

C1 08185 SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT FILL IN THIS FORM COMPLETELY PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED. COUNTY NUMBER A 536768

ST/CO USE ONLY DATE RECEIVED MM DD YY 8 13

DATE WELL COMPLETED 12 17 2012 DEPTH OF WELL 22 260 26 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-95-2450

OWNER Trinity Homes WELL SITE ADDRESS MD 32 TOWN West Friendship SUBDIVISION Keane Property SECTION LOT 6

WELL LOG Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

Table with columns: DESCRIPTION (Sand, Mica Rock, Water), FEET (FROM, TO), and check if water bearing.

GROUTING RECORD

WELL HAS BEEN GROUTED (Y) NO (N) TYPE OF GROUTING MATERIAL (Cement, Bentonite Clay) NO. OF BAGS, NO. OF POUNDS, GALLONS OF WATER, DEPTH OF GROUT SEAL

CASING RECORD (Steel, Concrete, Plastic, Other) MAIN CASING TYPE, Nominal diameter, Total depth

OTHER CASING (if used) diameter, depth

SCREEN RECORD (Steel, Brass, Bronze, Plastic, Open Hole, Other) screen type or open hole

DEPTH (nearest ft.) 56 260

PUMPING TEST

HOURS PUMPED (nearest hour) 3 PUMPING RATE (gal. per min.) 12 METHOD USED TO MEASURE PUMPING RATE Bucket WATER LEVEL (distance from land surface) BEFORE PUMPING 24 WHEN PUMPING 131 TYPE OF PUMP USED (for test) S submersible

PUMP INSTALLED

DRILLER INSTALLED PUMP (CIRCLE) (YES or NO) IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS. TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 35 PUMP HORSE POWER 37 41 PUMP COLUMN LENGTH (nearest ft.) 43 47 CASING HEIGHT (circle appropriate box and enter casing height) + above LAND SURFACE - below 2 (nearest foot)

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED (Y) (N)

CIRCLE APPROPRIATE LETTER A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO. 1 M S D 117

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. 1 A S D 027

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

DEPTH (nearest ft.) 56 260

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q 70 72 74 75 76 TELESCOPE CASING LOG INDICATOR OTHER DATA

LATITUDE 39.32956 LONGITUDE 76.94679 (DEFAULT COORD. WGS 84) NOTES:

B 1 14969  
1 2 3 6

SEQUENCE NO.  
(MDE USE ONLY)

STATE OF MARYLAND  
APPLICATION FOR PERMIT TO DRILL WELL  
53849 please type

STATE PERMIT NUMBER  
H0-95-2450  
70 fill in this form completely 79

Date Received (APA) 11/30/12  
OWNER INFORMATION  
8 MM DD YY 13  
Trinity Quality Homes  
15 Last Name Owner First Name 34  
3625 Park Ave Suite 301  
36 Street or RFD 55  
Ellicott City MD. 21043  
57 Town 70 State 72 Zip 76

B 3 LOCATION OF WELL  
Howard  
8 COUNTY 21  
Keane Property  
23 SUBDIVISION 42  
SECTION 44 46 LOT 6 48 50  
West Friendship  
52 NEAREST TOWN 71

DRILLER INFORMATION  
Ralph MAYNE M S D 117  
Driller's Name 76 License No. 81  
Ralph MAYNE Well Drilling  
Firm Name  
17024 Handy Rd. Mt. Airy MD 21771  
Address  
Signature Date 11/30/12

B 4 SOURCES OF DRILLING WATER  
1. well  
2.  
3.

MD Rt. 32  
11 STREET ADDRESS 30  
ON WHICH SIDE OF ROAD  
(CIRCLE APPROPRIATE BOX)  
NORTH N  
WEST W 32 EAST E  
SOUTH S  
34 750 37  
DISTANCE FROM ROAD 49  
ENTER FT OR MI 38 39  
TAX MAP: BLK: PARCEL

B 2 WELL INFORMATION  
1 2 APPROX. PUMPING RATE 5  
(GAL. PER MIN.) 8 12  
AVERAGE DAILY QUANTITY NEEDED 500  
(GAL. PER DAY) 14 20

USE FOR WATER (CIRCLE APPROPRIATE BOX)  
 D DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION  
 F FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)  
22  I INDUSTRIAL, COMMERCIAL, DEWATERING  
 P PUBLIC WATER SUPPLY WELL  
 T TEST, OBSERVATION, MONITORING  
 O OPEN LOOP GEOTHERMAL  
 C CLOSED LOOP GEOTHERMAL

NOT TO BE FILLED IN BY DRILLER  
HEALTH DEPARTMENT APPROVAL  
Howard 13 A536768  
COUNTY NAME COUNTY NO.  
STATE SIGNATURE INSERT S 41  
DATE ISSUED 12/4/12  
43 MM DD YY 48 CO SIGNATURE EXP. DATE 12/4/13

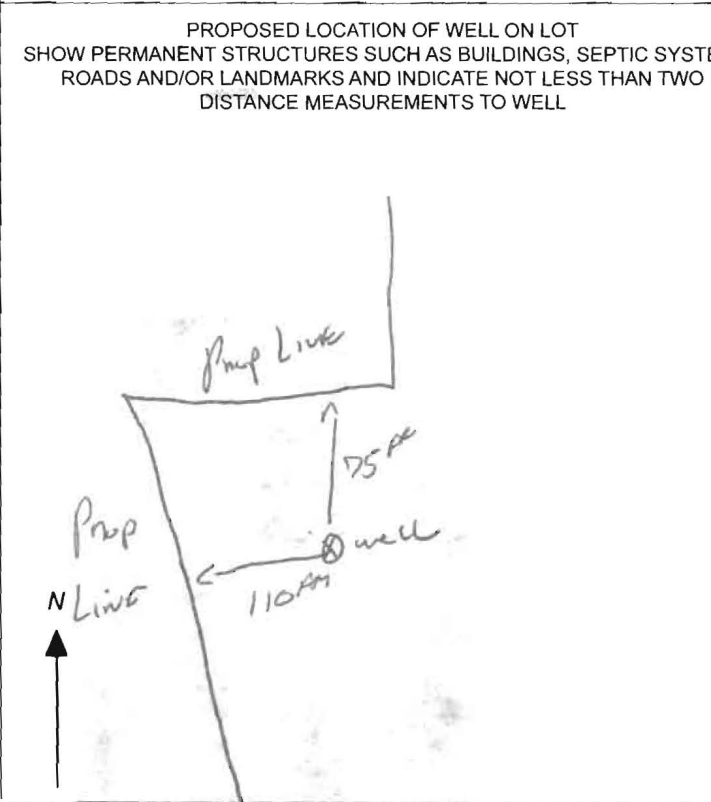
APPROXIMATE DEPTH OF WELL 150 FEET  
24 28

APPROXIMATE DIAMETER OF WELL 6 1/4 INCH  
NEAREST INCH

METHOD OF DRILLING (circle one)  
BORED (or Augered) JETTED Jetted & DRIVEN  
30 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)  
37 CABLE REVerse-ROTary DRive-POINT  
other

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)  
 N THIS WELL WILL NOT REPLACE AN EXISTING WELL  
 Y THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED  
39  S THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS  
 D THIS WELL WILL DEEPEM AN EXISTING WELL  
PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 52

Not to be filled in by driller (MDE OR COUNTY USE ONLY)  
APPROP. PERMIT NUMBER G  
PERMIT No. 140-95-2450  
70 71 72 73 74 75 76 77 78 79



SPECIAL CONDITIONS  
NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED



HOWARD COUNTY HEALTH DEPARTMENT  
 BUREAU OF ENVIRONMENTAL HEALTH  
 WELL & SEPTIC PROGRAM  
 TEL: (410)313-1771 FAX: (410)313-2648

Information Form for the Installation of the Well Pump, Pitless Adapter, and Supply Piping

NOTE: The installer is responsible for requesting an inspection prior to 9 am on the day of the desired inspection. No work is to be covered until approved by the Health Department. All installations must comply with the National Standard Plumbing Code (NSPC, as amended locally) and COMAR 26.04.04 (MD Well Construction Regulations). Submission of a complete form is required prior to Use and Occupancy approval.

Company Name: \_\_\_\_\_ Telephone #: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_

(Must circle one) Licensed Plumber      Licensed Well Driller      Licensed Well Pump Installer  
 License # and name of individual responsible for the field installation:  
 Name (Print): \_\_\_\_\_ License# \_\_\_\_\_

\*A licensed individual must perform the actual installation. Apprentices must be under the supervision of a licensed journeyman or master plumber, pump installer or well driller. Licenses may be subjected to field verification. Unlicensed individuals may be reported to the appropriate licensing agency.

Name of Property Owner: \_\_\_\_\_ Telephone #: \_\_\_\_\_  
 Subdivision: \_\_\_\_\_ Lot #: 6 Well Tag #: HO-95-2450  
 Site Address: 1487 R+32  
Sykesville, MD. 21784

<u>Submersible Pump Data</u>	<u>Pitless Adapter</u>	<u>Well Cap and Electric Conduit</u>
Make: _____	Make: _____	Two piece watertight cap: _____
Model #: _____	Model#: _____	Screened, vented well cap: _____
Pump Capacity _____ GPM	Depth: _____ (36" min)	Cap secured to casing: _____
Well Yield: _____ GPM	NSF/WSC approved: _____	Conduit min 18" B.G.: _____
Depth of well encountered at time of pump installation: _____ (feet)		Conduit secured to well cap: _____
If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.8.4		
Torque arrestors, Cable guards, or other acceptable method used- Must circle one		
Safety rope, if used, attached to brass rope adapter or other acceptable method <u>inside of well casing</u>		

<u>Piping to house</u>	<u>House Connection</u>
Type: _____	PVC sleeve to undisturbed soil at wall penetration: _____
PSI: _____ (160 psi min)	Length of sleeve(5' minimum from foundation): _____
Depth of supply line: _____ (36" min)	Sleeve sealed properly: _____

The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

Signature of company representative responsible for installation \_\_\_\_\_ date \_\_\_\_\_

For Health Department Use Only – Not to be completed by Installer

Date Insp. Requested: 12/19/13 Date Insp. Approved: 12/19/13 Inspector: RR

Inspection Data: Pitless adapter watertight & water supply line at least 36" below grade	✓
Two piece cap installed and attached to casing securely	✓
Elec. conduit extends at least 18" below grade/attached to cap properly	✓
Safety rope not outside of well cap/casing	✓
Correct well tag attached properly and casing 8" above finished grade	✓
Water supply line sleeved adequately at house connection	✓
Adequate grout observed below pitless adapter	✓

**HOWARD COUNTY HEALTH DEPARTMENT  
BUREAU OF ENVIRONMENTAL HEALTH  
WELL & SEPTIC PROGRAM  
TEL: (410)313-1771 FAX: (410)313-2648**

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**NOTE: The installer is responsible for requesting an inspection prior to 9 am on the day of the desired inspection. No work is to be covered until approved by the Health Department. All installations must comply with the National Standard Plumbing Code (NSPC, as amended locally) and COMAR 26.04.04 (MD Well Construction Regulations). Submission of a complete form is required prior to Use and Occupancy approval.**

Company Name: Do-It Plumbing & Heating LLC Telephone #: 240 882 0069  
Address: 9953 Old Mill Rd  
BC Md. 21044

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer  
License # and name of individual responsible for the field installation:  
Name (Print): Duane G. Gilbert License# 21899

**\*A licensed individual must perform the actual installation. Apprentices must be under the supervision of a licensed journeyman or master plumber, pump installer or well driller. Licenses may be subjected to field verification. Unlicensed individuals may be reported to the appropriate licensing agency.**

Name of Property Owner: T.B.P. Telephone #: 410-488-0023  
Subdivision: Glen Oak / Keane Property Lot #: 6 Well Tag #: HO-95-2450  
Site Address: 1487 Rt 32  
Sykesville, Md. 21784

<b><u>Submersible Pump Data</u></b>	<b><u>Pitless Adapter</u></b>	<b><u>Well Cap and Electric Conduit</u></b>
Make: <u>Milco's</u>	Make: <u>American Gravity</u>	Two piece watertight cap: <u>yes</u>
Model #: <u>25T52-12 Plus -P4-2</u>	Model #: <u>PT 300 LF</u>	Screened, vented well cap: <u>yes</u>
Pump Capacity <u>12</u> GPM	Depth: <u>yes</u> (36" min)	Cap secured to casing: <u>yes</u>
Well Yield: <u>20</u> GPM	NSF/WSC approved: <u>yes</u>	Conduit min 18" B.G.: <u>yes</u>
Depth of well encountered at time of pump installation: <u>260</u> (feet)		Conduit secured to well cap: <u>yes</u>
If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.8.4		
Torque arrestors, Cable guards, or other acceptable method used- Must circle one		
Safety rope, if used, attached to brass rope adapter or other acceptable method <u>inside of well casing</u> <u>NO</u>		

<b><u>Piping to house</u></b>	<b><u>House Connection</u></b>
Type: <u>Plastic 1" CPVC</u>	PVC sleeve to undisturbed soil at wall penetration: <u>16 ft</u>
PSI: <u>yes</u> (160 psi min)	Length of sleeve (5' minimum from foundation): <u>10 ft</u>
Depth of supply line: <u>yes</u> (36" min)	Sleeve sealed properly: <u>yes</u>

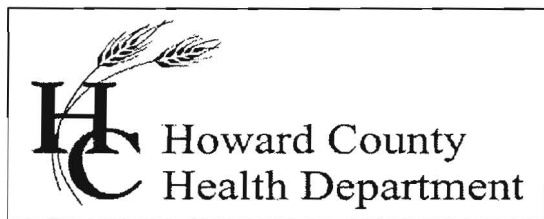
The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

Signature of company representative responsible for installation: [Signature] date: May - 11 - 2010

**For Health Department Use Only - Not to be completed by Installer**

Date Insp. Requested: \_\_\_\_\_ Date Insp. Approved: \_\_\_\_\_ Inspector: \_\_\_\_\_  
Inspection Data: Pitless adapter watertight & water supply line at least 36" below grade \_\_\_\_\_  
Two piece cap installed and attached to casing securely \_\_\_\_\_  
Elec. conduit extends at least 18" below grade/attached to cap properly \_\_\_\_\_  
Safety rope not outside of well cap/casing \_\_\_\_\_  
Correct well tag attached properly and casing 8" above finished grade \_\_\_\_\_  
Water supply line sleeved adequately at house connection \_\_\_\_\_  
Adequate grout observed below pitless adapter \_\_\_\_\_





## Bureau of Environmental Health

8930 Stanford Blvd., Columbia, MD 21045  
Main: 410-313-1771 | Fax: 410-313-2648  
TDD 410-313-2323 | Toll Free 1-866-313-6300  
[www.hchealth.org](http://www.hchealth.org)

Facebook: [www.facebook.com/hocohealth](http://www.facebook.com/hocohealth)  
Twitter: [HowardCoHealthDep](https://twitter.com/HowardCoHealthDep)

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

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### INTERIM CERTIFICATE OF POTABILITY

Expiration Date – NOVEMBER 28, 2014

May 28, 2014

Homeowner  
1487 Route 32  
Sykesville, MD 21784

**RE: Keane Property, Lot 6**  
**1487 Route 32**  
**Building Permit: B13003165**  
**Well Permit: HO-95-2450**

Dear Homeowner:

This is to advise you that the septic system installation and water well construction for the above referenced property have been inspected and approved. Final approval of the septic system was granted on **5/27/2014**. Final approval of the well line connection to the dwelling was granted on **12/19/2013**. The well construction was completed on **12/17/2012**. Water samples were collected on **5/14/2014**.

The water sample results indicate that the water samples submitted for testing were free of coliform and fecal coliform bacteria at the time of sampling and are bacteriologically safe for drinking. This certifies that the initial sampling requirements of COMAR 26.04.04 "Well Regulations" have been met for the water supply system installed under well permit HO-95-2450. Although the submitted sample results are in compliance with COMAR standards, the Health Department does not guarantee water supplies.

This Interim Certificate of Potability will expire **six months** from the date of issuance. Submission of a second bacteriological test indicating the water is free of coliform and fecal coliform bacteria is required prior to the expiration date, after which time a Final Certificate of Potability will be issued. **Failure to submit an additional sample and obtain a Final Certificate of Potability will result in a Notice of Violation and is punishable as a misdemeanor under the Annotated Code of Maryland, Environment Article, 9-1311, subject to a fine of up to \$500 or imprisonment not to exceed three months.**

Please contact (410) 313-1773 to schedule a final water sample appointment or contact a Maryland certified water laboratory to schedule a water sample. A list of laboratories certified by the state of Maryland may be found at the following website:  
<http://www.mde.state.md.us/assets/document/WSP-Labs-2010apr16.pdf>

Approving Authority,

A handwritten signature in black ink, appearing to read "Robert Bricker". The signature is written in a cursive style with a large initial "R".

Robert Bricker, REHS/R.S., L.E.H.S.  
Environmental Sanitarian  
Well & Septic Program

cc: Howard County Dept. of Inspections, Licenses, and Permits  
Community Hygiene Program  
File



TRACE LABORATORIES, INC  
 5 North Park Drive  
 Hunt Valley, MD 21030 USA  
 Telephone: 410/584-9099 / Fax: 410/584-9117  
 Website: www.tracelabs.com / Email: info@tracelabs.com

Maryland State Certified Laboratory #318

CERTIFICATE OF ANALYSIS

Requester:

S/O Number: 93093

Trinity Homes/TBI Homes  
 3675 Park Avenue, Suite 301  
 Ellicott City, Maryland 21043

Report Date: May 15, 2014

Property Sampled: 1487 Route 32, 21784  
 Sample Location: Pressure Tank Tap  
 Residual Chlorine: <0.1 mg/L ✓

Building Permit #: B13003165  
 Sampler ID #: 7483AM  
 Samples Iced: Yes

County: Howard

Subdivision: Glen Oak

Lot#: 6

Date/Time Collected in Field: May 14, 2014 11:40 am

Date/Time Received in Lab: May 14, 2014 3:10 pm

Well Tag #: HO-95-2450 ✓

Well Condition: 2-Piece Cap, Satisfactory ✓

Water Treatment/Conditioning: N/A – Raw Sample ✓

PARAMETER	METHOD	MCL/*SMCL	RESULT	COMMENT
Total Coliform	SM 9223B	Absent	Absent ✓	Pass
<i>E. coli</i>	SM 9223B	Absent	Absent ✓	Pass
Nitrate	SM 4500-NO3D	10 mg/L as N	2.6 mg/L as N ✓	Pass
Turbidity	EPA 180.1	10 NTU	1.7 NTU ✓	Pass
pH (Field)	SM 4500-H <sup>+</sup> B	*6.5-8.5 Units	5.6 Units ✓	***
Sand		Absent	Absent ✓	Pass

The results in this report relate only to those items tested. If any additional information or clarification of this report is required, please contact us. This test report shall not be reproduced except in full without the written approval of Trace Laboratories Inc.

OK! 5/28/2014

Katherine C. Higgs  
 Manager – Drinking Water Testing

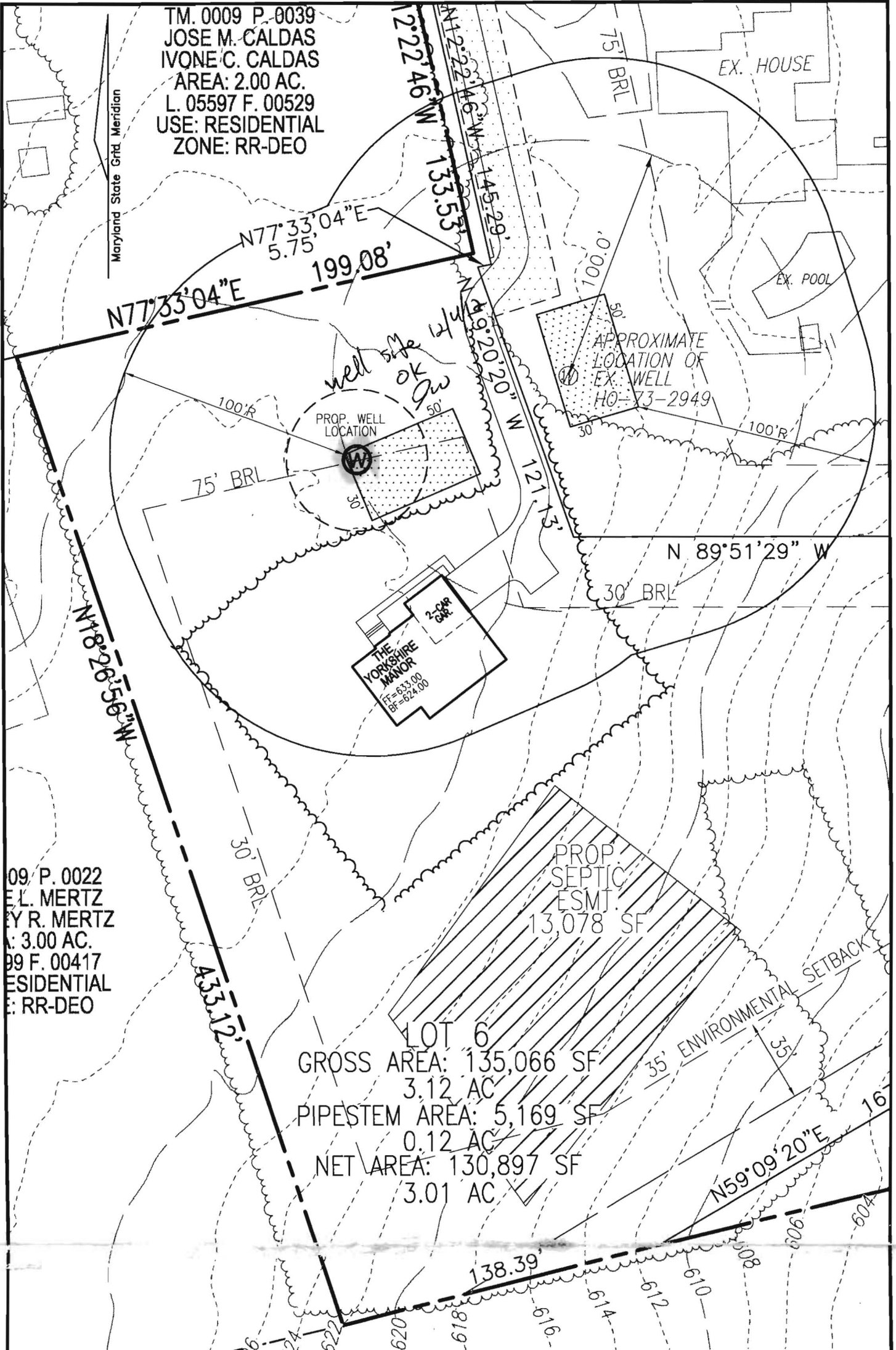
MCL: Maximum Contamination Level, an enforceable level established by the EPA

\*SMCL: Secondary Maximum Contamination Level, a level recommended by the EPA

\*\*\*A non-enforceable parameter that may cause cosmetic effects or aesthetic effects (such as taste, color or odor) in drinking water.

TM. 0009 P. 0039  
 JOSE M. CALDAS  
 IVONE C. CALDAS  
 AREA: 2.00 AC.  
 L. 05597 F. 00529  
 USE: RESIDENTIAL  
 ZONE: RR-DEO

Maryland State Grid Meridian



09 P. 0022  
 E.L. MERTZ  
 R. MERTZ  
 A: 3.00 AC.  
 99 F. 00417  
 RESIDENTIAL  
 ZONE: RR-DEO

LOT 6  
 GROSS AREA: 135,066 SF  
 3.12 AC  
 PIPESTEM AREA: 5,169 SF  
 0.12 AC  
 NET AREA: 130,897 SF  
 3.01 AC

SCALE: 1"=50'  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: NOVEMBER 2012  
 PROJECT #: 12-06  
 SHEET#: 1 OF 1

**EXHIBIT TO ACCOMPANY  
 WELL PERMIT APPLICATION**

**KEANE PROPERTY  
 LOT 6  
 REF: F-13-006**

BLOCK 17 & 18  
 TAX MAP 9 PARCEL 41  
 ZONED: RR-DEO  
 3RD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**OWNER**  
 CHRISTIAN FAMILY OUTREACH CENTER  
 1475 ROUTE 32  
 SYKESVILLE, MARYLAND 21784  
 (443) 324-9806

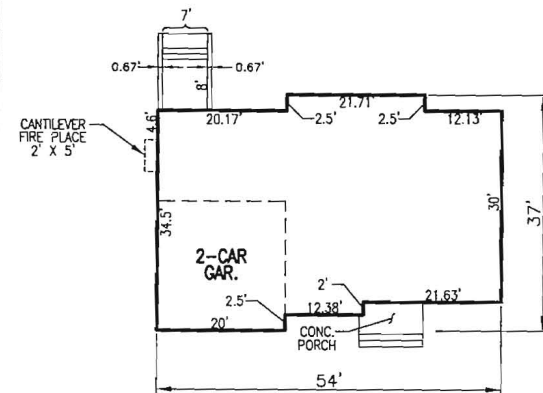
**ROBERT H. VOGEL  
 ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELUDOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

THE EXISTING WELL SHOWN ON LOT 6 TAG NO. 95-2450 HAS BEEN FIELD LOCATED BY ROBERT H. VOGEL ENGINEERING, INC., AND IS ACCURATELY SHOWN.

BUILDING OF LOT 6 FLOOR AREAS:  
 BASEMENT FLOOR AREA: 1320  
 FIRST FLOOR AREA: 1350  
 SECOND FLOOR AREA: 1490  
 BEDROOMS: 4

NOTE: STORMWATER MANAGEMENT FOR THIS LOT IS PROVIDED BY A RAIN GARDEN (M-7), ROOFTOP DISCONNECTS (N-1), AND NON-ROOFTOP DISCONNECTS (N-2)

BUILDING PERMIT NO. \_\_\_\_\_

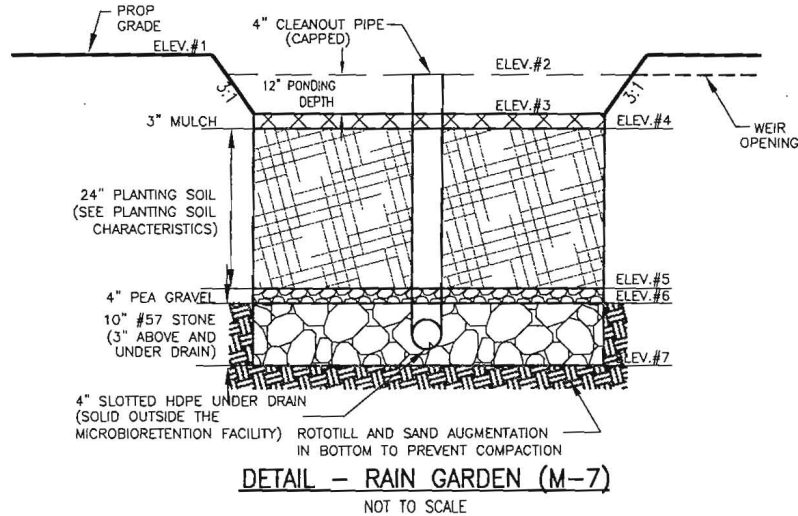


**THE AMESBURY II**  
 W/ CULT. STONE VENEER & SIDING  
 SCALE: 1"=30'

SCALE: AS SHOWN  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: JULY 2013  
 PROJECT #: 12-06  
 SHEET#: 3 OF 3

**PLOT PLAN**  
**GLEN OAK**  
**LOT 6**  
 REF: F-13-006  
 TAX MAP 9 PARCEL 41  
 BLOCK 17 & 18  
 3RD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLIOTT CITY, MD 21043  
 TEL: 410.461.7666 FAX: 410.461.8961



**DETAIL - RAIN GARDEN (M-7)**  
 NOT TO SCALE

**RAIN GARDEN**  
 ROOFTOP = 931 SF  
 $P_e = 1" \quad R_v = 0.95$   
 $ESDV = A(P_e)(R_v)/12 =$   
 $ESDV = 931 \text{ SF}(1")(0.95)/12 = 74 \text{ CF}$

LOT #	RAIN GARDEN	1	2	3	4	5	6	7	4" INV.	4" INV. OUTFALL	RAIN GARDEN SIZE
LOT 6	RG 1 (M-7)	626.30	625.90	624.90	624.65	622.65	622.32	621.49	621.74	621.52	74 CF

Appendix B.4. Construction Specifications for Environmental Site Design Practices

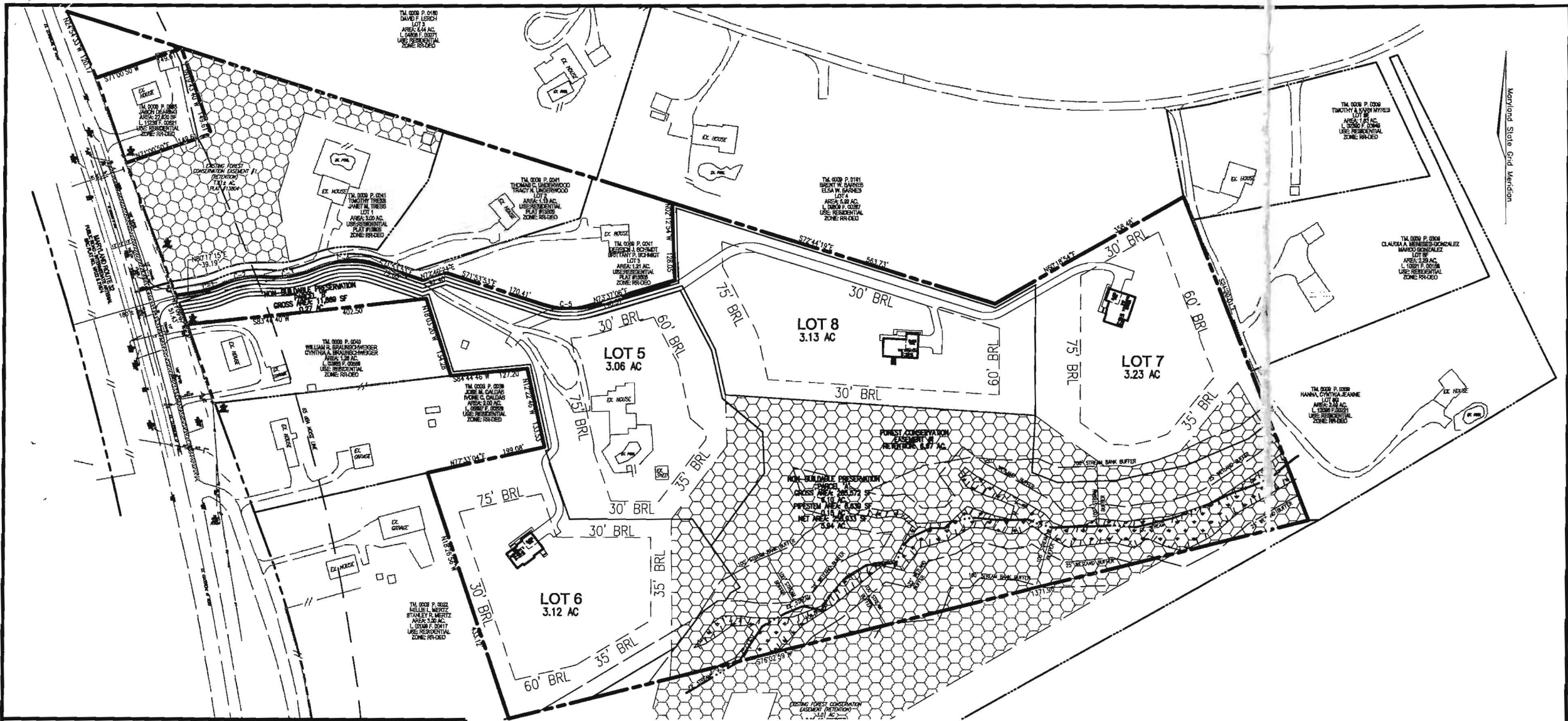
Material	Specifications	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	Plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (10%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2923)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel, ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/a	FE Type 1 nonwoven
Gravel (sanddrains and infiltration berms)	AASHTO M-43	NO. 37 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR33	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/2-inch polypropylene hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; $f'_c = 3500$ psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-A615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings, sealed and approved by a professional structural engineer licensed in the State of Maryland -design to include meeting ACI Code 350.3R89; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressures), and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #11 are not acceptable. No calcium carbide or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

**OPERATION AND MAINTENANCE SCHEDULE FOR RAIN GARDEN AREAS**

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**OWNER**  
 CHRISTIAN FAMILY OUTREACH CENTER  
 1475 ROUTE 32  
 SYKESVILLE, MARYLAND 21784  
 (443) 324-9806  
 ATTN: MR. TIM KEANE

**ADDRESS**  
 1487 ROUTE 32  
 SYKESVILLE, MD 21784  
 GP: 13-050



SCALE: AS SHOWN  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: JULY 2013  
 PROJECT #: 12-06  
 SHEET#: 1 OF 3

**PLOT PLAN  
 GLEN OAK  
 LOT 6**

**REF: F-13-006**  
 TAX MAP 9 PARCEL 41  
 BLOCK 17 & 18  
 3RD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**SCALE**  
 1"=200'

**VA ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

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