

**C 1** 36236 SEQUENCE NO. (MDE USE ONLY)

**STATE OF MARYLAND**  
**WELL COMPLETION REPORT**

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

1 2 3 6  
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

APPLICABLE TO ALL WELLS  
FILL IN THIS FORM COMPLETELY PLEASE TYPE

COUNTY NUMBER

ST/CO USE ONLY DATE RECEIVED MM/DD/YY 05/05/16 DATE WELL COMPLETED MM/DD/YY 4-7-16 Depth of Well 400 (TO NEAREST FOOT) PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-15-0033

OWNER Crooks, Todd + Michael last name first name TOWN Plantsburg MD LOT 267

WELL SITE ADDRESS 12109 S. Sunlit + Water Way SECTION \_\_\_\_\_

SUBDIVISION \_\_\_\_\_

**WELL LOG**  
Not required for driven wells

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

DESCRIPTION (Use additional sheets if needed)	FEET		check if water bearing
	FROM	TO	
Top Soil	0	1	
Bin Soil	1	20	
Red Bin Clay	20	40	
Bin Clay	40	80	
Waterbed Rock	80	90	
Grey Rock	90	400	

**GROUTING RECORD** yes no

WELL HAS BEEN GROUTED (Circle Appropriate Box) **Y** **N**

TYPE OF GROUTING MATERIAL (Circle one)  
CEMENT **CM** BENTONITE CLAY **BC**

NO. OF BAGS 98 NO. OF POUNDS 1700

GALLONS OF WATER 700

DEPTH OF GROUT SEAL (to nearest foot)  
from 0 TOP 48 ft. to 480 BOTTOM 58 ft.  
(enter 0 if from surface)

**CASING RECORD**

casing types insert appropriate code below

**ST** STEEL **CO** CONCRETE  
**PL** PLASTIC **OT** OTHER

MAIN CASING TYPE \_\_\_\_\_ Nominal diameter top (main) casing (nearest inch) \_\_\_\_\_ Total depth of main casing (nearest foot) \_\_\_\_\_

60 61 63 64 66 70

**OTHER CASING (if used)**

diameter inch \_\_\_\_\_ depth (feet) from \_\_\_\_\_ to \_\_\_\_\_

A C H S I N G

**SCREEN RECORD**

screen type or open hole insert appropriate code below

**ST** STEEL **BR** BRASS BRONZE **HO** OPEN HOLE **PL** PLASTIC **OT** OTHER

**C 2** DEPTH (nearest ft.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SLOT SIZE 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_

DIAMETER OF SCREEN (NEAREST INCH) \_\_\_\_\_

from \_\_\_\_\_ to \_\_\_\_\_

**C 3**

**PUMPING TEST**

HOURS PUMPED (nearest hour) \_\_\_\_\_

PUMPING RATE (gal. per min.) \_\_\_\_\_

METHOD USED TO MEASURE PUMPING RATE \_\_\_\_\_

WATER LEVEL (distance from land surface)

BEFORE PUMPING \_\_\_\_\_ ft.

WHEN PUMPING \_\_\_\_\_ ft.

TYPE OF PUMP USED (for test)

**A** air **P** piston **T** turbine  
**C** centrifugal **R** rotary **O** other (describe below)  
**J** jet **S** submersible

**PUMP INSTALLED**

DRILLER INSTALLED PUMP (CIRCLE) (YES OR NO) YES 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) \_\_\_\_\_

PUMP HORSE POWER \_\_\_\_\_

PUMP COLUMN LENGTH (nearest ft.) \_\_\_\_\_

CASING HEIGHT (circle appropriate box and enter casing height)

**+** above } LAND SURFACE (nearest foot)  
**-** below }

NUMBER OF UNSUCCESSFUL WELLS: \_\_\_\_\_

WELL HYDROFRACTURED **Y** **N**

CIRCLE APPROPRIATE LETTER

**A** 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 MWD 553

DRILLERS SIGNATURE \_\_\_\_\_ (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. 1 WRD 897

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

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

TELESCOPE CASING \_\_\_\_\_ LOG INDICATOR \_\_\_\_\_ OTHER DATA \_\_\_\_\_

LATITUDE 39.21050 LONGITUDE 76.92859

(DEFAULT COORD. WGS 84)

Pursuant to §10-624 of the State Govt. Article of the Maryland Code personal info. requested on this form is used in processing this form pursuant to COMAR 26.04.04. Failure to provide the info. may result in this form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment is subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or state law.

**B 1** SEQUENCE NO. (MDE USE ONLY) 43872 STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type 558057 STATE PERMIT NUMBER HO-15-0233  
1 2 3 6 70 79  
 fill in this form completely

**OWNER INFORMATION**  
 Date Received (APA) 03/29/16  
8 MM DD YY 13  
 Last Name Crooks Owner Todd First Name Michael 34  
 Street or RFD 12109 Sunlit Water Way 55  
 Town Clarksville State MD Zip 21029 57 70 72 76

**B 3** LOCATION OF WELL  
Howard COUNTY 8 21  
 SUBDIVISION 23 42  
 SECTION 44 46 LOT 267 48 50  
Clarksville NEAREST TOWN 52 71

**DRILLER INFORMATION**  
 Driller's Name John Hess M W D SS3 76 License No. 553 81  
 Firm Name Allied Environmental Svcs  
 Address PO Box 29 Annapolis Junction MD 20701  
 Signature John Hess Date 03/28/16

**B 4** SOURCES OF DRILLING WATER  
 1. Public 11 STREET ADDRESS 12109 S Sunlit Water Way 30  
 2.   
 3.   
 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)  
 NORTH  WEST  EAST  SOUTH   
 DISTANCE FROM ROAD 20 34 37 ENTER FT OR MI 38 39  
 TAX MAP: 0035 BLK: 0000 PARCEL 0157

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

**USE FOR WATER** (CIRCLE APPROPRIATE BOX)  
 DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION  
 FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)  
 INDUSTRIAL, COMMERCIAL, DEWATERING  
 PUBLIC WATER SUPPLY WELL  
 TEST, OBSERVATION, MONITORING  
 OPEN LOOP GEOTHERMAL  
 CLOSED LOOP GEOTHERMAL 2 loops

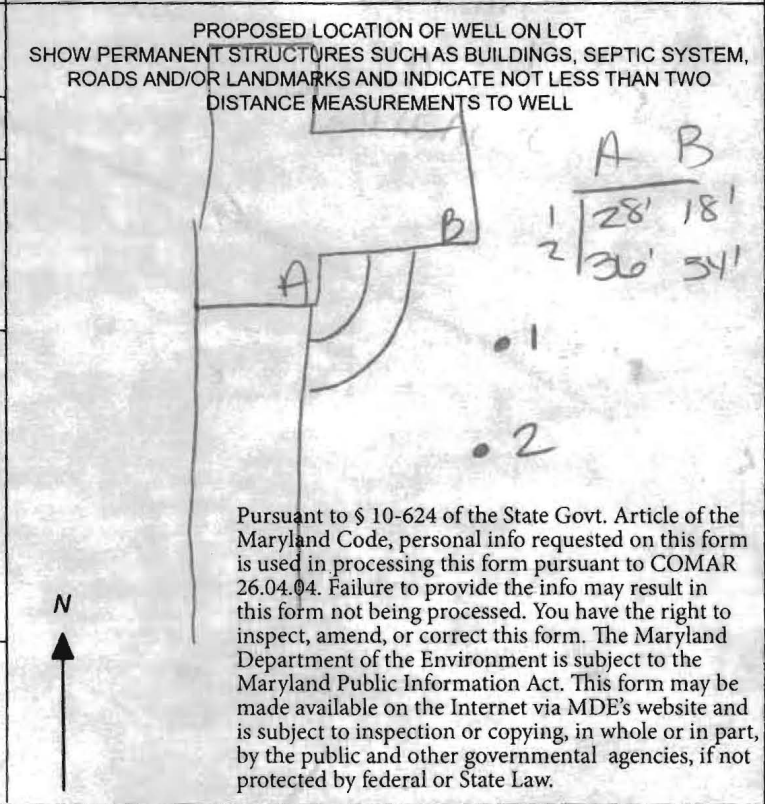
**NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL**  
Howard COUNTY NAME (13) COUNTY NO. 41  
 STATE SIGNATURE \_\_\_\_\_ INSERT S →  
 DATE ISSUED 4/5/16 43 48 CO SIGNATURE Sal C.M. EXP. DATE 4/5/17

APPROXIMATE DEPTH OF WELL 400 FEET 24 28  
 APPROXIMATE DIAMETER OF WELL 6 INCH NEAREST

**METHOD OF DRILLING** (circle one)  
 BORED (or Augered) JETTED Jetted & DRIVEN  
 AIR-ROTARY  AIR-PERCussion  ROTARY (Hydraulic Rotary)  
 CABLE  REVERSE-ROTARY  DRIVE-POINT  
 other \_\_\_\_\_

**REPLACEMENT OR DEEPEMED WELLS** (CIRCLE APPROPRIATE BOX)  
 THIS WELL WILL NOT REPLACE AN EXISTING WELL  
 THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED  
 THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS  
 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. HO-15-0233 70 71 72 73 74 75 76 77 78 79

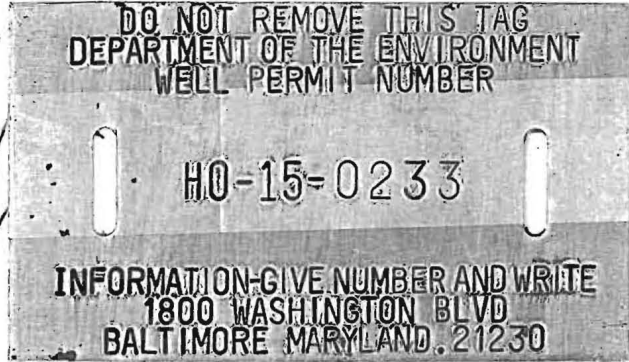


**SPECIAL CONDITIONS**  
 NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED: Wells must be grouted from bottom to top.  
 MDE/WMA/PER.071 **2** COUNTY

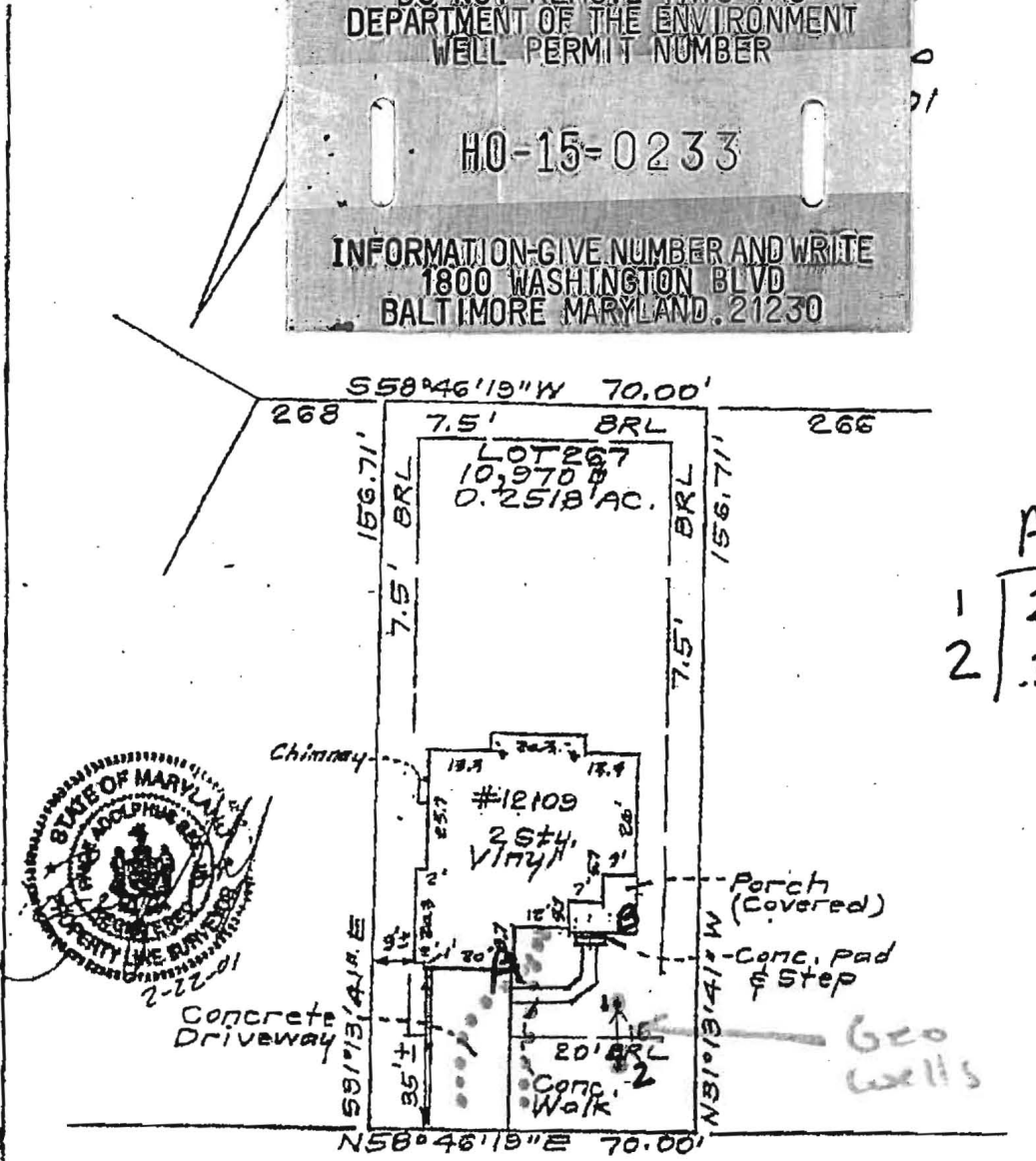


Scale: 1" = 40'

# Location Survey



Well sites  
approved  
4/5/16 SC



	A	B
1	28' 18"	
2	36' 34"	

- 18' to sewer line
- Sewer line (PVC)
- H<sub>2</sub>O line

SUNLIT WATER WAY  
50'R/W PLAT No. 12926

<b>SURVEYOR'S CERTIFICATE</b> I hereby certify that a field survey of this property has been made under my supervision for the purpose of locating improvements shown hereon, and that they are located as shown.	<b>CLARK, FINEFROCK &amp; SACKETT, INC.</b> ENGINEERS • PLANNERS • SURVEYORS 7136 MINISTREL WAY COLUMBIA, MARYLAND 21049 PHONE: BALT. (410) 381-7500 • WASH. (301) 821-8100	
	REFERENCE: PLAT NO.: 1328 B	DRAWN BY: KWC DATE: 2-22-01 SCALE: 1" = 50'

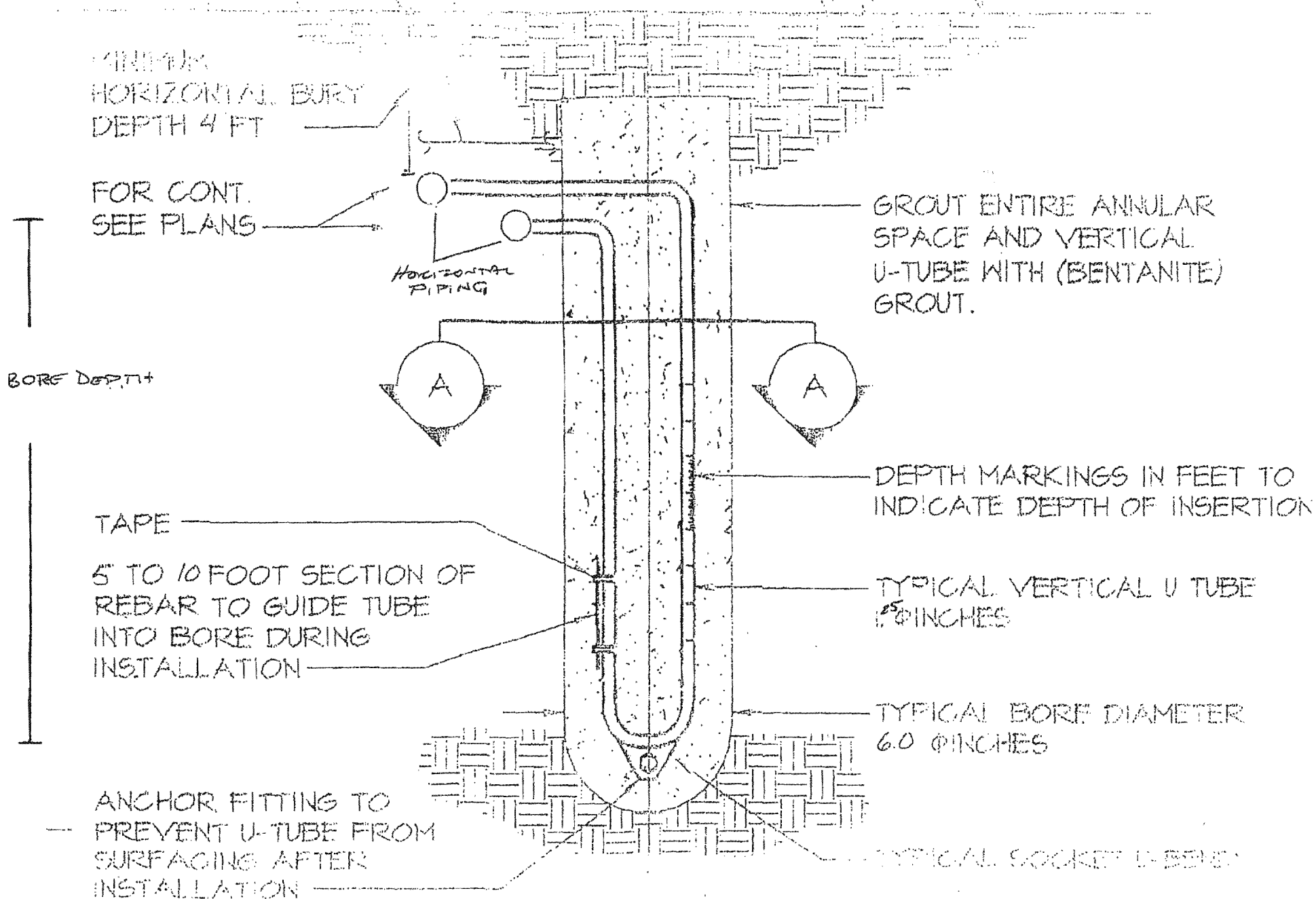
*KWC* *PAS* 4/4/09  
date

## HOWARD COUNTY GROUTING PROCEDURE

Boreholes will be grouted from the bottom to the top via a tremie pipe and positive displacement pump. Bentonite grout, known as Quik-Grout will be used according to the manufacturer's specifications to achieve a consistency of at least 20% solids (24 gallons potable water/50 lb. sack of grout) and a permeability no more than  $2.5 \text{ E}(-08) \text{ cm/sec}$ . Grouting will be completed immediately after installing the geothermal loop and no later than twenty-four (24) hours after installing the geothermal loop. Open boreholes/annular space will be protected as necessary to prevent the entry of surface water or pollutants.

GRADE

EACH BORE HOLE (TYP.)



MINIMUM  
HORIZONTAL BURY  
DEPTH 4 FT

FOR CONT.  
SEE PLANS

HORIZONTAL  
PIPING

GROUT ENTIRE ANNULAR  
SPACE AND VERTICAL  
U-TUBE WITH (BENTANITE)  
GROUT.

BORE DEPTH

TAPE

5 TO 10 FOOT SECTION OF  
REBAR TO GUIDE TUBE  
INTO BORE DURING  
INSTALLATION

DEPTH MARKINGS IN FEET TO  
INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE  
6.5 INCHES

TYPICAL BORE DIAMETER  
6.0 INCHES

ANCHOR FITTING TO  
PREVENT U-TUBE FROM  
SURFACING AFTER  
INSTALLATION

TYPICAL SOCKET U-BOLTS