

BRAEBURN ROAD

50' RW
LOCAL COUNTY ROAD

EX. DRIVEWAY

EX. PAVING

EX. MB

N62° 56' 16"W 106.94'

EX. BUSH

EX. R

GfB

REPLACEMENT WELL 2 (WITH BOLLARDS)

REPLACEMENT WELL 1 (WITH BOLLARDS)

PERMEABLE PAVEMENT A-2

PROP. MICRO-BIO 1 M-6 (SEE G.N. 15)

PROP. HOUSE
FF:333.80
B:321.78

AREA OF 25% SLOPES OR GREATER
AREA OF 1,211 SF

PROXIMATE WELL LOCATION
CO. HEALTH DEPARTMENT WELL
COMPLETION REPORT A-04958

AREA OF 15% - 25% SLOPES
CONTIGUOUS AREA
OF 4,561 SF ±

EX. HOUSE

EX. SHED
EX. CONC. PATIO
EX. WOOD DECK

EX. POOL

EX. WOOD DECK
EX. CONC. STEPS

PROP. RAIN BAR (SEE 7)
AREA OF 15% CONTIGUOUS OF

EX. SHED

AREA OF 15% SLOPES
GREATER
CONTIGUOUS AREA
HAY 20,000 SF

AREA OF 15% - 25% SLOPES
CONTIGUOUS AREA
OF 6,446 SF ±

LOT 13
1.1680 AC ±
SEWAGE DISPOSAL AREA
3,327 SF ±

Approved Septic System Plan
Howard County Health Department

Signature
Date 5-23-19

Signature
MKP/ED

AREA OF 15% - 25% SLOPES
CONTIGUOUS AREA
OF 6,704 SF ±

10' UTILITY EASEMENT
P.B. 8, P.N. 80

GgB

JODPLAIN
WARD
ITY (GIS)

N62° 44' 55"W 189.61'

AREA OF 25% SLOPES
OR GREATER
CONTIGUOUS AREA
MORE THAN 20,000 SF

10865 Braeburn Rd

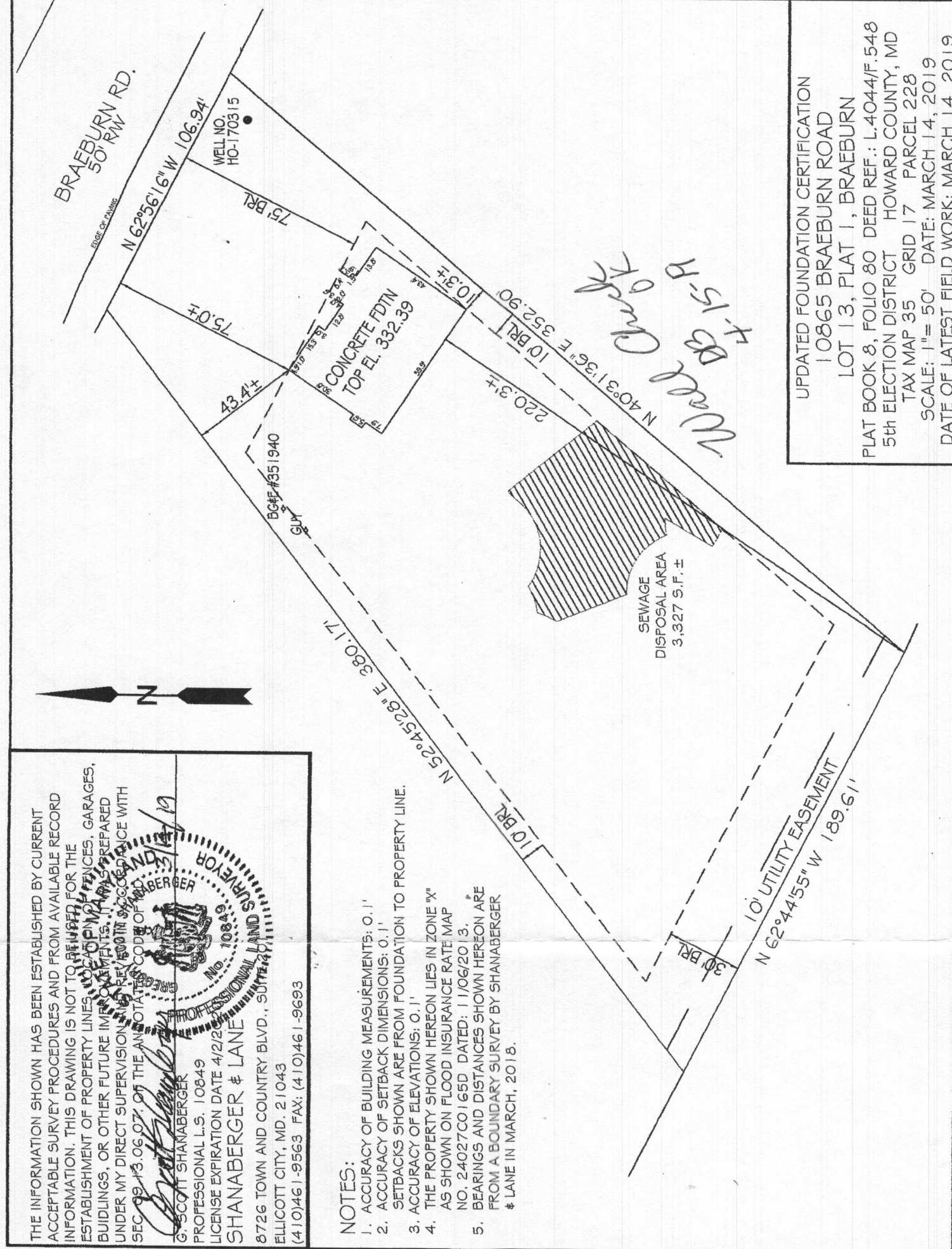
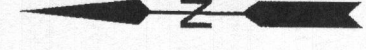
PLAN
SCALE

1"=30'

THE INFORMATION SHOWN HAS BEEN ESTABLISHED BY CURRENT ACCEPTABLE SURVEY PROCEDURES AND FROM AVAILABLE RECORD INFORMATION. THIS DRAWING IS NOT TO BE USED FOR THE ESTABLISHMENT OF PROPERTY LINES, FENCES, GARAGES, BUILDINGS, OR OTHER FUTURE IMPROVEMENTS. IT WAS PREPARED UNDER MY DIRECT SUPERVISION AND IN ACCORDANCE WITH SEC. 09-13.06.07 OF THE ANNOTATED CODE OF MARYLAND.

Scott Shanaberger
 G. SCOTT SHANABERGER
 PROFESSIONAL L.S. 10849
 LICENSE EXPIRATION DATE 4/2/2020
 SHANABERGER & LANE
 8726 TOWN AND COUNTRY BLVD., SUITE 100
 ELLICOTT CITY, MD. 21043
 (410)461-9563 FAX: (410)461-9693

- NOTES:
1. ACCURACY OF BUILDING MEASUREMENTS: 0.1'
 2. ACCURACY OF SETBACK DIMENSIONS: 0.1'
 3. SETBACKS SHOWN ARE FROM FOUNDATION TO PROPERTY LINE.
 4. ACCURACY OF ELEVATIONS: 0.1'
 5. THE PROPERTY SHOWN HEREON LIES IN ZONE "X" AS SHOWN ON FLOOD INSURANCE RATE MAP NO. 24027C0165D DATED: 11/06/2013.
- BEARINGS AND DISTANCES SHOWN HEREON ARE FROM A BOUNDARY SURVEY BY SHANABERGER & LANE IN MARCH, 2018.



*Well Check
 BS
 T-15-B*

UPDATED FOUNDATION CERTIFICATION
 10865 BRAEBURN ROAD
 LOT 13, FLAT 1, BRAEBURN
 PLAT BOOK 8, FOLIO 80 DEED REF.: L.4044/F.548
 5th ELECTION DISTRICT HOWARD COUNTY, MD
 TAX MAP 35 GRID 17 PARCEL 228
 SCALE: 1" = 50' DATE: MARCH 14, 2019
 DATE OF LATEST FIELD WORK: MARCH 14, 2019

8/27/66
O'Brien IV

PERMIT

SEWAGE DISPOSAL SYSTEM

MARYLAND STATE DEPARTMENT OF HEALTH

HOWARD COUNTY

INDEXED

P 12088

A 04957

ELLCOTT CITY

DISTRICT 5

DATE 8/15/66

Tattrie & Levy IS PERMITTED TO INSTALL ALTER

ADDRESS Simpsonville, Maryland PHONE AT 6-3241

A SEWAGE DISPOSAL SYSTEM LOCATED AT _____

SUBDIVISION Braeburn ROAD Braeburn Rd. LOT 12

PROPERTY OWNER Douglas Joyce

ADDRESS _____

SPECIFICATIONS - 3 bedrooms

DRAIN FIELD _____ DEPTH _____ FEET, BOTTOM AREA _____ SQ. FT.

SEEPAGE PITS _____ ABSORBENT SIDE-WALL AREA _____ SQ. FT.

SEPTIC TANK CAPACITY 750 GALLONS

FOR GARBAGE GRINDER, INCREASE DISPOSAL AREA 22% & TANK CAPACITY 50%.

OTHER Dry well - 300 sq. ft. absorbent sidewall area to begin below the inlet pipe. between lot 90 ft behind house + between 24 to 51 Place dry well about 100 ft. from front lot line and about 54 ft. from left side line determined as you face lot from Braeburn Rd.

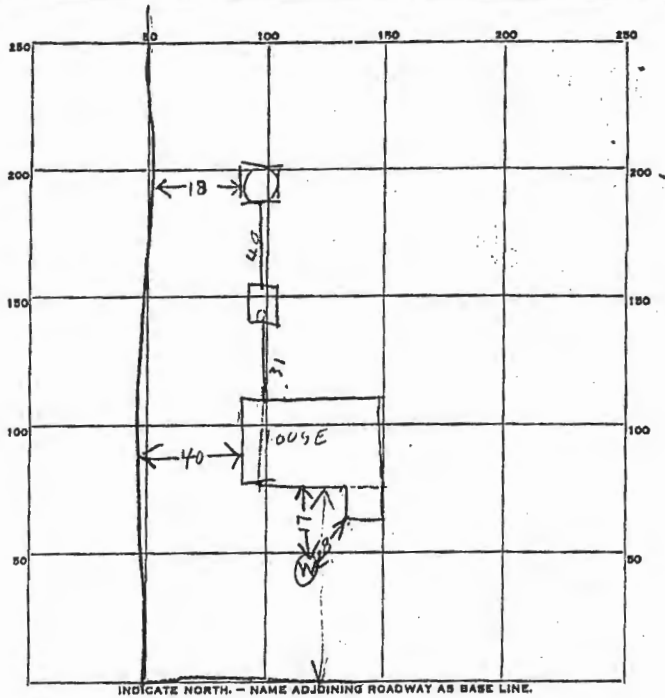
PLANS APPROVED BY D. W. Monaghan DATE 10/29/63

8/17/66

FILL SEPTIC TANK AND DISTRIBUTION BOX WITH WATER BEFORE CALLING FOR AN INSPECTION. COVER NO WORK UNTIL INSPECTED AND APPROVED.

NEITHER THE HOWARD COUNTY COMMISSIONERS NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

A 04957



.14
 3.1
 14
 42
 43.8

PERMIT CARD _____

SEPTIC TANK, LEVEL OK 1000 Top CLEANOUTS _____
 1 FT TO 8" BELOW GRADE
 DISTRIBUTION BOX, LEVEL _____

37
 37
 607

TILE FIELD, DEPTH _____ FT. TRENCH WIDTH _____ FT.

GRAVEL DEPTH _____ IN. TOTAL LENGTH _____ FT.

NUMBER OF TRENCHES _____ TOTAL BOTTOM AREA _____

SEEPAGE PITS, INSIDE DIAMETER 12 FT. DEPTH BELOW INLET 11 FT.

ABSORBENT AREA 484 SQ. FT. counting stone
407 SQ. FT. not counting stone

1
 43
 43
 44
 484

REMARKS: 1230 8/24/66 bit Dry Well inlet is 2 FT below grade

DATE SYSTEM APPROVED 8/24/66 INSPECTOR Raymond Hodges

APPLICATION

SEWAGE DISPOSAL TESTING

A 04957

P _____

MARYLAND STATE DEPARTMENT OF HEALTH

HOWARD COUNTY

ELLCOTT CITY

DISTRICT 5th

DATE 4-5-62

TO: THE COUNTY HEALTH OFFICER
ELLCOTT CITY, MARYLAND

I, HEREBY, APPLY FOR THE NECESSARY TESTS IN ORDER TO CONSTRUCT (OR RECONSTRUCT) A SEWAGE DISPOSAL SYSTEM.

PROPERTY OWNER A. H. Young, Jr., Inc.

ADDRESS Ashton, Maryland PHONE WA 4-4103

PROPERTY LOCATION:

SUBDIVISION Braeburn LOT NO. 12

ROAD AND DESCRIPTION Braeburn Road

OCCUPANT _____ PHONE _____

PERSON TO CONSTRUCT SYSTEM _____

ADDRESS _____ PHONE _____

SIZE OF LOT 1.1 acre TYPE BLDG. 4 bedroom dwelling
NUMBER OF BEDROOMS

IF NOT SINGLE RESIDENCE DESCRIBE _____

SIGNATURE OF APPLICANT A. H. Young, Jr., Inc. by [Signature] President

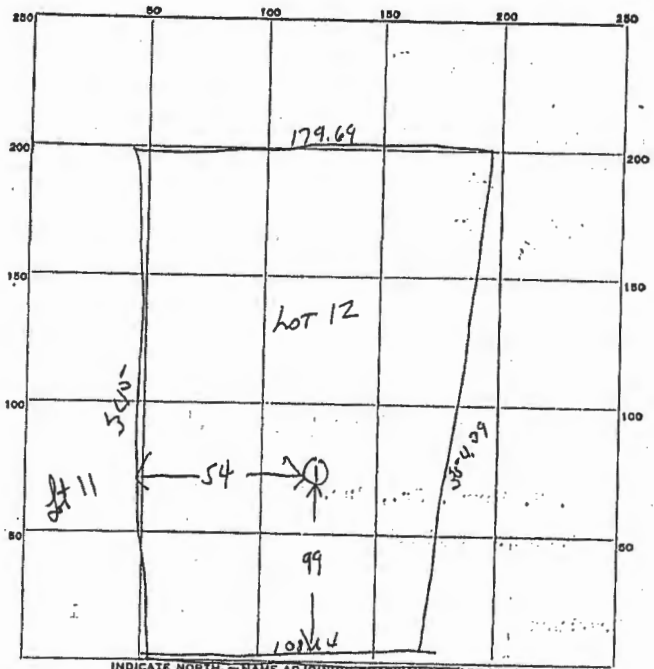
APPROVED BY [Signature] FOR [Signature] DATE 4/27/62
(KIND OF SYSTEM)

REJECTED BY _____ FOR _____ DATE _____
(KIND OF SYSTEM)

HOLD PENDING FURTHER TESTS _____ DATE _____

REASONS FOR REJECTION OR HOLDING _____

THIS IS NOT A PERMIT



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.
Archer Blvd

DATE	TEST NO.	DEPTH	PRE-WET		TEST - 1" DROP		TIME
			START	STOP	START	STOP	
4-18-62	1	5	1034	1039	1039	1047	8 min
	1a	9	1034	1036	1036	1039	3 min

6 min
 2 min

SOIL AUGER FINDING _____
 TESTED BY *burn 4-18-62*
 REMARKS _____
 ALSO PRESENT *to be used* LOT NO. *12*

no 671

HOWARD COUNTY
MARYLAND STATE DEPARTMENT OF HEALTH
8 Church Road
ELLICOTT CITY, MARYLAND
WELL COMPLETION REPORT

HO-66-W-346

LOT 12 Braeburn

This report must be submitted within 10 days after completion of the well.

This is to certify that the well which has been completed on the below property has been constructed and disinfected in compliance with the regulations and specifications of the State Board of Health.

The following construction and performance characteristics were noted:

1. Type, diameter and length of casing 6 1/4" Pipe 82 ft.
2. Total depth of well 120
3. Type, diameter and length of strainer None. Size of screen openings _____
4. Method of sealing top and bottom of screen _____
5. Method of grouting Cement. Quantity, cement used 94 lbs.
Gals. water 5
6. Standing water level (depth below ground surface when not pumping) 45 ft.
7. Yield of well in gallons per minute 3 1/2; elevation of water surface when pumped at the designated rate. _____
8. Number of hours pump operated at stipulated rate during pumping test 2
9. Record of any other pumping performance None
10. Log of materials encountered during drilling 4 ft. Clay. 78 Sand + gravel 16 ft. Shale Rock 22 ft. Irregular Rock
11. Physical appearance of water at end of final pumping test Clear
12. Variation in vertical alignment (how much the well casing varies from a truly plumb line) throughout its depth _____
13. Disinfected by 1 ounces of Quart Chlorox % Chlorine (Brand name)

Property Owner Jattie + Levy Address Clarksville, Md
Location of property Braeburn St - Sub 0

Health Department Number _____ Dept. of Water Resources Permit No. HO-66-W-346

Date: 8/23/66, 19____. Ed. Brown # 81
Signature of Well Driller

INSTRUCTIONS: This form is to be completed in duplicate and certified by the well driller upon completion of each drilled well. One copy will be forwarded to the property owner by the Health Department along with the final approval of the well.

1st Tax ID - 05-363713

9/25/87
9:30 AM
8/6/87

MAP 35
PLOT LOT 12
GRID 17

PERMIT

P 39690
A 09751 NOT LOCATED
REPAIR

SEWAGE DISPOSAL SYSTEM

MARYLAND STATE DEPARTMENT OF HEALTH

DISTRICT _____

HOWARD COUNTY
BUREAU OF ENVIRONMENTAL HEALTH
461-9933

INDEXED

DATE 7/20/87

DATE SYSTEM APPROVED _____

INSPECTOR _____

Jenkins Brothers

IS PERMITTED TO INSTALL ALTER _____

ADDRESS Route 144, Ellicott City, Maryland 21043 PHONE 465-6646

SUBDIVISION _____ ROAD 10861 Braeburn Road LOT 12

PROPERTY OWNER James L. Potter PHONE: 531-6351
10861 Braeburn Road

ADDRESS Columbia, Maryland 21044

IF GARBAGE GRINDER IS USED INCREASE SEPTIC TANK CAPACITY BY 50% AND ABSORPTION AREA BY 22%.

GARBAGE GRINDER? YES _____ NO

128

SEPTIC TANK CAPACITY 1000 GALLONS NUMBER OF BEDROOMS 3

REPAIR - CALL FOR INSPECTION WHEN GROUND IS OPENED UP SO SANITARIAN CAN RECOMMEND REPAIR.

8/6/87 TRENCH - 375 SOFT ONE SIDE WALL
AREA BELOW INLET TRENCH TO
BE 10 FT DEEP WITH 6 FT OF STONE
WITH INLET 3 TO 4 FT DEEP

PLANS APPROVED BY C. Williams DATE 7/20/87

COVER NO WORK UNTIL INSPECTED AND APPROVED.

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

NOTE: CLEANOUT REQUIRED EVERY 70 FEET OF SEWER LINE AND/OR AT 90° SWEEPS IN LINES FROM HOUSE TO DRAIN FIELDS.

NOTE: ALL PARTS OF SEPTIC SYSTEMS (I.E., TANK, DISTRIBUTION BOX, TRENCHES) TO BE 100 FEET FROM WELL. (UNLESS OTHERWISE SPECIFICALLY AUTHORIZED)

NOTE: IF DEEP TRENCHES ARE USED CALL FOR INSPECTION BEFORE AND AFTER PLACING GRAVEL IN TRENCHES).

NOTE: NO DRY WELL SHALL EXCEED 15 FOOT IN DIAMETER. NO ABSORPTION TRENCH TO EXCEED 100 FEET IN LENGTH.

NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 40 PVC OR ABS.

PERMIT VOID AFTER TWO YEARS.

NOTE: INSTALL STAND PIPE ON SEPTIC TANK AND DRY WELL. STAND PIPES MUST BE 6 INCHES IN DIAMETER. CAST IRON, CONCRETE OR TERRA COTTA OR PVC OR ABS ACCEPTED. IF TOP OF SEPTIC TANK IS DEEPER THAN 3 FEET, MANHOLE TO GRADE REQUIRED.

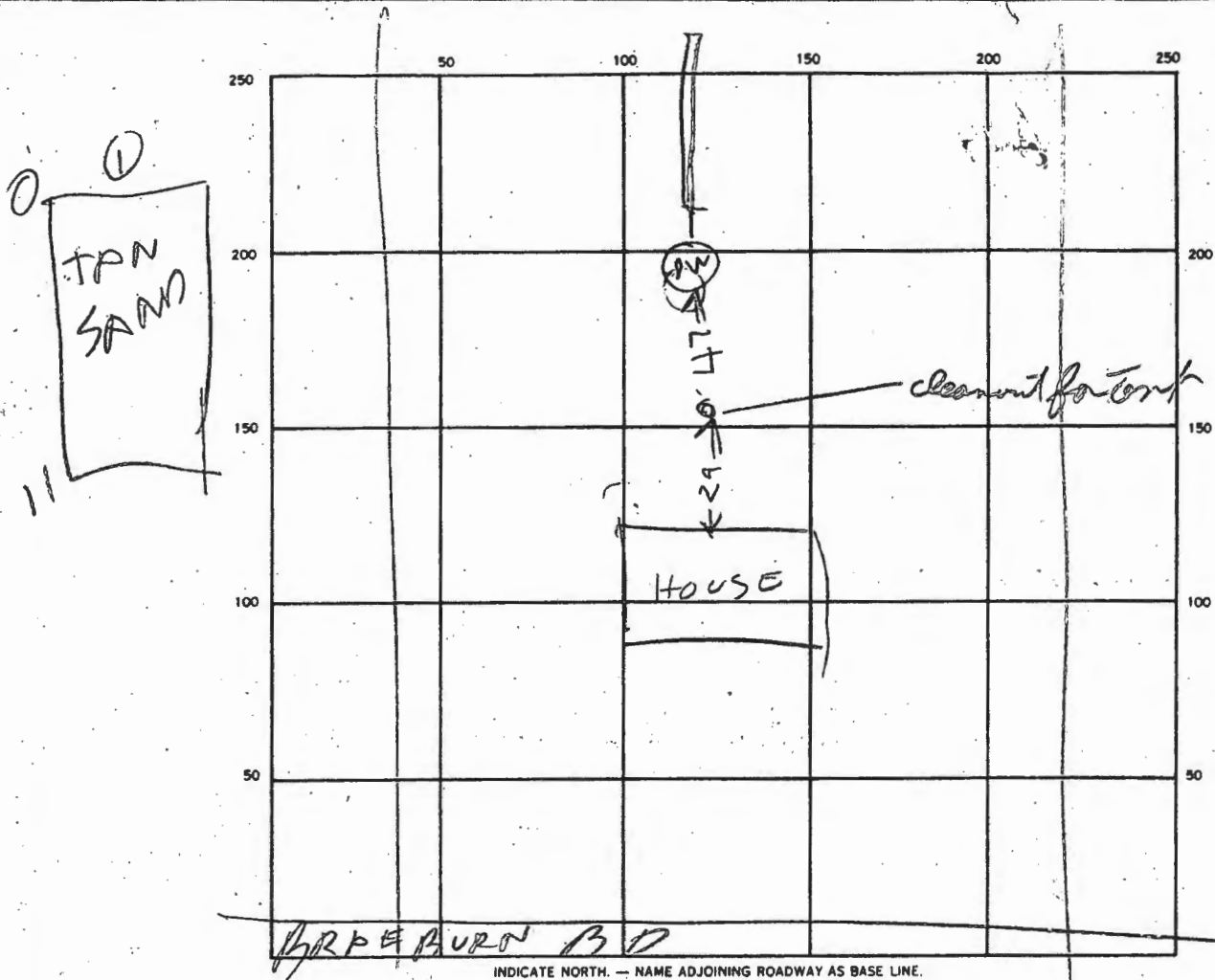
NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES.

***INSTALLER IS RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT**

*CALL 461-9933 FOR INSPECTION OF SEPTIC SYSTEMS.

EH - 2-1186

PA 39690



SEPTIC TANK. LEVEL 11 CLEANOUTS _____

DISTRIBUTION BOX. LEVEL _____

DRAIN FIELD/TILE FIELD. DEPTH 10 FT. TRENCH WIDTH 2 FT. INLET DEPTH 4 FT.

EFFECTIVE GRAVEL DEPTH 6 FT. TOTAL LENGTH 66 FT.

NUMBER OF TRENCHES 1 ONE SIDEWALL/BOTTOM AREA 396 SQ. FT.

DRYWELL INSIDE DIAMETER _____ FT. EFFECTIVE DEPTH BELOW INLET _____ FT.

ABSORBENT AREA _____ SQ. FT.

REMARKS 8/6/87 JENKINS PUT STONE IN DITCH
BEFORE INSPECTION BECAUSE STORM
COMING SOIL VERY GOOD, JENKINS
SHOWN NO RECEIPT FROM QUARRY BIT

DATE SYSTEM APPROVED 8/6/87 INSPECTOR Raymond Hodges

11/1/65
11/8/65

11/1/65 - Not complete - JHK
Approved
11/11/65
R.F.

PERMIT

P 10892
A 04958

SEWAGE DISPOSAL SYSTEM

MARYLAND STATE DEPARTMENT OF HEALTH

HOWARD COUNTY

INL

ELLICOTT CITY

DISTRICT 5

DATE 9/8/65

Elwood Seaggs IS PERMITTED TO INSTALL ALTER

ADDRESS Murphy Rd., Laurel, Md. PHONE PA 5-0324

A SEWAGE DISPOSAL SYSTEM LOCATED AT _____

SUBDIVISION Braeburn ROAD 10369 Braeburn Rd. LOT 14

PROPERTY OWNER A. H. Young, Inc. Joan & Irving Beckam

ADDRESS _____

SPECIFICATIONS 3 bedrooms
4 bedrooms - changes 6 K. Sec. M 9/21/65

DRAIN FIELD _____ DEPTH _____ FEET, BOTTOM AREA _____ SQ. FT.

SEEPAGE PITS _____ ABSORBENT SIDE-WALL AREA _____ SQ. FT.

SEPTIC TANK CAPACITY 1000 GALLONS

FOR GARBAGE GRINDER, INCREASE DISPOSAL AREA 22% & TANK CAPACITY 50%.

OTHER 300 sq
Tilt field - 400 sq. ft. trench area. Trench depth shall not exceed
3 ft. in depth below original grade. Place tilt field between 250 and 300 ft.
from front lot line and between 40 and 90 ft. from right side line as seen when
facing lot from Braeburn Rd.

Septic tank shall be no deeper than 2 ft. below grade.

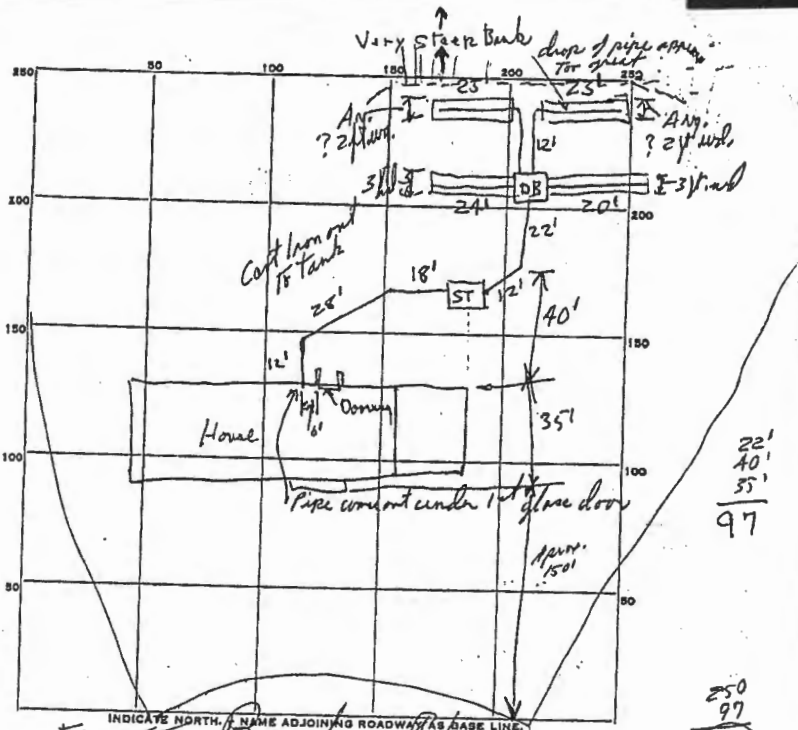
PLANS APPROVED BY D. W. Monaghan DATE 6/16/64

FILL SEPTIC TANK AND DISTRIBUTION BOX WITH WATER BEFORE CALLING FOR AN INSPECTION. COVER NO WORK UNTIL INSPECTED AND APPROVED.

NEITHER THE HOWARD COUNTY COMMISSIONERS NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

SEWAGE DISPOSAL SYSTEM
AND REQUIRED 9/29/65
Serial # 21533
Pat. C. C. C.

A 04958



PERMIT CARD For Cadon St. Mr. Postel

SEPTIC TANK, LEVEL OK CLEANOUTS OK

DISTRIBUTION BOX, LEVEL OK

TILE FIELD, DEPTH _____ FT. TRENCH WIDTH _____ FT.

GRAVEL DEPTH _____ IN. TOTAL LENGTH _____ FT.

NUMBER OF TRENCHES _____ TOTAL BOTTOM AREA _____

SEEPAGE PITS, INSIDE DIAMETER _____ FT. DEPTH BELOW INLET _____ FT.

ABSORBENT AREA _____ SQ. FT.

1/17 Telephone call - Mr. R.F. says seepage scope needed - are 3 ft wide or more - where to go to inspect system - Page R.F.

REMARKS 11/16/65 - Not complete - no connections from house to tanks - leaves covering trenches of H.K.

11/18/65 - Difficult to tell if back trenches are 2 ft. or 3 ft. wide due to rock & earth slides. If all trenches are 3 ft. wide system about 24 ft. long. (Measure as to distance house is setback from road to check location of system.) R.F.

If system is correct back of house should be about 1150 ft.

DATE SYSTEM APPROVED 11/2/65 INSPECTOR R.F. O'Neil

7/11/62
9:30 ~~7/13/62~~

APPLICATION

A 04958
P _____

SEWAGE DISPOSAL TESTING

MARYLAND STATE DEPARTMENT OF HEALTH

HOWARD COUNTY

ELLICOTT CITY

Sigflex Tank - 1000 gal.

DISTRICT 5

Tells Field - 400 sq. ft. trench manure trench

DATE 7/15/62

Sigflex shall not exceed 3 ft in depth below any and grade.

Place Tells Field between 250 and 300 ft from front lot line and between 40 and 90 ft from right side line as shown when facing lot from Beachburn Rd.

TO: THE COUNTY HEALTH OFFICER
ELLICOTT CITY, MARYLAND

Sigflex tank shall also not be less than 2 ft below grade.

I, HEREBY, APPLY FOR THE NECESSARY TESTS IN ORDER TO CONSTRUCT (OR RECONSTRUCT) A SEWAGE DISPOSAL SYSTEM.

PROPERTY OWNER A. H. Young, Inc.

ADDRESS Ashton PHONE WA 4-7103

PROPERTY LOCATION:

SUBDIVISION Beachburn LOT NO. 14

ROAD AND DESCRIPTION Beachburn Rd.

OCCUPANT _____ PHONE _____

PERSON TO CONSTRUCT SYSTEM _____ PHONE _____

ADDRESS _____ PHONE _____

SIZE OF LOT 72.91 TYPE BLDG. 4 bedroom dwelling
NUMBER OF BEDROOMS

IF NOT SINGLE RESIDENCE DESCRIBE _____

SIGNATURE OF APPLICANT A. H. Young, Inc. by A. H. Young/dma

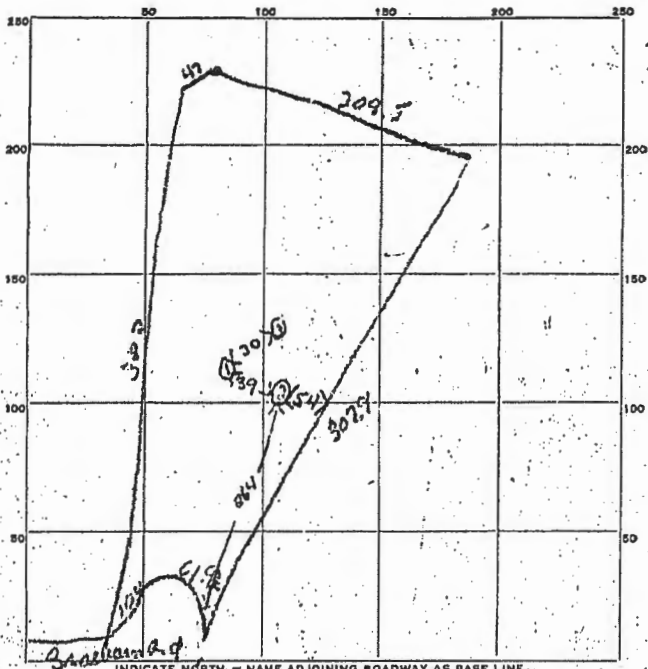
APPROVED BY W. W. Mangham FOR Tells Field DATE 7/15/62
(KIND OF SYSTEM)

REJECTED BY _____ FOR _____ DATE _____
(KIND OF SYSTEM)

HOLD PENDING FURTHER TESTS _____ DATE _____

REASONS FOR REJECTION OR HOLDING _____

THIS IS NOT A PERMIT



INDICATE NORTH. - NAME ADJOINING ROADWAY AS BASE LINE

DATE	TEST NO.	DEPTH	PRE-WET		TEST - 1" DROP		TIME
			START	STOP	START	STOP	
4-18-54	1	3	1012	1017	1017	1025	8 min
	2	3	1013	1016	1016	1020	4 min
	3	3	1014	1018	1018	1025	7 min

} Test area

SOIL AUGER FINDING _____

TESTED BY _____

REMARKS _____

ALSO PRESENT to be used LOT NO. 14

MD. 459
State Office Building
ANNAPOLIS, MARYLAND 21401

STATE OF MARYLAND
DEPARTMENT OF
WATER RESOURCES 3:05

WITHIN 30 DAYS
AFTER COMPLETION
OF THE WELL

WELL COMPLETION REPORT A-04958

WELL DESCRIPTION

WELL LOG
State the kind of formations penetrated, their color, their depth, their thickness, and if water-bearing

CASING AND SCREEN RECORD
State the kind and size and position of casing, liner, shoe, screen, and other accessories (if no casing used, give diameter of well).

Top Soil 0-3
Clay 3-15
Blom Shale

Micasist
& Granit 15-135

FEET from ___ to ___
DIAM. (inches) 6.4
FEET from ___ to ___ 0-23
Black Steel

3 Days in
Dewey Brown
L on No 42

Well Number W-134
Owner Dewey Brown
Address Clarksville MD
Subdivision Branch
Section 4 Lot 4

PUMPING TEST
Hours Pumped 4
Type of Pump Used air
Pumping Rate 15
Gallons per Minute 20

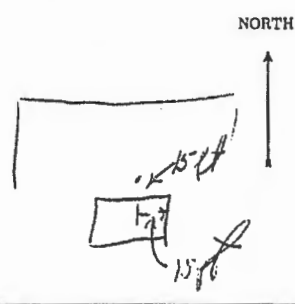
WATER LEVEL
Distance from land surface to water:
Before Pumping 40 Ft.
When Pumping 125 Ft.

APPEARANCE OF WATER
Clear Cloudy
Taste _____
Odor _____

Height of Casing Above Land
Surface 2 Ft.

PUMP INSTALLED
Type _____
Capacity _____
Gallons per Minute _____
Gallons per Hour _____
Pump Column Length _____ Ft.

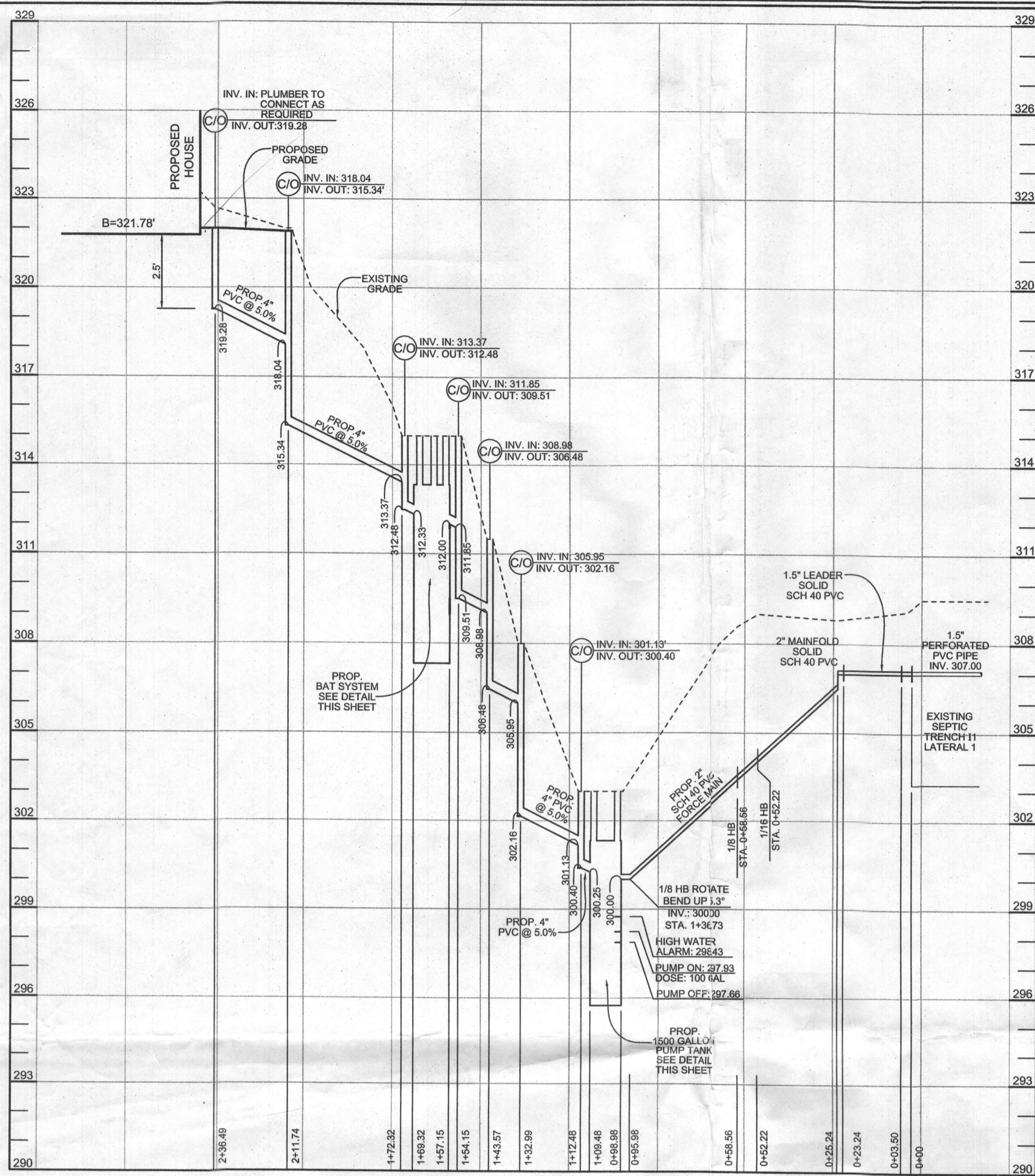
LOCATION OF WELL ON LOT
Show permanent structures such as building(s), septic tank, and/or other landmarks and indicate not less than 2 distances (measurements) to well.



Oct 29 1965

Date Well Was Completed

Well Drilled by Howard Soren
Signature [Signature]



BAT SYSTEM PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

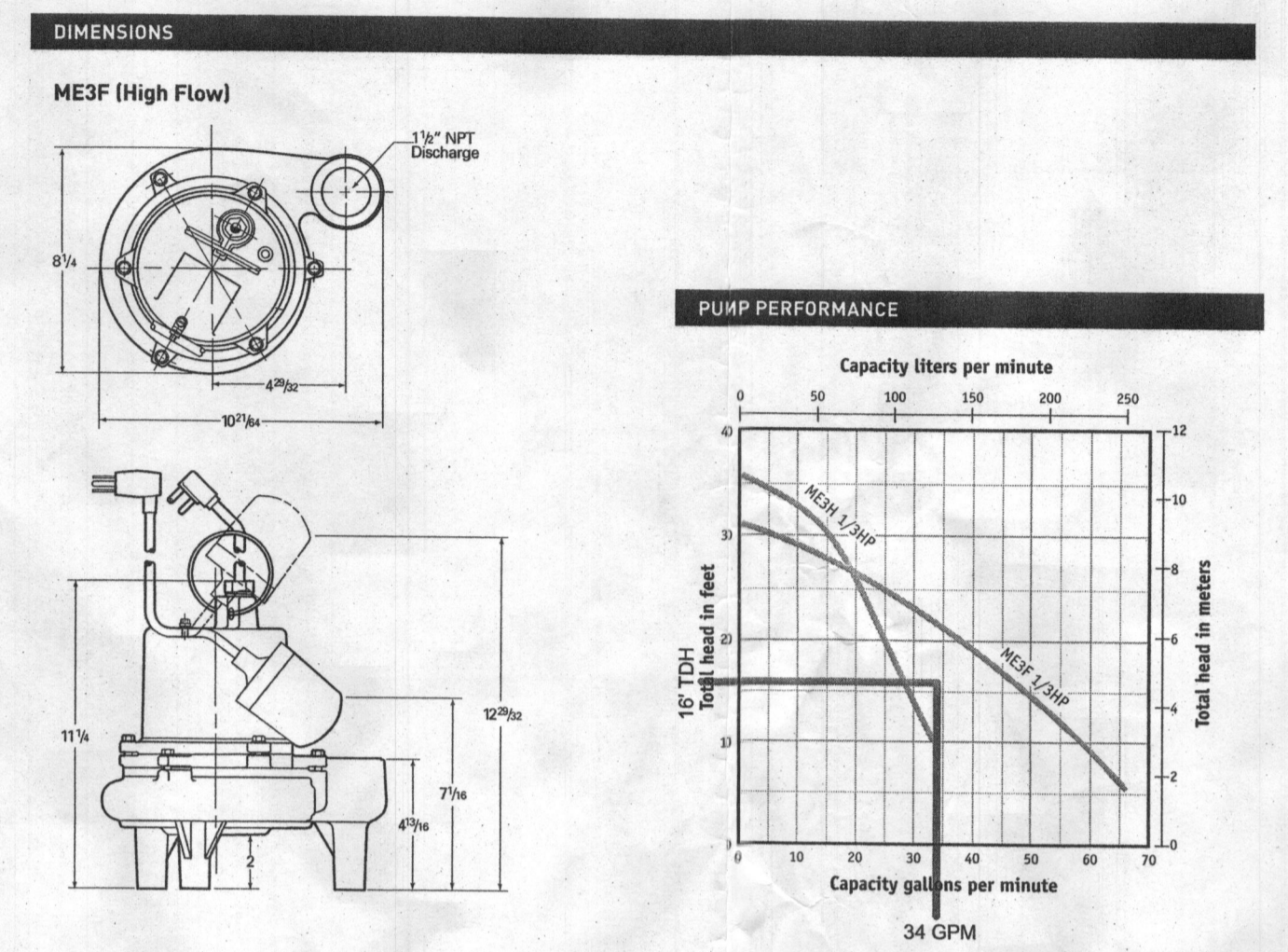
EFFLUENT PUMPS

MYERS® ME3 SERIES

ORDERING INFORMATION

Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
ME3-11	1/3	115	1/60	12	1-1/2"	Manual	20'	37
ME3-11P	1/3	115	1/60	12	1-1/2"	Automatic*	20'	38
ME3-21	1/3	230	1/60	6	1-1/2"	Manual	20'	37
ME3-21P	1/3	230	1/60	6	1-1/2"	Automatic*	20'	38
ME3F-11	1/3	115	1/60	12	1-1/2"	Manual	20'	37
ME3F-11P	1/3	115	1/60	12	1-1/2"	Automatic*	20'	38
ME3F-21	1/3	230	1/60	6	1-1/2"	Manual	20'	37
ME3F-21P	1/3	230	1/60	6	1-1/2"	Automatic*	20'	38

*9996026

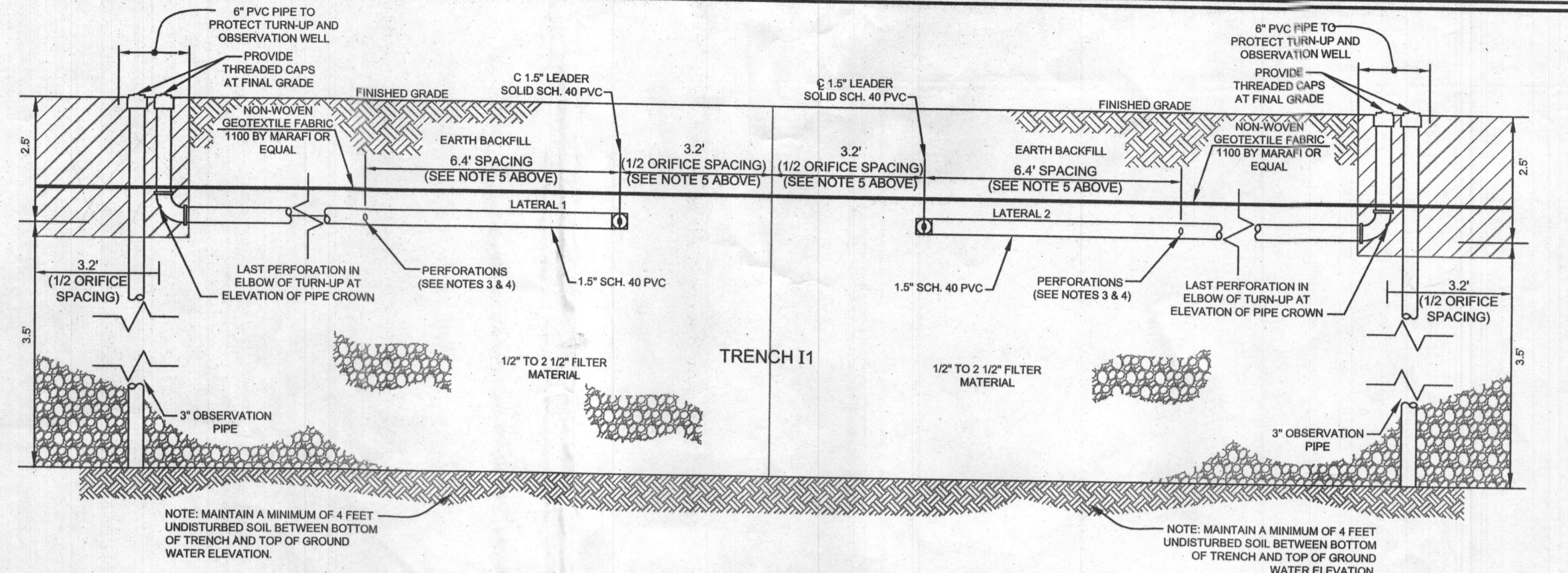


SEWAGE DISPOSAL AREA LATERAL SIZING SUMMARY

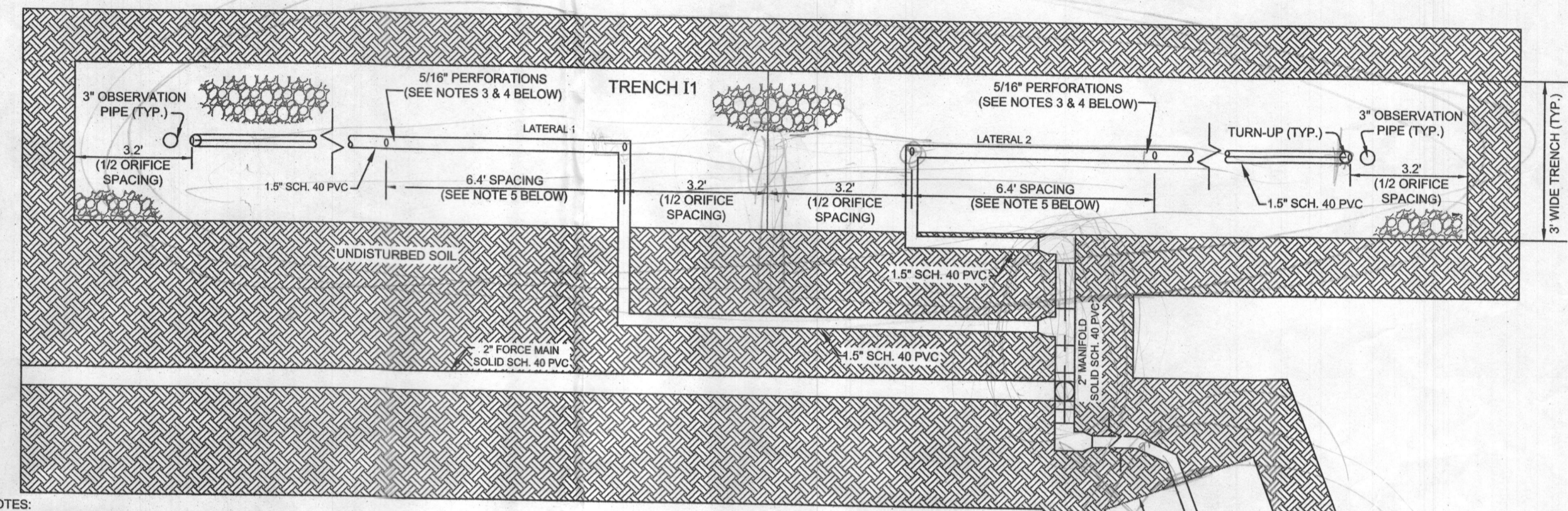
FIELD	LATERAL TRENCH NO.	LATERAL LENGTH	LATERAL DIAMETER	INVERT ELEV.	HEAVY STONE	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACING	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)	ZONE
INITIAL	L1	38.6	1.5"	307.0	2.0'	5/16"	1.63	6.4'	7	11.41	1
	L2	38.6	1.5"	307.0	2.0'	5/16"	1.63	6.4'	7	11.41	
	L3	38.6	1.5"	307.0	2.0'	5/16"	1.63	6.4'	7	11.41	

TRENCH DESIGN CHART

TRENCH	GROUND ELEV.	STONE ELEV.	PIPE INV. ELEV.	BOTTOM ELEV.	DEPTH OF STONE	EFFECTIVE DEPTH	TRENCH LENGTH	TRENCH WIDTH	TRENCH SPACING
11	309.50'	307.50'	307.0'	303.50'	4.0'	2.0'	90'	3.0'	10.0'
12	309.25'	307.50'	307.0'	301.75'	5.75'	4.5'	45'	3.0'	10.0'

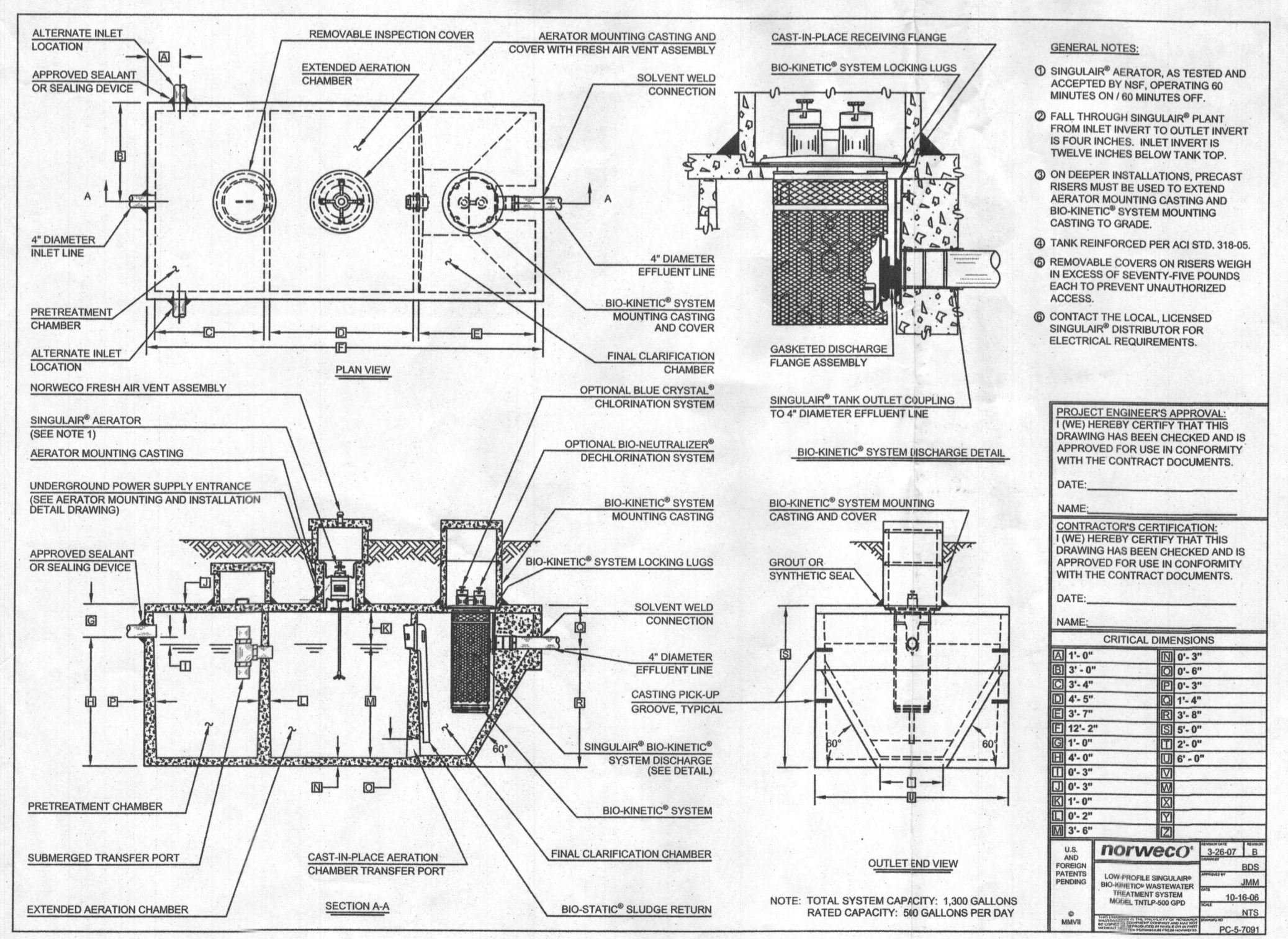


DISTRIBUTION LATERAL PROFILE DOSING FIELDS
NOT TO SCALE

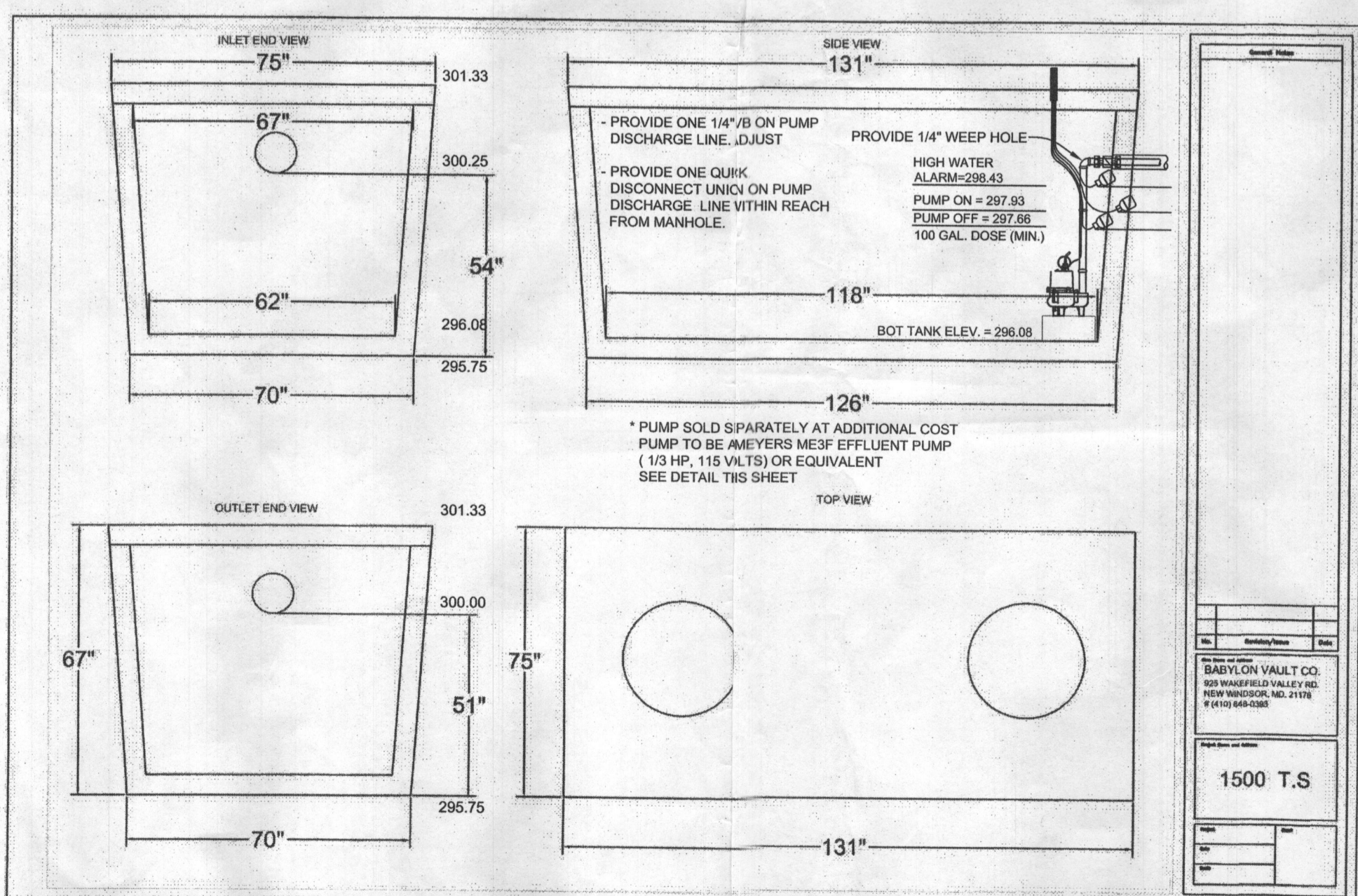


DOSING FIELD TRENCH DETAIL
NOT TO SCALE

- NOTES:
- CONTRACTOR TO BUILD / INSTALL 3' WIDE DISPOSAL TRENCHES.
 - DISTRIBUTION LATERALS TO BE INSTALLED ON LEVEL GRADE. BOTTOM OF TRENCH TO BE EXCAVATED ON LEVEL GRADE.
 - CONTRACTOR TO DRILL ORIFICES IN DISTRIBUTION LATERAL AS SHOWN. INSTALL PIPE ORIFICE DOWNWARD.
 - THE LAST HOLE IN THE LATERALS MUST BE LOCATED AT THE CROWN OF THE INVERT.
 - TERMS ORIFICE/ORIFICES AND PERFORATION/PERFORATIONS ARE INTERCHANGEABLE.



BAT SYSTEM DETAIL
NTS



PUMP TANK DETAIL
NTS

BAT SEQUENCE

- REMOVE EXISTING FIBER GLASS TANK, AND EXISTING DISTRIBUTION BOX. EXISTING LINES TO DRAINFIELD TO BE CUT.
- ABANDON EXISTING DRYWELL AND CESSPOOL.
- INSTALL PROPOSED BAT TANK, PUMP TANK AND PROPOSED 4" GRAVITY SEWER PIPES.
- UNCOVER EXISTING TRENCH 11. REMOVE OLD SEPTIC PIPE.
- DIG PROPOSED TRENCH 12.
- STONE TO BE ADDED AS NEEDED TO EXISTING TRENCH 11 AND PROPOSED TRENCH 12 AS SPECIFIED.
- INSTALL PROPOSED FORCE MAIN, MANIFOLD AND LATERALS AT SPECIFIED ELEVATION.
- COVER TRENCHES.
- SEED AND MULCH DISTURBED SOIL.
- TASK 3-7 CAN BE RE-SEQUENCED AT CONTRACTORS DISCRETION.

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 DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 50 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 MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- DOSE TO BE 100 GALLONS ON A PUMP RUN TIME OF 2.9 MINUTES ON DEMAND.
- PUMP TO BE A MYERS ME3 SERIES OR EQUIVALENT.
- BAT SYSTEM TO BE A NORWECO SINGULAR MODEL 600 OR EQUIVALENT.
- TOTAL DYNAMIC HEAD CALCULATION:
 (TDH) = STATIC HEAD + DISTAL HEAD + FRICTION HEAD + LATERAL FRICTION HEAD SAFETY FACTOR = 10.42+2.0+2.5+1.5+16.42 USE 16

SITE PLAN FOR BAT INSTALLATION

BRAEBURN
LOT 13
10865 BRAEBURN DRIVE
ZONED: R-20

TAX MAP 35 GRID 17
5TH ELECTION DISTRICT

PARCEL 228
HOWARD COUNTY, MARYLAND

OWNER
ANGELA CRUMP VOLCY & GUERDY VOLCY
PSC 78 BOX 12
APO AP 96328
C/O DAVID PASTVA 703-342-2012

BUILDER
CRAFTMARK HOMES
C/O DAVID PASTVA
1355 BEVERLY ROAD, SUITE 330
MCLEAN, VA 22101
703-342-2012

SILL ENGINEERING GROUP, LLC
11130 Dovedale Court, Suite 200
Marriottsville, Maryland 21104
Phone: 443.225.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: OCTOBER 24, 2018
PROJECT #: 18-001
SHEET #: 2 of 2

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. 32926, EXPIRATION DATE: JUNE 30, 2019.

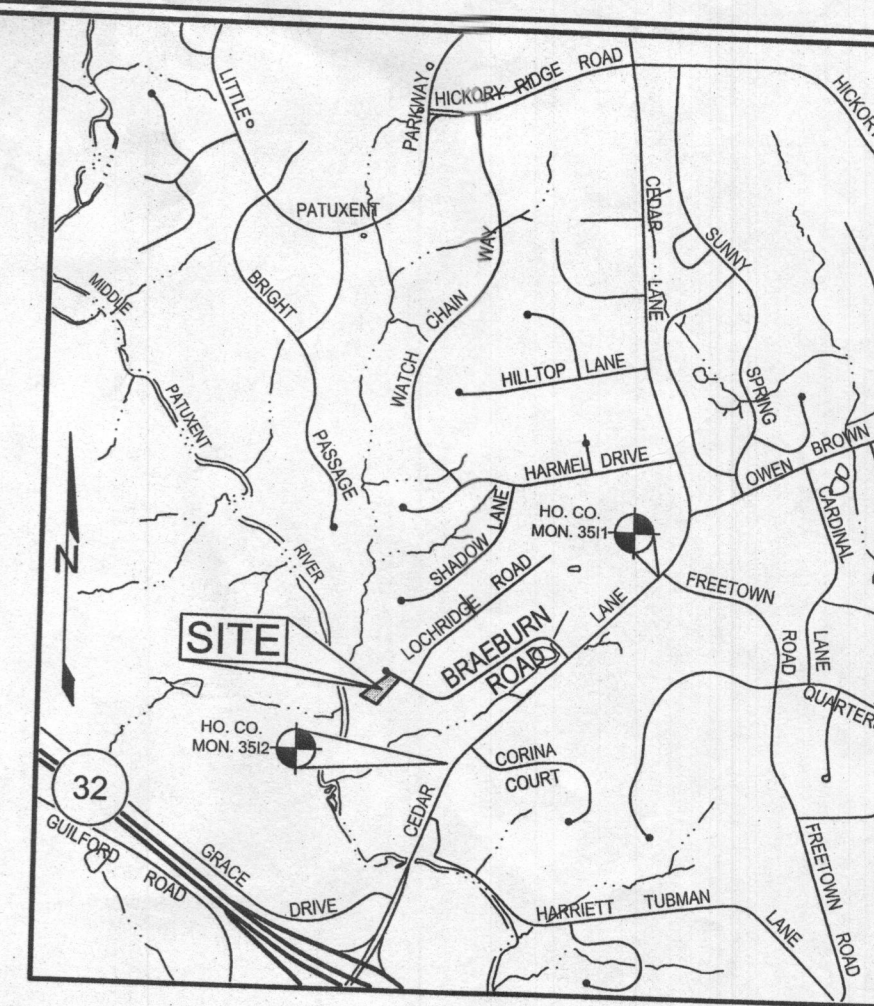
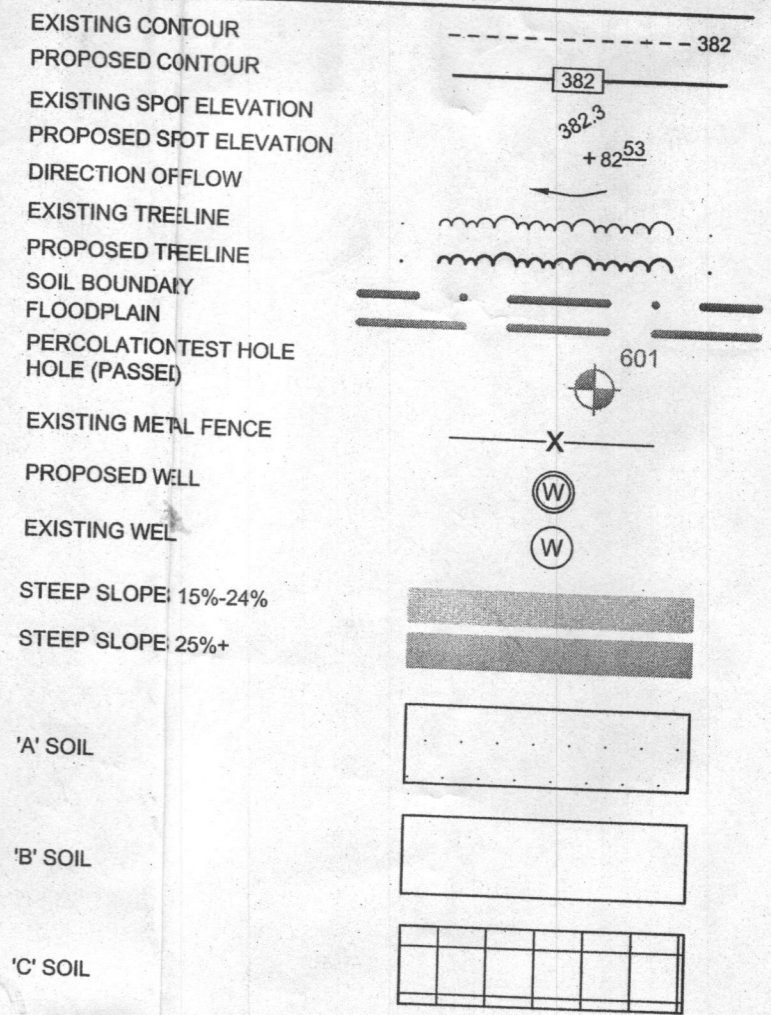
SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
Co	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES	C	0.37
GbB	GLADSTONE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	A	0.28
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.24
MkF	MANOR-BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	0.32

NOTES:
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 6 PERCENT.

Existing well HO-17-053
 is shown accurately on
 this plan
 Sill Engineering Group, LLC
 AEA

LEGEND



VICINITY MAP
 SCALE: 1"=200'

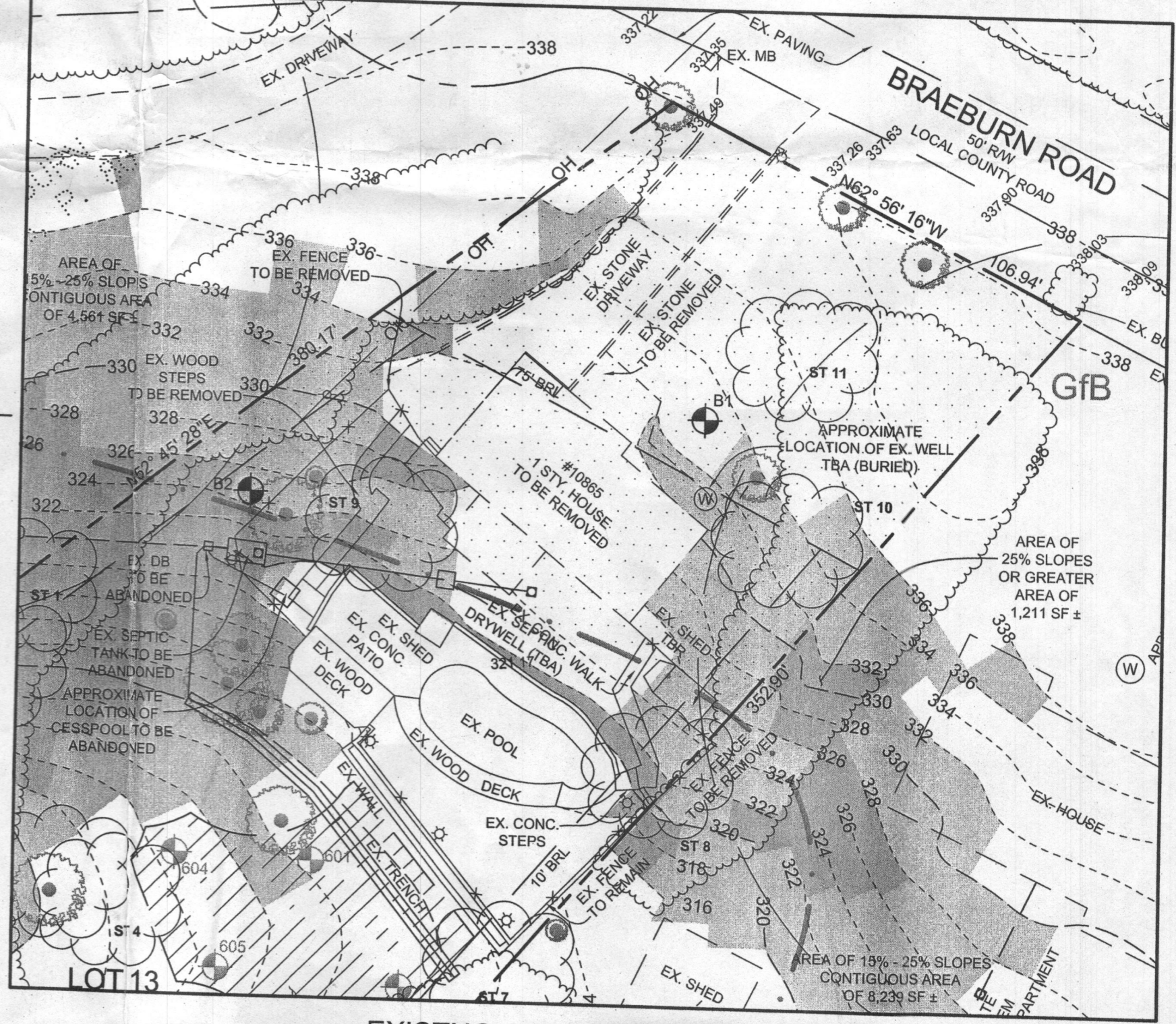
GENERAL NOTES

- SUBJECT PROPERTY ZONED R-20 PER 02/02/04 COMPREHENSIVE ZONING PLAN.
- TOTAL AREA OF PROPERTY: 1.176 AC.±
- REFERENCE: LIBER 404, FOLIO 548
- PROPERTY ADDRESS: 10865 BRAEBURN ROAD, COLUMBIA, MD 21044.
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- ZZZZ TH AREA DESIGNATES A PRIVATE SEWAGE AREA, AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR ACCOMMODATE AN INITIAL AND REPLACEMENT SEPTIC SYSTEM WITH A BAT UNIT AS REQUIRED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREAS. RECORDATION OF A MODIFIED SEWAGE AREAS SHALL NOT BE NECESSARY.
- THIS SITE WILL UTILIZE A BAT/PSD SYSTEM AND THEREFORE THE SEPTIC SYSTEM REQUIREMENTS HAVE BEEN REDUCED TO AN INITIAL AND ONE REPLACEMENT SYSTEM.
- THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY SHANBERGER & LANE IN MARCH 2018.
- THE TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY SHANBERGER & LANE, IN MARCH 2016. OFFSITE TOPOGRAPHY IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FROM 2011.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREAS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN FIELD LOCATED.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- THE PURPOSE OF THIS PLAN IS TO SHOW AN UPDATED SEWAGE DISPOSAL AREA FOR THE REDEVELOPMENT OF THE LOT.
- THE EXISTING WELLS AND SEPTIC SYSTEMS ARE TO BE ABANDONED.
- TBA= TO BE ABANDONED
- THE NEW WELL MUST BE DRILLED AND THE OLD WELL MUST BE ABANDONED PRIOR TO BUILDING PERMIT APPROVAL.
- A VARIANCE BY MDE HAS BEEN APPROVED TO ALLOW THE SEPTIC TANK/PUMP TO BE WITHIN STEEP SLOPES.
- THE PROPOSED MICRO-BIOTRETENTION FACILITY LOCATED WITHIN THE 100' WELL RADIUS IS TO BE LINED AND SETBACK FROM ANY WELL AND OR PROPOSED WELL LOCATION BY AT LEAST 50 FEET.



SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

INITIAL SYSTEM:
 DESIGN FLOW:
 - BEDROOMS AT 150 GPD
 - 4X150 GPD = 600 GPD
 SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
 - DESIGN FLOW (600 GPD) = 750SF
 APPLICATION RATE (0.8)
 - THE INITIAL SYSTEM WILL UTILIZE THE EXISTING TRENCH ON SITE. THE EXISTING TRENCH WILL PROVIDE 432 SQUARE FEET OF THE REQUIRED 750 SQUARE FEET OF DRAINFIELD. THE REMAINING 318 SQUARE FEET WILL BE TREATED IN A SECOND TRENCH (TRENCH I2).
TRENCH I1
 - 90' L X 3' W X 6' D, WITH A 2' EFFECTIVE SIDE WALL
 SIDEWALL REDUCTION CREDIT:
 - TRENCH WIDTH (W) = 3'
 - TRENCH EFFECTIVE DEPTH (D) = 2'
 - (W+2) / (W+1+2D) X 100 =
 - (3+2) / (3+1+2(2)) X 100 =
 - 5.8 X 100 = 58%
 EXISTING DRAINFIELD SQUARE FOOTAGE:
 - 90' DRAINFIELD SQUARE FOOTAGE X 0.825 = 432 SF
 SQUARE FOOTAGE (318) X SIDEWALL REDUCTION CREDIT (38%) = 40.28LF
 LINEAR LENGTH OF TRENCH PROVIDED = 45 LF
TRENCH I2
 - APPLICATION RATE: 0.8'
 - EFFECTIVE AREA BEGINNING DEPTH: 3.0'
 - BOTTOM MAXIMUM DEPTH: 7.5'
 SIDEWALL REDUCTION CREDIT:
 - TRENCH WIDTH (W) = 3'
 - TRENCH EFFECTIVE DEPTH (D) = 4.5'
 - (W+2) / (W+1+2D) X 100 =
 - (3+2) / (3+1+2(4.5)) X 100 =
 - 5.13 X 100 = 38%
 LINEAR LENGTH OF TRENCH REQUIRED:
 - REMAINING DRAIN FIELD
 SQUARE FOOTAGE (318) X SIDEWALL REDUCTION CREDIT (38%) = 40.28LF
 TRENCH WIDTH (3')
 LINEAR LENGTH OF TRENCH PROVIDED = 45 LF
REPLACEMENT SYSTEM: THREE TRENCHES AT 32'
 APPLICATION RATE: 0.8'
 EFFECTIVE AREA BEGINNING DEPTH: 3.0'
 BOTTOM MAXIMUM DEPTH: 7.5'
 DESIGN FLOW:
 - BEDROOMS AT 150 GPD
 - 4X150 GPD = 600 GPD
 SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
 - DESIGN FLOW (600 GPD) = 750SF
 APPLICATION RATE (0.8)
 SIDEWALL REDUCTION CREDIT:
 - TRENCH WIDTH (W) = 3'
 - TRENCH EFFECTIVE DEPTH (D) = 4.5'
 - (W+2) / (W+1+2D) X 100 =
 - (3+2) / (3+1+2(4.5)) X 100 =
 - 5.13 X 100 = 38%
 LINEAR LENGTH OF TRENCH REQUIRED:
 - SQUARE FOOTAGE (750) X SIDEWALL REDUCTION CREDIT (38%) = 95LF
 TRENCH WIDTH (3')
 LINEAR LENGTH OF TRENCH PROVIDED = 96 LF
TRENCH I1: TRENCH I2: TRENCH R1: TRENCH R2: TRENCH R3:
 EX. GRADE: 309.50' 309.25' 308.00' 305.75' 304.00'
 INVERT: 307.00' 307.00' 305.00' 302.75' 301.00'



EXISTING CONDITIONS DETAIL
 SCALE: 1"=30'

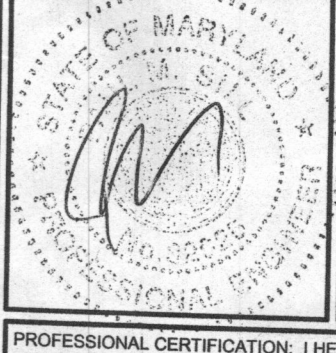
PLAN VIEW
 SCALE: 1"=30'

SITE PLAN FOR BAT INSTALLATION

BRAEBURN
 LOT 13
 10865 BRAEBURN DRIVE
 ZONED: R-20
 PARCEL 221
 HOWARD COUNTY, MARYLAND
 TAX MAP 35 GRID 17
 5TH ELECTION DISTRICT

OWNER
 ANGELA CRUMP VOLCY &
 GUERDY VOLCY
 PSC 78 BOX 12
 APO AP 96328
 C/O DAVID PASTVA 703-342-2012

BUILDER
 CRAFTMARK HOMES
 C/O DAVID PASTVA
 1315 BEVERLY ROAD, SUITE 330
 MCLEAN, VA 22101
 703-342-2012



SILL ENGINEERING GROUP, LLC
 11130 Dovetdale Court, Suite 200
 Manassasville, Maryland 21104
 Phone: 443.325.5076
 Fax: 410.696.2022
 Email: info@sillengineering.com

DESIGN BY: PS
 DRAWN BY: AEA
 CHECKED BY: PS
 SCALE: AS SHOWN
 DATE: OCTOBER 24, 2018
 PROJECT #: 18-001
 SHEET #: 1 of 2

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. 32265, EXPIRATION DATE: JUNE 20, 2019

SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
C ₀	COODRUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES	C	0.37
G _{0B}	GLADSTONE-URBAN LAND COMPLEX, 0 TO 9 PERCENT SLOPES	A	0.28
G _{0B}	GLENELOAM, 3 TO 8 PERCENT SLOPES	B	0.24
M _{0F}	MANOR-BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	0.32

NOTES:
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
3511	557,110.407	1,344,893.68	400.083	41' SOUTHWEST OF CROSS BUTTON, 39' NORTHWEST OF ED OF SIDEWALK RAMP
3512	555,100.7812	1,342,733.0529	329.758	10.5' WEST OF CEDAR LANE, 31.87' NORTHEAST OF SOUTHERN DW HSE #6636

GENERAL NOTES CONTINUED:
 23. THE PROPOSED IMPROVEMENTS WILL NOT RESULT IN THE CLEARING OF 20,000 SQUARE FEET OF FOREST AND THEREFORE THIS PROJECT WILL BE EXEMPT FROM THE REQUIREMENTS OF THE FOREST CONSERVATION ACT, INCLUDING THE REGULATIONS RELATED TO SPECIMEN TREE PROTECTION. A DECLARATION OF INTENT HAS BEEN FILED WITH THE DEPARTMENT OF PLANNING AND ZONING ON OCTOBER 15, 2018.
 24. LANDSCAPING IS NOT REQUIRED FOR THE LOT LINES INTERNAL TO THE BRAEBURN SUBDIVISION. EXISTING VEGETATION WILL BE USED TO SATISFY THE LANDSCAPE OBLIGATION FOR THE REAR PROPERTY LINE. IN ACCORDANCE WITH SECTION 122.0A.1 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR DECKS, OPEN OR CLOSED IF PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
 25. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
 27. AN ALTERNATIVE COMPLIANCE REQUEST (WP-19-011) OF SECTION 16.155(a)(2)(i) OF THE SUBDIVISION & LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT A SITE DEVELOPMENT PLAN APPROVED BY THE DEPARTMENT OF PLANNING & ZONING IS REQUIRED FOR THE DEVELOPMENT OF SINGLE-FAMILY DETACHED RESIDENTIAL LOTS AND DEEDED PARCELS WITHIN THE PLANNED SERVICE AREA FOR BOTH PUBLIC WATER AND SEWER, EXCEPT THAT LOTS IN RECORDED SUBDIVISIONS CREATED BEFORE FEBRUARY 7, 1978 ARE EXEMPT FROM THE DEVELOPMENT PLAN REQUIREMENTS UNLESS 5,000 SQUARE FEET OF DISTURBANCE IS PROPOSED AND THE LOTS HAVE BEEN RECONFIGURED OR MERGED THROUGH THE RECORDED OF A PLAN RECORDED ON OR AFTER FEBRUARY 7, 1978 WAS APPROVED ON SEPTEMBER 4, 2018 SUBJECT TO THE FOLLOWING CONDITIONS:
 • THE ALTERNATIVE COMPLIANCE EXHIBIT SHALL SERVE AS THE SUBSTITUTE FOR A SITE DEVELOPMENT PLAN FOR THE NEW RESIDENTIAL DWELLING. NO DISTURBANCE IS PERMITTED BEYOND THE PROPOSED LIMIT OF DISTURBANCE (LOD) AS SHOWN ON THE PLAN EXHIBIT.
 • REVISED THE PLAN EXHIBIT PER THE ATTACHED COMMENTS FROM THE DIVISION OF LAND DEVELOPMENT AND SUBMIT A 24" X 36" ORIGINAL SIGNED AND SEALED MYLAR WITH STANDARD SDP SIGNATURE BLOCKS TO DPZ WITHIN 45 DAYS FOR SIGNATURE AND RETENTION (ON OR BEFORE OCTOBER 19, 2018). THE ASSOCIATED BUILDING PERMIT WILL NOT BE RELEASED UNTIL THE MYLAR RECEIVES SIGNATURE APPROVAL.
 • THE ORIGINAL SIGNED FOREST CONSERVATION DECLARATION OF INTENTION FOR A SINGLE LOT CLEARING LESS THAN 20,000 SQUARE FEET OF FOREST NEEDS TO BE SUBMITTED CONCURRENTLY WITH THE MYLAR PLAN EXHIBIT. THE MYLAR EXHIBIT WILL NOT BE ACCEPTED WITHOUT THIS NOTARIZED THIS NOTARIZED DOCUMENT.
 • THE PETITION SHALL COMPLY WITH ALL APPLICABLE COUNTY AND STATE REGULATIONS AND OBTAIN ALL NECESSARY PERMITS FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS.
 • COMPLIANCE WITH THE ATTACHED DED COMMENTS DATED AUGUST 10, 2018 REGARDING THE APPROVED SIMPLIFIED ECP. PLAN SUBMISSION AND REQUIRED DECLARATION OF COVENANTS FOR THIS LOT.
 • COMPLIANCE WITH HEALTH DEPARTMENT NOTE: "ALL STORMWATER DEVICES MUST MEET WELL & SEPTIC SETBACKS ON OSDS PLAN."
 28. THE DEPARTMENT OF PLANNING AND ZONING HAS DETERMINED THE DISTURBANCE WITHIN THE STEEP SLOPES FOR THE PROPOSED SEPTIC SYSTEM AND STORMWATER MANAGEMENT UNDERDRAIN TO BE NECESSARY DISTURBANCE.
 29. LIMIT OF DISTURBANCE = 20,989 SQ. FT.
 30. LIMIT OF CLEARING = 4,167 SQ. FT.
 31. PREVIOUS COUNTY FILE NUMBERS: P.B. 8, P.N. 80, WP-19-011

STORMWATER MANAGEMENT NOTES & DESIGN NARRATIVE

BELOW IS A LIST TO DESCRIBE THE STORMWATER MANAGEMENT REQUIREMENTS AND ACHIEVEMENTS FOR THE SITE PER THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II, AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007.
 1. ENVIRONMENTALLY SENSITIVE AREAS HAVE BEEN AVOIDED WHERE POSSIBLE. THE SITE WAS DESIGNED TO DISTURB AREAS OF STEEP SLOPES AND FORESTS ONLY WHEN NECESSARY. THE LIMIT OF DISTURBANCE AND ALL DEVELOPMENT ACTIVITY IS OVER 140' AWAY FROM THE 100 YEAR FLOODPLAIN ON-SITE. NO STREAMS OR WETLANDS EXIST ON-SITE.
 2. TO THE GREATEST EXTENT PRACTICABLE THE NATURAL FLOW PATTERNS OF THE SITE HAVE BEEN MAINTAINED. IMPERVIOUS AREAS HAVE BEEN REDUCED BY POSITIONING THE BUILDING AS CLOSE TO THE STREET AS THE SETBACKS AND GRADES ALLOW.
 3. A STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCES ARE USED AS SEDIMENT AND EROSION CONTROL.
 4. THE STORMWATER MANAGEMENT OBLIGATIONS FOR LOT 13 WILL BE MET BY THE USE OF A MICRO-BIORETENTION (M-6) FACILITY, PERMEABLE PAVING (A-2) AND ONE (1) RAIN BARREL (M-1).

SITE ANALYSIS DATA SHEET

ENVIRONMENTAL AREA	SIZE OR USE
TOTAL PROJECT AREA	1.1680 AC ±
ROW TO BE DEDICATED	N/A
PROPOSED PROJECT AREA	1.1680 AC ±
ZONING DESIGNATION	R-20
NUMBER OF UNITS ALLOWED	1
NUMBER OF UNITS PROPOSED	1
LIMIT OF DISTURBANCE	0.4814 AC ±
GREEN OPEN AREA (LAWN)	0.3723 AC ±
PROPOSED IMPERVIOUS AREA	0.1091 AC ±
PROPOSED SITE USES	RESIDENTIAL
REQUIRED PARKING SPACES	2.5 SPACES
PROVIDED PARKING SPACES	2.5 SPACES
WETLANDS	0 AC ±
WETLAND BUFFERS	0 AC ±
FLOODPLAINS	0.0027 AC ±
FLOODPLAIN BUFFERS	0.0440 AC ±
EXISTING FOREST	0.5810 AC ±
FOREST TO BE CLEARED	0.0957 AC ±
FOREST TO REMAIN	0.4853 AC ±
SLOPES GREATER THAN 15%	0.21 AC ±
SLOPES GREATER THAN 25%	0.27 AC ± (1)
HIGHLY ERODIBLE SOILS	0.0572 AC ± (1)
PREVIOUS COUNTY FILE NO.S	P.B. 8, P.N. 80 WP-19-011

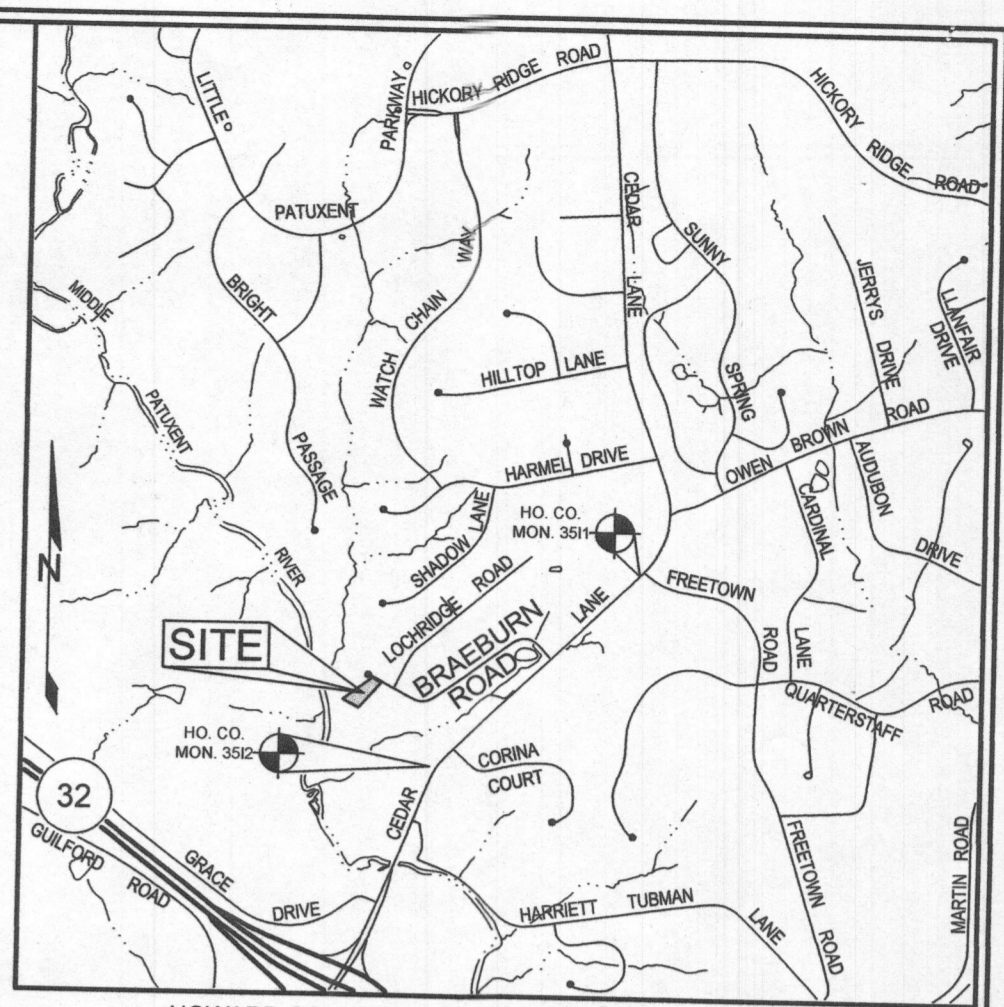
*NOTES:
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 11-21-18
 DIRECTOR DATE
 [Signature] 11-14-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE
 [Signature] 11-21-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

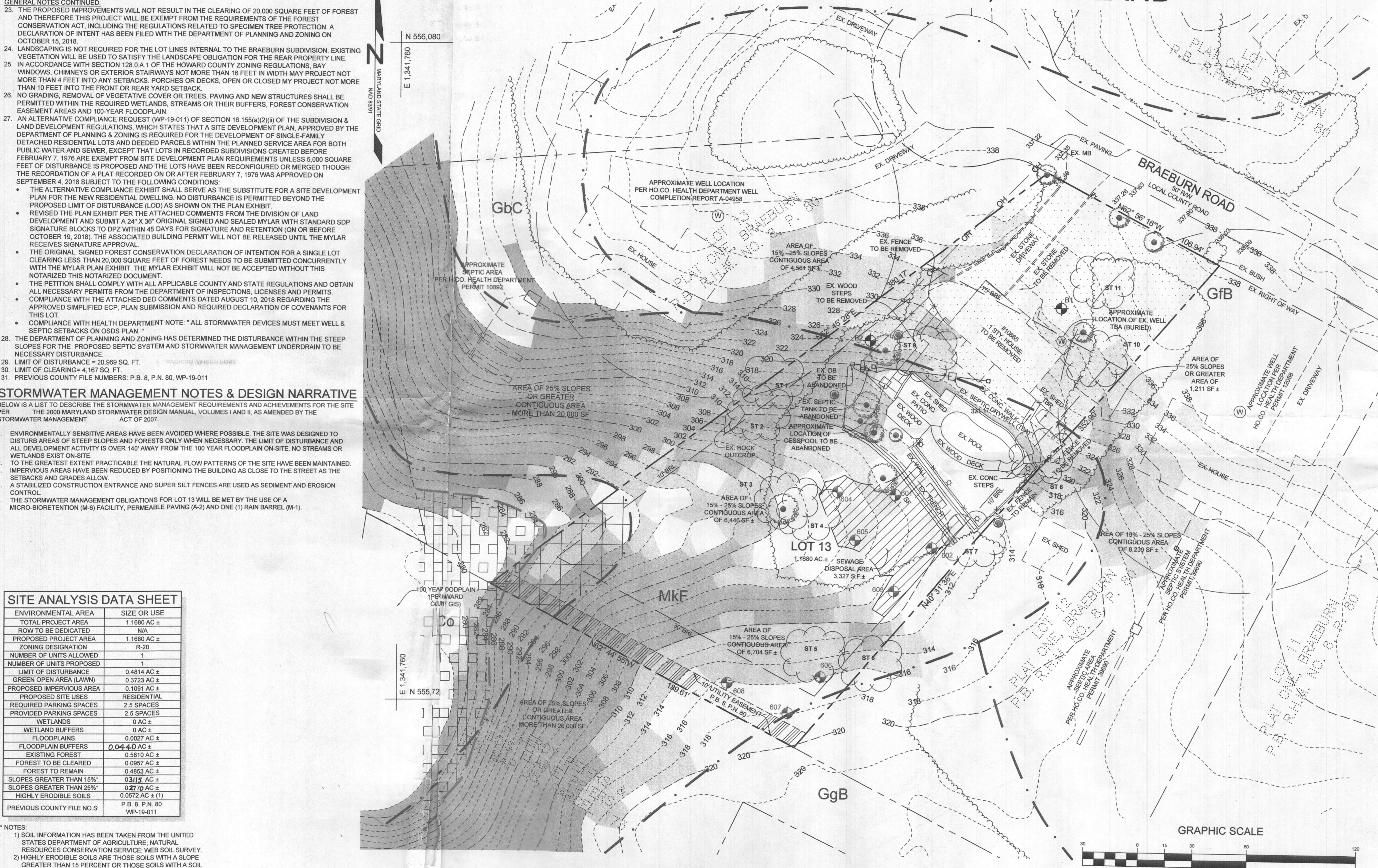
EXHIBIT TO ACCOMPANY ALTERNATIVE COMPLIANCE REQUEST BRAEBURN LOT 13 HOWARD COUNTY, MARYLAND

LEGEND

- EXISTING CONDIR: --- 382
- EXISTING SPOTELEVATION: --- 350.3
- EXISTING TREE LINE: ---
- SOIL BOUNDARY: ---
- PASSED PERCOLATION TEST LOCATION: 103
- SWM BORING LOCATION: B1
- EXISTING TREE: [Symbol]
- EXISTING SPECIMEN TREE: ST 1
- EXISTING WELL: [Symbol]
- STEEP SLOPES 15%-24%: [Symbol]
- STEEP SLOPES 25%+: [Symbol]
- 'A' SOIL: [Symbol]
- 'B' SOIL: [Symbol]
- 'C' SOIL: [Symbol]
- 100 YEAR FLOODPLAIN: [Symbol]
- EXISTING 10' UTILITY EASEMENT: [Symbol]



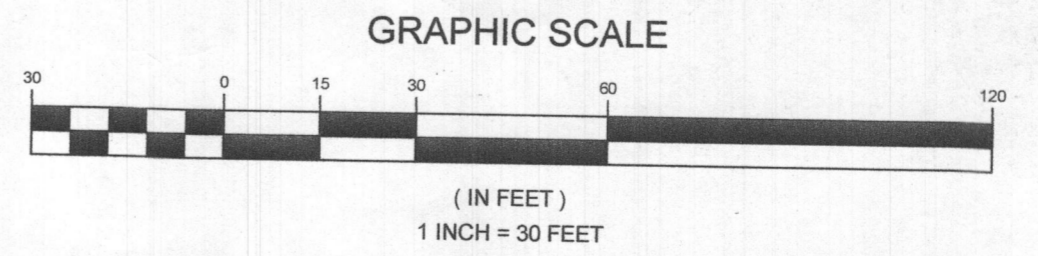
HOWARD COUNTY, MARYLAND ADC MAP 32, GRID C-4
VICINITY MAP
 SCALE: 1"=2000'



GENERAL NOTES

- SUBJECT PROPERTY ZONED R-20 PER 10/06/13 COMPREHENSIVE ZONING PLAN.
- TOTAL AREA OF PROPERTY: 1.1680 AC ±
- REFERENCE: PLAT: BRAEBURN, P.B. 8, P.N. 80 DEED: LIBER 4044, FOLIO 548
- PROPERTY ADDRESS: 10865 BRAEBURN ROAD, COLUMBIA, MD 21044.
- THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY SHANABERGER & LANE IN MARCH 2016.
- THE TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY SHANABERGER & LANE, IN MARCH 2016. OFFSITE TOPOGRAPHY IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2011.
- THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE.
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE AREA, AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). FOR LOTS CREATED PRIOR TO MARCH 1972 IT PROVIDES AT LEAST ENOUGH AREA TO ACCOMMODATE AN INITIAL AND REPLACEMENT SEPTIC SYSTEM WITH A BAT UNIT AS REQUIRED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA/AREAS. RECORDATION OF A USE AND OCCUPANCY PERMIT FOR ANY NEW REQUIREMENTS.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- THERE IS AN EXISTING HOUSE (CIRCA 1964) THAT IS LOCATED ON-SITE AND SHALL BE RAZED.
- THE EXISTING WELL AND SEPTIC SYSTEM ARE TO BE ABANDONED.
- THIS SITE WILL UTILIZE A BAT/PS SYSTEM AND THEREFORE THE SEPTIC SYSTEM REQUIREMENTS HAVE BEEN REDUCED TO AN INITIAL AND ONE REPLACEMENT SYSTEM.
- A VARIANCE BY MDE HAS BEEN APPROVED TO ALLOW THE SEPTIC TANK/PUMP TO BE WITHIN STEEP SLOPES.
- THE PROPOSED MICRO-BIORETENTION FACILITY LOCATED WITHIN THE 100' WELL RADIUS IS TO BE LINED AND SETBACK FROM ANY WELL AND OR PROPOSED WELL LOCATION BY AT LEAST 50 FEET.
- THE PROPOSED RAIN BARREL LOCATED AT THE REAR CORNER OF THE HOUSE IS TO BE A 205 GALLON BUSHMAN RAIN WATER HARVESTING TANK OR EQUIVALENT. SEE DETAIL ON SHEET 3.
- A FIELD REVIEW PERFORMED BY ECO-SCIENCE PROFESSIONALS IN JUNE, 2018 HAS CONFIRMED THAT NO WETLAND, STREAMS OR BUFFERS ARE PRESENT ON THE PROPERTY.
- THERE ARE NO CEMETERIES WITHIN THE PROJECT BOUNDARY.
- EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW REQUIREMENTS.
- MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- TBA= TO BE ABANDONED
- TBR= TO BE REMOVED
- SEE GENERAL NOTES CONTINUED. (THIS SHEET)

PLAN VIEW
 SCALE: 1"=30'



STORMWATER MANAGEMENT PRACTICES			
LOT	ADDRESS	MICRO-BIORETENTION M-6 (NUMBER)	PERVIOUS PAVEMENT A-2 (AREA)
13	10865 BRAEBURN ROAD	1	DRIVEWAY

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	EXISTING CONDITION PLAN
2	GRADING, LAYOUT, SEDIMENT AND EROSION CONTROL AND STORMWATER MANAGEMENT PLAN
3	STORMWATER MANAGEMENT DETAILS AND ESD DRAINAGE AREA MAP

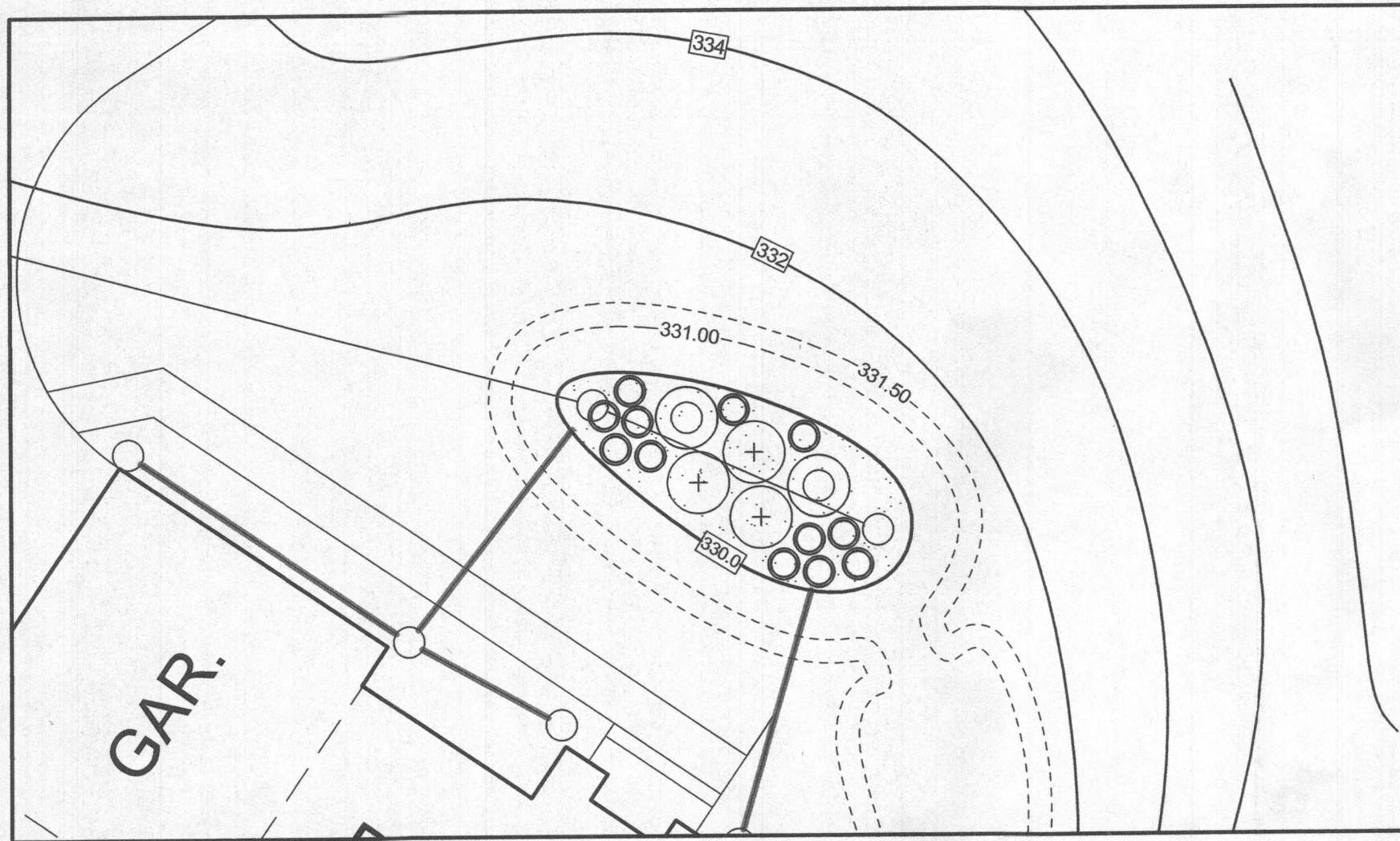
EXISTING CONDITIONS PLAN
BRAEBURN
 LOT 13
 10865 BRAEBURN DRIVE
 ZONED: R-20
 TAX MAP 35 GRID 17
 5TH ELECTION DISTRICT
 PARCEL 228
 HOWARD COUNTY, MARYLAND

OWNER
 ANGELA CRUMP VOLCY & SUEYDY VOLCY
 PSC 18 BOX 12
 APO AP 96326
 C/O DAVID PASTVA 703-342-2012
BUILDER
 CRAFTMARK HOMES
 C/O DAVID PASTVA
 1355 EVERLY ROAD, SUITE 330
 McLEAN, VA 22101
 703-342-2012

SILL ENGINEERING GROUP, LLC
 11130 Dovevale Court, Suite 200
 Marriottsville, Maryland 21104
 Phone: 443.325.5076
 Fax: 410.696.2022
 Email: info@sillengineering.com
 Civil Engineering for Land Development

DESIGN BY: PS
 DRAWN BY: AEA
 CHECKED BY: PS
 SCALE: AS SHOWN
 DATE: OCTOBER 30, 2018
 PROJECT #: 18-001
 SHEET #: 1 of 3

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. 32026, EXPIRATION DATE: JUNE 30, 2019



LANDSCAPING PLAN - M-6 MICRO-BIORETENTION FACILITY
SCALE: 1=10'

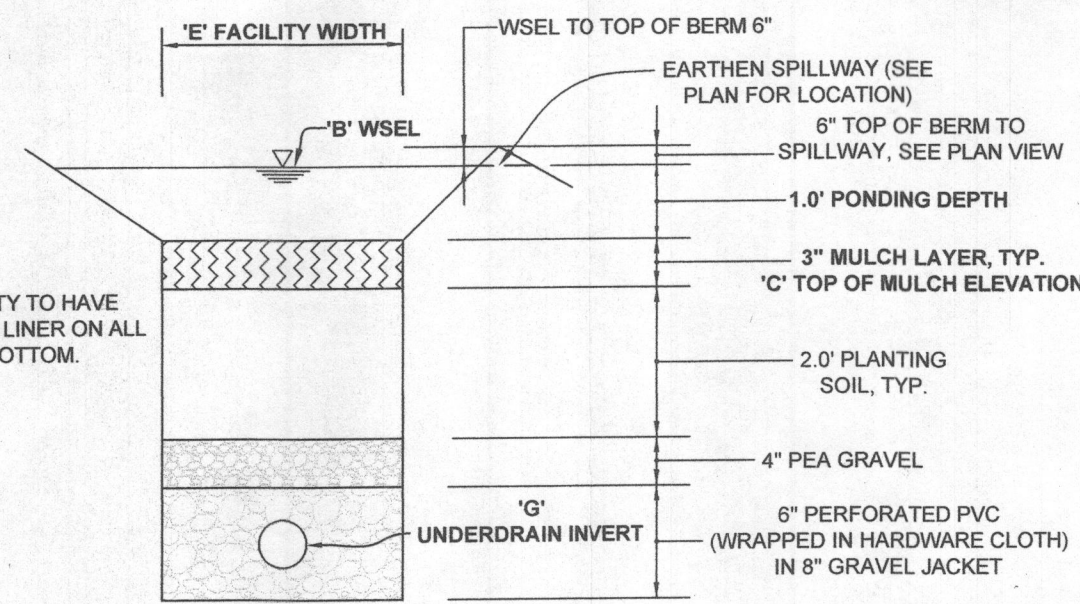
M-6 MICRO-BIORETENTION PLANT LIST						
SHRUBS						
LEGEND	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	REMARKS	QTY BIO 1
+	ILEX VERTICILLATA	WINTERBERRY	AS SHOWN* (MIN. 4' O.C.)	24"-36" HT.	ONE MALE	3
HERBACEOUS SPECIES						
LEGEND	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	REMARKS	QTY BIO 1
○	RUDEBECKIA LACINIATA	TALL CONEFLOWER BLACKEYED SUSAN	AS SHOWN* (MIN. 2' O.C.)	1 GAL		12
⊙	EUPATORIUM DUBIUM	JOE-PYE WEED LITTLE JOE (DWARF)	AS SHOWN* (MIN. 4' O.C.)	1 GAL		2

NOTE: PLANT MATERIAL MUST COVER 50% OF THE MULCH AREA AT MATURE GROWTH.
*INTERPERSE PLANTINGS THROUGHOUT BIORETENTION FILTER AREA
BIO 1 - BIORETENTION AREA = 197 S.F. OR 0.0045 AC.
PROVIDED: 3 SHRUBS AND 14 HERBACEOUS SPECIES

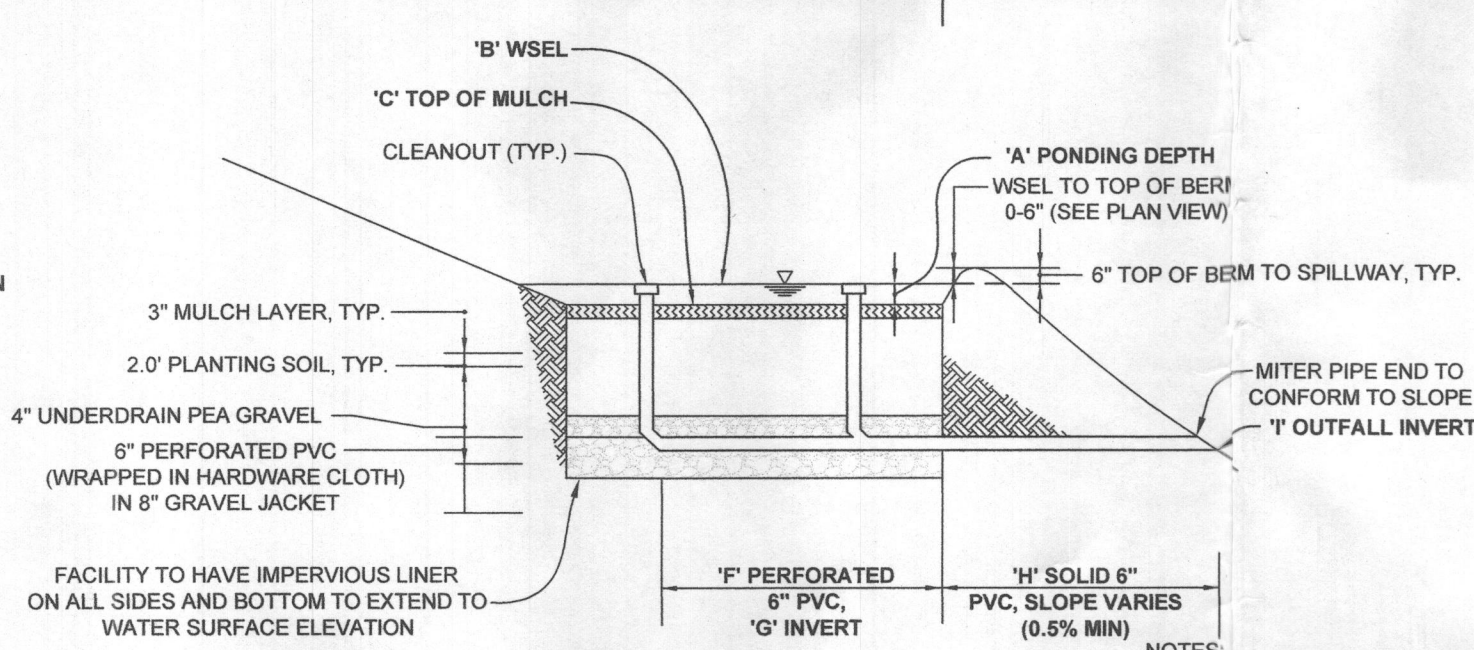
MATERIAL SPECIFICATIONS FOR M-6 MICRO-BIORETENTION FACILITIES			
MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLANT LIST THIS SHEET	N/A	PLANTINGS ARE SITE-SPECIFIC. SEE PLANT LIST THIS SHEET
PLANTING SOIL (2'-4" DEEP)	LOAMY SAND (60% - 85%) & COMPOST (35%-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM-D-2974)		
MULCH	SHREDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN, IF REQUIRED	PEA GRAVEL: ASTM-D-448	PEA GRAVEL: NO. 8 OR NO. 9 (1/8" TO 3/8")	
GEOTEXTILE	ORNAMENTAL STONE, WASHED COBBLES	STONE: 2" TO 5"	PE TYPE 1 NONWOVEN
UNDERDRAIN GRAVEL	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 788, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	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 1/4" GALVANIZED HARDWARE CLOTH.

M-6 MICRO-BIORETENTION ELEVATIONS & DIMENSIONS

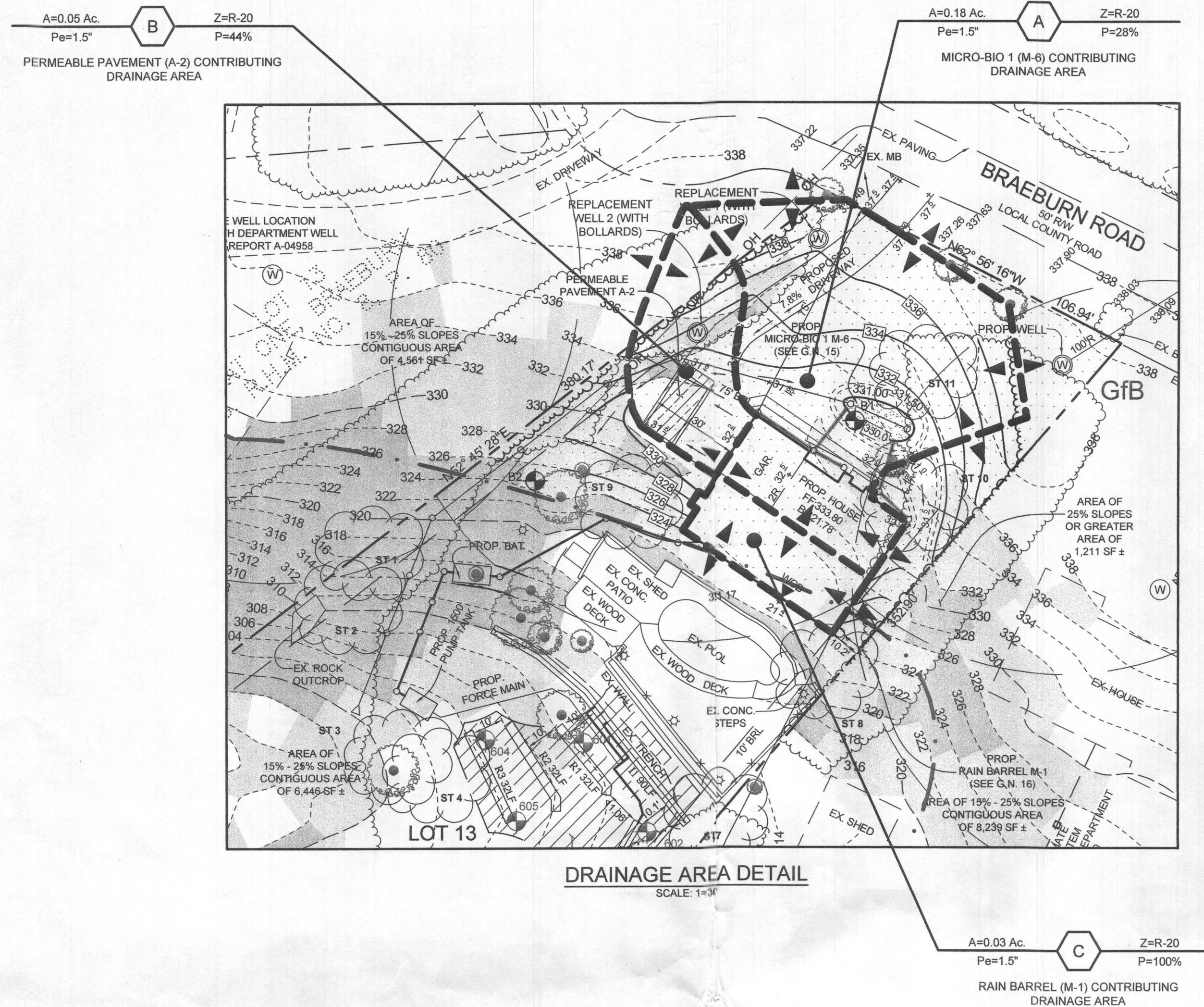
DESCRIPTION	BIO 1
'A' PONDING DEPTH	1.0'
'B' WSEL	331.00'
'C' TOP OF MULCH	330.00'
'D' FACILITY LENGTH	25'
'E' FACILITY WIDTH	10'
'F' PERF. UNDERDRAIN DIMENSION	20.17'
'G' UNDERDRAIN INVERT	326.94'
'H' SOLID UNDERDRAIN DIMENSION	220.0'
'I' TOUTFALL INVERT	301.00'



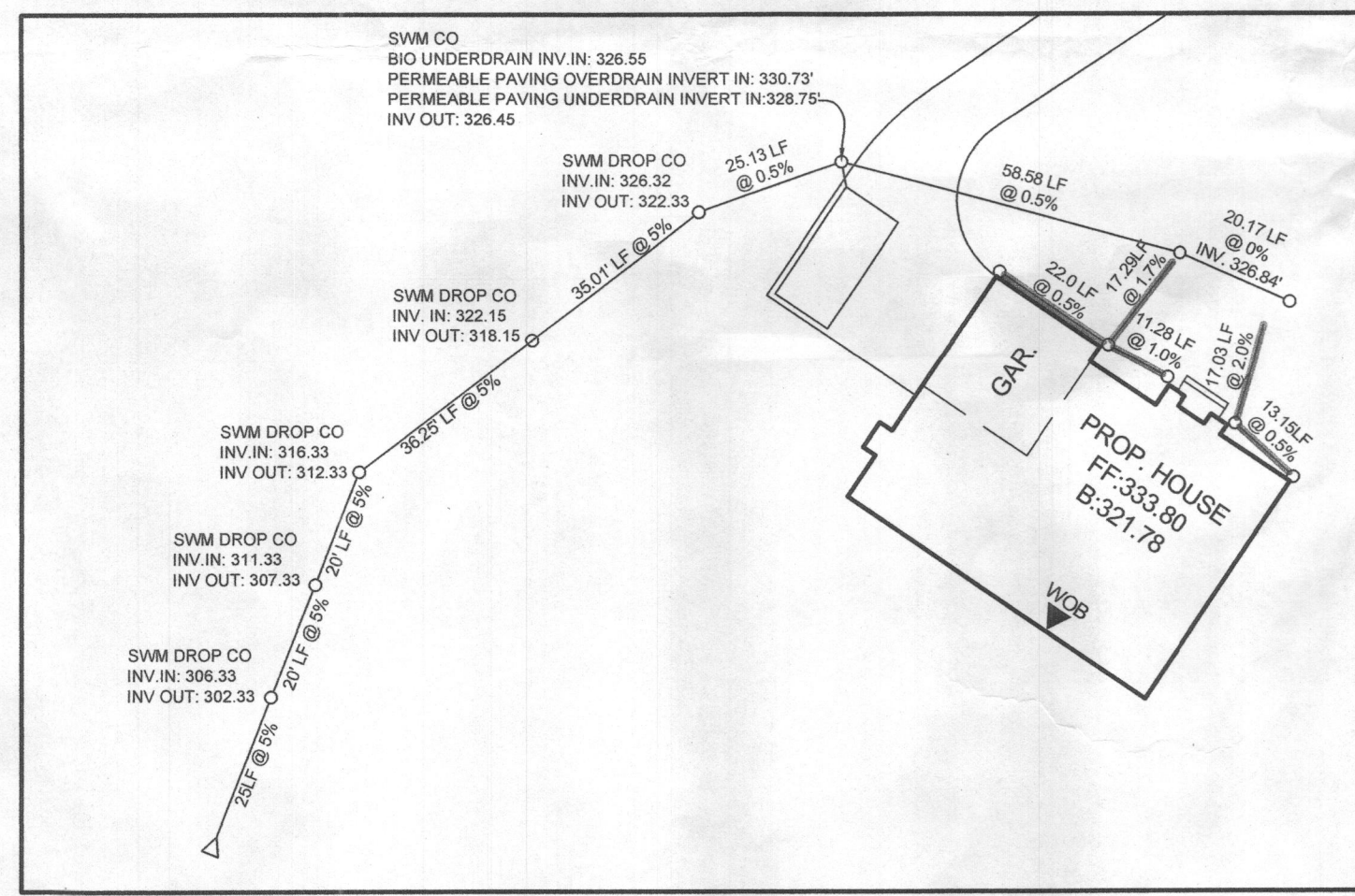
M-6 MICRO-BIORETENTION FACILITY TYPICAL SECTION
NOT TO SCALE



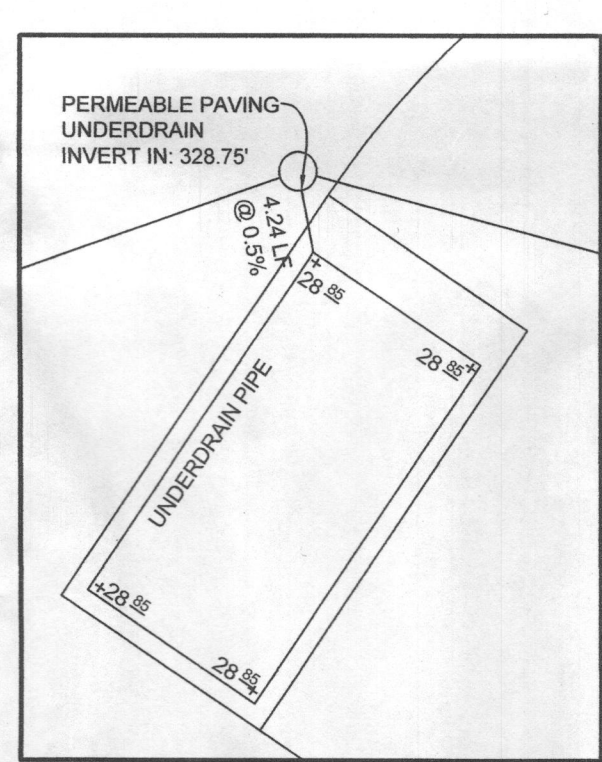
M-6 MICRO-BIORETENTION FACILITY TYPICAL PROFILE
NOT TO SCALE
NOTE: M-6 MICRO-BIORETENTION FACILITY 1 IS TO BE LINED WITH IMPERVIOUS LINER BECAUSE IT IS LOCATED WITHIN THE 100' WELL RADIUS.



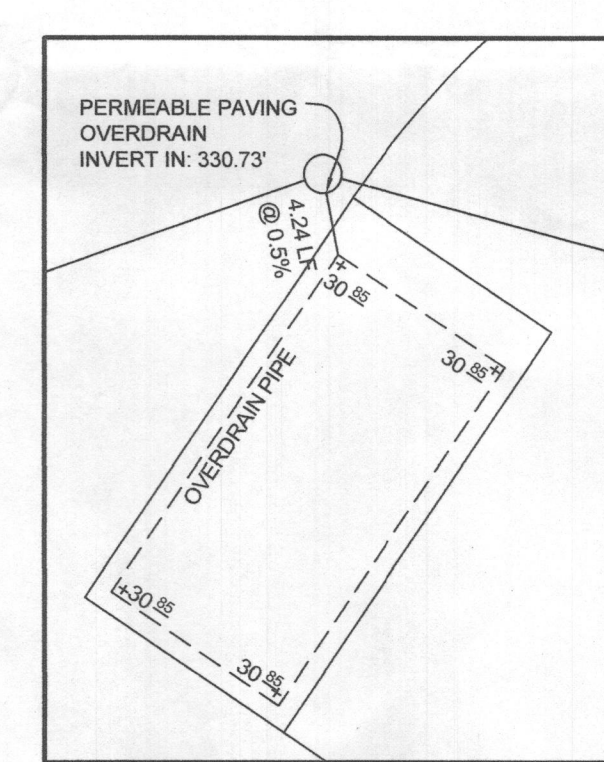
DRAINAGE AREA DETAIL
SCALE: 1=30'



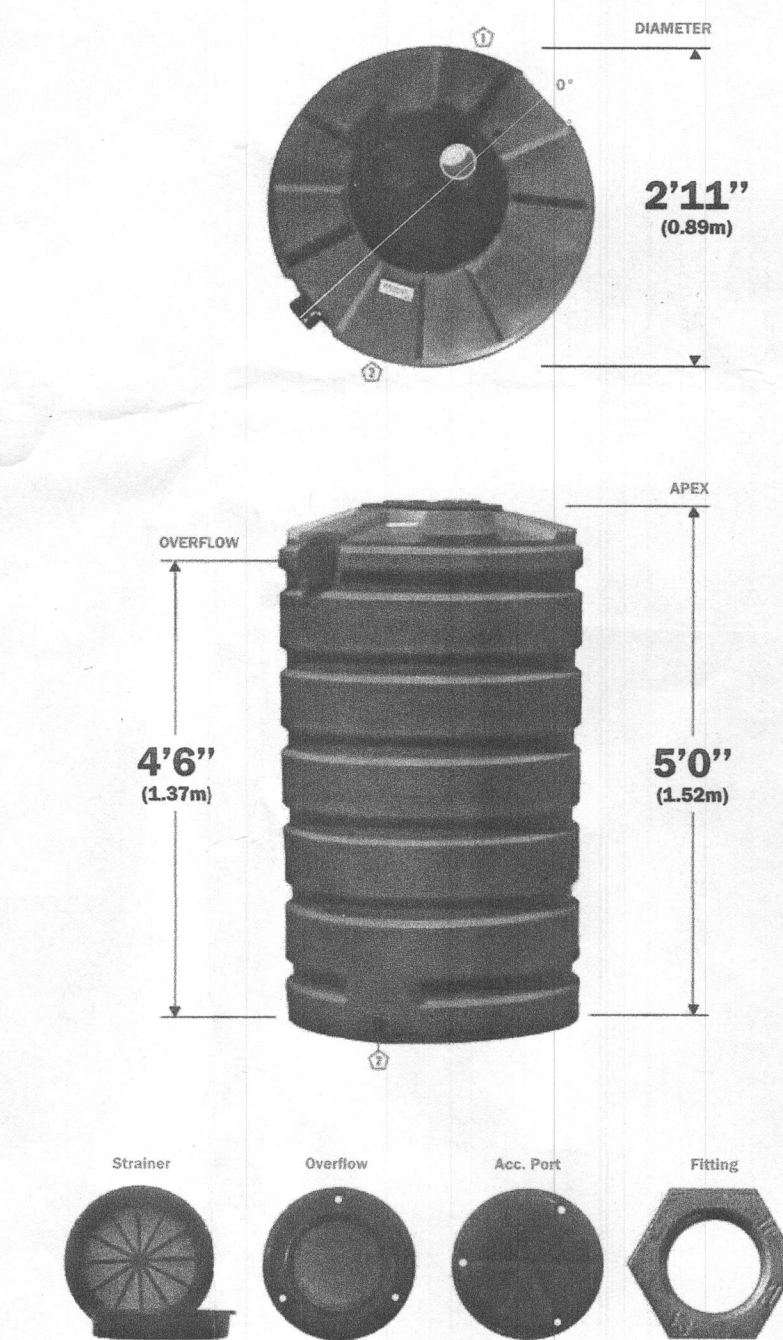
UNDERDRAIN AND STORMWATER MANAGEMENT CLEANOUT DETAIL
SCALE: 1=30'



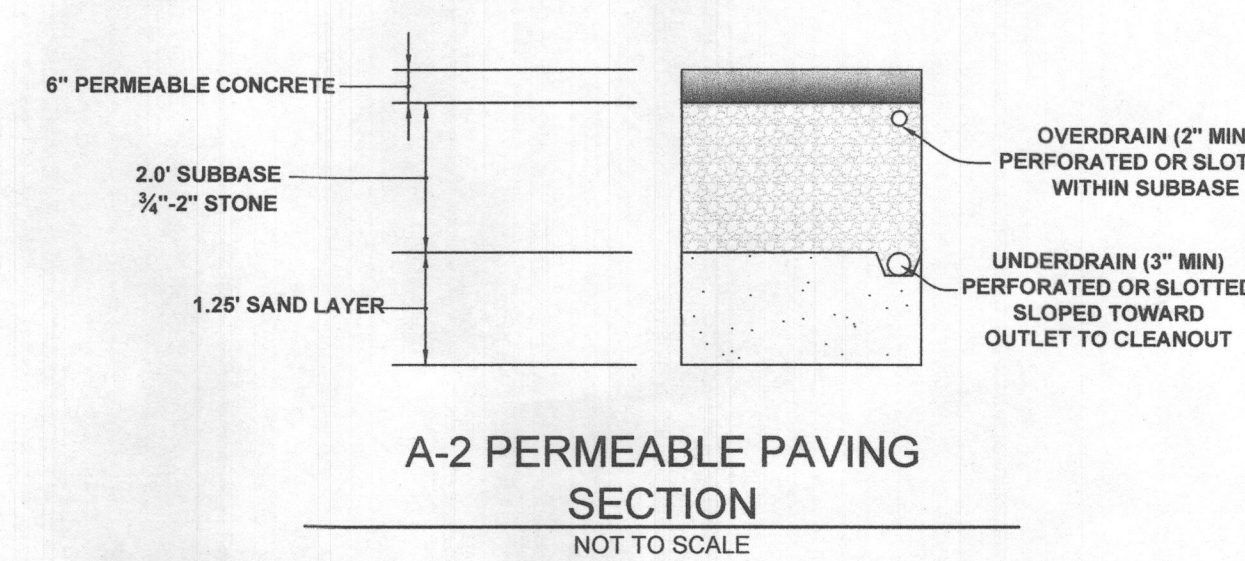
PERMEABLE PAVING UNDERDRAIN DETAIL
SCALE: 1=10'



PERMEABLE PAVING OVERDRAIN DETAIL
SCALE: 1=10'



BUSHMAN 205 GALLON RAINWATER HARVESTING TANK DETAIL
NOT TO SCALE
NOTE: EQUIVALENT TANK CAN BE USED. MUST HAVE A MINIMUM OF 205 GALLONS OF STORAGE.



A-2 PERMEABLE PAVING SECTION
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 11-21-18
DATE: 11-14-18
DATE: 11-21-18

OR ADDITIONAL INFORMATION, SEE THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II.
SEE CHART, THIS SHEET, FOR ELEVATIONS AND DISTANCES.
FACILITY TO HAVE IMPERVIOUS LINER ON ALL SIDES AND BOTTOM.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

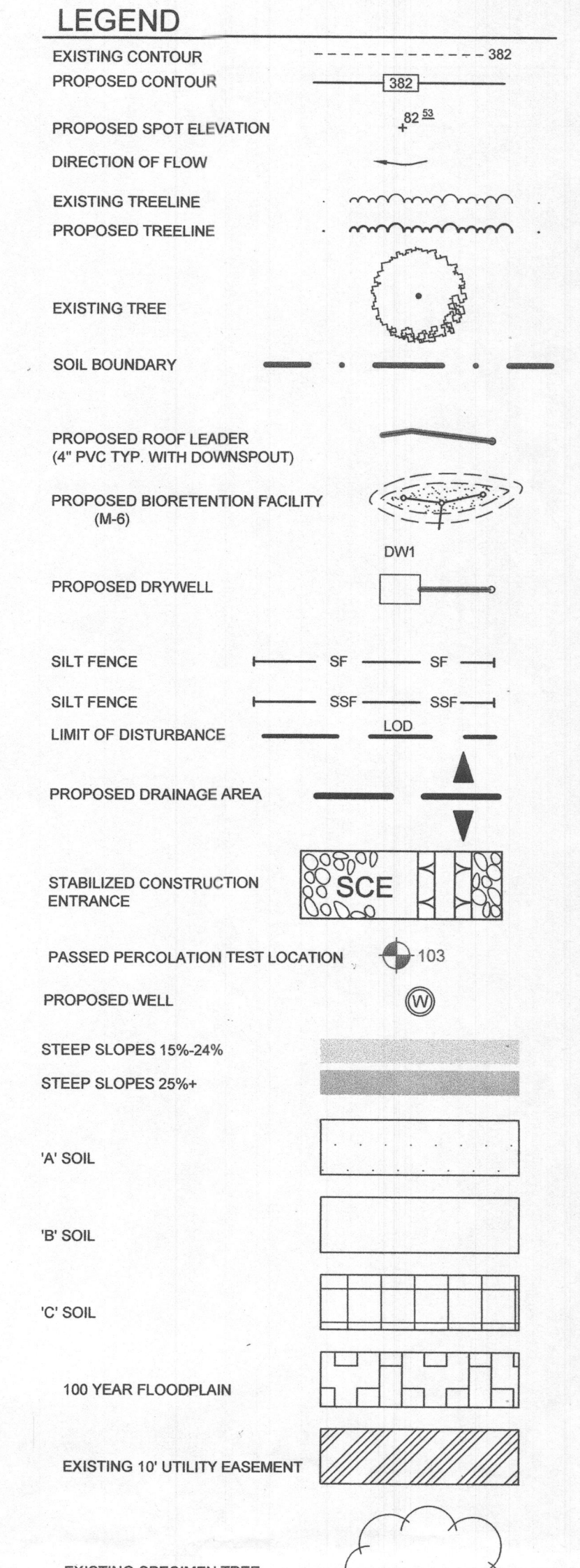
- THE OWNER SHALL SWEEP AND VACUUM TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING SYSTEMS AND COMPRESSED AIR SYSTEMS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
- DRAINAGE PIPES, INLETS, STONE EDGE DRAINS, AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE SHOULD BE CLEANED OUT AT REGULAR INTERVALS.
- TRUCKS AND OTHER HEAVY VEHICLES CAN GRIND DIRT AND GRIT INTO THE POROUS SURFACES, LEADING TO CLOGGING AND PREMATURE FAILURE. THESE VEHICLES SHOULD BE PREVENTED FROM TRACKING AND SPILLING MATERIAL ONTO THE PAVEMENT.
- DEICERS SHOULD BE USED IN MODERATION. WHEN USED, DEICERS SHOULD BE NON-TOXIC AND ORGANIC AND CAN BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT. SNOW PLOWING SHOULD BE DONE CAREFULLY WITH BLADES SET ONE-INCH HIGHER THAN NORMAL. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIOTRETENTION FACILITIES (M-6)

- ACCESS SHALL BE PROVIDED FOR CLEANING, INSPECTION, AND MAINTENANCE IN ALL CISTERNS. A DRAIN PLUG SHALL ALSO BE PROVIDED TO ALLOW THE SYSTEM TO BE COMPLETELY EMPTIED IF NEEDED.
- LEAF SCREENS, GUTTERS AND DOWNSPOUTS SHOULD BE CLEANED TO PREVENT CLOGGING. BUILT-UP DEBRIS CAN ALSO FOSTER BACTERIAL GROWTH IN GUTTERS AND DOWNSPOUTS.
- STORAGE TANK LIDS AND MOSQUITO SCREENS SHOULD BE INSPECTED AND CLEANED.
- DAMAGED COMPONENTS SHOULD BE REPLACED AS NEEDED.
- TO AVOID FREEZING OF COMPONENTS, ABOVE GROUND SYSTEMS SHOULD BE DISCONNECTED, DRAINED AND CLEANED AT THE START OF THE WINTER SEASON.
- UNDERGROUND SYSTEM CONNECTIONS SHOULD BE CHECKED FOR FROZEN LINES AND ICE BLOCKAGES DURING WINTER.
- INDOOR SYSTEMS MAY REQUIRE MORE SPECIFIC MAINTENANCE.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIOTRETENTION FACILITIES (M-6)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. 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. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



STORMWATER MANAGEMENT DETAILS AND ESD DRAINAGE AREA MAP
BRAEBURN
LOT 13
10865 BRAEBURN DRIVE
ZONED: R-20
HOWARD COUNTY, MARYLAND

TAX MAP 35 GRID 17
5TH ELECTION DISTRICT
PARCEL 228

OWNER: ANGELA CRUMP VOLCY & GUERDY VOLCY
PSC 78 BOX 12
APO AP 96326
443-210-1415

BUILDER: CRAFTMARK HOMES
C/O DAVID PASTVA
1355 BEVERLY ROAD, SUITE 330
MCLEAN, VA 22101
703-342-2012

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Phone: 443.325.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: OCTOBER 9, 2018
PROJECT #: 18-001
SHEET #: 3 of 3