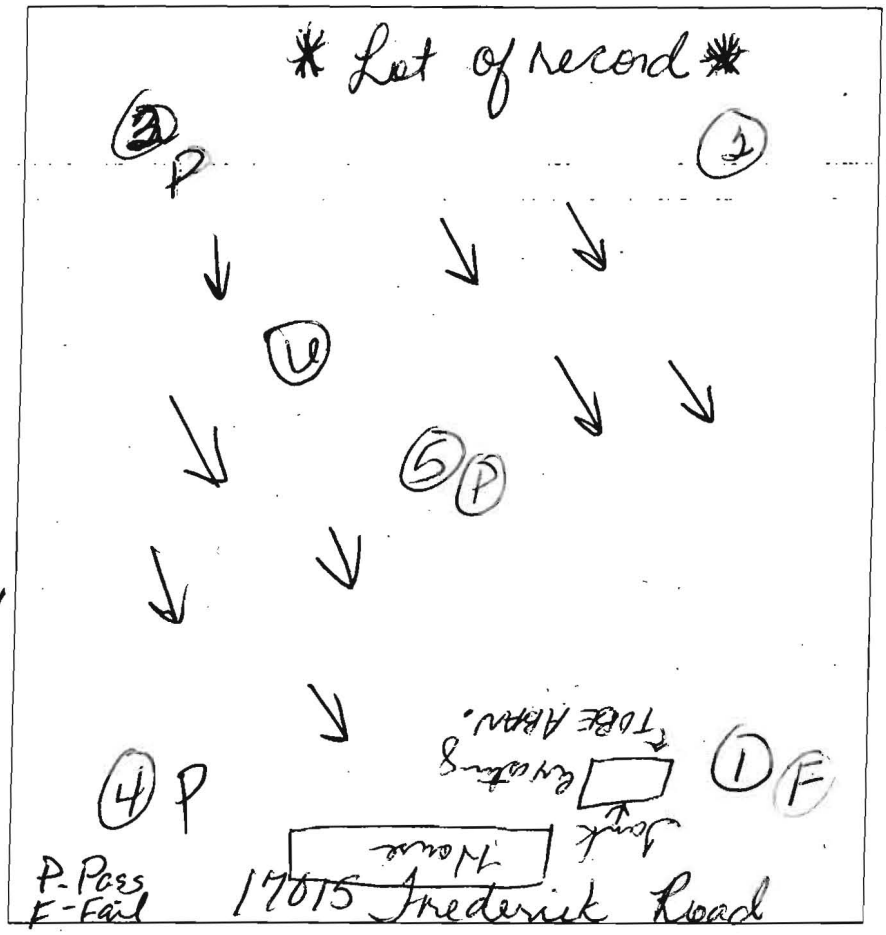
AJP _____



#1
Red Brown Grey SL
In Swale
7'

#2
Red Brown yellow SL
5'
Red Brown yellow SL white
10-20% Shale + Rock
14'

#3
Red Brown yellow SL
5.5
Red Brown yellow SL
5-10% Shale & R4
14'

#4
Red Brown yellow SL
5.5
Red Brown yellow
10-20% Shale @ 8' SL
1'

#5
Red Brown yellow SL
5.5
Red Brown yellow Shale @ 7' SL
5-10% R4

#6
Red Brown yellow SL
5'
Red Brown yellow SL white Sand Rock crop @ 7'
10-20% Lg Boulders @ 12'
14'

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
12-3-15	5	6/14	11:07	11:12	11:15	3min	P
12-3-15	1	7/14	12:22	12:54	NO MOVEMENT		F
12-3-15	3	6/14	12:23	12:25	12:27	2min	P
12-3-15	4	6/14	12:49	12:51	12:56	5min	P
12-3-15	2	6/14	1:21	1:23	1:25	2min	P
12-3-15	6	14	Visual Pass →				P

REMARKS Hole # 1F Near Tank (TBA) Well must be abandoned

SANITARIAN Bernard BACKHOE _____ OTHERS Jet Septic (410) 815-2311

TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____

TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE S/W _____

Howard County Health Department

Bureau of Environmental Health
7178 Columbia Gateway Drive, Columbia, MD 21046-2147
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

Maura J. Rossman, Health Officer

Date: December 9, 2015

To: M and P Contracting
C/o Matt
E-Mail: MPContracting@comcast.net

RE: **Percolation Testing Report**
17015 Frederick Road

Matt,

Percolation testing was conducted on the referenced property on December 3, 2015. The purpose for conducting these percolation tests was for an anticipated establishment of a sewage disposal area to support a proposed addition.

A total of six (6) test holes evaluated and five (5) were found to be satisfactory with moderate percolation rates and one (1) was unsatisfactory. Acceptable ranges for recommended inlet and trench bottom depth, and usable sidewall are indicated, and may be confirmed at the time of installation for the five (5) percolation test holes which were satisfactory. The Field data collected is shown on the Percolation Test Worksheet enclosed with this letter.

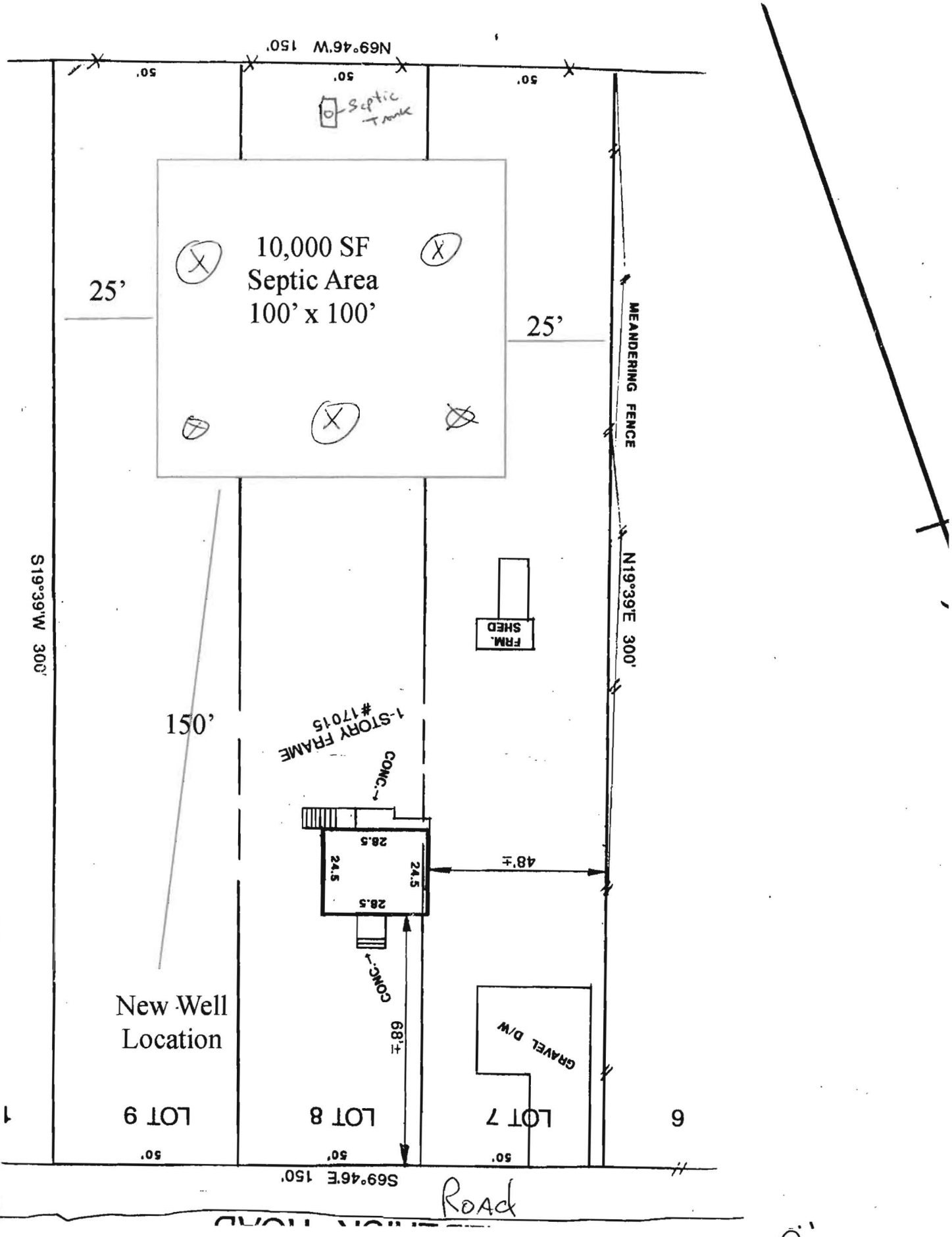
All percolation tests conducted were standard tests, measuring rate of fall for a pre-wet period followed by measurement and recordation of the time required for the water level to drop 1 inch. Areas that may be included in a septic reserve are represented by test locations having satisfactory soil conditions. The area of the septic reserve must be at least 10,000 square feet, though Howard County Code [3.805.A.2.X] requires that the area be large enough to accommodate an initial drain field and two repair drain fields for the planned residence.

The next step in this process is to submit a Percolation Certification Plan to confirm the design of the septic reserve area. If you have any questions regarding this evaluation or requirements for the Percolation Certification Plan, please contact me at the above address or by telephone at (410) 313-2775.

Respectfully,
Dana Bernard
Dana Bernard, REHS/RS
Environmental Sanitarian II
Well and Septic Program

Enclosures (2)

Cc: File



17015 Frederick Rd Mt Airy Md

LETTER OF TRANSMITTAL

☐AGENCY ☐CLIENT ☐FILE ☐ACCT. ☐CORR. ☐OTHER_____

VanMar Associates, Inc.

Engineers ~ Surveyors ~ Planners
310 South Main Street, P.O.Box 328, Mt. Airy, MD 21771
301-829-2890 301-831-5015 301-695-0600
410-549-2751 (FAX) 301-831-5603

TO: Howard County Department of Environmental Health
8930 Strafford Drive
Columbia, Maryland 21045

Attn: Dana Barnard

DATE: July 7, 2016

PROJECT: Ivan R. & Darlene M. Betancort
17015 Old National Pike

VMA#: b65545

ENCLOSED:

Revised
Percolation Certification Plan Submission

COPIES	DATE	DESCRIPTION
3	7/7/16	REVISED Percolation Certification Plan, Lands Conveyed to Ivan R. & Darlene M. Betancourt

REMARKS: Good Morning Dana, plan has been revised per your comments and submitted for review and approval. Thank you and have a great day!

COPIES TO (ADDRESS): Ivan Betancourt, 17015 Frederick Road, Mount Airy, MD 21771

SUBMITTED BY: dkv	g\engr b65545 hd revised perc cert plan submission 7.7.16

LETTER OF TRANSMITTAL

☐AGENCY ☐CLIENT ☐FILE ☐BILLING ☐CORRESPONDANCE ☐OTHER

VanMar Associates, Inc.

Engineers ~ Surveyors ~ Planners
310 South Main Street, P.O.Box 328, Mt. Airy, MD 21771
301-829-2890 301-831-5015 301-695-0600
410-549-2751 (FAX) 301-831-5603

TO: : Howard County Health Department
Bureau of Environmental Health
8930 Stanford Blvd
Columbia, Maryland 21045

Attn: Dana Bernard

DATE : May 26, 2016

PROJECT : Ivan R. & Darlene M. Betancort
17015 Old National Pike

VMA# B65545

ENCLOSED:

COPIES	DATE	DESCRIPTION
3	5/26/16	Percolation Certification Plan / Bat Site Plan Lands conveyed to Ivan R. & Darlene M. Betancourt

REMARKS : **Hi Dana, submitted for your review and approval. Thank you!**

COPIES TO (ADDRESS): **Ivan Betancourt, 17015 Frederick Road, Mount Airy, Maryland 21771**

SUBMITTED BY **dkv**

G:ENGRS b65545 hd initial perc cert & bat plan submission 5.26.16

Howard County Health Department

Bureau of Environmental Health
7178 Gateway Drive Columbia, MD 21046
(410) 313-2640 Fax (410) 313-2648
TDD (410) 313-2323 Toll Free 1-866-313-6300
website: www.hchealth.org

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

APPLICATION

FOR PERCOLATION TESTING AND SITE EVALUATION

PROPERTY LOCATION

SUBDIVISION/PROPERTY NAME _____ LOT # _____

PROPERTY ADDRESS 17015 Frederick Rd (STREET) Mt Airy (TOWN) 21771 (ZIP)

TAX ACCOUNT # _____ TAX MAP _____ GRID _____ PARCEL _____ ZONING DESIGNATION _____

PROPERTY OWNER(S) Juan Betancourt

DAYTIME PHONE _____ CELL 443 677 5521 EMAIL _____

MAILING ADDRESS 17015 Frederick Rd (STREET) Mt Airy (CITY) Md (STATE) 21771 (ZIP)

APPLICANT Jet Septic Inc RELATIONSHIP TO OWNER: Contractor

DAYTIME PHONE 410 875-2311 CELL 410 259-6905 EMAIL EMS@Weinstocklegal.Com

MAILING ADDRESS 2516 Marston Rd South (STREET) New Windsor (CITY) Md (STATE) 21776 (ZIP)

I HEREBY APPLY FOR THE NECESSARY TESTING/EVALUATION PRIOR TO ISSUANCE OF SEWAGE DISPOSAL SYSTEM PERMIT(S):

BUILDING:
- [x] RESIDENTIAL WITH 3 EXISTING OR PROPOSED BEDROOMS IN THE COMPLETED STRUCTURE
- [ ] COMMERCIAL (PROVIDE DETAIL OF TYPE OF USE AND NUMBERS OF EMPLOYEES/CUSTOMERS ON ACCOMPANYING PLAN)

PROPERTY:
- [ ] SUBDIVISION: NUMBER OF LOTS INCLUDING RESIDUE: _____
- [ ] CONSTRUCT NEW OSDS ON UNDEVELOPED LOT
- [x] REPAIR OR REPLACE FAILING OSDS
- [ ] UPGRADE EXISTING OSDS

IS THE PROPERTY WITHIN 2500 FEET OF ANY RESERVOIR?
- [ ] YES
- [x] NO

AS APPLICANT, I UNDERSTAND THE FOLLOWING:

- **THIS APPLICATION IS VALID FOR TWO(2) YEARS FROM DATE OF FEE PAYMENT AND APPROVAL IS BASED UPON HEALTH OFFICER SIGNATURE OF A PERC CERTIFICATION PLAN PRIOR TO EXPIRATION OF THIS PERMIT.**
- **THE APPLICATION FEE IS NON-REFUNDABLE**
- THIS APPLICATION MUST BE ACCOMPANIED BY ALL APPLICABLE FEES AND A SUITABLE SITE PLAN IN ORDER TO BE PROCESSED
- THIS IS A PUBLIC DOCUMENT

I declare and affirm that to the best of my knowledge, the information contained herein is correct. I declare that I am the owner of the property or duly authorized to make this application on behalf of the owner. I agree to comply with all applicable state and county regulations.

By signature of this application, I hereby grant Howard County Health Department officials the right to enter onto the property for the purpose of inspecting the property as directly related to the requested permit/service.

[signature] 9-16-15

SIGNATURE OF APPLICANT DATE

11/29/12_JW

Howard County Health Department

Bureau of Environmental Health
7178 Columbia Gateway Drive, Columbia, MD 21046-2147
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

Maura J. Rossman, Health Officer

Date: December 9, 2015

To: M and P Contracting
C/o Matt
E-Mail: MPContracting@comcast.net

RE: **Percolation Testing Report**
17015 Frederick Road

Matt,

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The next step in this process is to submit a Percolation Certification Plan to confirm the design of the septic reserve area. If you have any questions regarding this evaluation or requirements for the Percolation Certification Plan, please contact me at the above address or by telephone at (410) 313-2775.

Respectfully,
Dana Bernard

Dana Bernard, REHS/RS
Environmental Sanitarian II
Well and Septic Program

Enclosures (2)

Cc: File

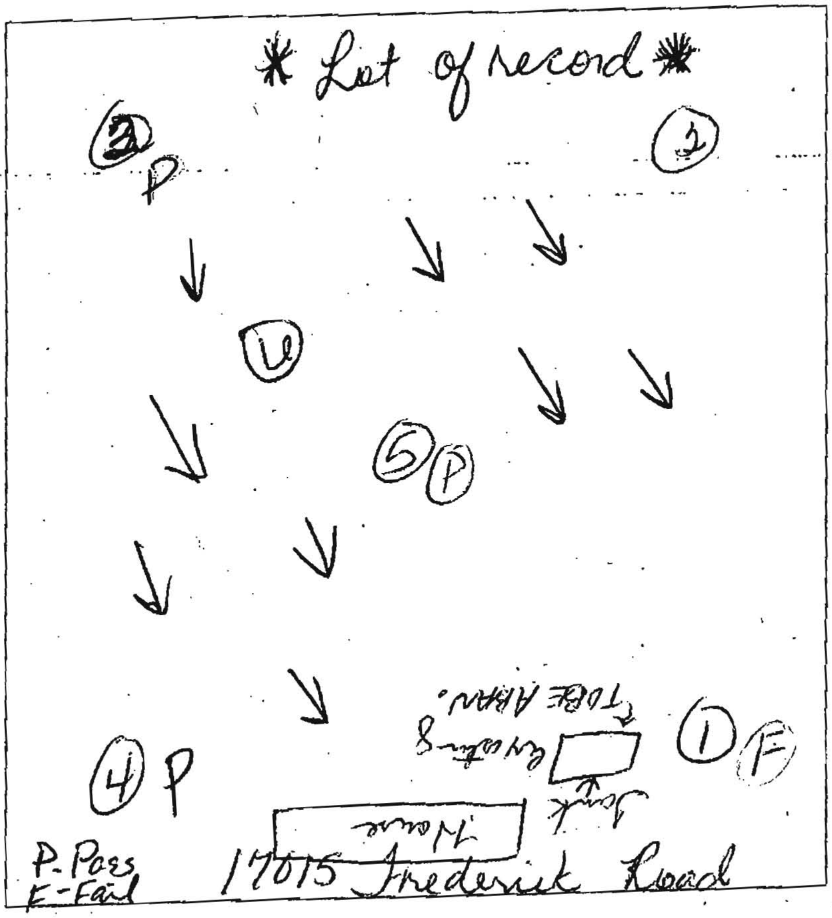
A/P ________

#1
Red Brown
Grey
8Ch
7'

In Swale ←

#2
Red Brown
yellow
8L
5'
Red Brown
yellow
Sh white
10-20%
Shale + Rock
14'

#3
Red Brown
yellow
8L
5.5
Red Brown
yellow
8L
5-10%
Shale & Rk
14'



DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
12-3-15	5	6/14	11:07	11:12	11:15	3min	P
12-3-15	1	7/14	12:22	12:54	NO MOVEMENT		F
12-3-15	3	6/14	12:23	12:25	12:27	2min	P
12-3-15	4	6/14	12:49	12:51	12:56	5min	P
12-3-15	2	6/14	1:21	1:23	1:25	2min	P
12-3-15	6	14	Visual Pass →				P

REMARKS Hole # 1F Near Tank (TBA) Well must Be abandoned

SANITARIAN Bernard BACKHOE ________ OTHERS Jet Septic (410) 875-2311

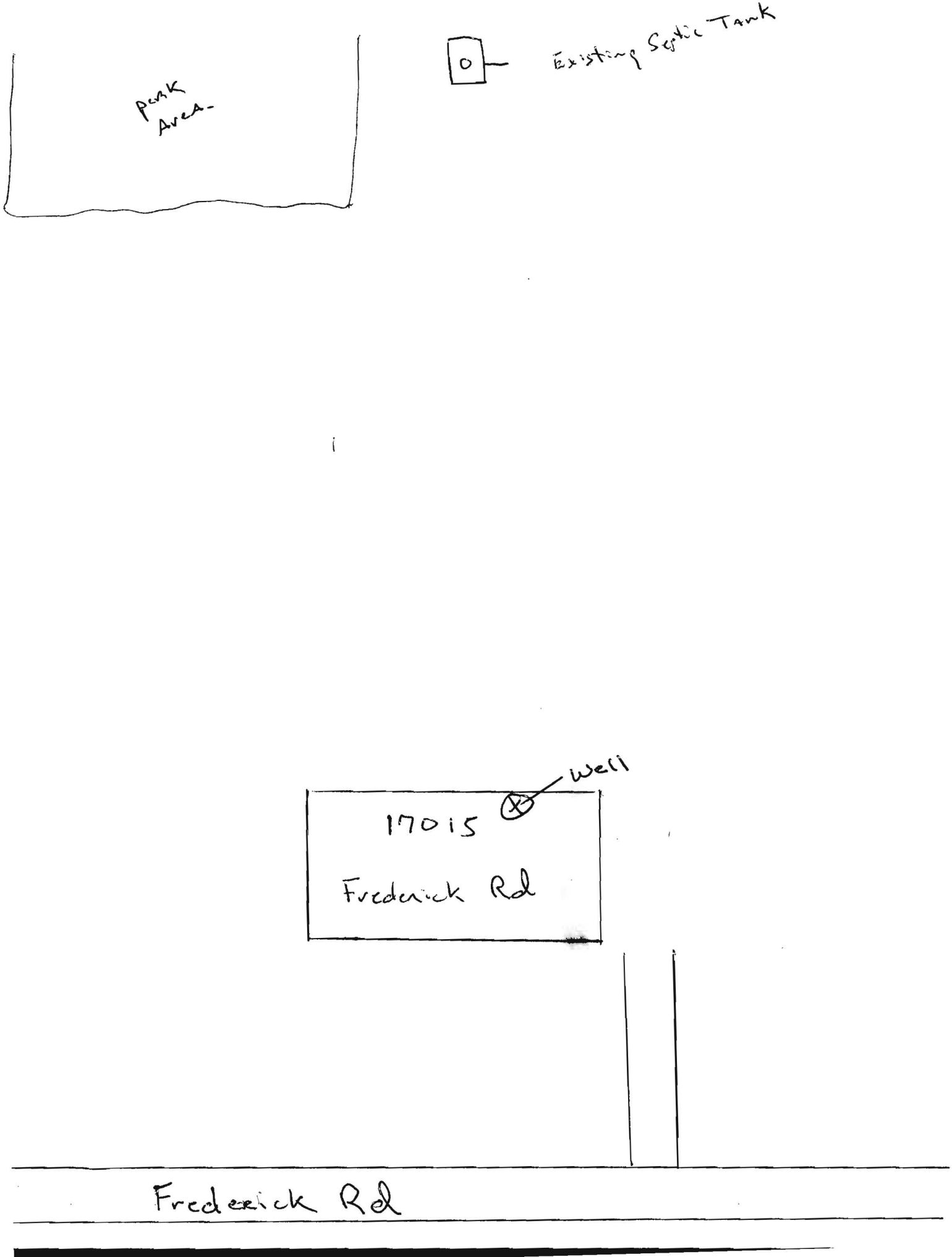
TEST HOLES USED IN SDA ________ AVG. PERC TIME ________ SQ. FT/BR ________

TRENCH WIDTH ________ INLET DEPTH ________ MAX. BOT DEPTH ________ EFFECTIVE S/W ________

#4
Red Brown
yellow
8L
5.5
Red Brown
yellow
10-20%
Shale @ 8'
Sh
14'

#5
Red Brown
yellow
8L
5.5
Red Brown
yellow
Shale @ 7'
Sh
5-10%
Rk

#6
Red Brown
yellow
8L
5'
Red Brown
yellow
8L white sand
Rock crops @ 7
10-20%
Lg Boulders @ 12'
14'


Existing Septic Tank
Peak Area
Well
17015
Frederick Rd
Frederick Rd

Bernard, Dana

From: Bernard, Dana
Sent: Tuesday, June 07, 2016 4:09 PM
To: ron@vanmar.com
Subject: Vanmar Asociates, Inc.

Mr. Thompson, I have received your BAT plan and your Percolation Certification Plan. However, they must be submitted separately. We need 3 copies of your BAT plan and 3 copies of you Percolation Certification Plan.

Thank you & Have a*´¨)
¸.·´¸.·*´¨) ¸.·*¨)
(¸.·´ (¸.·´ * Wonderful Day !

Dana Bernard, R.E.H.S/L.E.H.S.
Environmental Specialist II
Bureau of Environmental Health
Well and Septic Program
Phone (410) 313-2775
E-mail: DBernard@howardcountymd.gov

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition:
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose:
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies:
Where vegetative stabilization is to be established.

Criteria:
A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).
iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
iv. Soil contains 1.5 percent minimum organic matter by weight.
v. Soil contains sufficient pore space to permit adequate root penetration.
b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches. B.13
d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.
B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
a. Erosion and sediment control practices must be maintained when applying topsoil.
b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading B.14 and seedbed preparation.
C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200–400 pounds per 1,000 square feet) prior to the placement of topsoil.

TEMPORARY STABILIZATION SPECIFICATIONS TABLE

Hardiness Zone (from Figure B.3): 6b
Seed Mixture (from Table B.1): ______

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)	Lime Rate
	ANNUAL RYEGRASS	40	MAR. 1 – MAY 15 AUG. 1 – OCT. 15	0.5 INCHES	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	FOXTAIL MILLET	30	JUNE 1 – JULY 31	0.5 INCHES		

PERMANENT STABILIZATION SPECIFICATIONS TABLE

Hardiness Zone (from Figure B.3): 6b
Seed Mixture (from Table B.3): 11

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20) N	P205	K20	Lime Rate
	kentucky bluegrass	20	Mar. 1–May 15 Aug. 1–Oct.15	1/4–1/2 in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2lb/1000 sf)	90 lb/ac (90 lb/1000 sf)	2 tons/ac (90 lb/ 1000 sf)
				1/4–1/2 in				
				1/4–1/2 in				

DUST CONTROL

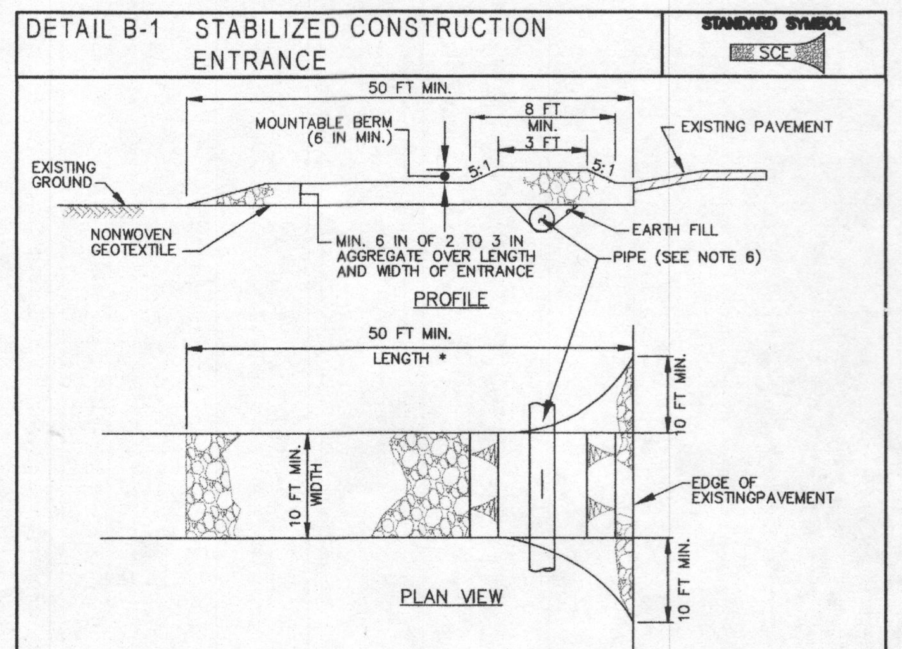
DUST CONTROL METHOD FOR THIS SITE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES: CALCIUM CHLORIDE SHALL BE APPLIED TO EXPOSED SURFACES AT A RATE THAT WILL KEEP SURFACE MOIST UNTIL SOIL IS STABILIZED ACCORDING TO VEGETATIVE SPECS. FOR THIS SITE AND AREAS TO BE PAVED ARE COMPLETED.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



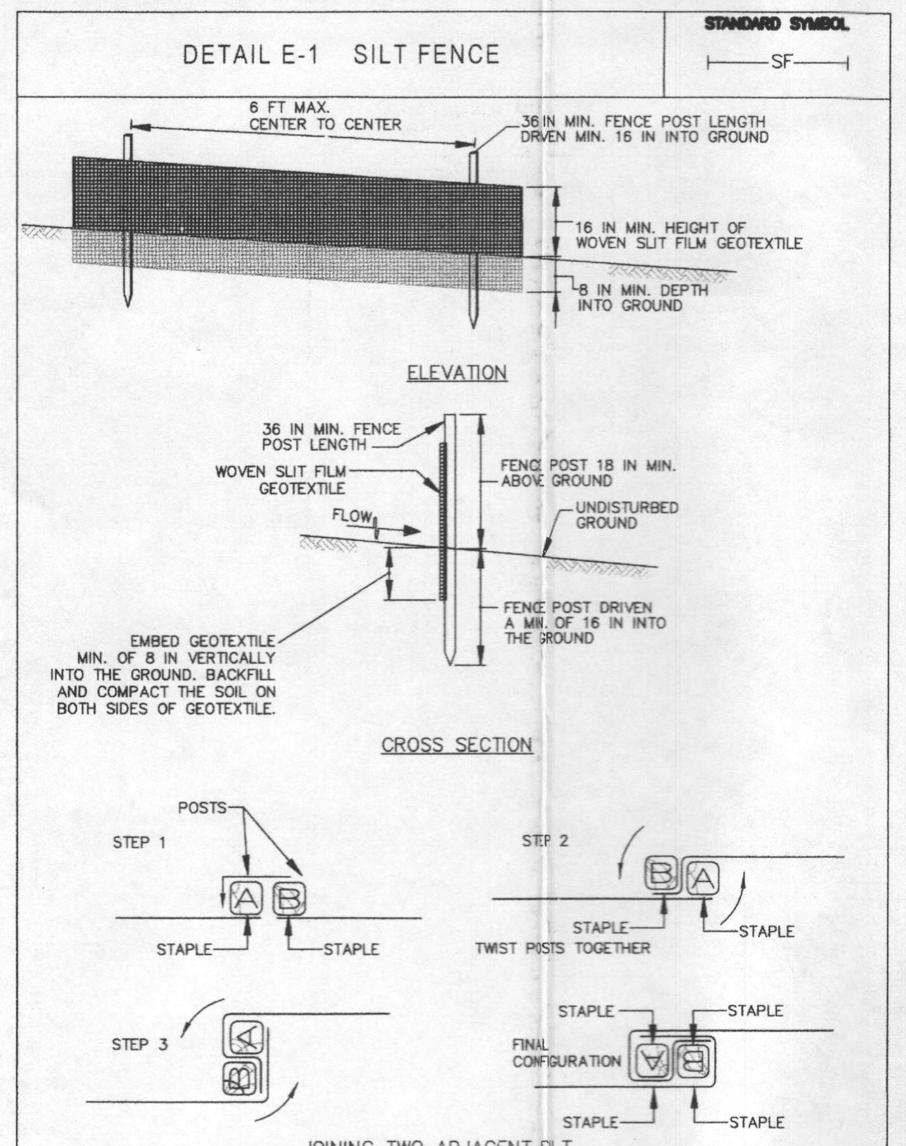
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition:
The application of seed and mulch to establish vegetative cover.

Purpose:
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies:
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria:
A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact. B.16
b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2 O5 (phosphorous), 200 pounds per acre; K2 O (potassium), 200 pounds per acre.
ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
iii. Mix seed and fertilizer on site and seed immediately and without interruption.
iv. When hydroseeding do not incorporate seed into the soil.
B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum. B.17
2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

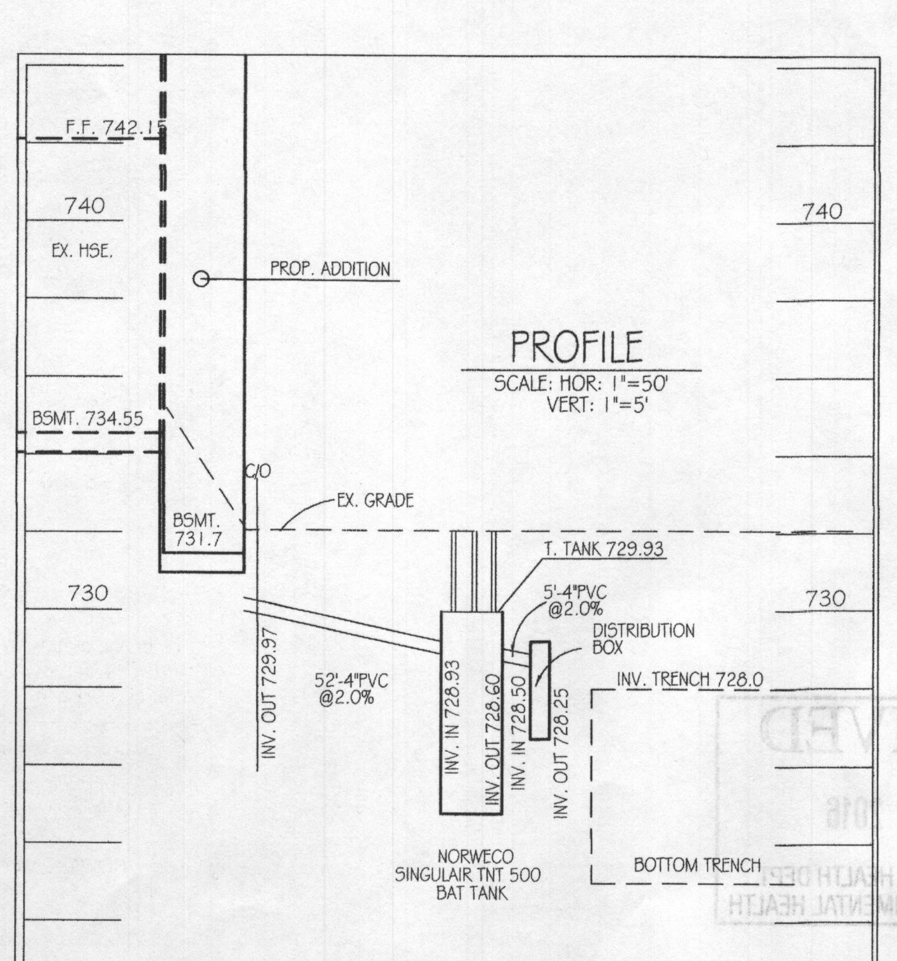
Definition
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria
1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading



PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1) A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected area marked clearly in the field. A minimum of 48 hour notice to CID must be given a the following stages:
   a. Prior to the start of earth disturbance,
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
   c. Prior to the start of another phase of construction or opening of another grading unit,
   d. Prior to the removal or modification of sediment control practices.
   Other building or grading inspection approvals may not be authorized until this initial approval by inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 "MARYLAND STANDARDS AND SPECIFICATIONS FOR THE SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3) Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4) All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
5) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
6) Site Analysis:

Total Area of Site	1.04 Acres.
Area Disturbed	0.36 Acres.
Area to be roofed or paved	0.14 Acres.
Area to be vegetatively stabilized	0.22 Acres.
Total Cut	– Cu. Yds.
Total Fill	– Cu. Yds.
Offsite waste/borrow area location	N/A

7) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8) Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
   * Inspection date
   * Inspection type (routine, pre-storm event, during rain event)
   * Name and title of inspector
   * Weather information (current conditions as well as time and amount of last recorded precipitation)
   * Brief description of project's status (e.g. percent complete) and/or current activities
   * Evidence of sediment discharges
   * Identification of plan deficiencies
   * Identification of sediment controls that require maintenance
   * Identification of missing or improperly installed sediment controls
   * Compliance status regarding the sequence of construction and stabilization requirements
   * Photographs
   * Monitoring/sampling
   * Maintenance and/or corrective action performed
   * Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
9) Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10) Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11) Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.
12) Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13) Top soil shall be stockpiled and preserved on-site for redistribution onto final grade.
14) All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum interval, with lower ends curled uphill by 2' in elevation.
15) Stream channels must not be disturbed during the following restricted time periods (inclusive):
   * Use I and IP March 1 – June 15
   * Use III and IIIP October 1 – April 30
   * Use IV March 1 – May 31
16) A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

SEQUENCE OF CONSTRUCTION

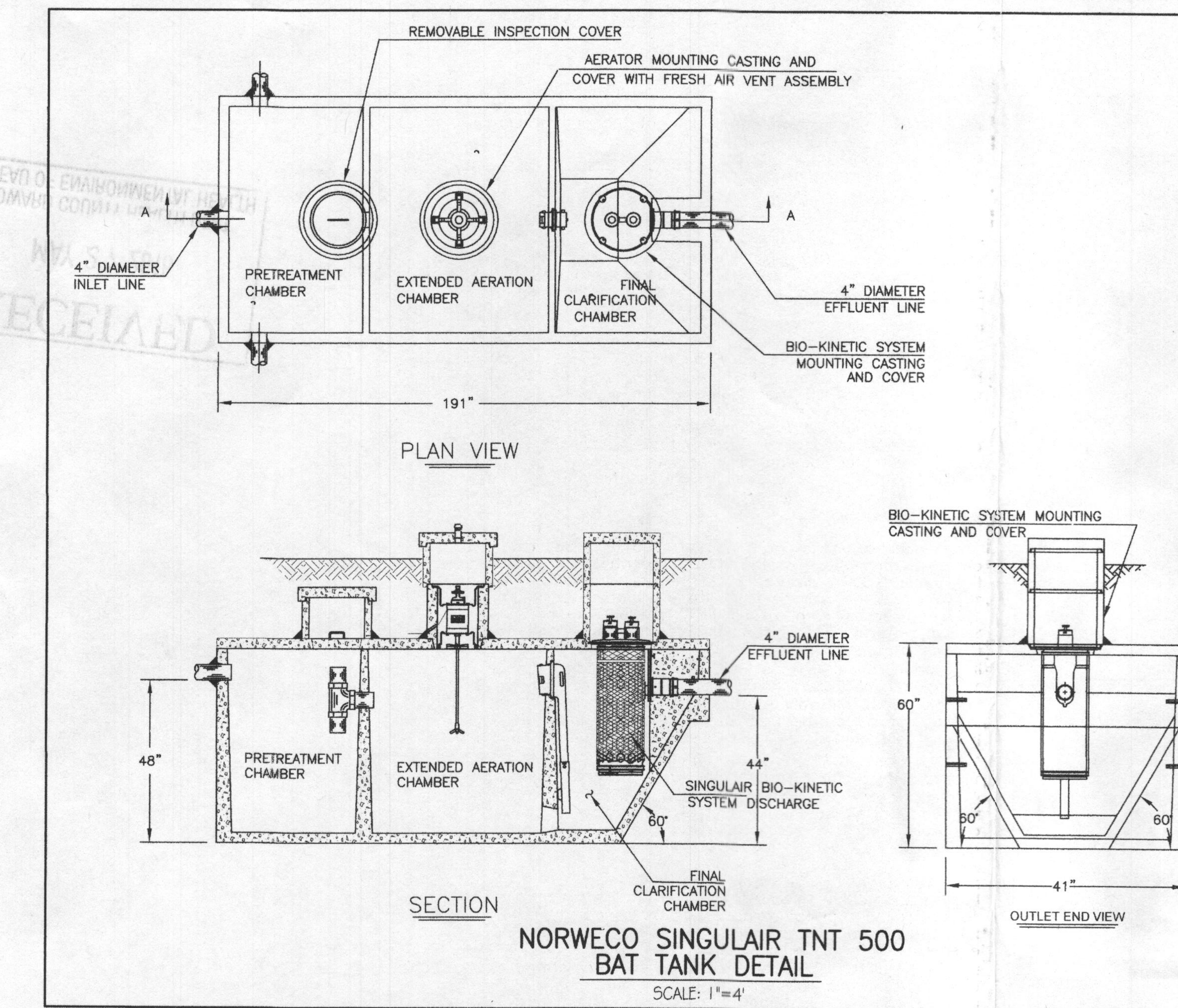
1. OBTAIN ALL REQUIRED GRADING, MDE PERMITS, APPROVALS AND LICENSES FROM APPROPRIATE AGENCIES.
2. NOTIFY SEDIMENT CONTROL INSPECTOR AT LEAST THREE (3) WORKING DAYS PRIOR TO STARTING WORK.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND OTHER SEDIMENT CONTROL DEVICES AS SHOWN IN THE SEDIMENT CONTROL PLAN.
4. STABILIZE ALL THE GRADED AREAS UP TO 20' OUTSIDE OF THE LIMIT OF GRADING AS PER PERMANENT SEEDING NOTES.
5. EXCAVATE HOUSE FOUNDATION, HOUSE CONSTRUCTION. UTILITIES AND INSTALL SEPTIC.
6. ANY AREAS THAT CAN BE TEMPORARILY SEEDED DURING CONSTRUCTION MUST BE TEMPORARILY STABILIZED PER SEEDING NOTES.
7. INSTALL DRIVEWAY.
8. STABILIZE DISTURBED AREAS PER PERMANENT SEEDING NOTES.
9. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR; REMOVE ALL TEMPORARY SEDIMENT CONTROL DEVICES FOR HOUSE CONSTRUCTION.
10. NOTIFY INSPECTOR FOR FINAL INSPECTION.

TEMPORARY STOCKPILE NOTE

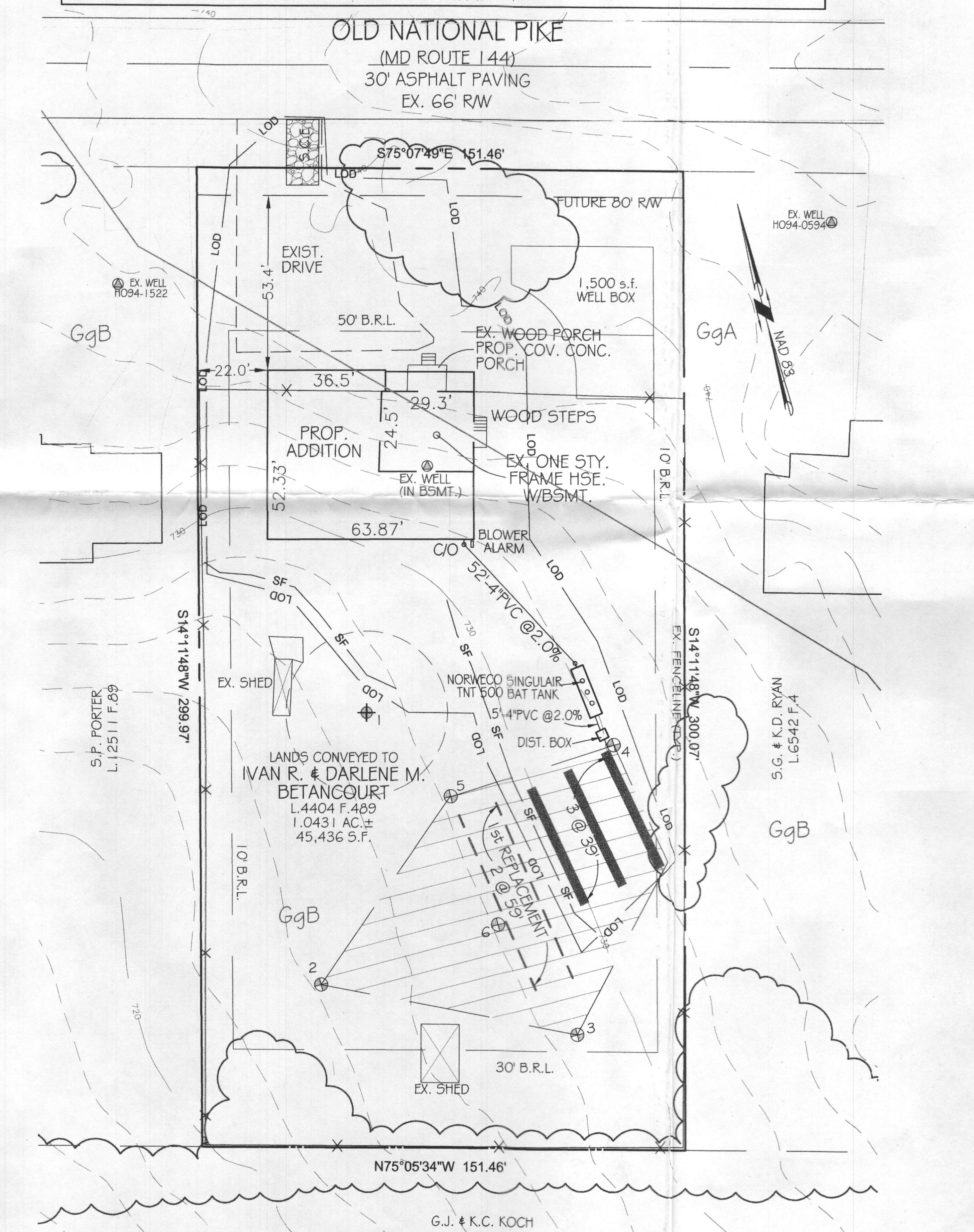
SITE EARTHWORK HAS BEEN BALANCED SUCH THAT A TEMPORARY STOCKPILE SHOULD NOT BE NECESSARY. SHOULD CONTRACTOR DECIDE TO USE A STOCKPILE, CONTRACTOR SHALL PLACE STOCKPILE WITHIN THE ORIGINALLY APPROVED L.O.D. AND FOLLOW TEMPORARY STABILIZATION NOTES.

BAT SITE PLAN NOTES:

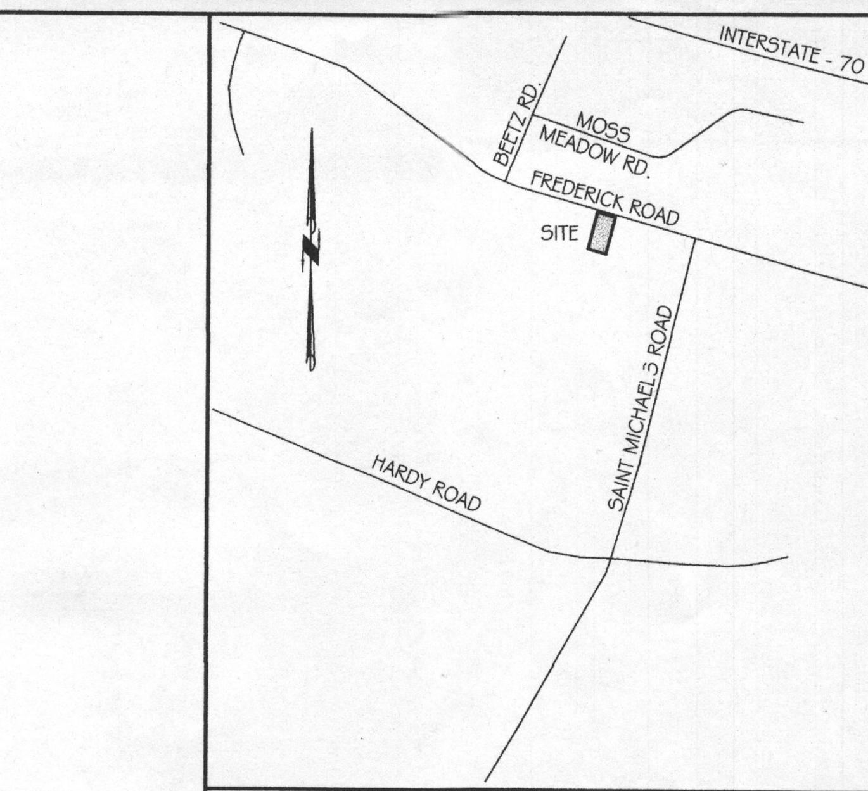
1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT PER MANUFACTURER'S SPECIFICATION IS THREE (3) FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. 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 TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PREFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF INSTALLATION.



NORWECO SINGULAIR TNT 500 BAT TANK DETAIL
SCALE: 1"=4'



OWNER / DEVELOPER
IVAN R. & DARLENE M. BETANCOURT
17015 FREDERICK ROAD
MOUNT AIRY, MARYLAND 21771
(410) 591-8500



VICINITY MAP
SCALE: 1"= 1,200'   TAX MAP: 7; PARCEL: 15

GENERAL NOTES:

1. OWNERS: IVAN R. & DARLENE M. BETANCOURT
   DEED REFERENCE: LIBER 4404 AT FOLIO 489
   DATE: JULY 30, 1998
   GRANTOR: VIRGINIA M. TALBERT
2. TAX MAP: 7 GRID: 2 PARCEL: 15
3. NEAREST POTABLE WATER SUPPLY: MOUNT AIRY 4 MILES±.
4. THERE IS NO FLOOD HAZARD AREA (100 YEAR FLOOD PLAIN) LOCATED ON THIS PROPERTY ACCORDING TO FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL# 24027C0030D, REVISED NOVEMBER 6, 2013.
5. TOPOGRAPHY: FROM HOWARD COUNTY GIS DATA, FIELD SUPPLEMENTED BY VANMAR ASSOCIATES. VERTICAL DATUM IS NAVD88. CONTOUR INTERVAL IS 2 FEET.
6. THERE ARE NO KNOWN WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY UNLESS OTHERWISE SHOWN HEREON.
7. ZONING DISTRICT: RC-DEO
8. LIMIT OF DISTURBANCE: 15,600 s.f.
9. ALL WELLS TO BE DRILLED PRIOR TO SUBMITTAL OF THE FINAL PLAT FOR SIGNATURE. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO THE FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS-UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
10. [hatched area] THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. FOR LOTS CREATED PRIOR TO MARCH OF 1972 IT PROVIDES AT LEAST ENOUGH AREA TO ACCOMMODATE AN INITIAL AND TWO REPLACEMENT SEPTIC SYSTEMS AS REQUIRED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS AREA 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 AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
10. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREAS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
11. ANY CHANGES TO A PRIVATE SEPTIC AREA WILL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
12. THE EXISTING WELL HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN.

SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 5
APPLICATION RATE = 1.2 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 209 LF TRENCH
209 LF TRENCH X 0.56 REDUCTION CREDIT = 117 LF TRENCH
TRENCH 1 (T1) EX. GRD=732.0 –INV. TRENCH=728.0 –B. TRENCH=724.0
TRENCH 2 (T2) EX. GRD=731.0 –INV. TRENCH=727.0 –B. TRENCH=723.0
TRENCH 3 (T2) EX. GRD=730.0 –INV. TRENCH=726.0 –B. TRENCH=722.0

1st REPLACEMENT
APPLICATION RATE = 0.8 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 209 LF TRENCH
209 LF TRENCH X 0.56 REDUCTION CREDIT = 117 LF TRENCH

PROPOSED PERCOLATION TEST SITE: ⊕
(PASSED) PERCOLATION TEST SITE: ⊕
(FAILED) PERCOLATION TEST SITE: ⊕
EX. WELL/PROP. WELL SITE: ▲
EX. / PROP. HOUSE SITE: ▭

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER ____________ DATE ____________

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT ____________ DATE ____________

ENGINEER'S CERTIFICATE:

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

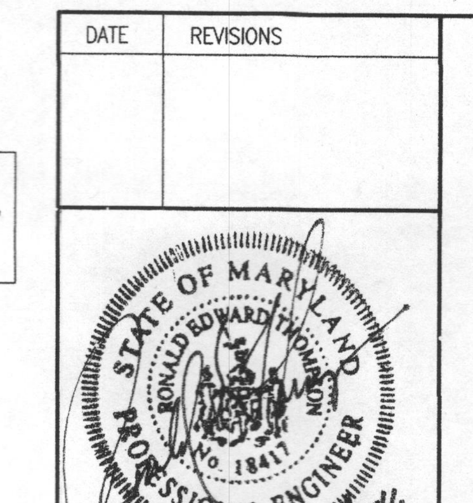
RONALD E. THOMPSON, P.E.   DATE 5/26/2016

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-18-17.

APPROVED:
FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

HOWARD COUNTY HEALTH OFFICER ____________ DATE ____________

DATE	REVISIONS



PERCOLATION CERTIFICATION PLAN
BAT SITE PLAN
LANDS CONVEYED TO
IVAN R. & DARLENE M. BETANCOURT
LIBER 4404 FOLIO 489
17015 OLD NATIONAL PIKE
FOURTH ELECTION DISTRICT
FOURTH COUNTY, MARYLAND
SCALE: 1"=30' MAY, 2016

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
vanmar.com

JOB NO. B6-5545

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B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition:
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose:
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies:
Where vegetative stabilization is to be established.

Criteria:
A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).
iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
iv. Soil contains 1.5 percent minimum organic matter by weight.
v. Soil contains sufficient pore space to permit adequate root penetration.
b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches. B.13
d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.
B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
a. Erosion and sediment control practices must be maintained when applying topsoil.
b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading B.14 and seedbed preparation.
C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

TEMPORARY STABILIZATION SPECIFICATIONS TABLE

Hardiness Zone (from Figure B.3): 6b
Seed Mixture (from Table B.1): ____

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)	Lime Rate
	ANNUAL RYEGRASS	40	MAR. 1 - MAY 15 AUG. 1 - OCT. 15	0.5 INCHES	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	FOXTAIL MILLET	30	JUNE 1 - JULY 31	0.5 INCHES		

PERMANENT STABILIZATION SPECIFICATIONS TABLE

Hardiness Zone (from Figure B.3): 6b
Seed Mixture (from Table B.3): 11

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20) N	P205	K20	Lime Rate
	kentucky bluegrass	20	Mar. 1-May 15 Aug. 1-Oct.15	1/4-1/2 in	45 pounds per acre (1.0 lb/1000 sf)	90 lb/ac (2lh/1000 sf)	90 lb/ac (90 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
				1/4-1/2 in				
				1/4-1/2 in				

DUST CONTROL

DUST CONTROL METHOD FOR THIS SITE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES: CALCIUM CHLORIDE SHALL BE APPLIED TO EXPOSED SURFACES AT A RATE THAT WILL KEEP SURFACE MOIST UNTIL SOIL IS STABILIZED ACCORDING TO VEGETATIVE SPECS. FOR THIS SITE AND AREAS TO BE PAVED ARE COMPLETED.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition:
The application of seed and mulch to establish vegetative cover.

Purpose:
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies:
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria:
A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact. B.16
b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2 O5 (phosphorous), 200 pounds per acre; K2 O (potassium), 200 pounds per acre.
ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
iii. Mix seed and fertilizer on site and seed immediately and without interruption.
iv. When hydroseeding do not incorporate seed into the soil.
B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum. B.17
2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria
1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1) A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected area marked clearly in the field. A minimum of 48 hour notice to CID must be given a the following stages:
a. Prior to the start of earth disturbance,
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
c. Prior to the start of another phase of construction or opening of another grading unit,
d. Prior to the removal or modification of sediment control practices.
Other building or grading inspection approvals may not be authorized until this initial approval by inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 "MARYLAND STANDARDS AND SPECIFICATIONS FOR THE SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3) Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4) All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
5) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
6) Site Analysis:

Total Area of Site	1.04 Acres.
Area Disturbed	0.36 Acres.
Area to be roofed or paved	0.14 Acres.
Area to be vegetatively stabilized	0.22 Acres.
Total Cut	- Cu. Yds.
Total Fill	- Cu. Yds.
Offsite waste/borrow area location	N/A

7) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8) Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
* Inspection date
* Inspection type (routine, pre-storm event, during rain event)
* Name and title of inspector
* Weather information (current conditions as well as time and amount of last recorded precipitation)
* Brief description of project's status (e.g. percent complete) and/or current activities
* Evidence of sediment discharges
* Identification of plan deficiencies
* Identification of sediment controls that require maintenance
* Identification of missing or improperly installed sediment controls
* Compliance status regarding the sequence of construction and stabilization requirements
* Photographs
* Monitoring/sampling
* Maintenance and/or corrective action performed
* Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
9) Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10) Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11) Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.
12) Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13) Top soil shall be stockpiled and preserved on-site for redistribution onto final grade.
14) All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum interval, with lower ends curled uphill by 2' in elevation.
15) Stream channels must not be disturbed during the following restricted time periods (inclusive):
* Use I and IP March 1 - June 15
* Use III and IIIP October 1 - April 30
* Use IV March 1 - May 31
16) A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

SEQUENCE OF CONSTRUCTION

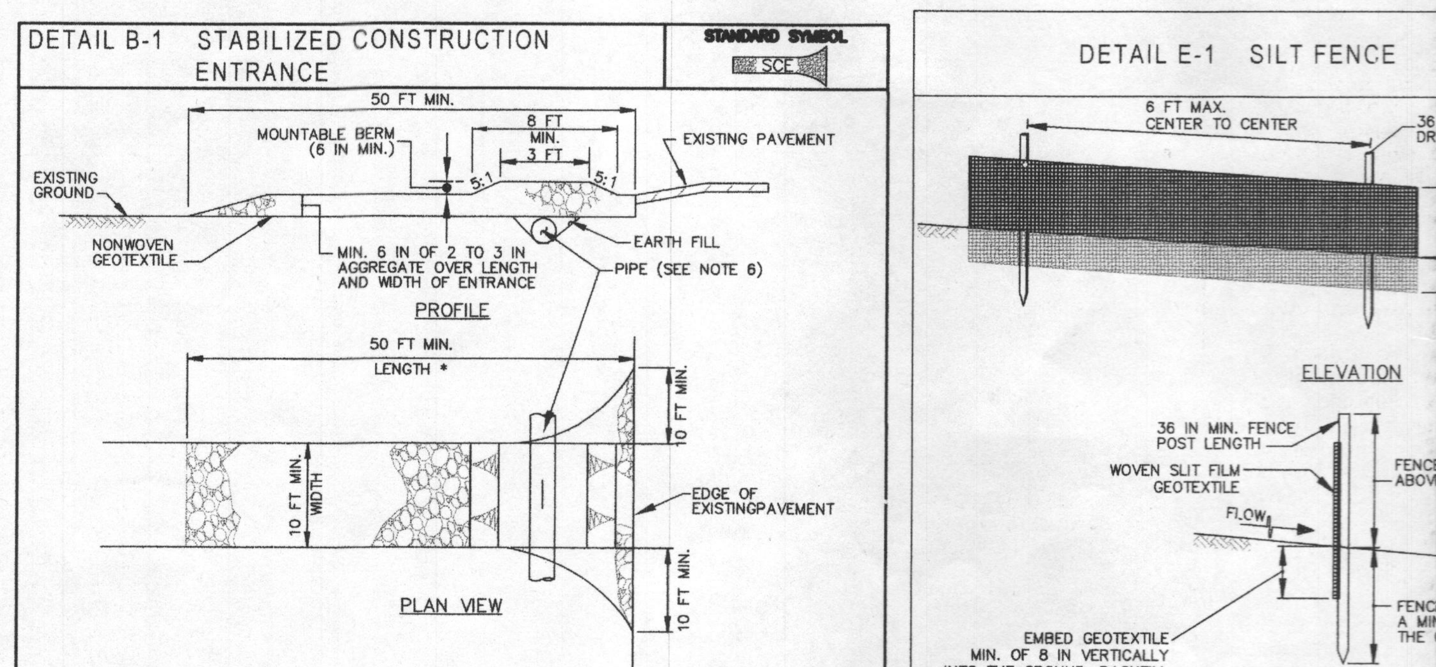
1. OBTAIN ALL REQUIRED GRADING, MDE PERMITS, APPROVALS AND LICENSES FROM APPROPRIATE AGENCIES.
2. NOTIFY SEDIMENT CONTROL INSPECTOR AT LEAST THREE (3) WORKING DAYS PRIOR TO STARTING WORK.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND OTHER SEDIMENT CONTROL DEVICES AS SHOWN IN THE SEDIMENT CONTROL PLAN.
4. STABILIZE ALL THE GRADED AREAS UP TO 20' OUTSIDE OF THE LIMIT OF GRADING AS PER PERMANENT SEEDING NOTES.
5. EXCAVATE HOUSE FOUNDATION, HOUSE CONSTRUCTION. UTILITIES AND INSTALL SEPTIC.
6. ANY AREAS THAT CAN BE TEMPORARILY SEEDED DURING CONSTRUCTION MUST BE TEMPORARILY STABILIZED PER SEEDING NOTES.
7. INSTALL DRIVEWAY.
8. STABILIZE DISTURBED AREAS PER PERMANENT SEEDING NOTES.
9. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR; REMOVE ALL TEMPORARY SEDIMENT CONTROL DEVICES FOR HOUSE CONSTRUCTION.
10. NOTIFY INSPECTOR FOR FINAL INSPECTION.

TEMPORARY STOCKPILE NOTE

SITE EARTHWORK HAS BEEN BALANCED SUCH THAT A TEMPORARY STOCKPILE SHOULD NOT BE NECESSARY. SHOULD CONTRACTOR DECIDE TO USE A STOCKPILE, CONTRACTOR SHALL PLACE STOCKPILE WITHIN THE ORIGINALLY APPROVED L.O.D. AND FOLLOW TEMPORARY STABILIZATION NOTES.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL — SCE



CONSTRUCTION SPECIFICATIONS

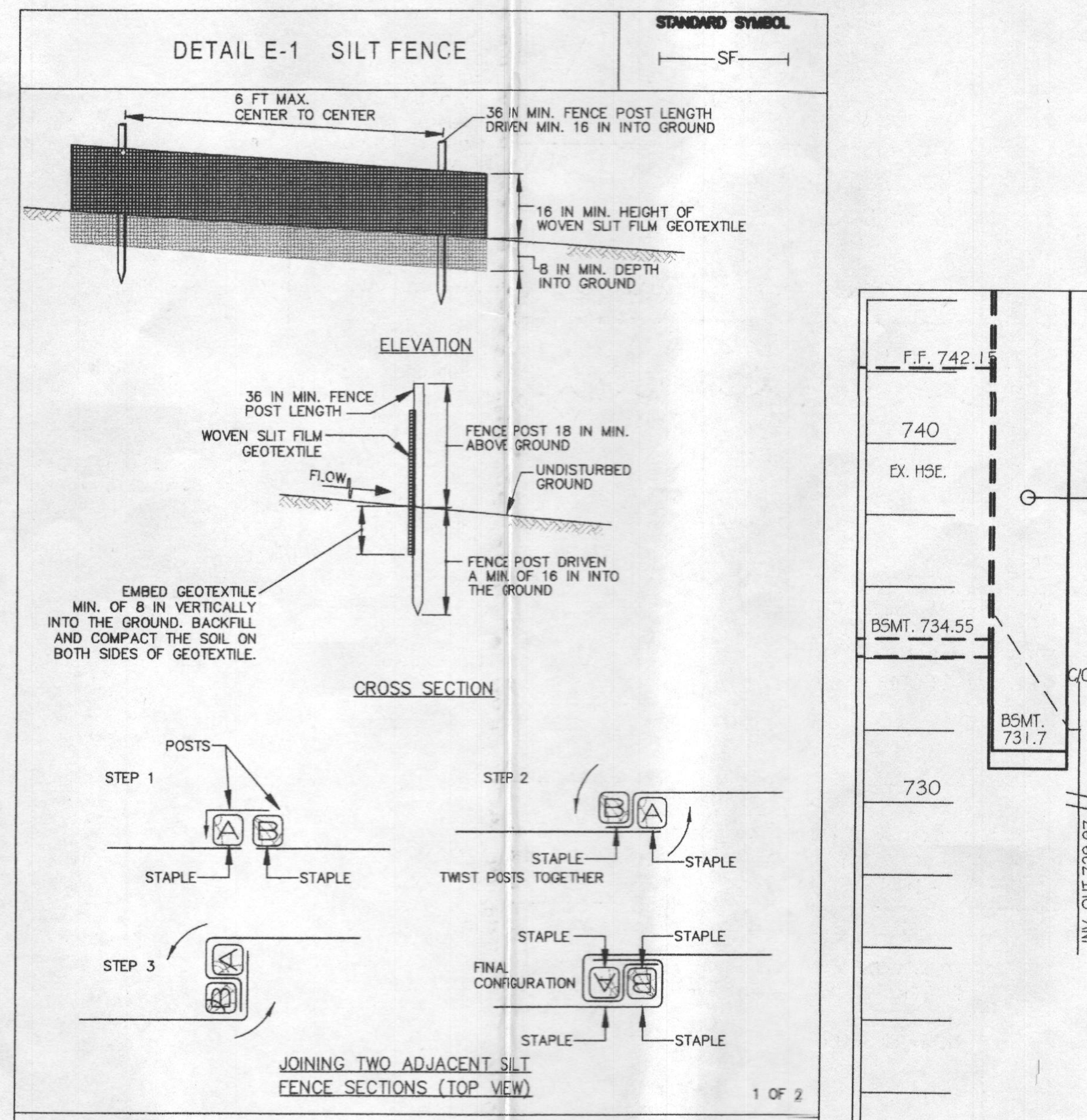
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

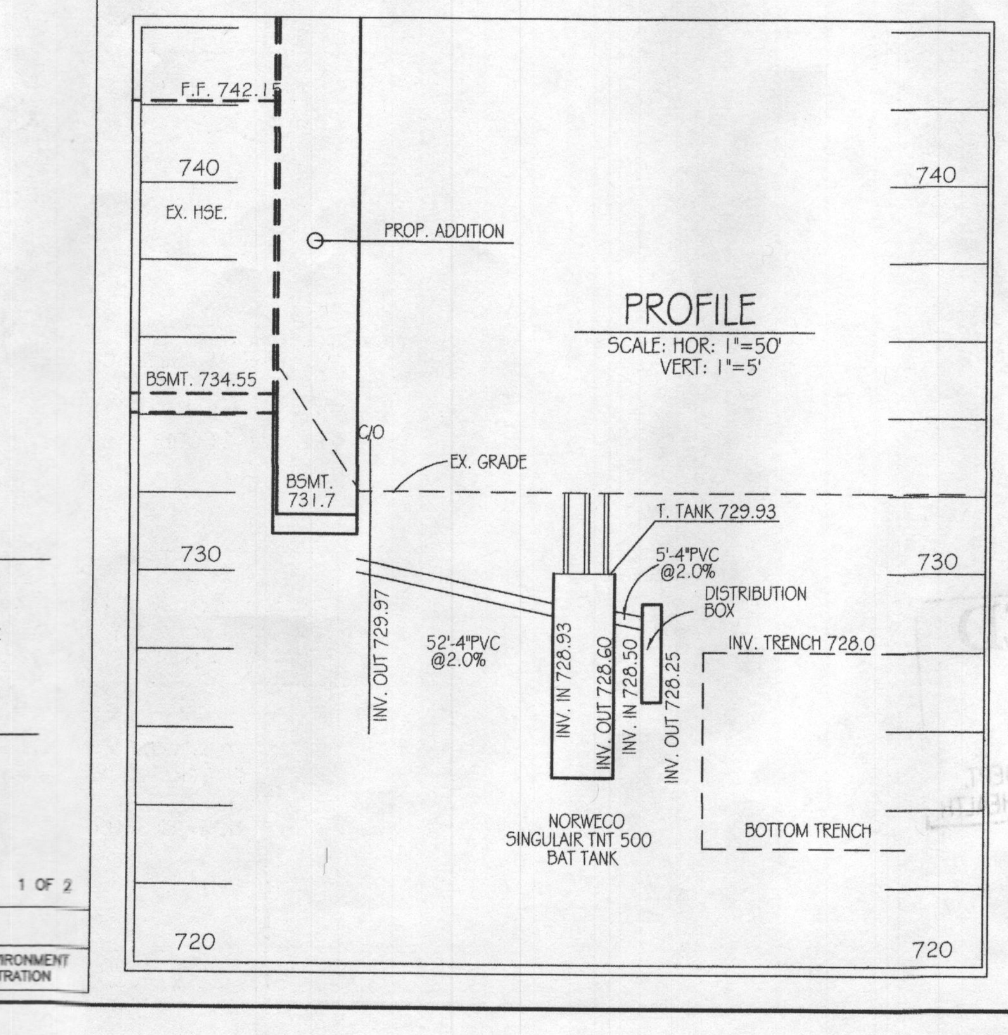
DETAIL E-1 SILT FENCE

STANDARD SYMBOL — SF



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

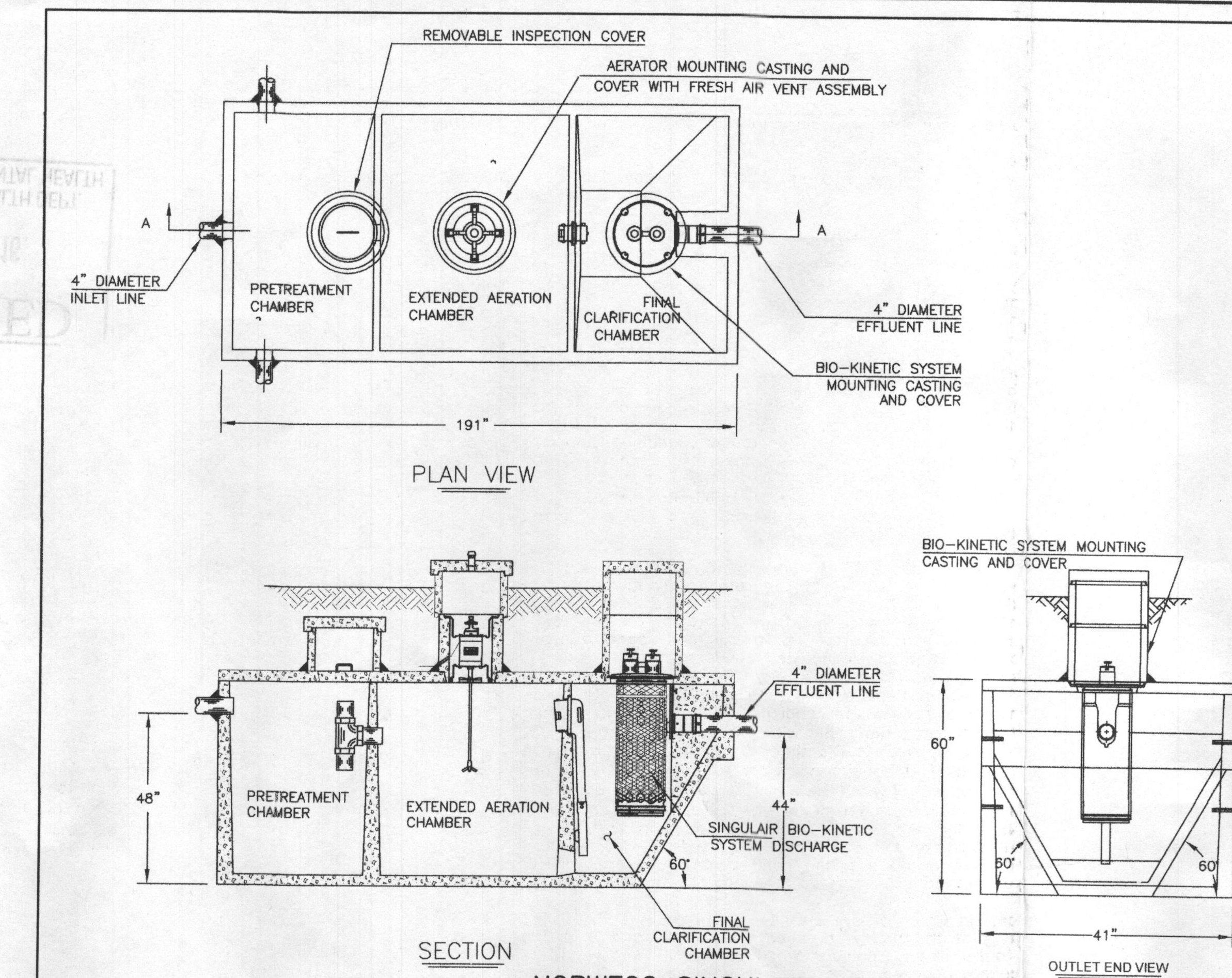
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



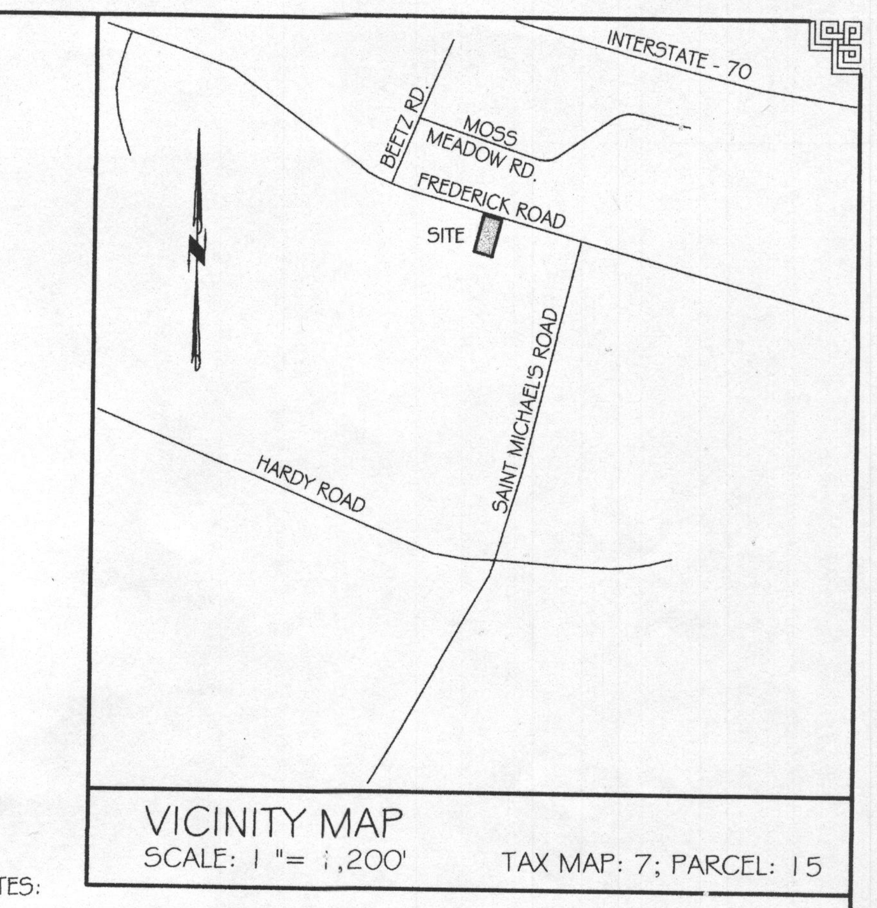
PROFILE
SCALE: HOR: 1"=50' VERT: 1"=5'

BAT SITE PLAN NOTES:

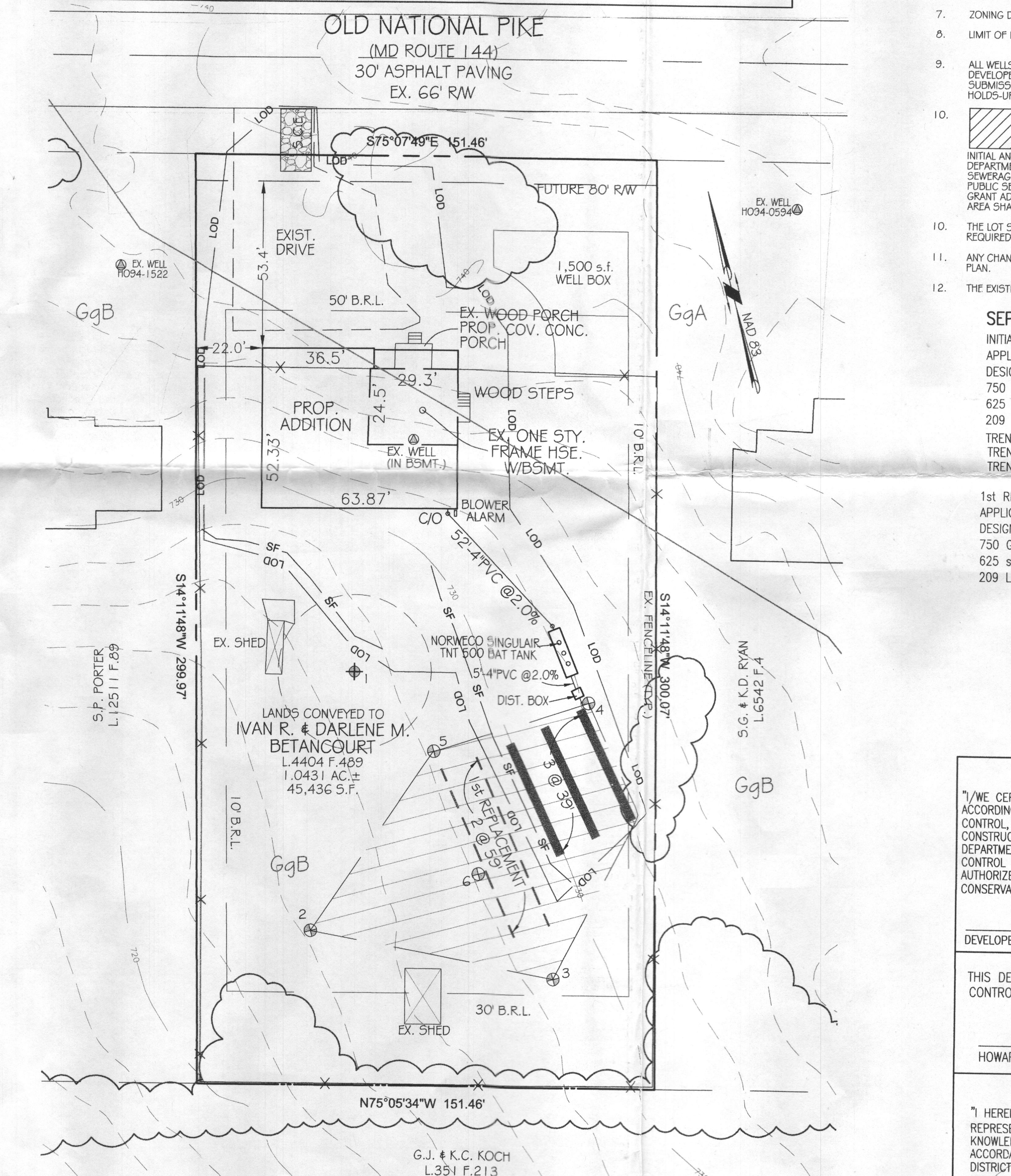
1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT PER MANUFACTURER'S SPECIFICATION IS THREE (3) FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. 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 TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PREFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF INSTALLATION.



NORWECO SINGULAIR TNT 500 BAT TANK DETAIL
SCALE: 1"=4'



VICINITY MAP
SCALE: 1"= 1,200'
TAX MAP: 7; PARCEL: 15



OWNER / DEVELOPER
IVAN R. & DARLENE M. BETANCOURT
17015 FREDERICK ROAD
MOUNT AIRY, MARYLAND 21771
(410) 591-8500

GENERAL NOTES:

1. OWNERS: IVAN R. & DARLENE M. BETANCOURT
DEED REFERENCE: LIBER 4404 AT FOLIO 489
DATE: JULY 30, 1998
GRANTOR: VIRGINIA M. TALBERT
2. TAX MAP: 7 GRID: 2 PARCEL: 15
3. NEAREST POTABLE WATER SUPPLY: MOUNT AIRY 4 MILES±.
4. THERE IS NO FLOOD HAZARD AREA (100 YEAR FLOOD PLAIN) LOCATED ON THIS PROPERTY ACCORDING TO FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL# 24027C0030D, REVISED NOVEMBER 6, 2013.
5. TOPOGRAPHY: FROM HOWARD COUNTY GIS DATA, FIELD SUPPLEMENTED BY VANMAR ASSOCIATES. VERTICAL DATUM IS NAVD88. CONTOUR INTERVAL IS 2 FEET.
6. THERE ARE NO KNOWN WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY UNLESS OTHERWISE SHOWN HEREON.
7. ZONING DISTRICT: RC-DEO
8. LIMIT OF DISTURBANCE: 15,600 s.f.
9. ALL WELLS TO BE DRILLED PRIOR TO SUBMITTAL OF THE FINAL PLAT FOR SIGNATURE. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO THE FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS-UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
10. [hatched area] THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. FOR LOTS CREATED PRIOR TO MARCH OF 1972 IT PROVIDES AT LEAST ENOUGH AREA TO ACCOMMODATE AN INITIAL AND TWO REPLACEMENT SEPTIC SYSTEMS AS REQUIRED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS AREA 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 AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
10. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREAS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
11. ANY CHANGES TO A PRIVATE SEPTIC AREA WILL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
12. THE EXISTING WELL HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN.

SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 5
APPLICATION RATE = 1.2 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 209 LF TRENCH
209 LF TRENCH X 0.56 REDUCTION CREDIT = 117 LF TRENCH
TRENCH 1 (T1) EX. GRD=732.0 -INV. TRENCH=728.0 -B. TRENCH=724.0
TRENCH 2 (T2) EX. GRD=731.0 -INV. TRENCH=727.0 -B. TRENCH=723.0
TRENCH 3 (T2) EX. GRD=730.0 -INV. TRENCH=726.0 -B. TRENCH=722.0

1st REPLACEMENT
APPLICATION RATE = 0.8 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 209 LF TRENCH
209 LF TRENCH X 0.56 REDUCTION CREDIT = 117 LF TRENCH

PROPOSED PERCOLATION TEST SITE: ⊕
(PASSED) PERCOLATION TEST SITE:
(FAILED) PERCOLATION TEST SITE:
EX. WELL/PROP. WELL SITE:
EX. / PROP. HOUSE SITE:

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATE:

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."

[signature] 5/26/2016
RONALD E. THOMPSON, P.E. DATE

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-18-17.

APPROVED:
FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

HOWARD COUNTY HEALTH OFFICER DATE

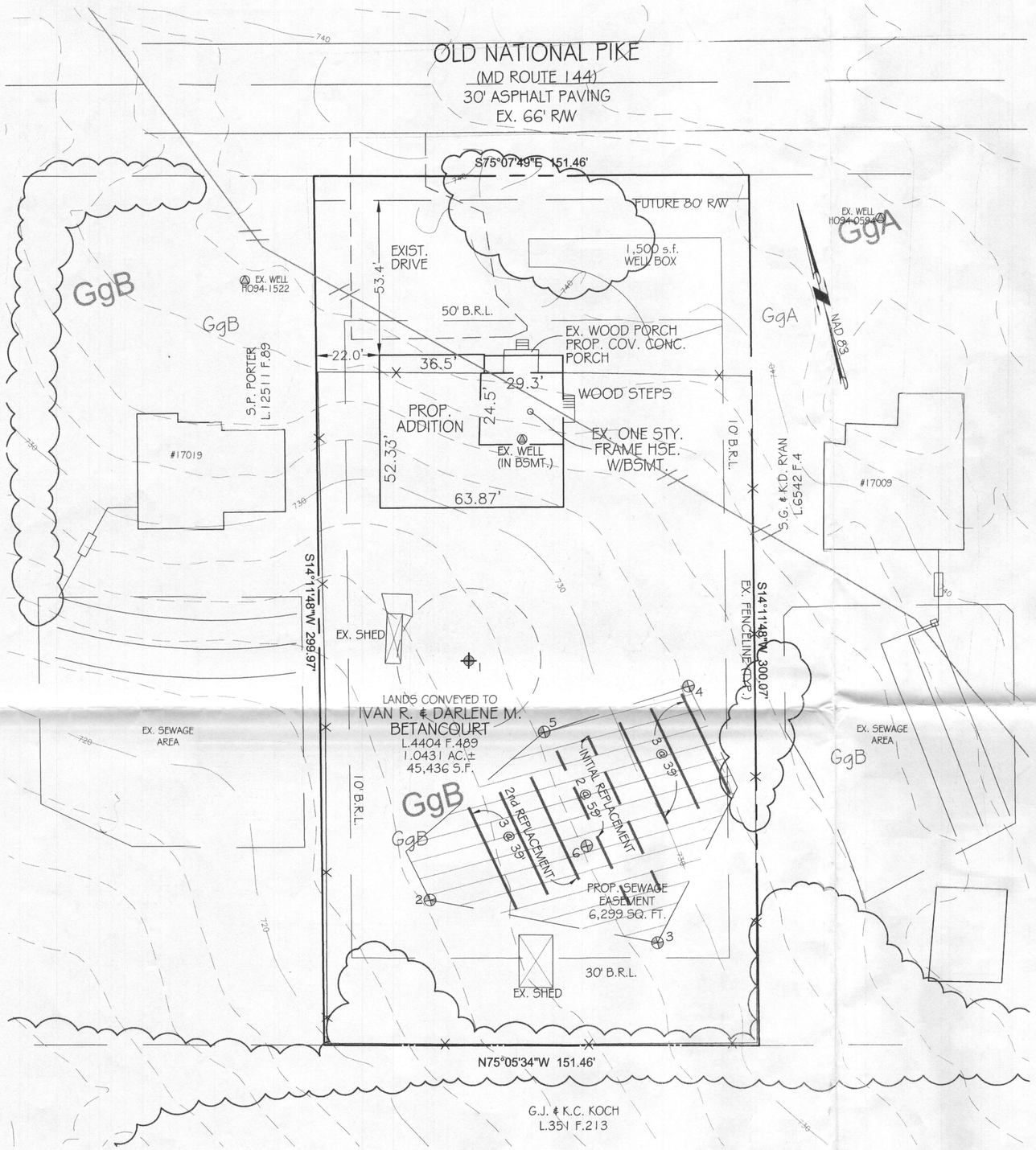
DATE	REVISIONS

STATE OF MARYLAND — RONALD EDWARD THOMPSON — No. 18417 — PROFESSIONAL ENGINEER — 5/26/2016

PERCOLATION CERTIFICATION PLAN
BAT SITE PLAN
LANDS CONVEYED TO
IVAN R. & DARLENE M. BETANCOURT
LIBER 4404 FOLIO 489
17015 OLD NATIONAL PIKE
FOURTH ELECTION DISTRICT
FOURTH COUNTY, MARYLAND
SCALE: 1"=30' MAY, 2016

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
vanmar.com

JOB NO. B6-5545



THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL AREA.

(PASSED) PERCOLATION TEST SITE: ⊕

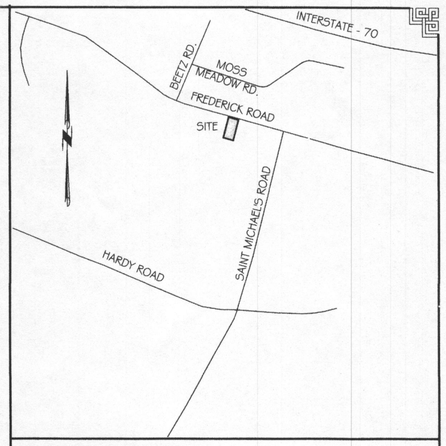
(FAILED) PERCOLATION TEST SITE: ⊕

EX. WELL ▲

EXISTING HOUSE SITE:

25% OR GREATER SLOPES (THERE ARE NO 25% SLOPES ON THE SUBJECT PROPERTY)

WELL BOX



VICINITY MAP
SCALE: 1 "= 1,200' TAX MAP: 7; PARCEL: 15

GENERAL NOTES:

1. OWNERS: IVAN R. & DARLENE M. BETANCOURT
   DEED REFERENCE: LIBER 4404 AT FOLIO 489
   DATE: JULY 30, 1998
   GRANTOR: VIRGINIA M. TALBERT
2. TAX MAP: 7 GRID: 2 PARCEL: 15
3. NEAREST POTABLE WATER SUPPLY: MOUNT AIRY 4 MILES±.
4. THERE IS NO FLOOD HAZARD AREA (100 YEAR FLOOD PLAIN) LOCATED ON THIS PROPERTY ACCORDING TO FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL# 24027C0030D, REVISED NOVEMBER 6, 2013.
5. TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY. SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES. VERTICAL DATUM IS NAVD88. CONTOUR INTERVAL IS 2 FEET.
6. THERE ARE NO KNOWN WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THE PROPERTY BOUNDARY UNLESS OTHERWISE SHOWN HEREON.
7. ZONING DISTRICT: RC-DEO
8. SOIL TYPES: GLENELG (GgA, GgB). HOWARD COUNTY SOILS MAP GRID: 319.
9. ALL WELLS TO BE DRILLED PRIOR TO SUBMITTAL OF THE FINAL PLAT FOR SIGNATURE. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO THE FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS-UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
10. THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. FOR LOTS CREATED PRIOR TO MARCH OF 1972 IT PROVIDES AT LEAST ENOUGH AREA TO ACCOMMODATE AN INITIAL AND TWO REPLACEMENT SEPTIC SYSTEMS AS REQUIRED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS AREA 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 AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
10. ANY CHANGES TO A PRIVATE SEPTIC AREA WILL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
11. THE EXISTING WELL HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN.
12. THE EXISTING WELL LOCATED IN THE BASEMENT WILL NEED TO BE ABANDONED.
13. THE HOWARD COUNTY HEALTH DEPARTMENT (EMAIL 7/5/16) HAS AGREED TO APPROVE THE BUILDING PERMIT BEFORE THE EXISTING WELL IS PROPERLY ABANDONED BY A LICENSED WELL DRILLER. THE NEW WELL WILL NEED TO BE DRILLED BEFORE THE BUILDING PERMIT IS ISSUED AND THE EXISTING WELL WILL NEED TO BE ABANDONED BEFORE THE INSTALLATION OF THE BAT SYSTEM.

OWNER / DEVELOPER
IVAN R. & DARLENE M. BETANCOURT
17015 FREDERICK ROAD
MOUNT AIRY, MARYLAND 21771
(410) 591-8500

APPROVED:
FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

HOWARD COUNTY HEALTH DEPARTMENT

BWilson for Maura Rossman 7/12/2016
HOWARD COUNTY HEALTH OFFICER DATE

PROFESSIONAL CERTIFICATION

I hereby certify that this document was prepared by me or under my responsible charge, and that I am a duly licensed Professional Land Surveyor under the laws of the State of Maryland, License No. 21097, Expiration Date 7/26/17, in accordance with COMAR 09.13.06.12.

For VanMar Associates, Inc.
Thomas L. Frazier, Jr. Date 7/7/16

DATE	REVISIONS
7/7/16	PER HD COMMENTS

STATE OF MARYLAND · THOMAS L. FRAZIER, JR. · No. 21097 · PROFESSIONAL LAND SURVEYOR

PERCOLATION CERTIFICATION PLAN
LANDS CONVEYED TO
IVAN R. & DARLENE M. BETANCOURT
LIBER 4404 FOLIO 489
17015 OLD NATIONAL PIKE
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: 1"=30' JUNE, 2016

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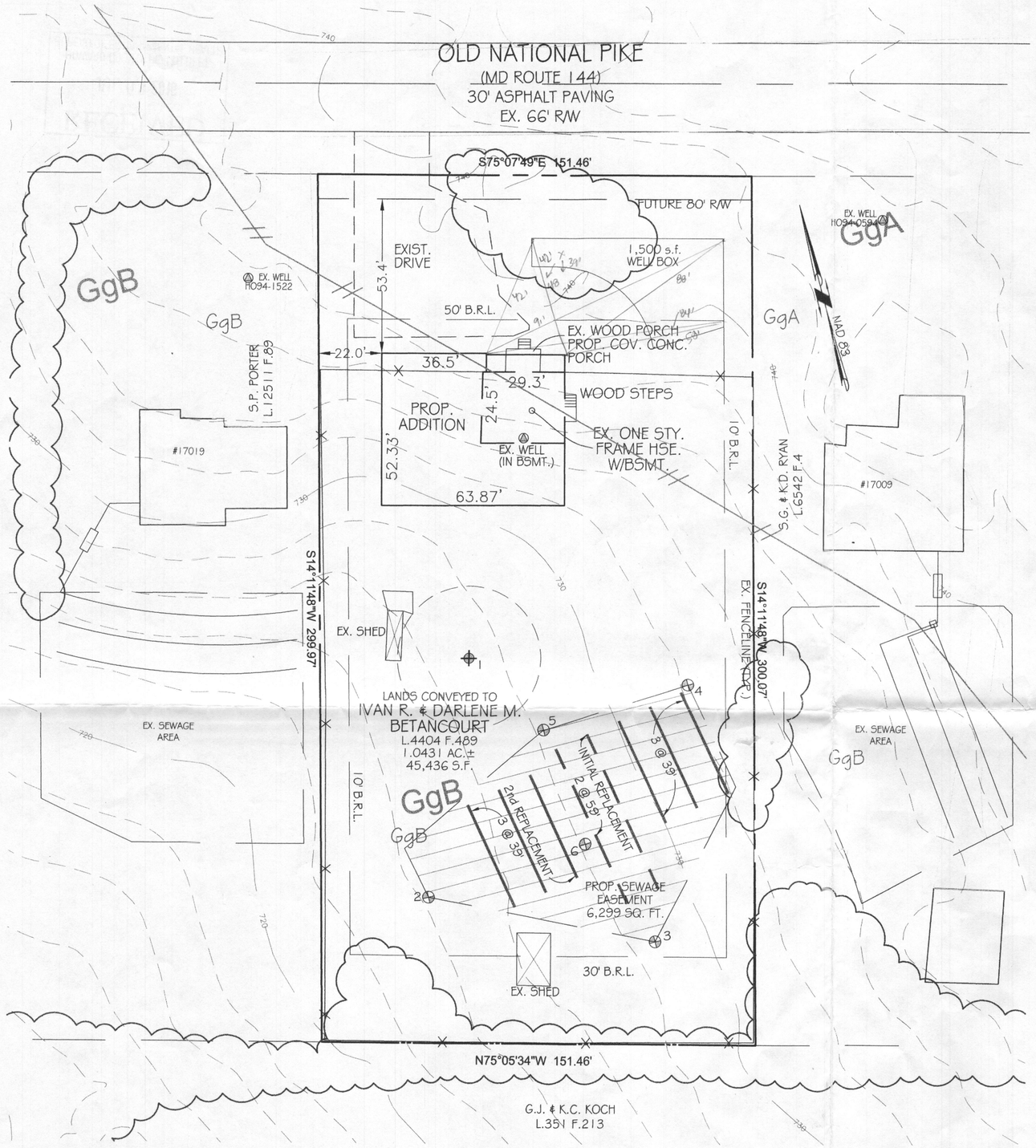

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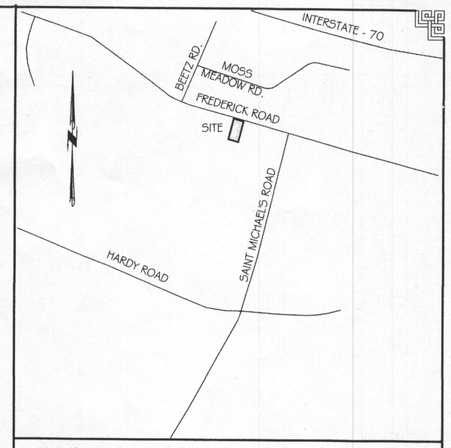

VICINITY MAP
SCALE: 1 "= 1,200' TAX MAP: 7; PARCEL: 15

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APPROVED:
FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

HOWARD COUNTY HEALTH DEPARTMENT

for Maura Rossman 7/12/2016
HOWARD COUNTY HEALTH OFFICER DATE

PROFESSIONAL CERTIFICATION

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For VanMar Associates, Inc.
Thomas L. Frazier, Jr. 7/7/16
Date

DATE	REVISIONS
7/7/16	PER HD COMMENTS

STATE OF MARYLAND · THOMAS L. FRAZIER, JR. · No. 21097 · PROFESSIONAL LAND SURVEYOR

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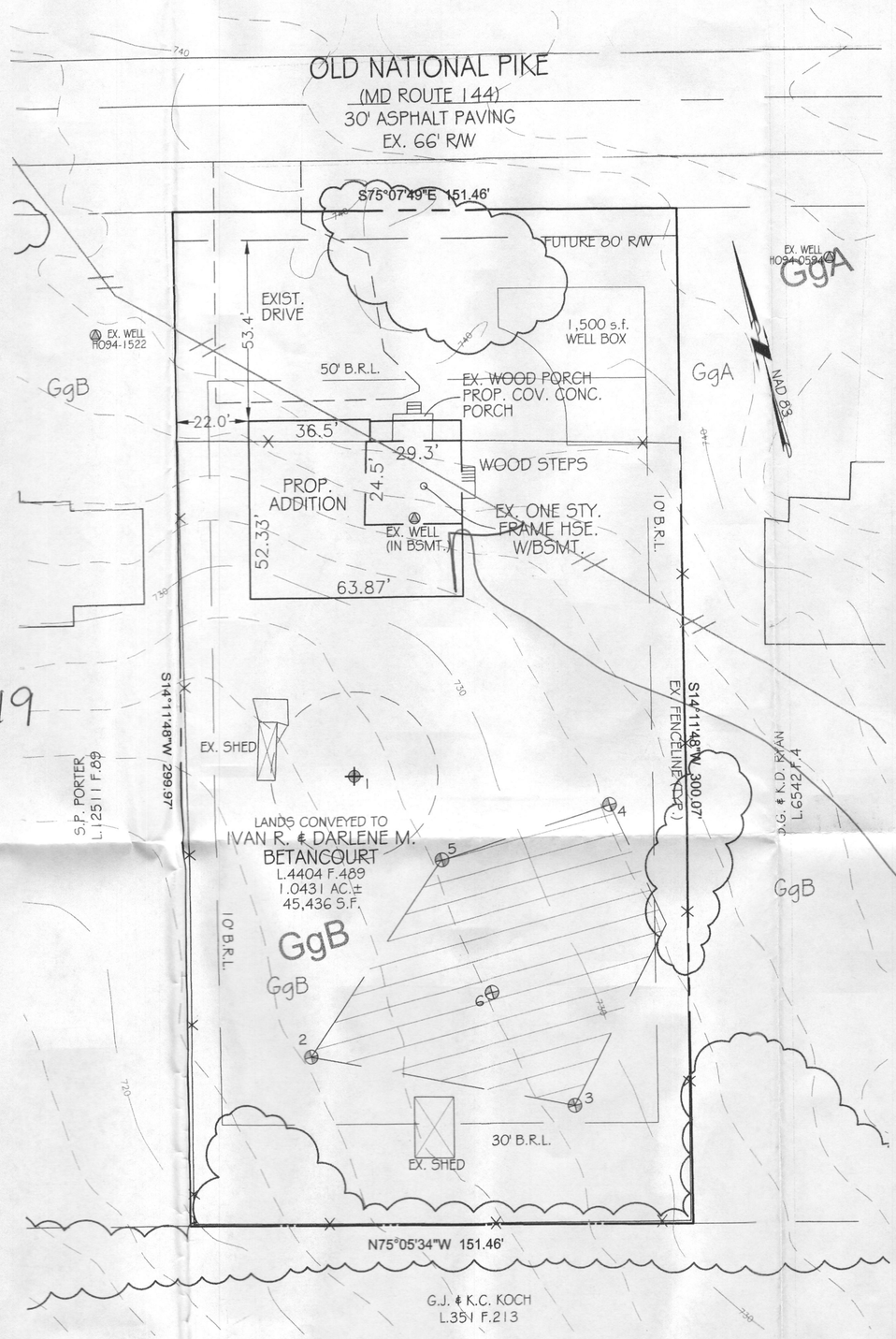

17019

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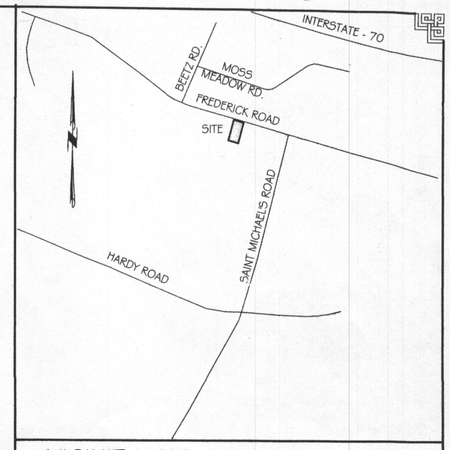

VICINITY MAP
SCALE: 1 "= 1,200' TAX MAP: 7; PARCEL: 15

Show wells and Septic
17009
TO BE ABANDONED

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HOWARD COUNTY HEALTH DEPARTMENT

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