROUND THE BAT TANK.
  - AT HIGH WATER ALARM PROBE, PUMP WILL HAVE CONTINUOUS OPERATION UNTIL LEVEL GOES BENEATH PROBE.
  - IF WATER LEVEL RISES ABOVE THE ALARM PROBE, AN AUDIBLE AND VISUAL ALARM WILL SOUND. SEE MANUFACTURER SPECS FOR ADDITIONAL INFORMATION.
  - ALARM TO BE WIRELESS TO A CIRCUIT SEPARATE FROM THE PUMP CIRCUIT.

**DESIGN DATA & GENERAL NOTES**

1) Concrete strength per ACI 308.2. © 18 days. Density = 149 pcf.  
 2) Concrete - Rebar Type #4 per ACI 308.2.1 & 308.2.2.  
 3) Admixtures & plasticizers per ASTM C 494-04 & C 684-04.  
 4) Referencing per ASTM A 118, Max. 1/4" cover.

**Mayer Brothers, Inc.**  
 6300 River Road  
 Steeles Maryland 21075  
 Tel: 410.798.1434  
 Fax: 410.798.1433  
 www.mayerbrothers.com

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

Dwg. No. H01 Form #1 No Scale March 18, 2009



**APPLICATIONS**  
 Specifically designed for the following uses:  
 • Efficient systems  
 • Homes  
 • Farms  
 • Heavy duty stamp  
 • Water transfer  
 • Dewatering

**SPECIFICATIONS**  
 • Solids handling capability: 1/2" maximum.  
 • Capacities: up to 60 GPM.  
 • Total heads: up to 31 feet.  
 • Discharge size: 1 1/2" NPT.  
 • Mechanical seal: carbon-rotary/ceramic-stationary. BUNA-N elastomers.  
 • Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.  
 • Fasteners: 300 series stainless steel.  
 • Capable of running dry without damage to components.

**Motor:**  
 • EP04 Single phase: 0.4 HP, 115 or 230 V, 60 Hz, 1550 RPM, built in overload with automatic reset.  
 • EP05 Single phase: 0.5 HP, 115 V or 230V, 60 Hz, 1550 RPM, built in overload with automatic reset.  
 • Power cord: 10 foot standard length, 16G SJTW with three prong grounding plug. Optional 20 foot length, 16G SJTW with three prong grounding plug (standard on EP05).  
 • Fully submerged in high grade turbine oil for lubrication and efficient heat transfer.

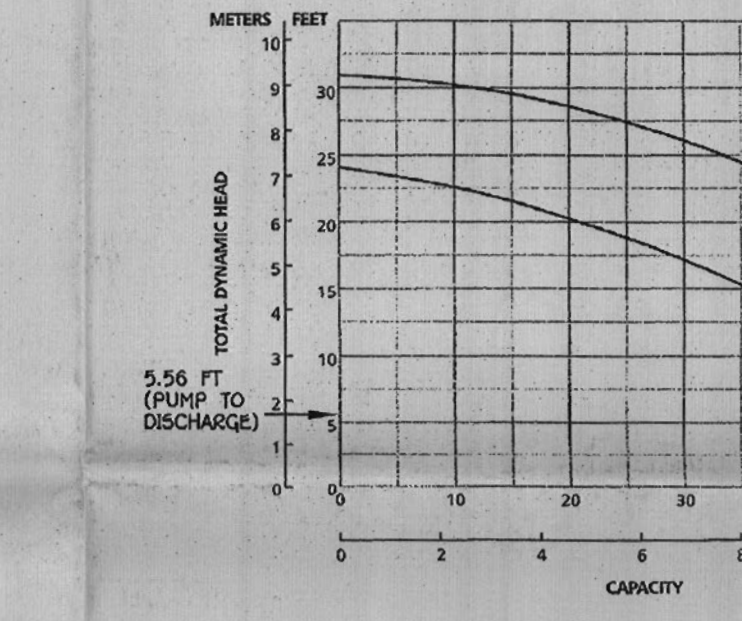
**Available for automatic and manual operation. Automatic models include Mechanical Float Switch assembled and preset at the factory.**

**PERFORMANCE RATINGS**

Total Head (ft. of water)	Gallons Per Minute	EP04	EP05
5	53		
10	46	52	
15	36	55	
20	21	46	
25	9	33	
30	—	11	

**COMPONENTS**

Item No.	Description
1	Inletter
2	Base
3	Pump Casing
4	Mechanical Seal
5	Ball Bearings
6	Oil Ring
7	Power Cord
8	Oil Filled Motor
9	Motor Housing/ Stator Assembly
10	Motor Cover



**MODEL INFORMATION**

Order No.	HP	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum On Level	Minimum Off Level	Minimum Basin Diameter	Minimum Solids Size	Maximum Shipping Weight
EP0411						Plug / No Switch	10'	1 1/2"	Manual	Manual	18"	1/2"	20/9.1
EP0411A						Plugback / Wide-Angle	10'	1 1/2"	Manual	Manual	18"	1/2"	21/9.5
EP0411F						Plug / No Switch	20'	1 1/2"	Manual	Manual	18"	1/2"	20/9.1
EP0411AC						Plugback / Wide-Angle	20'	1 1/2"	Manual	Manual	18"	1/2"	21/9.5
EP0412						Plug / No Switch	10'	1 1/2"	Manual	Manual	18"	1/2"	20/9.1
EP0412F						Plug / No Switch	20'	1 1/2"	Manual	Manual	18"	1/2"	20/9.1
EP0511F						Plug / No Switch	20'	1 1/2"	Manual	Manual	18"	1/2"	22/10
EP0511AC						Plugback / Wide-Angle	20'	1 1/2"	Manual	Manual	18"	1/2"	23/10.4
EP0512F						Plug / No Switch	20'	1 1/2"	Manual	Manual	18"	1/2"	22/10

**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. 38386, EXPIRATION DATE: 01/12/2014.

*Stephanie Lute* 5/23/13  
 Signature of Professional Engineer DATE

**STATE OF MARYLAND**  
 PROFESSIONAL ENGINEER  
 No. 38386  
 EXPIRES 01/12/2014

**SOILS LEGEND**

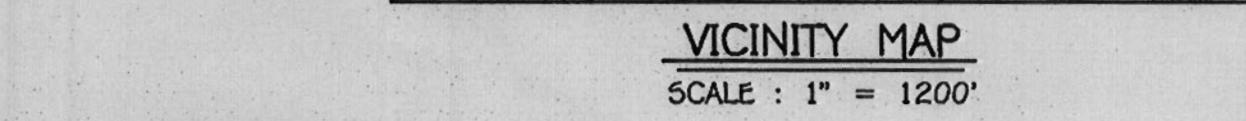
SOIL	NAME	CLASS
GmB	Glenville silt loam, 3 to 8 percent slopes	C
MaC	Manor loam, 0 to 15 percent slopes	B

- NOTES:**
- Hydric soils and/or contains hydric inclusions
  - May contain hydric inclusions
  - Generally only within 100-year floodplain areas

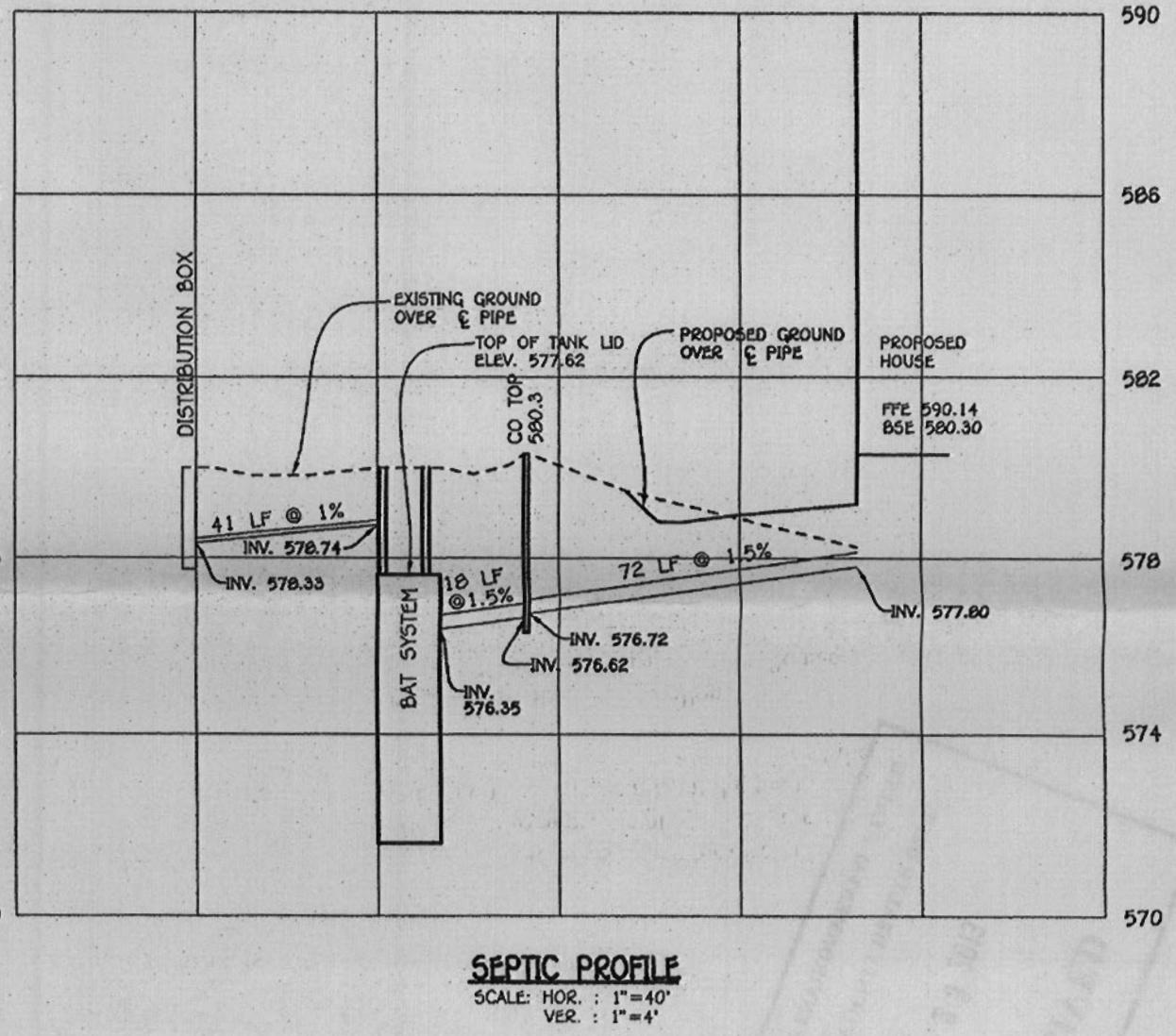


**LEGEND**

- EXISTING 2' CONTOURS
- EXISTING 10' CONTOURS
- - - EXISTING TREE LINE
- SOIL LINES AND TYPES
- DENOTES EXISTING OR ALTERNATE WELLS
- ▭ STABILIZED CONSTRUCTION EASEMENT
- SSF SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- ▨ PRIVATE DRAINAGE & UTILITY EASEMENT
- FLOW ARROW
- ROOF LEADER



- GENERAL NOTES**
- Subject Property Zoned RR-DEO Per 2/02/04 Comprehensive Zoning Plan And Comp Life Zoning Regulations Effective 7/28/06.
  - Coordinates Based on Assumed Datum.
  - This Plan is Based on Field Run Monumented Boundary Survey Performed on Or About June, 2012, by Sill, Adcock & Associates, LLC.
  - B.L. Denotes Building Restriction Line.
  - Denotes Iron Pin Set with Cap "F.C.C. #".
  - Denotes Iron Pipe or Iron Bar Found.
  - Denotes Angular Change in Bearing of Boundary or Right-of-Way.
  - Denotes Concrete Monument Set with Cap "F.C.C. #".
  - Denotes Concrete Monument or Stone Found.
  - All Lot Area is More or Less (±).
  - There are No Existing Principal Structures Currently on This Lot.
  - This Property is Not Located Within the Metropolitan District And Will be Served by Private Well and Private Septic System.
  - This Plan is in Compliance with The Amended Fifth Edition of The Subdivision And Land Development Regulations Per Council Bill 45-2005 And The Zoning Regulations As Amended by Council Bill 75-2005, Development Or Construction on This Lot Must Comply with Setback And Buffer Regulations in Effect At the Time of Submission of the Site Development Plan, Waiver Petition Application, or Building/Grading Permit And Per The Comp-Life Zoning Regulations Dated July 28, 2005.
  - All Construction shall be in Accordance with The Latest Standards and Specifications of Howard County.
  - The Contractor shall Notify The Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1800 at Least Five (5) Working Days Prior to the Start of Work.
  - The Contractor shall Notify "Miss Utility" at 1-800-257-7777 at Least 48 Hours Prior to Any Excavation Work Being Done.
  - The Existing Topography is Taken From Field Run Survey with Contour Intervals Prepared by Sill, Adcock & Associates, LLC in June, 2012 and Supplemented with Howard County GIS Information.
  - Existing Utilities Shown are Based on Available Construction Drawings. Contractor to Verify Locations of Existing Utilities Prior to Excavation.
  - There are No Floodplains, 15-24.9% Slopes, 25% or Greater Slopes, Wetlands, or Wetland Buffers on This Site.
  - There are No Disturbances to Environmental Features Located on This Property.
  - Site Area: 1.312 Acres.
  - Dead Reference: Liber 12582, Folio 293.
  - Adjustments to Septic Easement Area are Not Permitted Without Additional Testing.
  - The Lot shown Hereon Complies with The Minimum Ownership Width and Lot Area as Required by The Maryland State Department of the Environment.
  - Existing Wells And/or Sewerage Easements Within 100 Feet of The Property Have been Shown From All Reasonable Efforts.
  - Existing Well (Hc-95-2478) Has been Field Located by Fisher, Collins & Carter, Inc. in March 2013. Any Changes to A Private Sewerage Easement shall Require a Revised Perc Certification Plan.
  - This Area Designates A Private Sewerage Area of At Least 10,000 Square Feet (or if Precipitation System as Required by The Maryland State Department of the Environment for Individual Sewage Disposal. Improvements of Any Nature in This Area are Restricted Until Public Sewerage is Available. These Areas shall become Null and Void Upon Connection to a Public Sewerage System. The County Health Officer shall Have the Authority to Grant Adjustments to The Private Sewerage Area. Recordation of A Modified Sewerage Area shall Not be Necessary.
  - These Areas Designate Private Sewerage Areas as Required by The Maryland Department of the Environment for Individual Sewage Disposal. Improvements in This Area are Restricted Until Public Sewerage is Available. The County Health Officer shall Have the Authority to Grant Adjustments to The Private Sewerage Area. Recordation of A Modified Sewerage Area shall Not be Necessary.
  - Existing 24" Red Maple And 20" Cherry Along Western Property Line to be Root Pruned Upon Start of Excavation.



**SITE PLAN FOR BAT INSTALLATION**  
**13358 TRIADELPHIA ROAD**

Zoned: RR-DEO  
 Tax ID No: 03-302326  
 Tax Map No. 22; Grid No. 9; Parcel No. 439  
 Third Election District - Howard County, Maryland  
 Date: MAY 23, 2013 Scale: As Shown

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

**OWNERS**  
 RYAN & HEATHER JOHNSON  
 13360 TRIADELPHIA ROAD  
 ELLICOTT CITY, MARYLAND 21042  
 443-309-5572