

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: 7/14/14

ONSITE SEWAGE DISPOSAL SYSTEM

P 554540-13

INSTALLATION APPROVAL DATE: 10/19/14

**PERMIT
CONSTRUCTION**

A _____

PROPERTY ADDRESS: 13014 High Grove Road

SUBDIVISION: Schooley Mill Farm LOT: 9 TAX ID: _____

CONTRACTOR: _____ EMAIL: _____

CONTRACTOR ADDRESS: _____ PHONE: _____

PROPERTY OWNER: _____ EMAIL: _____

OWNER ADDRESS: NVR Inc. PHONE: 410-379-5956
9720 Patuxent Woods Drive, Columbia, MD 21046

BAT UNIT MODEL: Hoot 600 BNR BAT UNIT SIZE: 600 GPD

PUMP CHAMBER CAPACITY (GALLONS): _____ PUMP SIZE: _____

NUMBER OF BEDROOMS: _____ HOUSE SQ. FT. _____ APPLICATION RATE: _____

DISTRIBUTION SYSTEM: GRAVITY FED LOW PRESSURE DOSED

TRENCHES:	LINEAR FEET REQUIRED: <u>See Bat Plan 186</u>	INLET DEPTH: <u>See Bat Plan 3</u>
	TRENCH WIDTH: <u>See Bat Plan 2'</u>	MAXIMUM BOTTOM DEPTH: <u>See Bat Plan 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. ~99 ton.	
NOTES:	Set BAT unit per plan. 3 x 62'? Set distribution box per plan. Install trenches per plan.	

ISSUED BY: Jeff Williams ISSUE DATE: 7/14/14 EXPIRATION DATE: 7/14/15

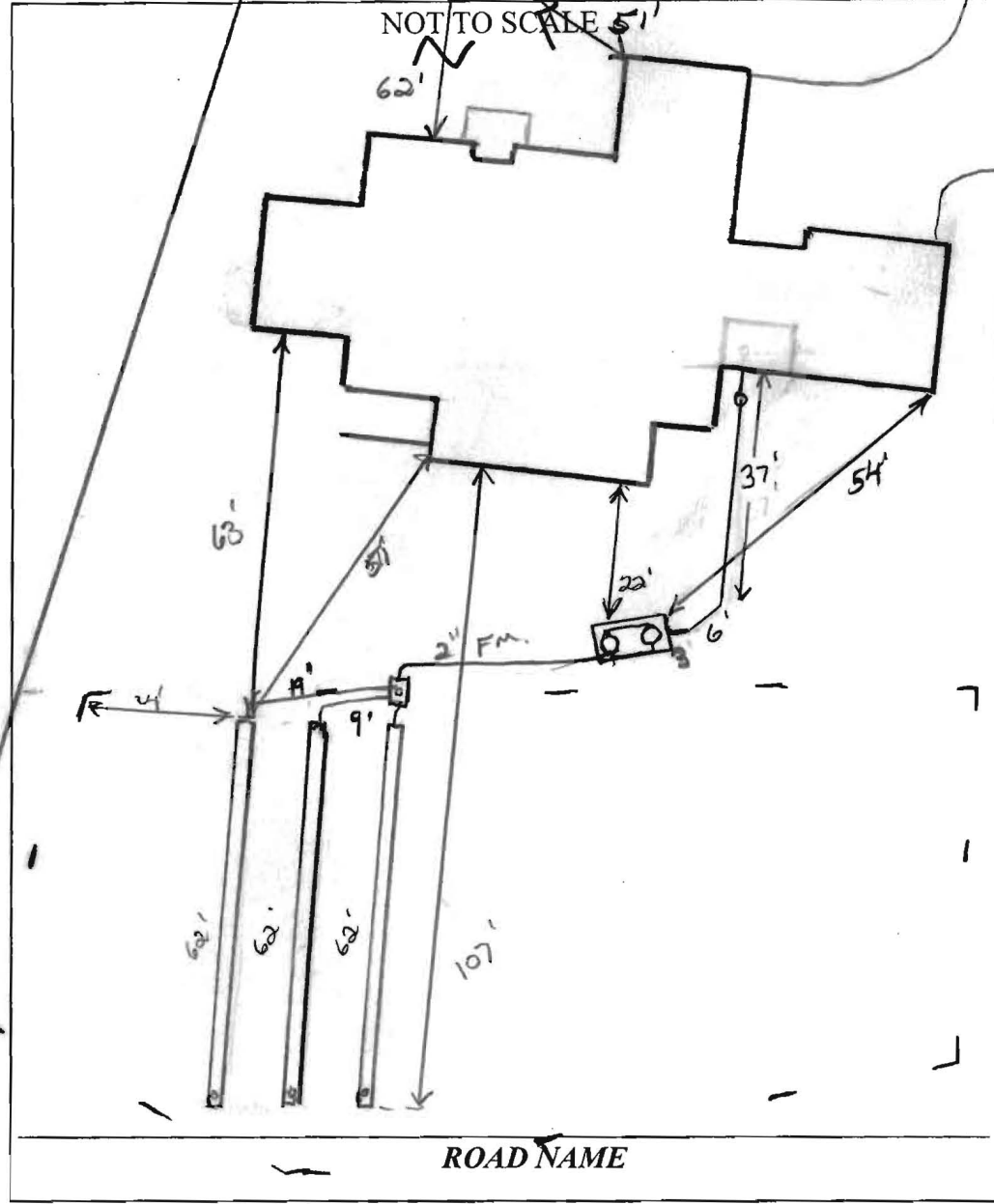
- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
- 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.**

HO-95-2444

NOT TO SCALE 5'



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
2'	8'	7'
NUMBER OF TRENCHES		136'
TOTAL LENGTH		186'
ABSORPTION AREA		
DISTRIBUTION BOX LEVEL		Yes
DISTRIBUTION BOX BAFFLE		Yes
DISTRIBUTION BOX PORT		Yes

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	Yes
MANUFACTURER	Mayer Bros
CAPACITY	4600 GAL
SEAM LOC	Top
TANK LID DEPTH	2.5'
BAFFLES	Front
BAFFLE FILTER	
MANHOLE LOC	Front/Rear
6" PORT LOC	None
WATERTIGHT TEST	
SLOTTED	Yes
DATE ON LID	

PUMP/SEPTIC TANK LEVEL	
N/A	
MANUFACTURER	
CAPACITY	
SEAM LOC	
TANK LID DEPTH	
BAFFLES	
BAFFLE FILTER	
MANHOLE LOC	
6" PORT LOC	
WATERTIGHT TEST	
SLOTTED	
DATE ON LID	

PRE-CONSTRUCTION:

8/4/14 Contour very choppy. Could not find usable contour on high side of SPA. Utilize lower (left) side of SPA. set Dbox to part of septic area, run 3 x 62' trenches across septic area on contour as pointed out in field. set tank per stake out. (KW)

INSTALLATION: 8/7/14 BAT unit being set. No trenches started. (KW)
 8/13/14 Trenches complete. OK to come all work up to the point. (KW)
 8/14/14 Dist. box set. Plumbing installed to tanks. 2" F.M. run. SAC started. OK to confirm (KW)
 8/15/14 SAC complete. Need BAT start-up (KW)
 10/7/14 onsite w/ rep. BAT start-up successful. Rep needed to mount probe in new location. Need BAT start-up from manufacturer (KW) Start-up received. gw

FINAL INSPECTOR [Signature] DATE OF APPROVAL 10/10/14



MAYER BROS., INC.

Precast Concrete Products

6264 Race Rd. Elkridge, MD 21075

Letter of Satisfaction Hoot System Installation

Address of Property 13014 Highgrove Rd.
Highland, MD, 20777 Lot # 9

Date of Final Inspection 10/8/14

Installer South Carroll Backhoe Service

Hoot Technician/Inspector Mike Sample

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

Sincerely,

Name of Inspector
Mayer Bros., Inc.

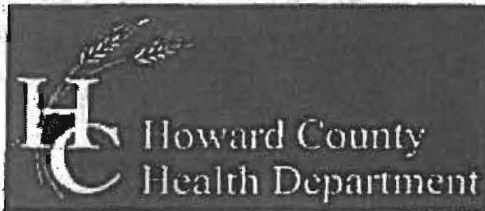
PH: 410-796-1434

FX: 410-796-1438

WBE
NPCA Certified Plant

mayerbro@connext.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 Slabs, Curb Heads, Curb Bumpers, FormEntry Basement Entries,
Scapewell Window Wells, Custom Precast Products



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Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

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

**OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM**

THIS AGREEMENT is made this 18th day of December, among
NVR Inc., hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the
"County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
13014 Highgrave Road, Highland, Maryland 20777, in the 5th Election District of Howard
County, Maryland, and the deed to same is recorded or shall be recorded among the Land
Records of Howard County, Maryland in Liber 10230 Folio 00678.

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

20
40
D

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.

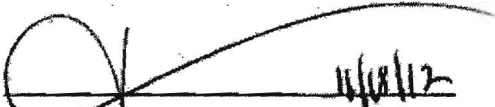
G. This agreement may be voided at any time at the discretion of the County.

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.

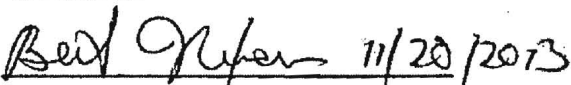
J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.


Owner _____ Date 11/18/12

Timothy Naughton
V.P. NVR Inc.

Owner _____ Date _____


Beth Miller 11/20/2013

Howard County Health Department

LR - Recording Fee (No Taxes)
20.00
Grantor/Grantee Name:
Ho Co Health Depart
Reference/Control #: 96
LR - Surcharge 40.00
Subtotal: 60.00
Total: 120.00
#234361R-B
01/08/2014 10:35
#234361R C02503 - C013-05
Howard Co
Columbia/CO05.03.04 -
Register 04 496

Williams, Jeffrey

From: Williams, Jeffrey
Sent: Friday, April 25, 2014 12:46 PM
To: 'Dave Harward, III'
Subject: RE: Woodmark

I approved the BAT plan for lot 9. Again, there were some tweaks that were partially my fault again. I don't know why I told you that the depth was 7' for all. Some were 7' and some were 8'. Lot 9 was 8', so I changed the bottom depth back to 8' on the plan. I also revised the dose and runtime for the hoot pump similar to the other two: 53g dose and 1 minute runtime. Also, same as the others, the 3' wide trenches changed the sidewall credit and changed the linear length to 129'. I changed the trenches to be 64.5' long each.

On this lot, we will need a revised plot plan submitted to DILP showing the new house location before we can approve the building permit. Please let me know when that is done so we can check and approve the BP. Thanks.

Jeff

From: Dave Harward, III [mailto:DaveH@fcc-eng.com]
Sent: Thursday, April 24, 2014 12:45 PM
To: Williams, Jeffrey
Subject: RE: Woodmark

Thanks Jeff,

I thought the depth was 8 ft., I will change in our CADD drawings to match what you changed. Thanks for taking care of these. I'll touch up Woodmark and send that to you soon. I know you are extremely busy and appreciate your offer to meet with me. I will hold off on that for now on your offer, I think I have a better handle on it now.

I greatly appreciate you getting these two approved today.

Dave.

From: Williams, Jeffrey [mailto:jewilliams@howardcountymd.gov]
Sent: Thursday, April 24, 2014 12:16 PM
To: Dave Harward, III
Subject: RE: Woodmark

I've approved lots 6 and 7. I made a few little redline revisions to them. For lot 7 I erred in telling you a 7' bottom depth, that one was 8', so I moved the trench bottoms down to 8'. Also, on both your trench sidewall credits were wrong. You were going off of our old spec sheet, which was giving you the sidewall credit if you were using 2' wide trenches. With our new sheet, we let you decide the trench width and calculate the credit yourself to avoid confusion. For both, the difference was about 5' per trench in additional length. I just redlined the numbers and added the length onto the end of each trench.

Also, the hoot dose and runtime is based on the pump curve. Your pump curve for both shows the pump will dose at 53 gpm. You stated a runtime of 23 minutes, which would be a dose of 106g. After a talk with Nancy Mayer, I realized that these systems would do best with a dose around 50g, so I changed your runtime to 1 minute on both.

I will review the rest tomorrow.

From: Dave Harward, III [mailto:DaveH@fcc-eng.com]
Sent: Thursday, April 24, 2014 8:14 AM

To: Williams, Jeffrey
Subject: RE: Woodmark

That would be really nice, Thank You.

From: Williams, Jeffrey [<mailto:jewilliams@howardcountymd.gov>]
Sent: Wednesday, April 23, 2014 5:00 PM
To: Dave Harward, III
Subject: RE: Woodmark

I will try to look at all of those by tomorrow and let you know.

From: Dave Harward, III [<mailto:DaveH@fcc-eng.com>]
Sent: Wednesday, April 23, 2014 4:56 PM
To: Williams, Jeffrey
Subject: RE: Woodmark

OK, thanks Jeff.

Have you had a chance to look at Schooley Mill. Lot 7 is especially urgent, if that one has any tweaks, I need to take care of that: and Lot 9 is not a urgent one, but Lot 6 is, which I got to you today is. Anyway you can look at those early tomorrow?

Thanks Jeff,
Dave H.

From: Williams, Jeffrey [<mailto:jewilliams@howardcountymd.gov>]
Sent: Wednesday, April 23, 2014 4:49 PM
To: Dave Harward, III
Subject: Woodmark

I've reviewed the woodmark BAT plan and there are some tweaks needed on the trench design. You show 94 linear feet with trench bottoms at 7'. Our specs indicate effective area beginning at 6', bottom max depth at 8'. If the trenches were taken down to 8', we would calculate $3 \text{ bedrooms} \times 150 \text{gpd} = 450 \text{g} / 0.8 = 562.5 / 3' \text{ wide trenches} = 187.5 \times 62\% \text{ sidewall credit for } 2' \text{ of sidewall} = 118 \text{ linear feet of trench required}$.

We need to see the trenches bottom out at 8' and give us a linear length of 118' showing two 59' trenches. If you like, we could sit down to go over this or other plans in the works to make sure we are on the same page. Thanks. You could even come in to redline these things on the existing plan if you want to speed things up.

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

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Williams, Jeffrey

From: Williams, Jeffrey
Sent: Friday, April 11, 2014 10:29 AM
To: 'Dave Harward, III'
Cc: Bricker, Robert
Subject: Schooley Mill

Hi Dave. I reviewed the Schooley Mill plans. I had Andrew review them and I apologize that I didn't catch the following issues for lot 7 and 9 on earlier reviews. I was focused on the septic design that I missed the well problem. Lot 9 wellbox is within the 30' setback to the house location. Lot 7 wellbox is within the 10' setback to the driveway.

For lot 6, it looks like on the site plan that you moved the proposed graded swale over to keep the tank on the side slope, but the septic profile still shows the proposed grade with the swale directly over the tank. I think the profile may need to be updated to match the new proposed grading?

Otherwise, for all lots the approved trench bottom depth is 7', but on all you have trench bottom depths at 8'. Also, we need the trench invert elevations for all. We also need the trenches within each system to be exactly equal length. I don't think that will be a problem on any of these. What is helpful to us is to include a chart or note indicating the trench depths and specs. I've attached a copy of an example that we like.

Also, I've learned that the Hoot system pump probes are at set locations, but the length of time the pump is on can be programmed, which is what gives the dose. I had asked for an elevation of the pump on float and a dose volume. We didn't get the pump elevation on these revised, but what we could get is a note under the dose stating the run time correlating to the rate of the pump selected that matches the dose given. A rule of thumb for a dose going to a d-box could be about 1/6 design flow or around 100g. For example, lot 7 has a pump with a rate of 53gpm. You could specify a dose of 106g and a runtime of 2 minutes.

I know these have had a few revisions. If you prefer, we could schedule a meeting to make sure everything is as we need it for approval prior to the next submission so that we can move forward. Let me know. Thanks
Jeff

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

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Williams, Jeffrey

From: Williams, Jeffrey
Sent: Thursday, April 03, 2014 1:59 PM
To: 'Dave Harward, III'
Subject: RE: Schooley Mill Lots 6, 7, & 9

We reviewed Schooley Mill lots 4,5,6,7, and 9. Following are comments:

- All of the plans need to show the pump on elevation and dose volume.
- All plans need to show trench details: ground elevation, invert elevation, bottom elevation for each.
- Lot 6: hoot tank location is in the middle of a proposed swale. They could move it over right by perc hole 1663.
- Lot 7: the building permit states 5 bedrooms, you revised the plan down to 4 bedrooms
- Lot 9: the sewer grade states 7%, but is really 4.7% (FYI, anything greater than 5% should level off to 2% in the last few feet before the tank)
- Lot 9: the d-box should go at the top edge of the easement for an end feed to the trenches.
- Lot 4: the d-box should go to the corner of the easement for end fed trenches.

From: Dave Harward, III [mailto:DaveH@fcc-eng.com]
Sent: Monday, March 24, 2014 11:16 AM
To: Williams, Jeffrey
Subject: Schooley Mill Lots 6, 7, & 9

Jeff,

I just had Frank from our office bring down BAT Installation Site Plans for Lots 6, 7, & 9. I will get you new plans tomorrow that have a couple of minor things we omitted. First, the plans you are getting today are not signed and sealed by an engineer. The other thing is that Robert Bricker had sent a memo that he also wanted to see the blower & control panel locations shown on the plan. Generally these will be shown at the closest corner of the house to the tank. We will add that to the plans that I send to you tomorrow. So you may want to discard the plans I've sent today. Frank was in a rush to get going, so we rushed these out a little earlier than I'd have liked to. Also, I'll just mention that the no. of bedrooms on Lot 7 per the trench design was for a 5 bedroom house. So we have revised the length for a 4 bedroom house.

So I'll get you new prints for these 3 lots tomorrow.

Thanks,

Dave Harward
Fisher, Collins, & Carter, Inc.
Centennial Square Office Park
10272 Baltimore National Pike
Ellicott City, Maryland 21042
Ph. 410-461-2855, Ext. 1818

Williams, Jeffrey

From: Williams, Jeffrey
Sent: Thursday, March 20, 2014 9:41 AM
To: 'Dave Harward, III'
Cc: 'jim@decaturbuildingservices.com'
Subject: Schooly Mill Lots 4 and 9

Just a reminder that the building permits for these lots are on hold pending a revised BAT plan. Thanks.

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

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Williams, Jeffrey

From: Williams, Jeffrey
Sent: Thursday, January 30, 2014 11:47 AM
To: 'Dave Harward, III'
Cc: Bricker, Robert
Subject: FW: Schooley Mill Farm Lots 6 and 7
Attachments: Specifications Sheet SMF-Lot 7.pdf; 13022 High Grove Road_Schooley Mill Farm-Lot 7.doc; 13026 High Grove Road_Schooley Mill Farm-Lot 6.doc; Specifications Sheet SMF-Lot 6.pdf

Attached are Roberts comments and spec sheets for lots 6 and 7. Additionally, as we discussed, we need a hydraulic profile on all of the plans. We also need to see the blower motor location on all the plans. And, we need to see the trench layout with elevations for the initial as well as the two reserve systems.

As we also discussed, we are working towards a consistent response for these plans. I met with both Dana and Robert today to verify that moving forward, we will follow the requirements of our BAT site plan guidance document, which specifies a hydraulic profile, the layout of the initial and reserve drainfield with elevations, as well as the location of all BAT components. For a Hoot unit (and possibly some others) with a detached blower motor, we need to see where that location is being proposed.

We are working with the builder to get accurate floor plans for a few of the lots (5,6,7,9). If any of them are confirmed as 4 bedrooms instead of the five you indicate on all of your plans, we will let you know.

Also, none of the plans were signed. Thanks
Jeff

From: Bricker, Robert
Sent: Tuesday, January 28, 2014 4:58 PM
To: Williams, Jeffrey
Subject: Schooley Mill Farm Lots 6 and 7

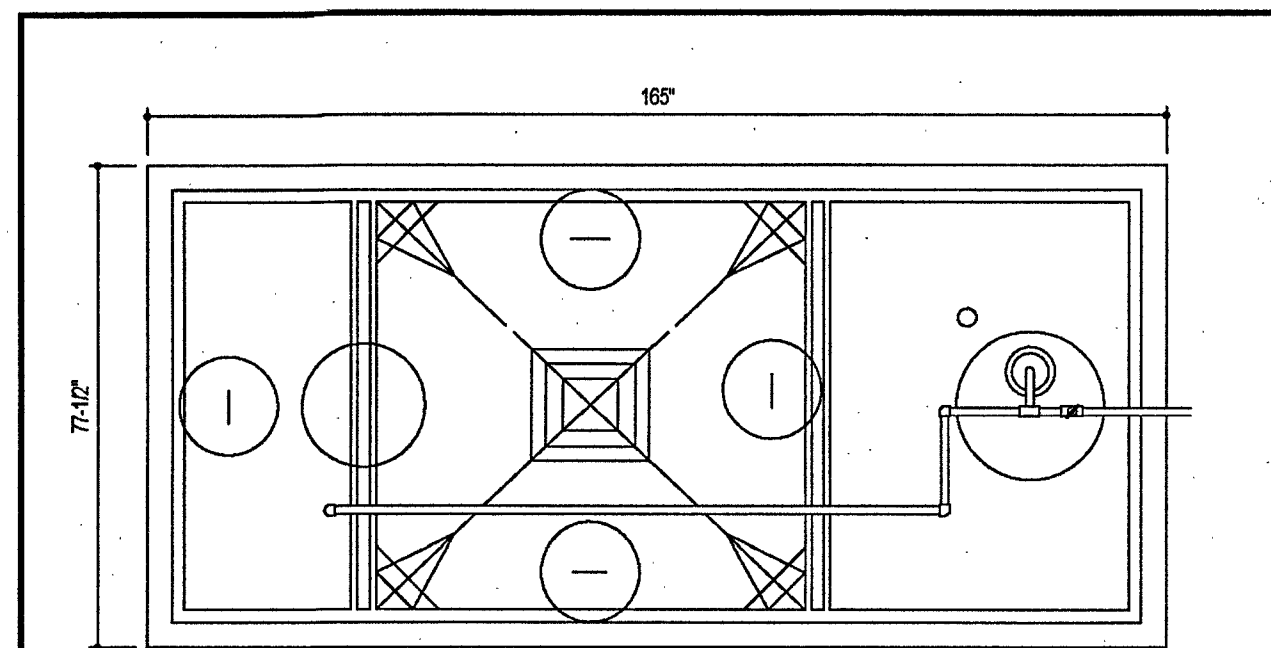
See attached

ROBERT BRICKER, CPSS, REHS/RS
ENVIRONMENTAL HEALTH SPECIALIST
DEVELOPMENT COORDINATION SECTION, WELL AND SEPTIC PROGRAM
HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH
8930 STANFORD BOULEVARD
COLUMBIA, MD 21045

410-313-2691; fax, 410-313-2648
rbricker@howardcountymd.gov

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SEPTIC SYSTEM ELEVATIONS
 A= 503.90
 B= 501.83 (INV. INTO TANK)
 C= 496.83
 D= 497.14
 E= 498.39
 F= 500.39
 G= 501.39
 H= 1.07' (7" MIN.)
 I= 503.10 (INV. OUT OF TANK)

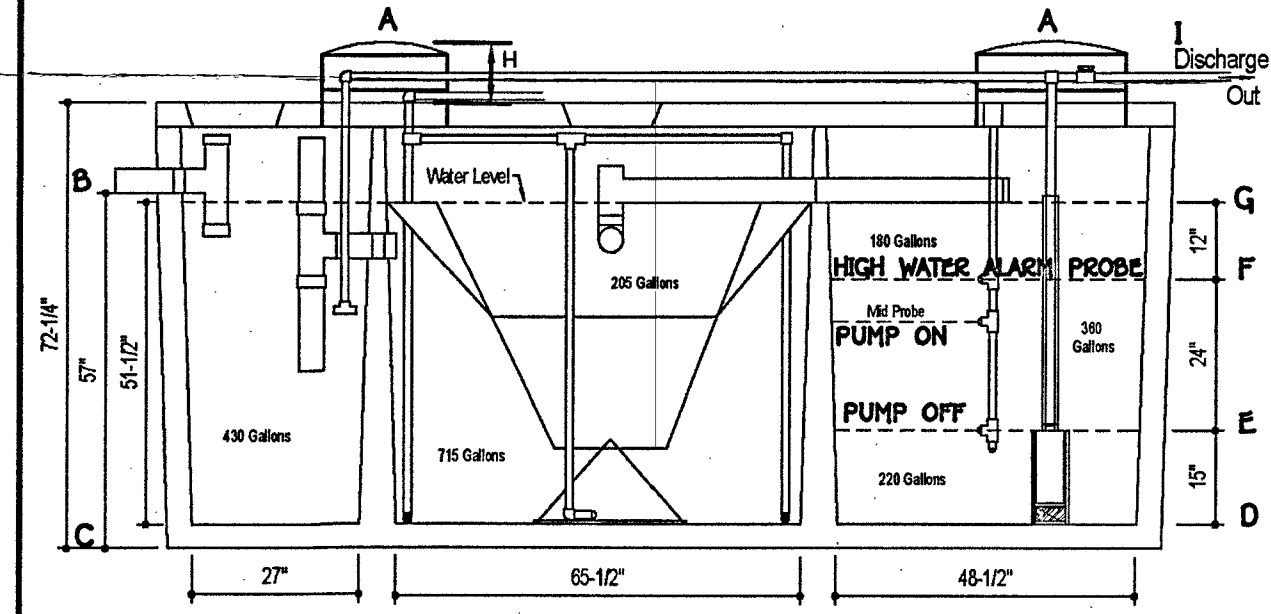
FFE = 508.35
 BSE = 498.51
 INV. OUT OF HOUSE = 502.90
 INV. INTO DISTRIBUTION BOX = 499.50
 TOP OF TANK = 502.83
 DOSE VOLUME = 40 GALS.
 TIME PER DOSE = 2-MIN.

NOTE:
 THE PROPOSED HOUSE IS TO HAVE 5 BEDROOMS.

SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOMS)
 PROP. INVERT AT FOUNDATION WALL: 502.90
 1. HOOT 600 BNR (MAX. NO. BDRMS.=5)
 EX. GRADE OVER TANK: 503.70
 PROP. GRADE OVER TANK: 503.90
 INVERT INTO TANK: 501.83 INVERT (DISCHARGE ELEV.) OUT TANK: 501.10
 2. DISTRIBUTION BOX:
 EX. GRADE: 503.50
 PROP. GRADE: 503.50
 INVERT IN: 499.50
 3. TRENCH DESIGN:
 (5 BDRM X 150 GPD/BDRM= 750 GPD)
 750 / 1.2 APP. RATE = 625 SF
 INV. INTO DISTRIBUTION BOX = 499.50
 USE 3' WIDE TRENCH AND 9' MIN. SPACING BETWEEN TRENCH EDGES.
 625 SF / 3' WIDTH = 208.33 L.F. X 0.57' = 118.75 L.F. MIN. TRENCH
 USE 2-59.5' LONG TRENCHES = 118.5' L.F.

TRENCH DATA:
 TRENCH 1:
 EX. GROUND ABOVE = 503.50
 INV. IN = 499.50
 BOTTOM TRENCH = 496.50
 TRENCH 2:
 EX. GROUND ABOVE = 502.90
 INV. IN = 498.90
 BOTTOM TRENCH = 495.90

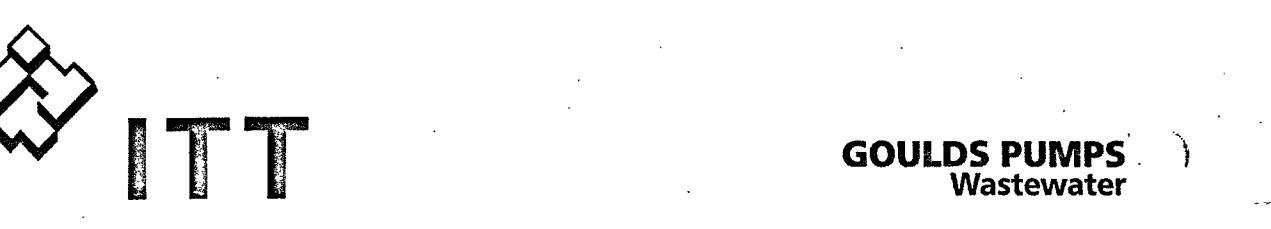
- BAT NOTES**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
 - THE MAXIMUM COVER OVER THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET. IF COVER EXCEEDS 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 SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER 14780, FOLIO 067.
 - 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 WIRED TO A CIRCUIT SEPARATE FROM THE PUMP CIRCUIT.



DESIGN DATA & GENERAL NOTES
 1) Concrete strength Fc=4,000 p.s.i. @ 28 days. Density=150 pcf.
 2) Cement - Portland Type III per ASTM C 150-92.
 3) Admixtures & plasticizers per ASTM C 494 & C 494-02.
 4) Reinforcing per ASTM A101, Min. 1/2" cover.

Mayer Brothers, Inc.
 6294 Race Road
 Shingler, Maryland 21075
 Tel. 410.795.1484
 Fax. 410.796.1429
 www.mayerbrothers.com

600 GPD BNR SYSTEM H-600 BNR
 with 750 GALLON PUMP CHAMBER
 Dwg. No. Hoot Form #1 No Scale March 13, 2009



APPLICATIONS
 Specifically designed for the following uses:
 • Efficient systems
 • Homes
 • Farms
 • Heavy duty sump
 • 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 (60° 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, 16/3 STW with three ground prong, 16/3 STW with three prong grounding plug (standard on EP05).
 • Fully submerged in high grade turbine oil for lubrication and efficient heat transfer.

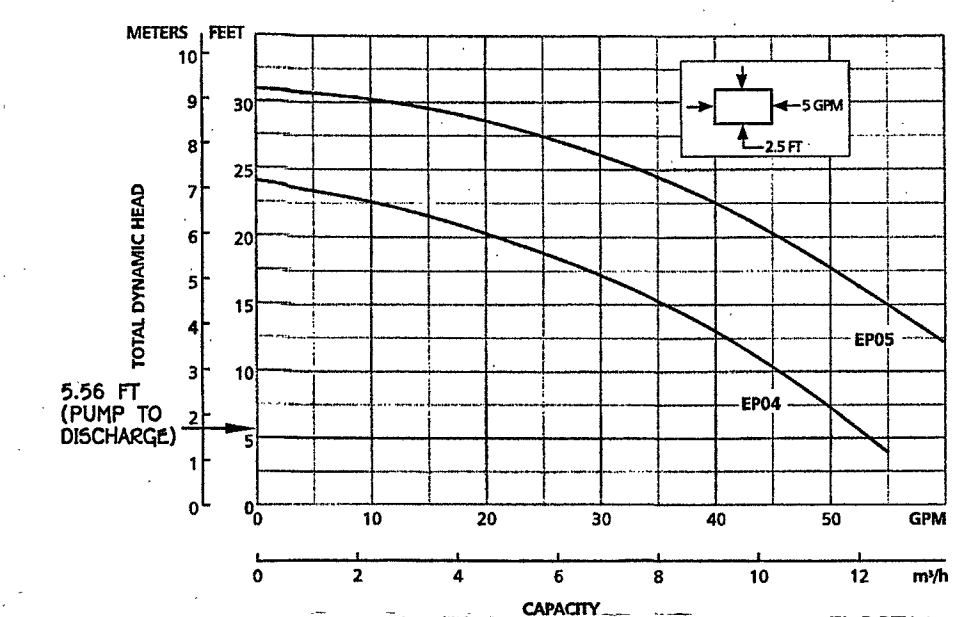
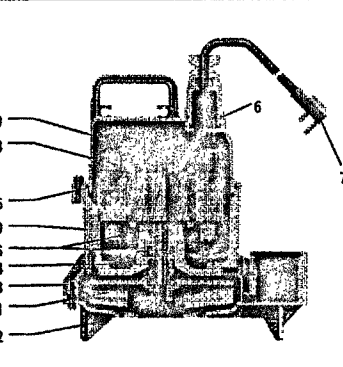
Available for automatic and manual operation.
 Automatic models include Mechanical Float Switch assembled and preset at the factory.

PERFORMANCE RATINGS

Total Head (ft. of water)	Gallons Per Minute	EP04	EP05
5	53	-	-
10	46	82	-
15	39	55	-
20	21	46	-
25	0	33	-
30	-	11	-

COMPONENTS

Item No.	Description
1	Inletter
2	Base
3	Pump Casing
4	Mechanical Plug
5	Ball Bearings
6	O-Rings
7	Power Cord
8	Oil Filled Motor
9	Motor Housing
10	Stator Assembly
11	Motor Cover



MODEL INFORMATION

Order No.	HP	Volts	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum On Level	Minimum Off Level	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight (lbs.)
EP0411	0.4	115	12	1	Plug / No Switch	10'	1 1/2"	Manual	Manual	15"	1/4"	20/9.1
EP0411A	0.4	115	12	1	Piggyback / Wide-Angle	10'	1 1/2"	Manual	Manual	15"	1/4"	21/9.5
EP0411F	0.4	115	12	1	Plug / No Switch	20'	1 1/2"	Manual	Manual	15"	1/4"	20/9.1
EP0411AC	0.4	115	12	1	Piggyback / Wide-Angle	20'	1 1/2"	Manual	Manual	15"	1/4"	21/9.5
EP0412	0.5	115	6	1	Plug / No Switch	10'	1 1/2"	Manual	Manual	15"	1/4"	20/9.1
EP0412F	0.5	115	6	1	Plug / No Switch	20'	1 1/2"	Manual	Manual	15"	1/4"	20/9.1
EP0511F	0.5	115	12	1	Plug / No Switch	20'	1 1/2"	Manual	Manual	15"	1/4"	22/10
EP0511AC	0.5	115	12	1	Piggyback / Wide-Angle	20'	1 1/2"	Manual	Manual	15"	1/4"	23/10.4
EP0512F	0.5	230	6.5	1	Plug / No Switch	20'	1 1/2"	Manual	Manual	15"	1/4"	22/10

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1111 CENTENNIAL SQUARE OFFICE PARK - 10772 BALDORNE NATIONAL PkE
 ELICOTT CITY, MARYLAND 21042
 (410) 451-2929

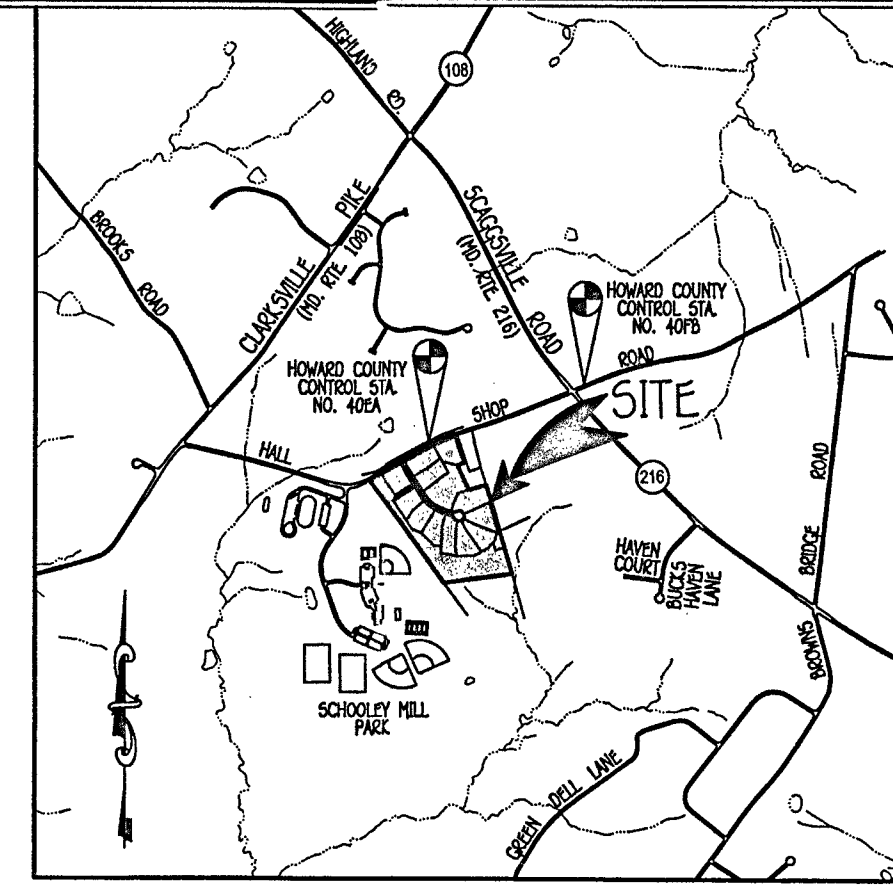
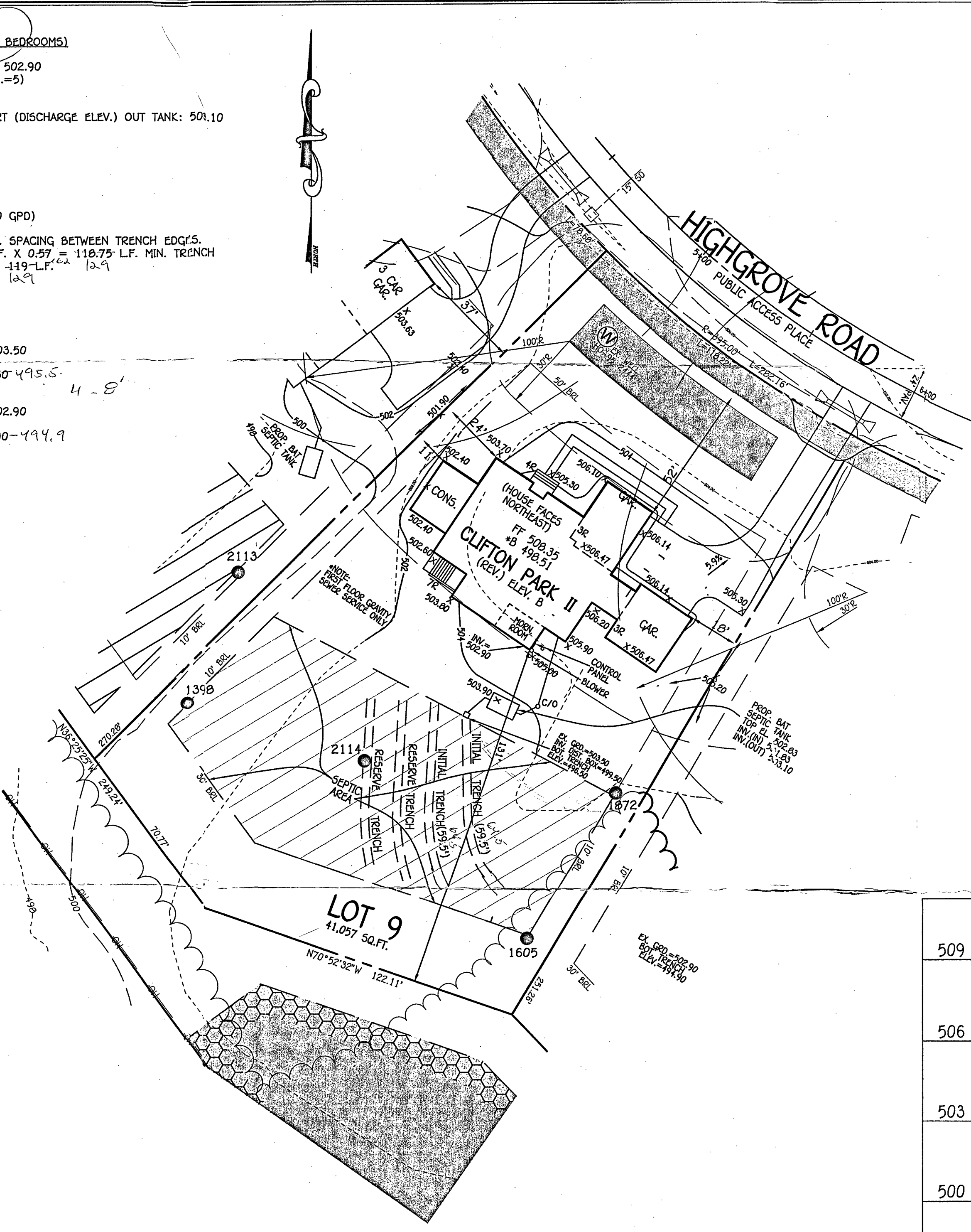
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 3/22/15.
 Signature: *Michael Vitucci*
 ALDO M. VITUCCI
 DATE: 4/2/14



WELL CERTIFICATION:
 THE EXISTING WELL, TAG NO. HO-95-2444, HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.

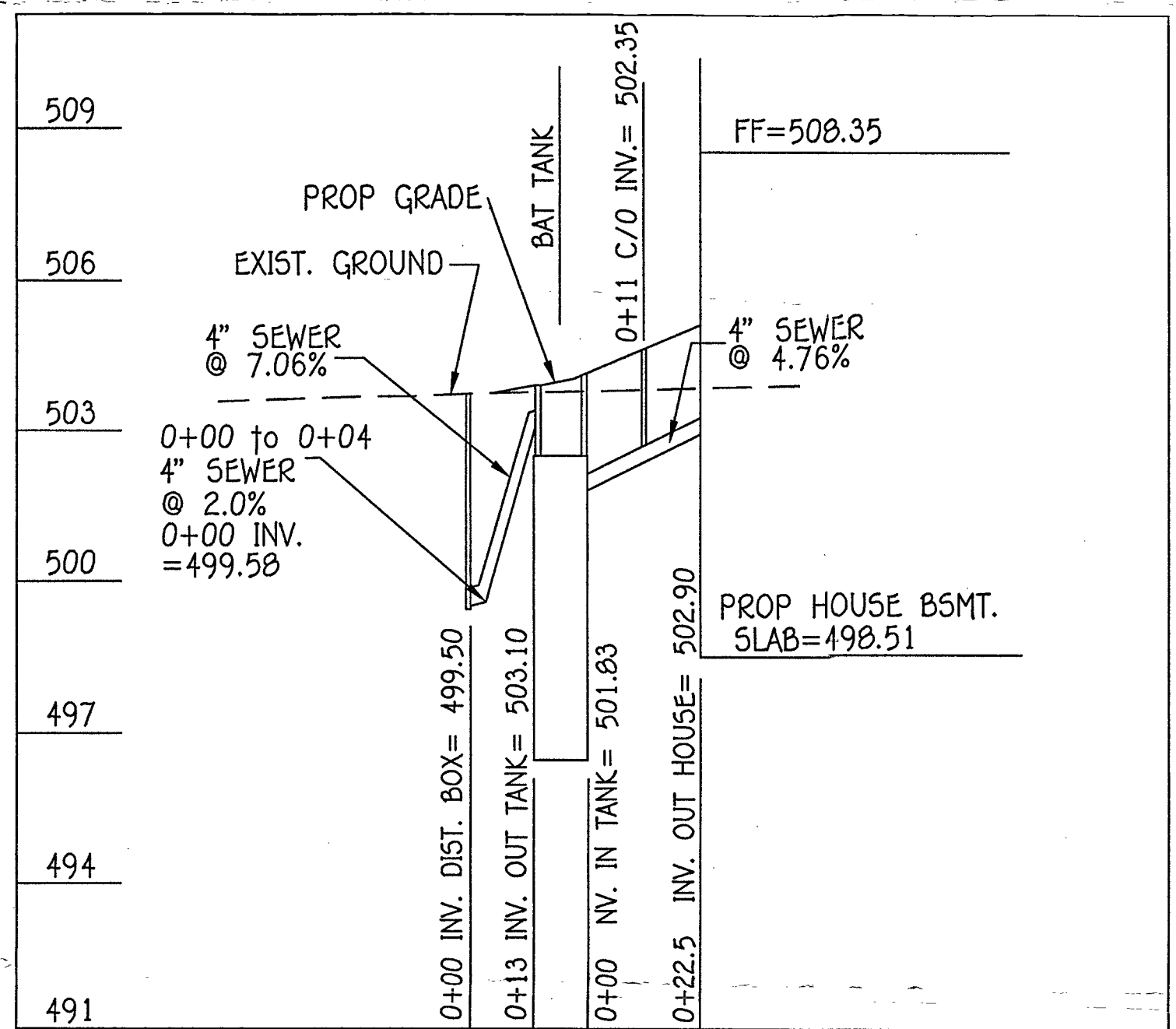
BUILDER/DEVELOPER
 NV HOMES
 9720 Patuxent Woods
 COLUMBIA, MARYLAND 21044
 410-379-5956

SCHOOLEY MILL FARM
 SITE PLAN FOR BAT INSTALLATION FOR LOT 9
 13014 HIGHGROVE ROAD
 Zoned: RR-DEO
 Tax Map No. 40; Grid No. 10 & 11; Parcel No. 115 & 149
 Fifth Election District - Howard County, Maryland
 Date: April, 2014 Scale: As Shown

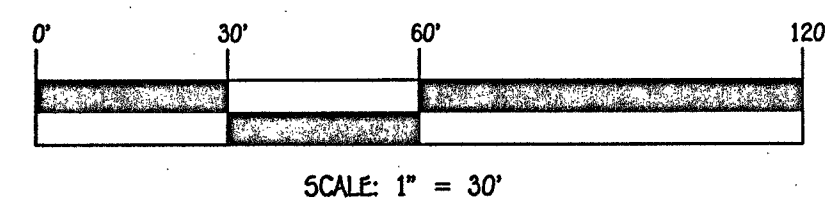


VICINITY MAP
 SCALE: 1" = 200'
 HO. CO. ADC MAP NO. 5051,
 GRIDS G-3 & G-4 & H-3 & H-4

BENCH MARKS
 T.P. 402A
 N. 547,511.391
 E. 1,324,510.091
 LOC. NEAR INTERSECTION OF HALL SHOP ROAD & ENTRANCE TO SCHOOLEY MILL PARK
 T.P. 407B
 N. 548,470.386
 E. 1,326,000.805
 LOC. NEAR INTERSECTION OF HALL SHOP ROAD & SCHOOLEY MILL PARK



SEPTIC SYSTEM PROFILE
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'

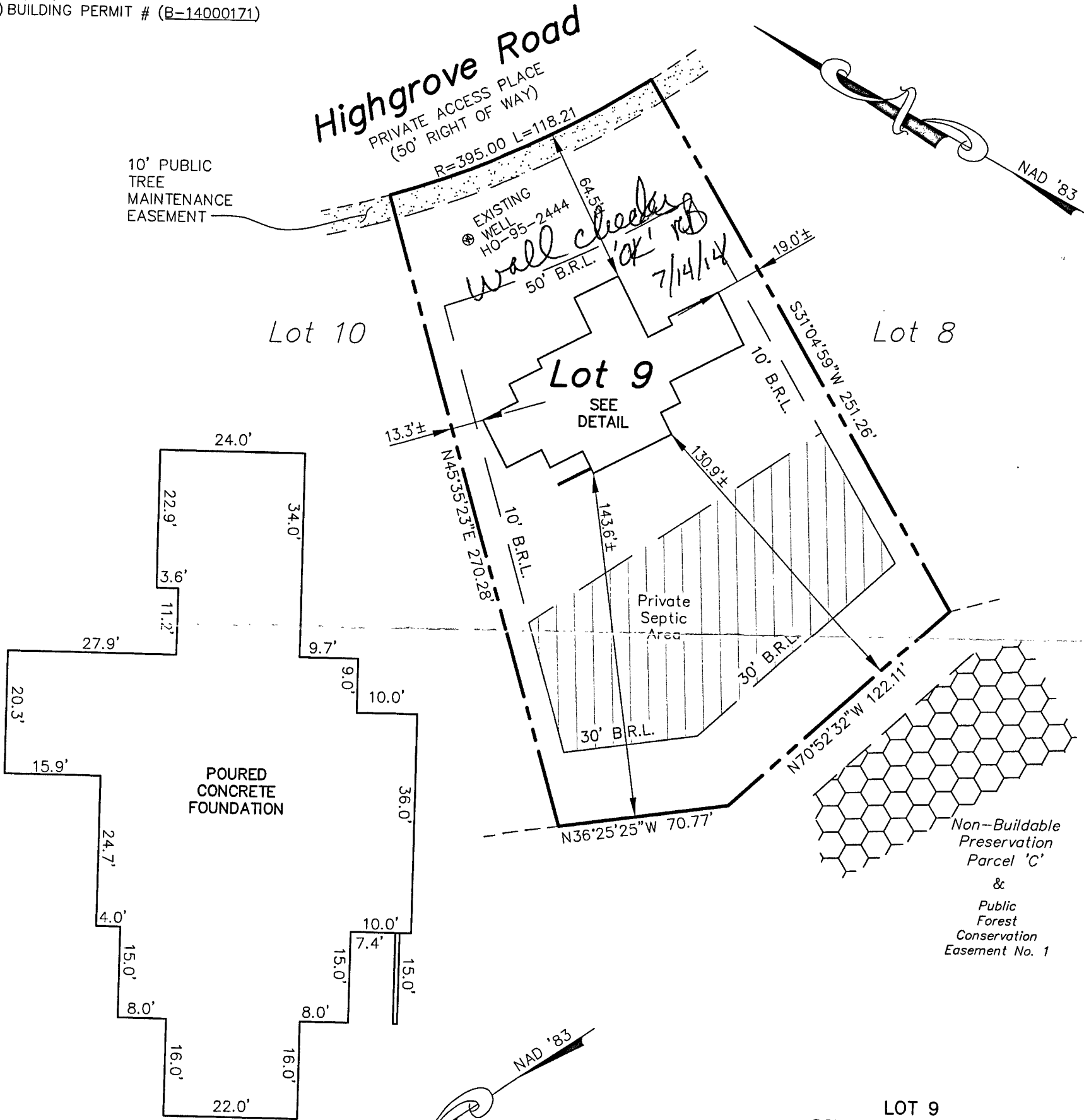


PLAN
 SCALE: 1" = 30'

Approved Septic System Plan
 Howard County Health Department
 Signature: *[Signature]*
 Date: 4/2/14

GENERAL NOTES:

- 1) THIS LOCATION DRAWING IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM INSOFAR AS IT IS REQUIRED BY A LENDER OR TITLE INSURANCE COMPANY OR ITS AGENTS IN CONNECTION WITH THE CONTEMPLATED TRANSFER, FINANCING OR REFINANCING OF THE PROPERTY SHOWN HEREON. UNLESS INDICATED AS BEING A BOUNDARY SURVEY, THIS LOCATION DRAWING IS NOT INTENDED FOR USE IN THE ESTABLISHMENT OF PROPERTY LINES AND IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OR LOCATIONS OF FENCES, GARAGES, BUILDINGS OR OTHER EXISTING OR FUTURE IMPROVEMENTS. AS A RESULT, THIS LOCATION DRAWING DOES NOT PROVIDE FOR ACCURATE IDENTIFICATION OF PROPERTY LINES, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING FOR RE-FINANCING.
- 2) SUBJECT PROPERTY IS SHOWN IN ZONE X ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 24027C0140D EFFECTIVE NOV. 6, 2013.
- 3) THE OFFSETS FROM BUILDING LINE TO PROPERTY LINE AS SHOWN ON THE PLAT HEREON ARE TO AN ACCURACY OF PLUS OR MINUS 1'.
- 4) NO TITLE REPORT FURNISHED. SUBJECT TO ALL EASEMENTS, RIGHTS OF WAY AND CONDITIONS OF RECORD.
- 5) THE EXISTING WELL(S) SHOWN ON THIS PLAN (IDENTIFIED WITH THE ATTACHED WELL TAG NUMBER HO-95-2444 HAS BEEN FIELD LOCATED BY FISHER, COLLINS AND CARTER, INC. PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.
- 6) PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 339, EXPIRATION DATE 10/04/2014.
- 7) BUILDING PERMIT # (B-14000171)



DETAIL:
1"=20'

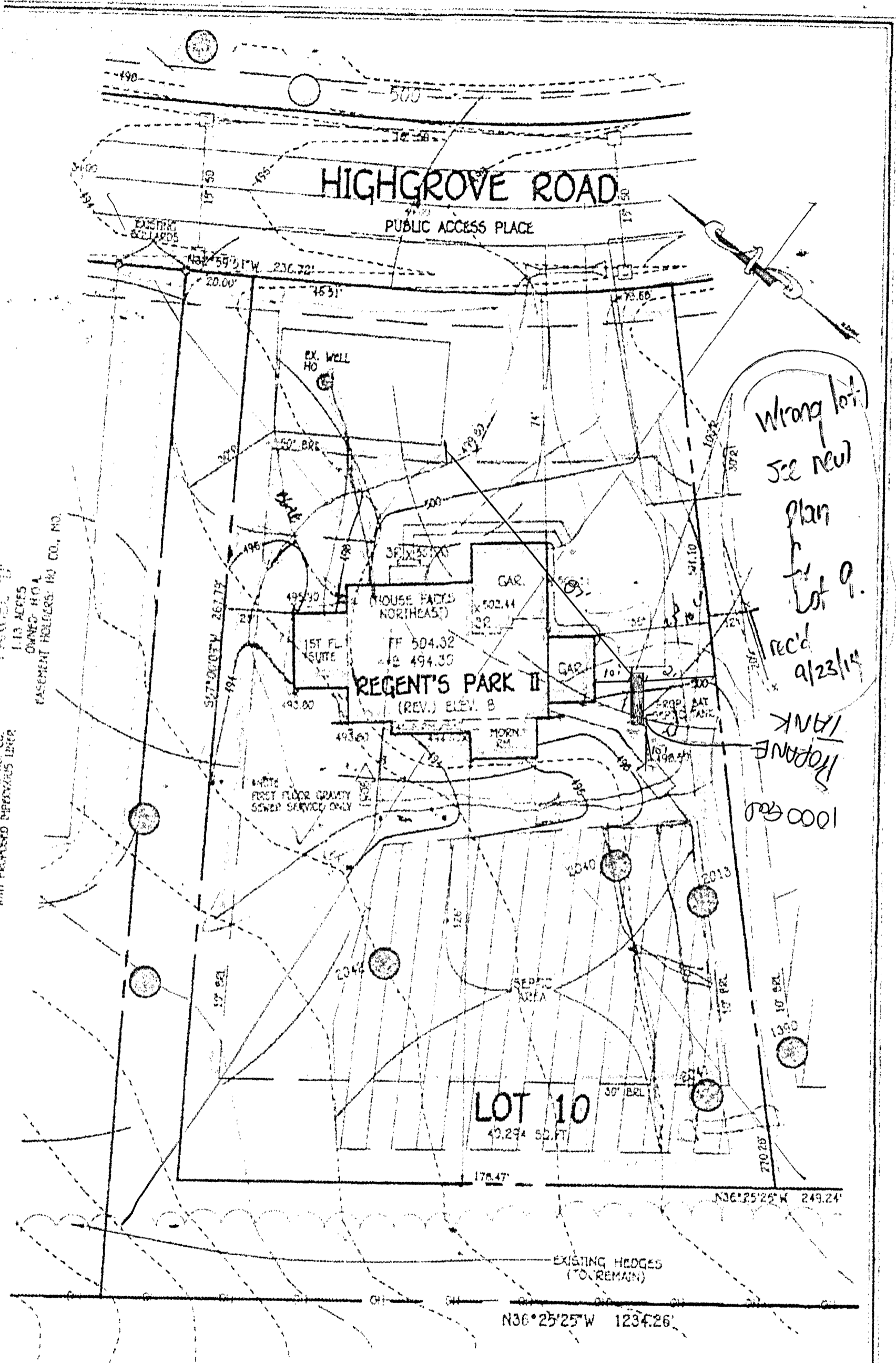
#13014 HIGHGROVE ROAD
TOP OF FOUNDATION ELEVATION = 506.6'±

LOT 9
SCHOOLEY MILL FARM
LOTS 1 THRU 11.
BUILDABLE PRESERVATION PARCEL 'A'
& NON-BUILDABLE PRESERVATION
PARCELS 'B' THRU 'D'
PLAT NOS. 22506 THRU 22507
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461 - 2855

Mark L. Rohlf
PROPERTY LINE SURVEYOR
REG. #339
6/23/14
DATE

**HOUSE LOCATION
DRAWING**
FOUNDATION LOCATION: 6/19/14
FINAL LOCATION: _____
BOUNDARY SURVEY: _____
SCALE: 1"=50'
DATE: 6/23/14
DRAWN BY: GAD
CHECKED BY: MLR
PROJECT No.: 05037-6001



Wrong lot
 See real
 plan
 for
 Lot 9.
 rec'd
 9/23/14
 PROANE
 1000 GAL

WITH PROPOSED PERVIOUS LINES
 OWNED BY HOVA & HO, CO
 EASEMENT HOLDERS: HO CO, NO.
 1.13 ACRES

HIGHGROVE ROAD
 PUBLIC ACCESS PLACE

REGENT'S PARK II
 (REV.) ELEV. B

LOT 10
 40,294 52.77

PROPERTY OF
 HOWARD COUNTY, MARYLAND

TAX MAP NO. PARCEL 115
 LIBER 881, FOLIO 487
 ZONED: RR-DEO

PERMIT PLAN
 LOT 10
 SCHOOLEY MILL FARM

HER, COLLINS & CARTER, INC.
 ENGINEERING CONSULTANTS & LAND SURVEYORS
 101 SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2055

13014 HIGHGROVE ROAD
 ZONED: R-EC
 TAX MAP NO: 45 PARCEL NO: 115 & 149 GEO NO: 10 & 14
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: MAY 30 2014

APPROVED FOR CONSTRUCTION