

**B 1** SEQUENCE NO. (MDE USE ONLY) **45626** STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type STATE PERMIT NUMBER **HO-15-0186**  
70 fill in this form completely 79

**OWNER INFORMATION**  
Date Received (APA) 8 MM DD YY 13  
Burnham David + Heather  
15 Last Name Owner First Name 34  
710 Newberry Drive  
36 Columbia MD 21044  
57 Town 70 State 72 Zip 76

**B 3** LOCATION OF WELL  
Howard  
8 COUNTY 21  
Riverside S 1 AR 2  
23 SUBDIVISION 42  
SECTION 44 46 LOT 6  
Columbia  
52 NEAREST TOWN 71

**DRILLER INFORMATION**  
C John Hess MWD 553  
76 Driller's Name License No. 81  
Allied Environmental Svcs  
Firm Name  
PO Box 129 Annapolis Junction MD 20701  
Address  
Signature Date 11/24/15

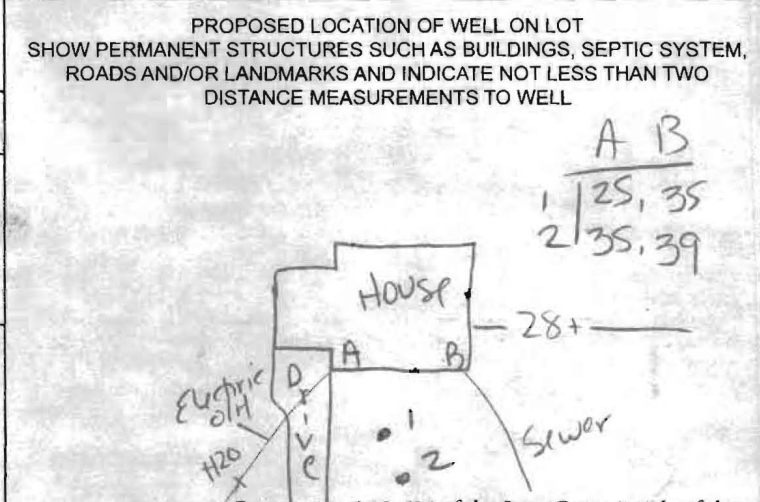
**B 4** SOURCES OF DRILLING WATER  
1. Public  
2.  
3.  
7110 Newberry Drive  
11 STREET ADDRESS 30  
ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)  
NORTH  
WEST EAST  
SOUTH  
34 37  
DISTANCE FROM ROAD  
ENTER FT OR MI 38 39  
TAX MAP: 0041 BLK: PARCEL 045

**B 2** WELL INFORMATION  
1 2 APPROX. PUMPING RATE (GAL. PER MIN.) 8 12  
AVERAGE DAILY QUANTITY NEEDED (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 2 loops

**NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL**  
Howard COUNTY NO. 13  
STATE SIGNATURE INSERT S →  
DATE ISSUED 12/7/15 41  
43 MM DD YY 48 CO SIGNATURE EXP. DATE 12/1/19

APPROXIMATE DEPTH OF WELL 320 24 28 FEET  
APPROXIMATE DIAMETER OF WELL 6 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. HO-15-0186  
70 71 72 73 74 75 76 77 78 79

**SPECIAL CONDITIONS** Grant bottom to top.  
NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED.

**C 1** 32474

SEQUENCE NO. (MDE USE ONLY)

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

ST/CO USE ONLY  
 DATE Received  
 MM DD YY

DATE WELL COMPLETED  
 MM DD YY

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

Depth of Well  
 22 320 26  
 (TO NEAREST FOOT)

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

COUNTY NUMBER

PERMIT NO. FROM "PERMIT TO DRILL WELL"  
 HO - 15 - 0186

OWNER Burham David Heather  
 WELL SITE ADDRESS 2110 Newberry Drive TOWN Columbia MD  
 SUBDIVISION Riverside SECTION \_\_\_\_\_ LOT 6

**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	
Brown Clay	1	10	
Weathered Rock	10	20	
Gray Rock	20	280	
Gray Broken Rock (water)	280	290	✓
Gray Rock	290	320	

2 closed logs

**GROUTING RECORD**  
 WELL HAS BEEN GROUTED (Circle Appropriate Box)  Y  N  
 TYPE OF GROUTING MATERIAL (Circle one)  
 CEMENT  CM BENTONITE CLAY  BC  
 NO. OF BAGS 36 NO. OF POUNDS 1800  
 GALLONS OF WATER 400  
 DEPTH OF GROUT SEAL (to nearest foot)  
 from 0 ft. to 320 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) \_\_\_\_\_

**OTHER CASING (if used)**  
 diameter \_\_\_\_\_ depth (feet) \_\_\_\_\_  
 inch from to

**SCREEN RECORD**  
 screen type or open hole  
 ST STEEL  BR BRASS  HO OPEN HOLE  
 PL PLASTIC  OT OTHER

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 M D 553  
 DRILLERS SIGNATURE \_\_\_\_\_  
 LIC. NO. 1 WRD 697  
 SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

**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
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SLOT SIZE 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_

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

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

**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) \_\_\_\_\_

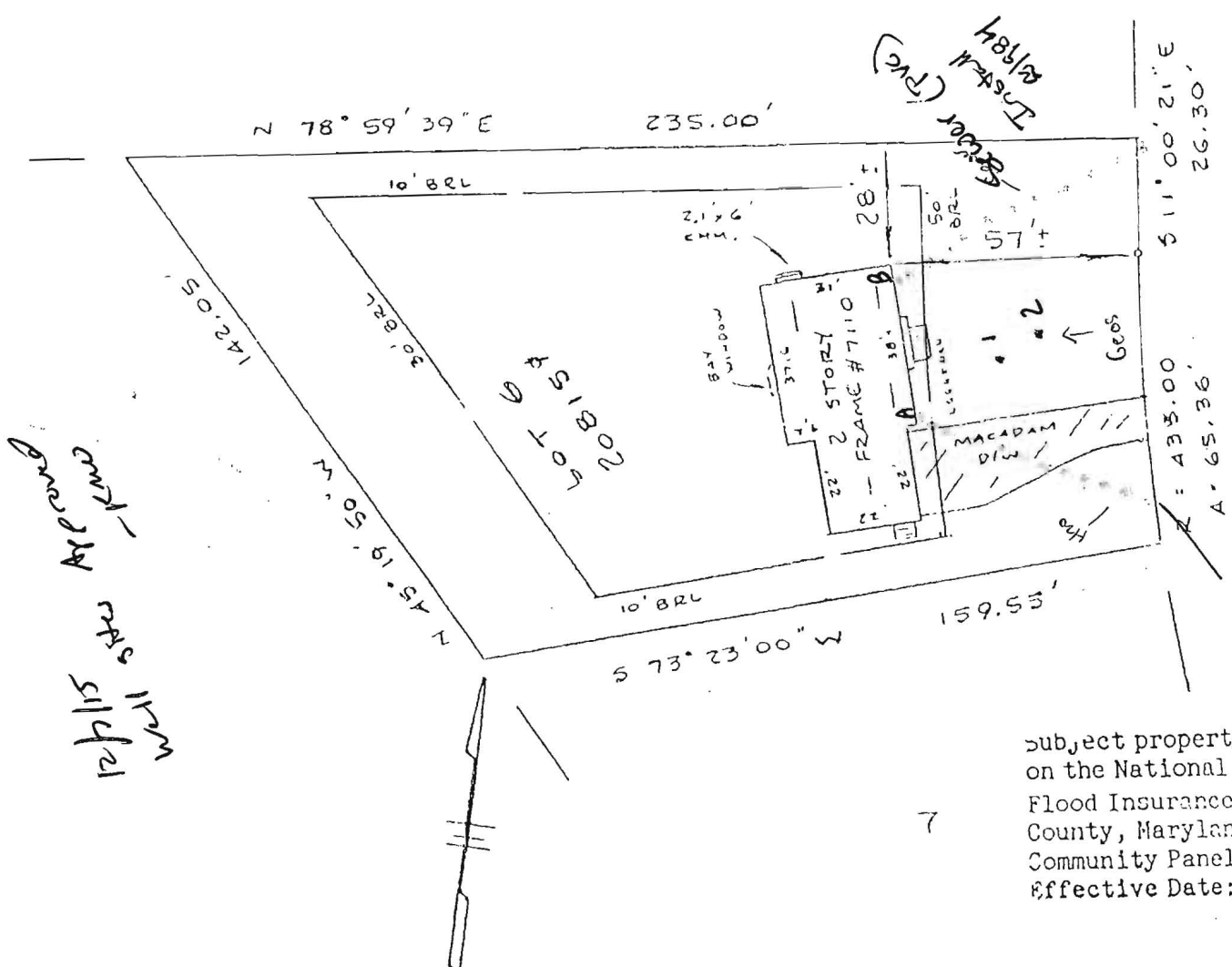
PUMP HORSE POWER \_\_\_\_\_

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

CASING HEIGHT (circle appropriate box and enter casing height)  
 + above } LAND SURFACE  
 - below } (nearest foot)

LATITUDE 39.17523  
 LONGITUDE 76.58553  
 (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.



BERRY RIVE  
 'R/W'  
 A B  
 1 25135  
 2 35139

subject property is  
 on the National Flood  
 Flood Insurance Rate  
 County, Maryland. P  
 Community Panel #  
 Effective Date:

DO NOT REMOVE THIS TAG  
 DEPARTMENT OF THE ENVIRONMENT  
 WELL PERMIT NUMBER  
 HO-15-0186  
 INFORMATION-GIVE NUMBER AND WRITE  
 1800 WASHINGTON BLVD  
 BALTIMORE MARYLAND 21230

This is to certify that I have surveyed the property  
 known as LOT 6  
 7110 NEWBERRY DRIVE,  
 sheet of recorded PLAT NO. 5793 among the  
 Land Records of HOWARD County, Maryland for the  
 purpose of locating the improvements thereon.

THIS PLAT SHOWS ONLY THAT THE IMPROVEMENTS ARE  
 CONTAINED WITHIN THE OUTLINES OF THE LOT AND IS  
 NOT TO BE USED TO ESTABLISH PROPERTY LINES.



J. Carl Hudgins PLS#96

LOCATION SURVEY

7110 NEWBERRY DRIVE  
 RIVERSIDE  
 5<sup>th</sup> ELECTION DISTRICT  
 HOWARD COUNTY, MD

NTT ASSOCIATES, INC.  
 16205 Old Frederick Road  
 Mt. Airy, Maryland 21771  
 Phone 442-2031

Scale	1" = 40'
Date	3/14/88
Field By	JLM
Drawn By	JLM
Drawing #	P6530

## 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.)

HORIZONTAL BURY  
DEPTH 4 FT

FOR CONT.  
SEE PLANS

HORIZONTAL  
PIPING

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

BORE DEPTH

TAPE

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

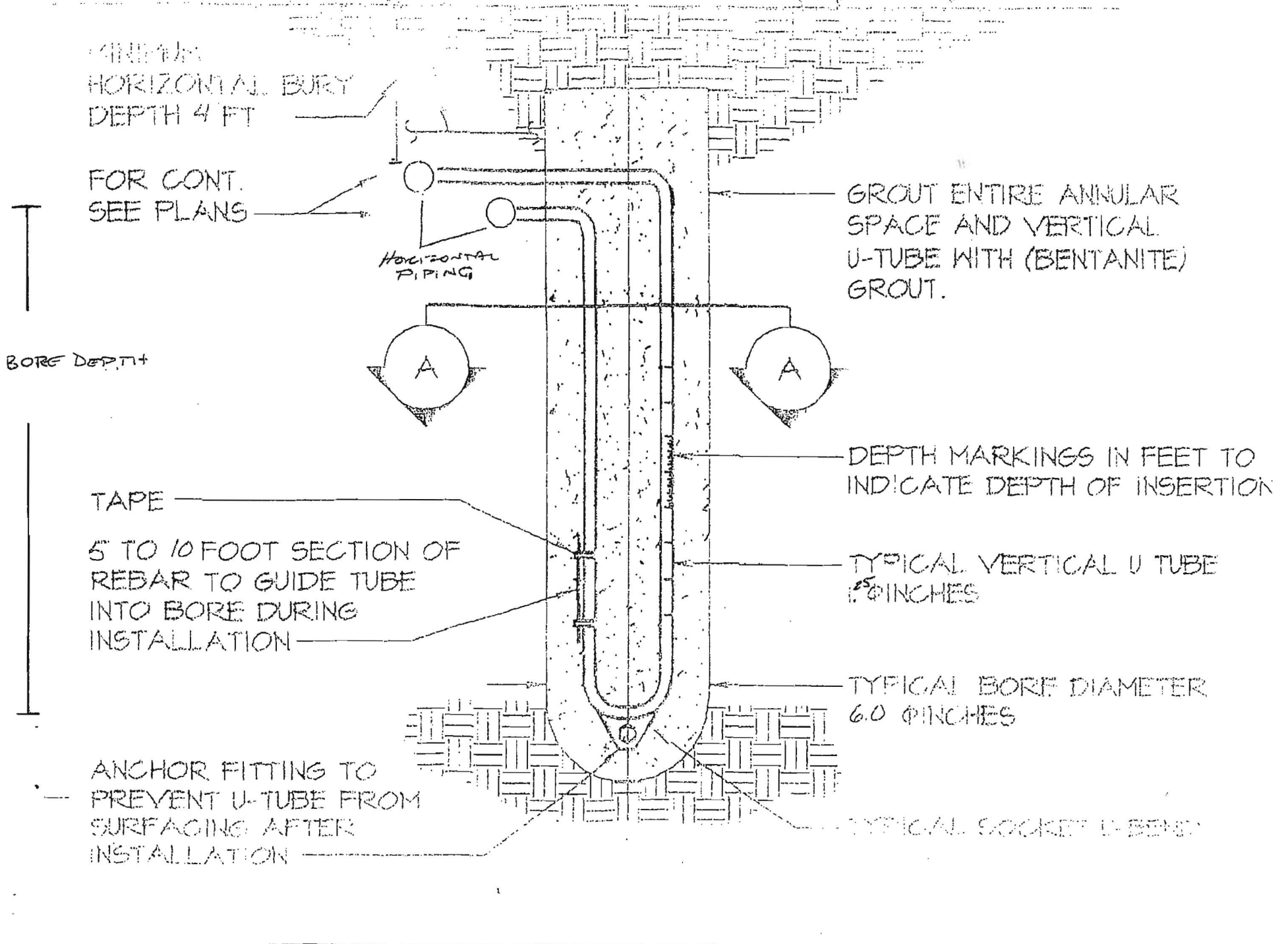
DEPTH MARKINGS IN FEET TO  
INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE  
1.5 INCHES

TYPICAL BORE DIAMETER  
6.0 INCHES

ANCHOR FITTING TO  
PREVENT U-TUBE FROM  
SURFACING AFTER  
INSTALLATION

TYPICAL SOCKET U-BEND





7110 Newberry Drive – site layout for geothermal. Property born on Public water/sewer



# HOWARD COUNTY DEPARTMENT OF FINANCE

## Legacy Water/Sewer

### Street Address Search

Account No     
  COLUMBIA 210440000

Date Created:   
 Building:  
 Tax ID: 5 393833 Land Use: R  
 Subdivision:

Master Information

Name on Account:

Service Type:  Cycle:   
 Pay Status:  Bill Stat:

### Primary Billing Address

### Secondary Billing Address

### Meter Information

Meter No:   
 ERT:   
 Date Instld:   
 Manufact:   
 Meter Size:   
 Perm Code:   
 Compound:

Surch Code:   
 Surch Area:   
 Surch Rate:

### Meter / SubMeter Info

Master Mtr:

Meter Location:



# HOWARD COUNTY HEALTH DEPARTMENT

57471

DATE 11/30/15

W5

Received From

Allied Environmental

PHONE #

301-776-8370

For

Well permit: 7110 Newberry Drive

CASH

CHECK

NO.

12132

One hundred sixty

<sup>00</sup>/<sub>100</sub>

Dollars

\$

160.00

Received By

M Curry