

C1 34458

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

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

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL" 28 29 30 31 32 33 34 35 36 37

OWNER Wellers, Wayne last name first name TOWN Columbia, MD

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 (Use additional sheets if needed), FEET (FROM, TO), check if water bearing. Includes entries for Topsoil, Wet Red Clay, Bin Rock, and Gray Rock.

NUMBER OF UNSUCCESSFUL WELLS: WELL HYDROFRACTURED YES NO

- 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 28.04.04 "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. MWD 553 DRILLERS SIGNATURE LIC. NO. 1 55 D 144

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

GROUTING RECORD yes no

WELL HAS BEEN GROUTED (Circle Appropriate Box) TYPE OF GROUTING MATERIAL (Circle one) CEMENT CM BENTONITE CLAY BC NO. OF BAGS 11 NO. OF POUNDS 300 GALLONS OF WATER 295 DEPTH OF GROUT SEAL (to nearest foot) from 0 ft. to 290 ft.

CASING RECORD casing types insert appropriate code below MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch)! Total depth of main casing (nearest foot)

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

SCREEN RECORD screen type or open hole insert appropriate code below STEEL BRASS BRONZE PLASTIC OPEN HOLE OTHER

DEPTH (nearest ft.) 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

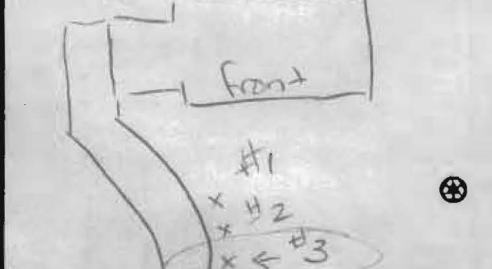
MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q TELESCOPE CASING LOG INDICATOR OTHER DATA

C 3 1 2

PUMPING TEST HOURS PUMPED (nearest hour) 8 9 PUMPING RATE (gal. per min.) 11 15 METHOD USED TO MEASURE PUMPING RATE WATER LEVEL (distance from land surface) BEFORE PUMPING 17 20 ft. WHEN PUMPING 22 25 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) 31 35 PUMP HORSE POWER 37 41 PUMP COLUMN LENGTH (nearest ft.) 43 47 CASING HEIGHT (circle appropriate box and enter casing height) LAND SURFACE (nearest foot)

LATITUDE 39.26214 #3 LONGITUDE 76.87994 (DEFAULT COORD. WGS 84) NOTES:



Ground loop

C 1 - 34460

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.

1 2 3 4 5 6
(THIS NUMBER IS TO BE PUNCHED
IN COLS. 3-6 ON ALL CARDS)

COUNTY
NUMBER

ST/CO USE ONLY
DATE RECEIVED
MM DD YY

DATE WELL COMPLETED

Depth of Well

PERMIT NO.
FROM "PERMIT TO DRILL WELL"

OWNER Lutter, Wayne last name first name
WELL SITE ADDRESS 6328 Goldin Hook
SUBDIVISION _____ SECTION _____ TOWN Columbia, MD LOT _____

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	2	
Wet Red Clay	2	12	
Brn Rock	12	33	
Grey Rock	33	90	

6 bags x 26 gal / bag = 156 gal / 90' = 1.7 gal'

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 6 NO. OF POUNDS 500
GALLONS OF WATER 150
DEPTH OF GROUT SEAL (to nearest foot)
from 0 TOP 90 ft. to 90 BOTTOM 58 ft.
(enter 0 if from surface)

CASING RECORD

caseing 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)

ACCHASING
diameter inch depth (feet) from to

SCREEN RECORD

screen type or open hole (insert appropriate code below)
 ST STEEL BR BRASS BRONZE HO OPEN HOLE
 PL PLASTIC OT OTHER
DEPTH (nearest ft.)

E A C H S C R E E N	DEPTH (nearest ft.)	
	1	2
1	8	11
2	23	26
3	38	41
4	45	47
5	55	60

DIAMETER OF SCREEN (NEAREST INCH)
from 56 to 60

C 3

PUMPING TEST

HOURS PUMPED (nearest hour) 8 9
PUMPING RATE (gal. per min.) 11 15
METHOD USED TO MEASURE PUMPING RATE _____
WATER LEVEL (distance from land surface)
BEFORE PUMPING 17 20 ft.
WHEN PUMPING 22 25 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. 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 (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.

DRILLER'S LIC. NO. MW D 553
DRILLER'S SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)
LIC. NO. D 144

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 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 39.20217
LONGITUDE 76.87990
(DEFAULT COORD. WGS 84)

NOTES: front
x1
x2
x8

15-015718

EMERGENCY/TEMP NO. IF ANY

B 1	36729	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type	STATE PERMIT NUMBER HO - 15 - 0094 <small>fill in this form completely</small>
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OWNER INFORMATION

8 MM DD YY 13
 15 Last Name Owner First Name 34
 36 Street or RFD 55
 57 Town 70 State 72 Zip 76

Walters, Wayne G
6328 Golden Hook #BB11
Columbia MD 21044

LOCATION OF WELL

8 COUNTY 21
 23 SUBDIVISION 42
 SECTION 44 46 LOT 48 50
 52 NEAREST TOWN 71

Howard
Vil Hickory Ridge St
Columbia

DRILLER INFORMATION

Driller's Name 76 License No. 81
 Firm Name
 Address
 Signature Date

John Hess MWD 553
Allied Environmental Services
PO Box 29 Annapolis Junction MD 20701
John Hess *adillis*

SOURCES OF DRILLING WATER

1. *Public*

11 STREET ADDRESS 30
ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)

34 37
 DISTANCE FROM ROAD
 ENTER FT OR MI 38 39

TAX MAP: *0035* BLK: *0012* PARCEL: *0293*

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 (13) COUNTY NAME COUNTY NO.
 STATE SIGNATURE INSERT S → 41
 DATE ISSUED *6/18/15* *Sub All* *6/18/16*
 43 MM DD YY 48 CO SIGNATURE EXP. DATE

APPROXIMATE DEPTH OF WELL *320* FEET
 APPROXIMATE DIAMETER OF WELL *6* NEAREST INCH

PROPOSED LOCATION OF WELL ON LOT
 SHOW PERMANENT STRUCTURES SUCH AS BUILDINGS, SEPTIC SYSTEM, ROADS AND/OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCE MEASUREMENTS TO WELL

METHOD OF DRILLING (circle one)

BORED (or Augered) JETTED Jetted & DRIVEN
 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)
 CABLE REVERSE-ROTary DRIVE-POINT
 other _____

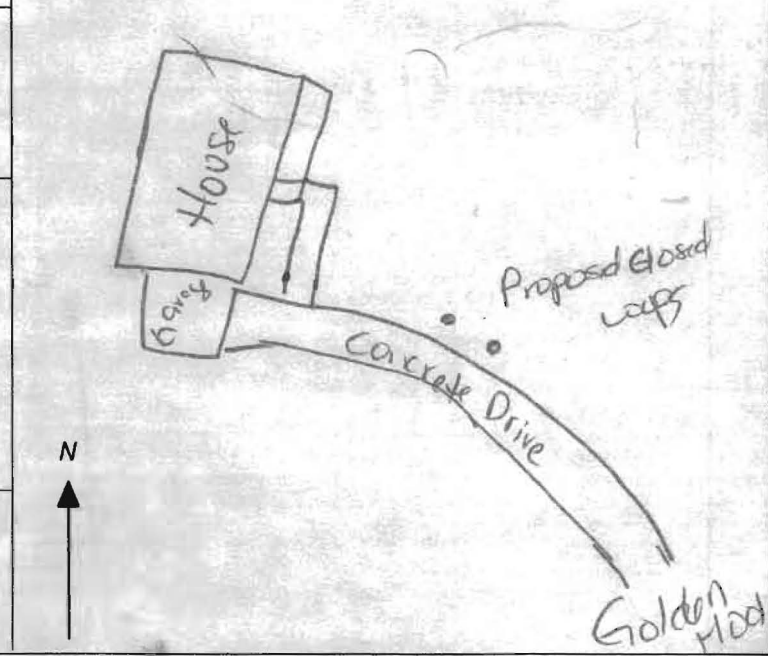
REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

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)

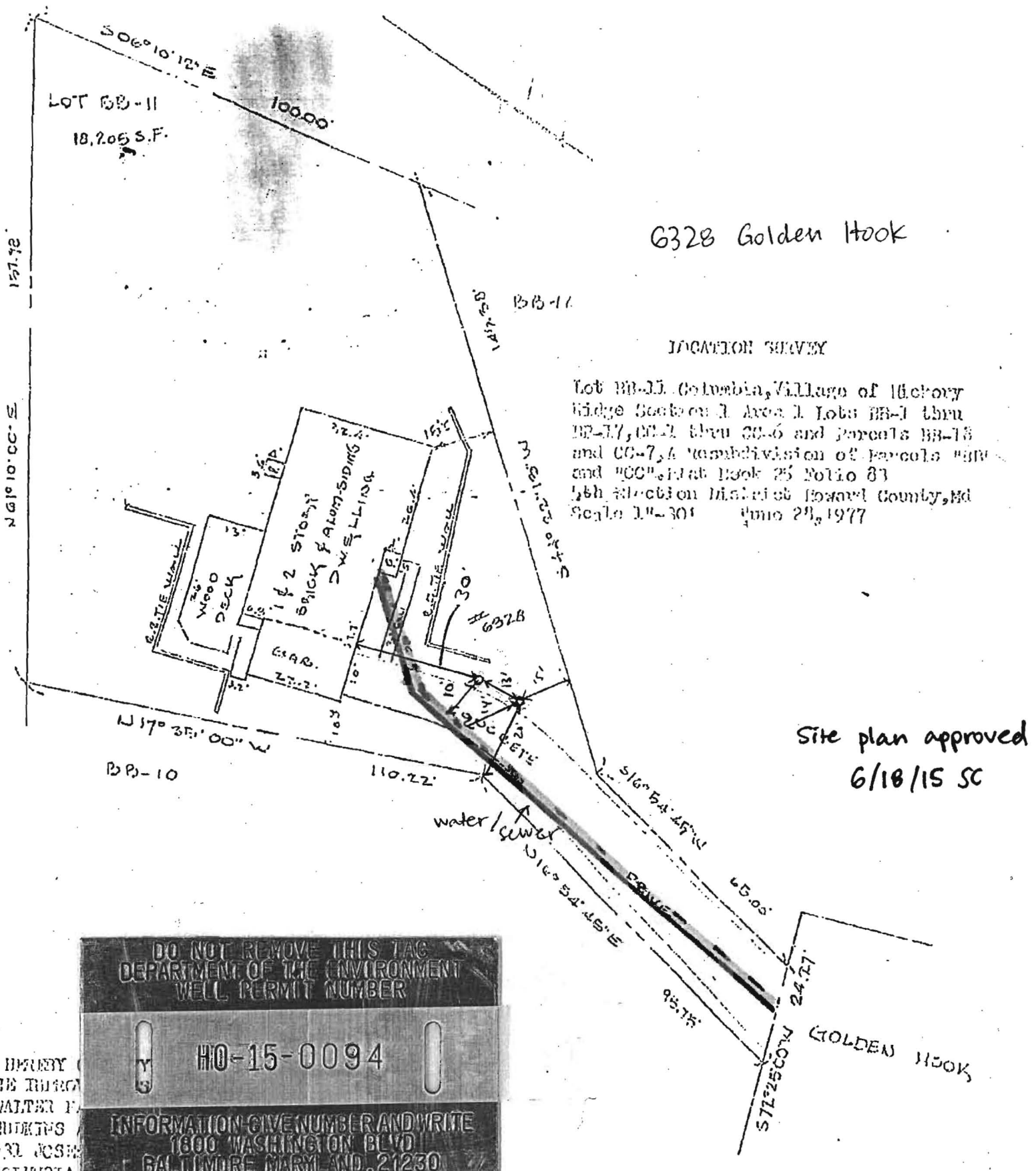
APPROP. PERMIT NUMBER _____ **G** _____
 PERMIT No. *HO - 15 - 0094*
 70 71 72 73 74 75 76 77 78 79



Grand loop

SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED



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 (BENTONITE)
GROUT.

BORE DEPTH

TAPE

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

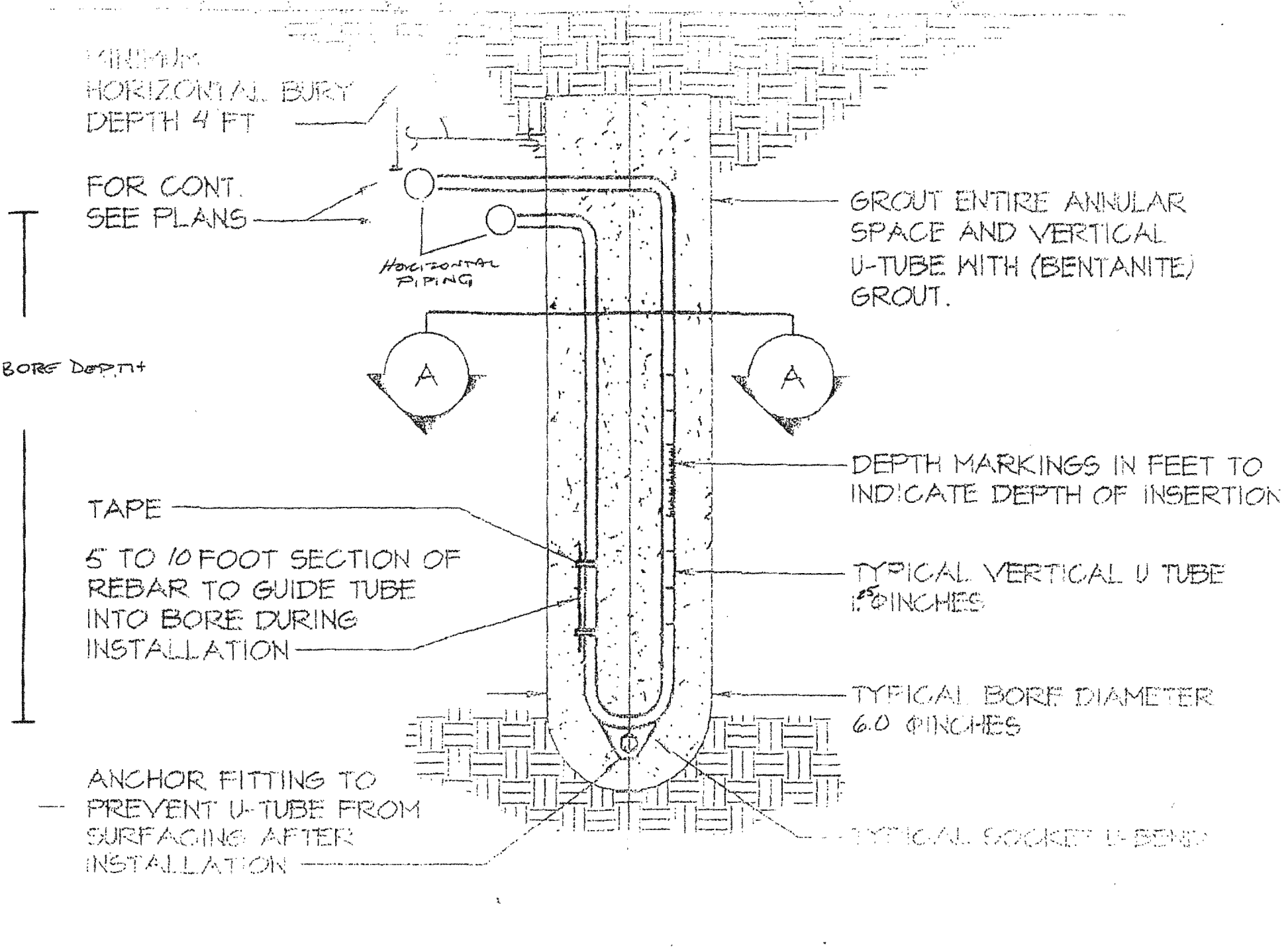
DEPTH MARKINGS IN FEET TO
INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE
1.55 INCHES

TYPICAL BORE DIAMETER
6.0 INCHES

ANCHOR FITTING TO
PREVENT U-TUBE FROM
SURFACING AFTER
INSTALLATION

TYPICAL SOCKET U-BEND



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.



HOWARD COUNTY HEALTH DEPARTMENT

56483

DATE
6/11/15

Received From

Allied EMU

PHONE #

65
301-776-8370

For

well permit/6328 Golden Hawk

CASH

CHECK

NO.

11766

One hundred sixty

Dollars

\$

160.00

Received By

J King