

Bureau of Environmental Health
 8930 Stanford Boulevard, Columbia, MD 21045
 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

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

RECEIPT DATE: 11/2/14 **ONSITE SEWAGE DISPOSAL SYSTEM**

P 659827-B

APPROVAL DATE: 2/2/17 **PERMIT: CONSTRUCTION**

A _____

PROPERTY ADDRESS: 732 Woodbine Crossing

SUBDIVISION: Woodbine Crossing LOT: 10 TAX ID: 04-374495

CONTRACTOR: WTC Contractors EMAIL: _____

CONTRACTOR ADDRESS: 3033 Salem Bottom Road, Westminster, MD 21157 PHONE: 443-458-7024

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: LDG INC. EMAIL: _____

OWNER ADDRESS: 8601 Georgia Avenue, Silver Spring, MD 20910 PHONE: 301-585-7000

BAT UNIT MODEL: Norweco 750 PUMP SIZE: WE-03L PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 6/9/14 DATE RECORDED: 6/18/14

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>234</u>	INLET DEPTH: <u>4</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>6</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:		

ISSUED BY: Hank Oswald ISSUE DATE: 11/2/16 EXPIRATION DATE: 11/2/17

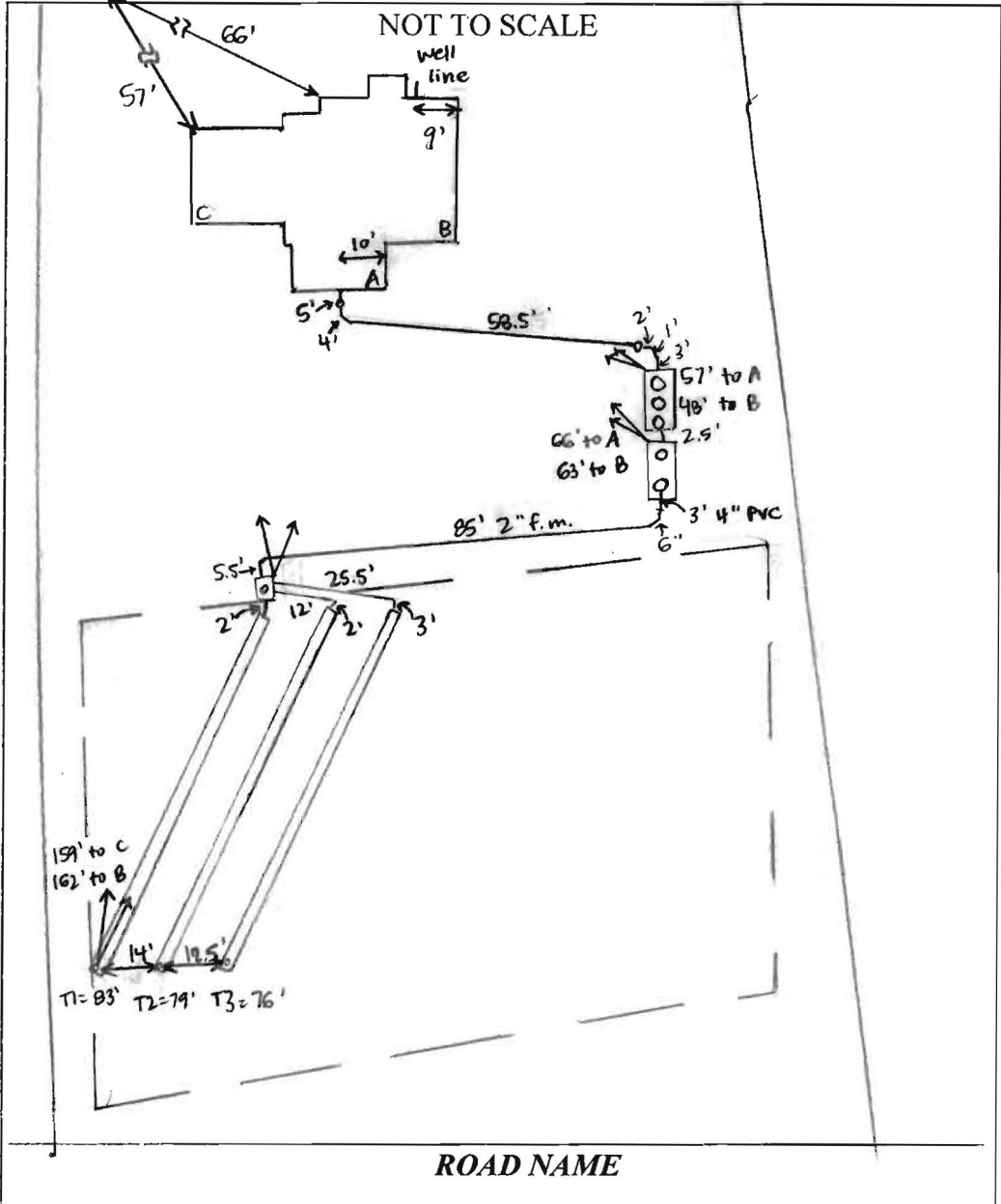
- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
- NOTE: WATERTIGHT SEPTIC TANKS REQUIRED
- NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM
- ELECTRICAL PERMIT ISSUED E 16005235
- NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.
 PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.
 CALL 410-313-1771 TO SCHEDULE INSPECTIONS.**

W H0-95-1073

1" = 40'

NOT TO SCALE



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	4'	8'
NUMBER OF TRENCHES <u>3</u>		
TOTAL LENGTH <u>238'</u>		
ABSORPTION AREA <u>714' + SIDEWALL</u>		
DISTRIBUTION BOX LEVEL <u>YES</u>		
DISTRIBUTION BOX BAFFLE <u>YES</u>		
DISTRIBUTION BOX PORT <u>YES</u>		

SEPTIC TANK DATA

SEPTIC TANK I LEVEL	<u>YES</u>
MANUFACTURER	<u>BACKRIVER/ NORWECO</u>
CAPACITY	<u>1300</u> GAL
SEAM LOC	<u>TOP</u>
TANK LID DEPTH	<u>2-2.5'</u>
BAFFLES	<u>NO</u>
BAFFLE FILTER	<u>NONE</u>
MANHOLE LOC	<u>FRONT, MID, REAR</u>
6" PORT LOC	<u>NONE</u>
WATERTIGHT TEST	<u>NO</u>
SLOTTED	<u>NO</u>
DATE ON LID	<u>9-20-16</u>

PUMP/SEPTIC TANK LEVEL

PUMP/SEPTIC TANK LEVEL	<u>YES</u>
MANUFACTURER	<u>BACKRIVER</u>
CAPACITY	<u>1500</u> GAL
SEAM LOC	<u>TOP</u>
TANK LID DEPTH	<u>2-2.5'</u>
BAFFLES	<u>NO</u>
BAFFLE FILTER	<u>NONE</u>
MANHOLE LOC	<u>FRONT + REAR</u>
6" PORT LOC	<u>NONE</u>
WATERTIGHT TEST	<u>NO</u>
SLOTTED	<u>NO</u>
DATE ON LID	<u> </u>

PRE-CONSTRUCTION:

11/16/16 Site visit to verify stakes. BAT tank and SDA corner stakes present. OK to set tanks. (SC) 11/17/16 on site with WTC to layout trenches. Shot contour and laid out 3 x 78' trenches. (SC)

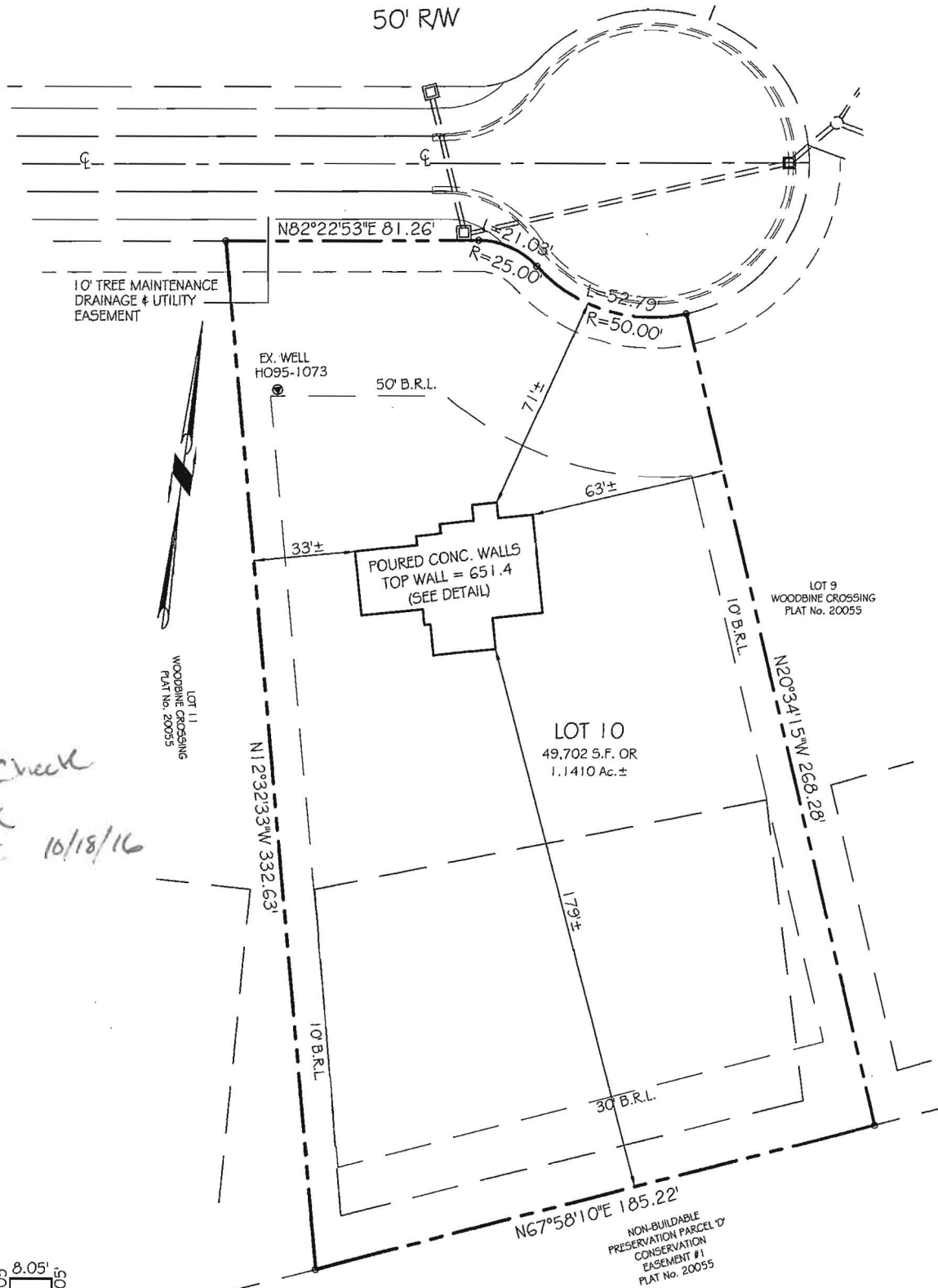
INSTALLATION:

11/17/16 House connection made. BAT tank set and pipe laid from house to tank. (SC) 11/17/16 Pump tank set. WTC running 2" f.m. to D-box. (SC) 11/18/16 WTC digging T3. T1 + T2, left open at ends 3' wide, 3.5' to stone. Using laser to check depths. (SC) 11/21/16 T3 finished, left open at end. Need BAT startup certification and pump + alarm. (SC) 12/2/16 BAT startup certification received (SC) 2/2/17 on site for pump + alarm test. Pump pumps effluent to D-box, alarm sounds. Norweco startup good - alarm sounds, aerator runs. (SC)

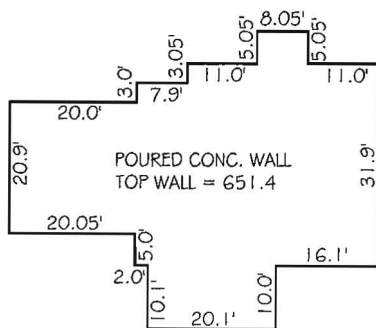
FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 2/2/17

WOODBINE CROSSING ROAD

50' RW



Wall Check
OK
RAE 10/18/16



HOUSE DETAIL
SCALE: 1" = 30'

NOTES:

- 1) FOUNDATION AND FOOTINGS ARE IN PLACE AS SHOWN HEREON.
- 2) BUILDING TIES ARE ±0.5' UNLESS OTHERWISE NOTED.
- 3) TOP OF WALL = 651.4
- 4) SEPTIC AREA SHOWN IS TAKEN FROM THE REVISED PERC CERT PLAN.

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. 21091, EXPIRATION DATE JULY 26, 2015, IN ACCORDANCE WITH COMAR 09.03.06.

Thomas L. Frazier, Jr.
 For VanMar Associates, Inc. No. 21091
 Thomas L. Frazier, Jr. Professional Land Surveyor
 Date 9/21/16

WALL CHECK DRAWING LOT 10 WOODBINE CROSSING

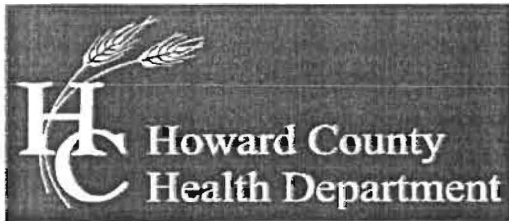
PLAT No. 20055
 732 WOODBINE CROSSING ROAD
 FOURTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' SEPTEMBER, 2015

I CERTIFY THIS PLAT TO BE CORRECT; IT IS THE RESULT OF AN ACTUAL FIELD SURVEY, BASED ON DATA FOUND AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND, AS REFERENCED HEREON.

REFERENCE	JOB NO.
PLAT NO. 20055	B4-5416



VANMAR ASSOCIATES, INC.
 Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771
 (301) 829-2890 (301) 831-5015 (410) 549-2751
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TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

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

**OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM**

THIS AGREEMENT is made this 28 day of May, 2014, a nong
LDG, Inc., hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the
"County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
732 Woodbine Crossing, Woodbine, MD 21797 (Lot 10), in the 04 Election District of Howard
County, Maryland, and the deed to same is recorded or shall be recorded among the Land
Records of Howard County, Maryland in Liber 1988 Folio 2:8.

WHEREAS, The Lot is suitable for the installation of a conventional on-site sewage
disposal system with an advanced pre-treatment system, utilizing best available
technology to perform nitrogen reduction, in accordance with the Code of Maryland
Regulations 26.04.02.07, effective January 1, 2013.

NOW, THEREFORE, the parties hereto agree as follows:

- A. Owner hereby grants to the County the right to enter upon the Lot at any reasonable time for access to the system to make periodic inspections and the Owner agrees to provide any information and data in Owner's possession reasonably requested and needed by the County to develop accurate and thorough test results.
- B. Owner acknowledges and agrees that neither the County nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.
- C. The Owner will devote reasonable care and effort to the operation and maintenance of the system in perpetuity or until a public sewer connection is made so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.
- D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County with a private entity to operate and maintain on a regularly scheduled basis an approved advanced pre-treatment system. The owner shall supply a copy of the contract to the County when it is renewed or altered.
- E. This agreement shall run with the land and upon Owner's taking title to the Lot shall bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as

long as the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Lot that the system shall require maintenance or other attention. Upon taking title to the Lot, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

G. This agreement may be voided at any time at the discretion of the County.


H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.

_____	_____		<u>6/9/14</u>
Owner	Date	Owner	Date


Howard County Health Department 6/18/14

Back River Pre-Cast, LLC

PO BOX 329
Glyndon, MD 21071
Phone # 410-833-3394
Fax # 410-833-4116

Letter of Certification

This is to certify that the Norweco Singulair TNT 600 GPD Septic Tank installed at 732 Woodbine Crossing, Mt. Airy, MD 21771 November 17, 2016 was installed according to the manufacture's specifications.

Installer: Walter Coon

Property Owner: Catonsville Homes

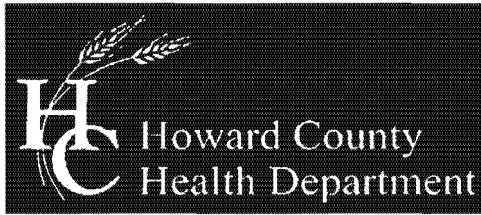
Permit #

THIS CERTIFICATION IS FOR INSTALLATION ONLY. THE 5-YEAR OPERATIONS & MAINTENANCE AGREEMENT FROM DATE OF INSTALLATION WILL ONLY GO INTO EFFECT AFTER BACK RIVER PRE-CAST, LLC RECEIVES FINAL AND FULL PAYMENT FOR THE SYSTEM.



MATTHEW GECKLE

Vice-President



Bureau of Environmental Health 000090
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, M.D., Health Officer

OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this 28 day of May, 2014, among
LDG, Inc., hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the
"County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
732 Woodbine Crossing, Woodbine, MD 21797 (Lot 10), in the 04 Election District of Howard
County, Maryland, and the deed to same is recorded or shall be recorded among the Land
Records of Howard County, Maryland in Liber 1988 Folio 258.

WHEREAS, The Lot is suitable for the installation of a conventional on-site sewage
disposal system with an advanced pre-treatment system, utilizing best available
technology to perform nitrogen reduction, in accordance with the Code of Maryland
Regulations 26.04.02.07, effective January 1, 2013.

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needed by the County to develop accurate and thorough test results.
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employees, either officially or individually, underwrites the operation of any system
approved by them.
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the system in perpetuity or until a public sewer connection is made so that a system
malfunction is not the result of poor maintenance, faulty operation, or neglect.
D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the
County with a private entity to operate and maintain on a regularly scheduled basis an
approved advanced pre-treatment system. The owner shall supply a copy of the contract
to the County when it is renewed or altered.
E. This agreement shall run with the land and upon Owner's taking title to the Lot shall
bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as

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Owner Date

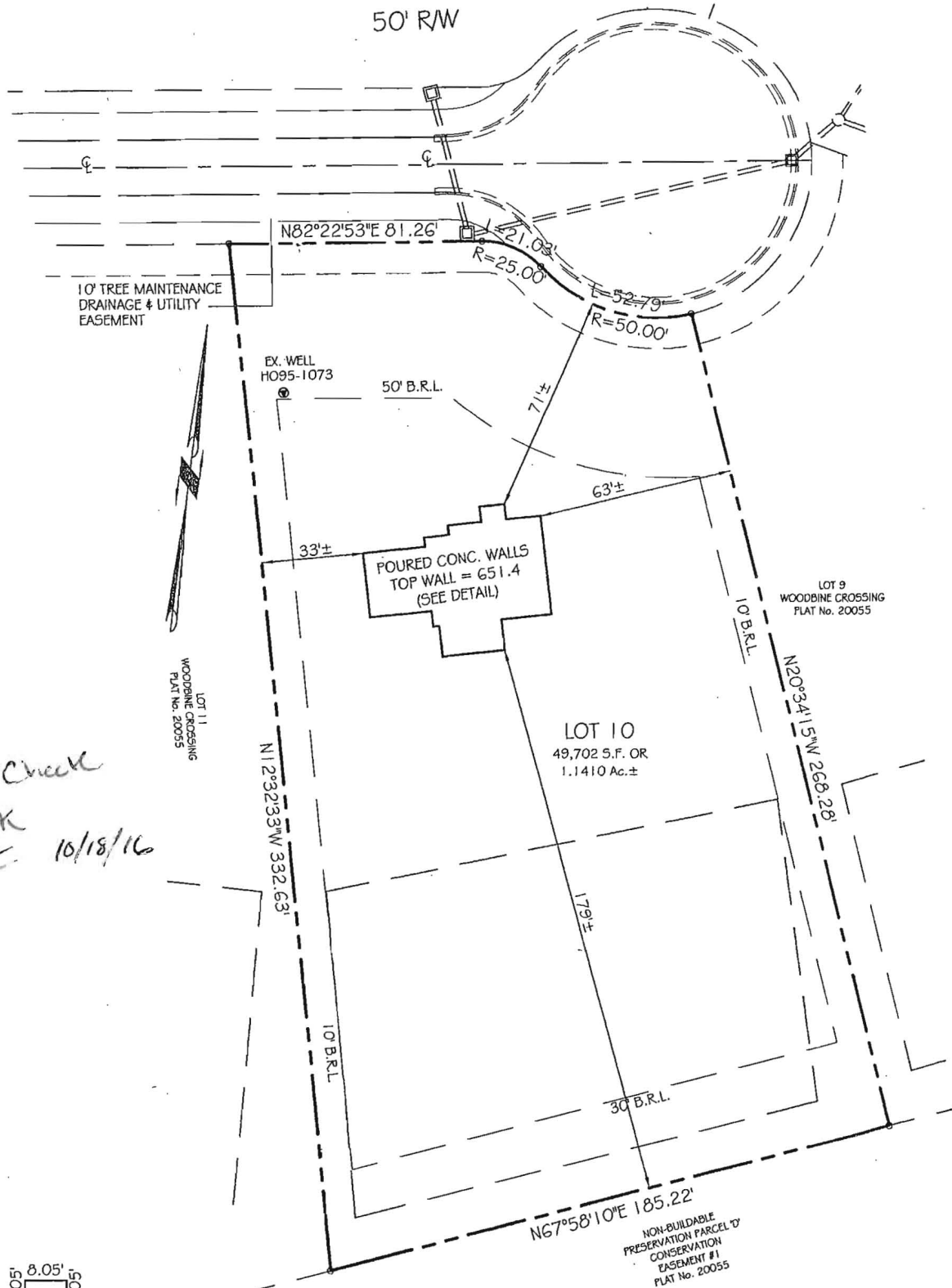
Michael J. Quinn 6/18/14
Howard County Health Department

[Signature] 6/9/14
Owner Date
LDC, Inc Bruce Lee

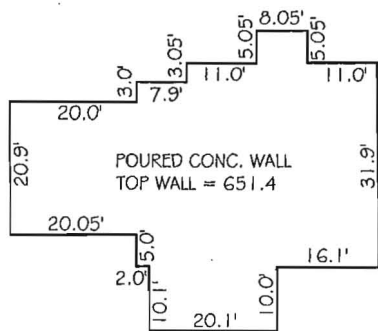
LP - Recording Fee (No Taxes)
20.00
Grantor/Grantee Name:
Howard County
Reference/Control #: 39
LP - Surcharge 40.00
SubTotal: 60.00
Total: 90.00
06/18/2014 08:53
#2931914 C00503 - CC13-NH
Howard Co
Columbia/C005 02.02 -
Register 02

WOODBINE CROSSING ROAD

50' R/W



Wall Check
OK
RAE 10/18/16



HOUSE DETAIL
SCALE: 1" = 30'

NOTES:

- 1) FOUNDATION AND FOOTINGS ARE IN PLACE AS SHOWN HEREON.
- 2) BUILDING TIES ARE ±0.5' UNLESS OTHERWISE NOTED.
- 3) TOP OF WALL = 651.4
- 4) SEPTIC AREA SHOWN IS TAKEN FROM THE REVISED PERC CERT PLAN.

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. 20266, EXPIRATION DATE JULY 26, 2015, IN ACCORDANCE WITH COMAR 09.58.06.02.

Thomas L. Frazier
 For VanMar Associates, Inc.
 Thomas L. Frazier, Surveyor
 Date 9/21/16

WALL CHECK DRAWING LOT 10 WOODBINE CROSSING

PLAT No. 20055
 732 WOODBINE CROSSING ROAD
 FOURTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' SEPTEMBER, 2015

I CERTIFY THIS PLAT TO BE CORRECT. IT IS THE RESULT OF AN ACTUAL FIELD SURVEY, BASED ON DATA FOUND AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND, AS REFERENCED HEREON.

REFERENCE	JOB NO.
PLAT NO. 20055	B4-5416



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 Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771
 (301) 829-2890 (301) 831-5015 (410) 549-2751
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Ron Thompson

From: Oswald, Hank <hoswald@howardcountymd.gov>
Sent: Tuesday, August 09, 2016 2:41 PM
To: Ron Thompson
Subject: BAT Plan_732 Woodbine Crossing Road_Lot 10
Attachments: Sewage spec sheet.pdf

Hi Ron:

The BAT Plan has been reviewed with the following comments:

- 1.) The application rate is 0.6. Revise calculations. (see attachment)
- 2.) Add third replacement system to SDA by utilizing upper area. Adjust tank location as necessary. (Per supervisors instructions, all new construction BAT plans must show 3 systems)

Should you have any questions, please don't hesitate to ask.

Hank

Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
410.313.2648 (Fax)

LETTER OF TRANSMITTAL

AGENCY
 CLIENT
 FILE
 BILLING
 CORESPONDANCE
 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:

Mr. Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
8930 Stanford Blvd.
Columbia, Maryland 21045

DATE: August 12, 2016

PROJECT: Woodbine Crossing, Lot 10

VanMar # B45416

ENCLOSED:

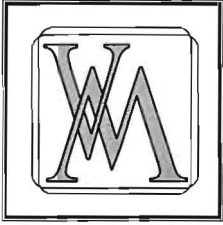
COPIES	DATE	DESCRIPTION
1	8/12/2016	Cover letter to Mr. Hank Oswald. Lot 10 site Plan For BAT Installation Woodbine Crossing, Lot 10
3	8/12/2016	Plot Plan site Plan for BAT Technology, Lot 10 Woodbine Crossing Plat No. 20055

REMARKS: submitted for your approval

COPIES TO (ADDRESS): Catonsville Builders, Inc., 11175 Stratfield Court, Marriottsville, Maryland 21104

SUBMITTED BY: mag-M

G:eng.B45416.BAT plan sub. H.D.8.12.2016



**VANMAR
ASSOCIATES, INC.**

Engineers • Surveyors • Planners

310 South Main Street, P.O. Box 328, Mount Airy, Maryland 21771

(301) 829-2890
(301) 695-0600

(301) 831-5015

(410) 549-2751
Fax (301) 831-5603

August 12, 2016

Mr. Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
8930 Stanford Blvd.
Columbia, MD 21045

RE: Lot 10 Site Plan for BAT Installation
Woodbine Crossing Subdivision

The following is a response to the August 9 email comments.

1. *The application rate is 0.6. Revise calculations.*

Response 1: The computations have been revised with the 0.6 application rate.

2. *Add third replacement system to SDA by utilizing upper area. Adjust tank location as necessary.*

Response 2: Initial, 1st & 2nd replacement systems are now shown.

Thank you,
VANMAR ASSOCIATES


Ronald E. Thompson, P.E.

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, August 09, 2016 2:39 PM
To: ron@vanmar.com
Subject: BAT Plan_732 Woodbine Crossing Road_Lot 10

Hi Ron:

The BAT Plan has been reviewed with the following comments:

- 1.) The application rate is 0.6. Revise calculations. (see attachment)
- 2.) Add third replacement system to SDA by utilizing upper area. Adjust tank location as necessary. (Per supervisors instructions, all new construction BAT plans must show 3 systems)

Should you have any questions, please don't hesitate to ask.

Hank

Hank Oswald, L.E.H.S.
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
410.313.2648 (Fax)

Oswald, Hank

From: Oswald, Hank
Sent: Monday, August 22, 2016 2:54 PM
To: ron@vanmar.com
Subject: FW: BAT Plan_732 Woodbine Crossing Road_Lot 10
Attachments: Sewage spec sheet.pdf

Hi Ron:

The initial and 1st replacement system cannot utilize sidewall credit (please see sewage disposal spec sheet). The 3rd system can only utilize 0.625 of sidewall credit. I should point out that the SDA is within 25 feet of the drainage ditch which doesn't meet the setback requirements. We were willing to allow it since the trenches were 40 feet away but this will change with the new calculations. The perc cert may need revising to fit the systems.

Should you have any questions, please don't hesitate to ask.

Hank

From: Oswald, Hank
Sent: Tuesday, August 09, 2016 2:41 PM
To: ron@vanmar.com
Subject: BAT Plan_732 Woodbine Crossing Road_Lot 10

Hi Ron:

The BAT Plan has been reviewed with the following comments:

- 1.) The application rate is 0.6. Revise calculations. (see attachment)
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Hank Oswald, L.E.H.S.
Howard County Health Department
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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:**
- Soil Preparation
 - Temporary Stabilization
 - Soil preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment such as harrows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth and left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Soil tests are required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Available salts less than 500 parts per million (ppm).
 - 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 topsoils will be planted, then a sandy soil (less than 30 percent silt plus clay) will be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions. Topsoil shall be applied to a depth of 3 to 5 inches. B-13.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Max soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake soil areas to smooth the surface to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.
 - Permanent Stabilization
 - Soil preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment such as harrows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth and left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
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 - Soil pH between 6.0 and 7.0.
 - Available salts less than 500 parts per million (ppm).
 - 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 topsoils will be planted, then a sandy soil (less than 30 percent silt plus clay) will be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions. Topsoil shall be applied to a depth of 3 to 5 inches. B-13.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Max soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake soil areas to smooth the surface to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

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.

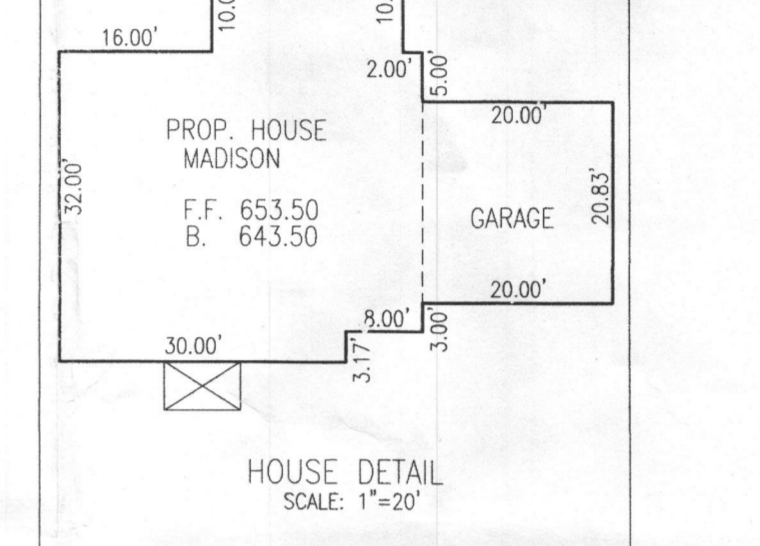
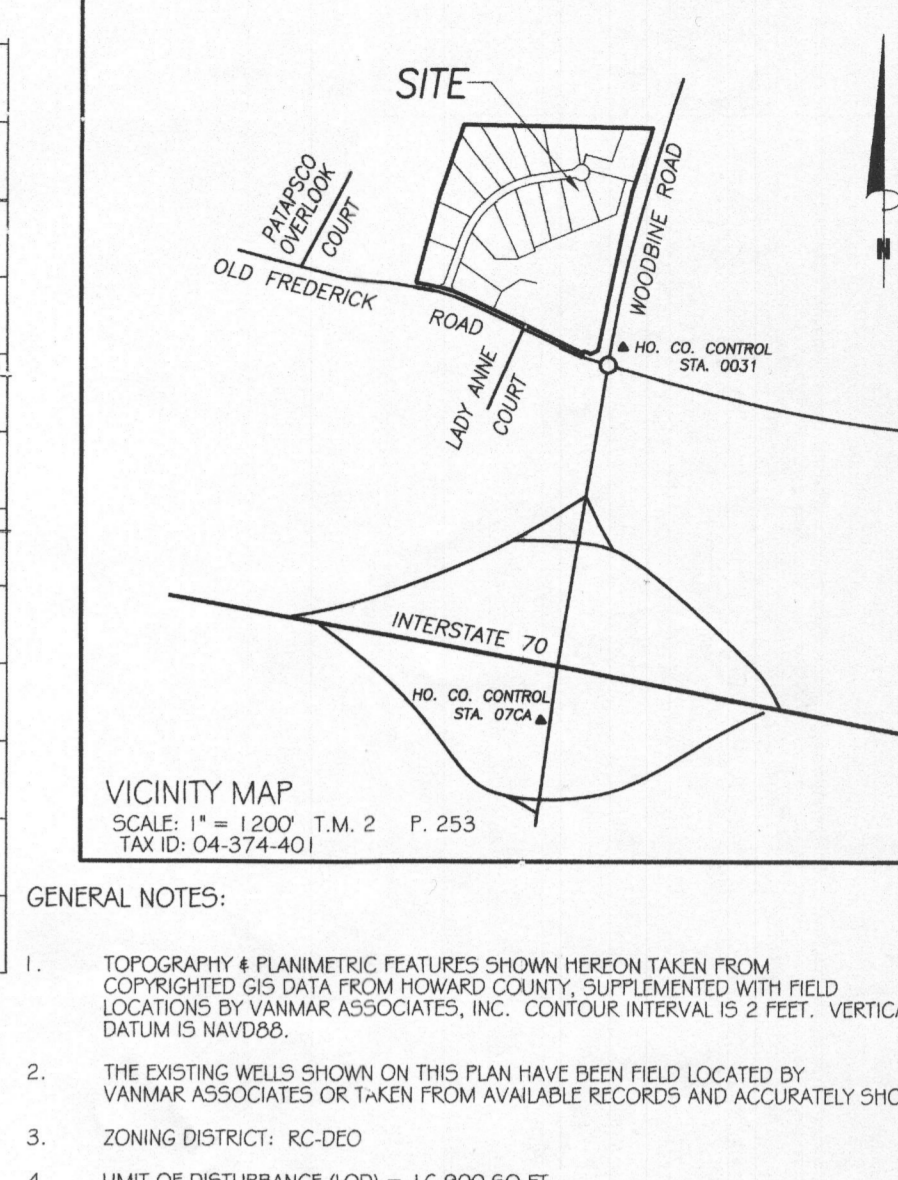
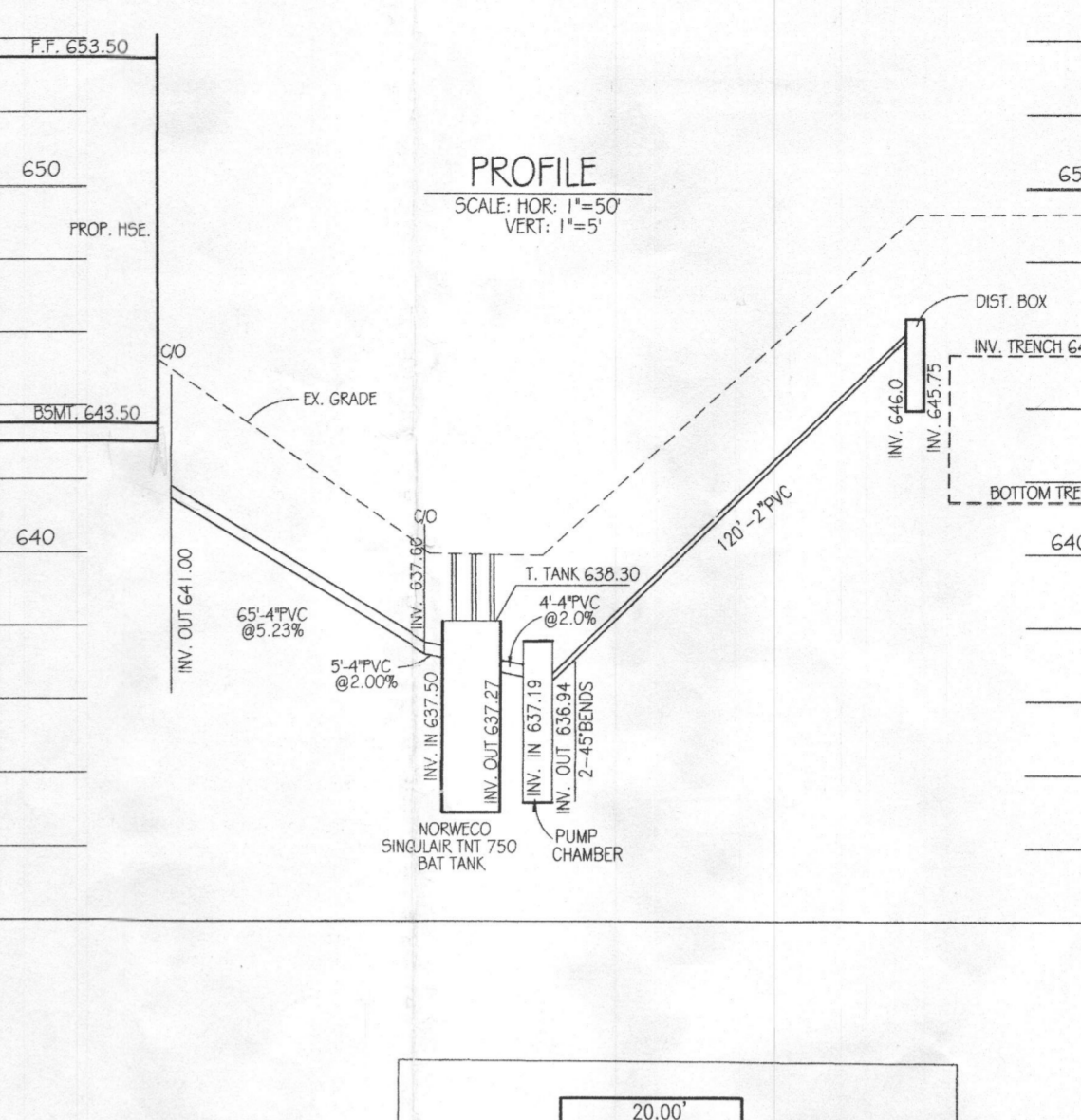
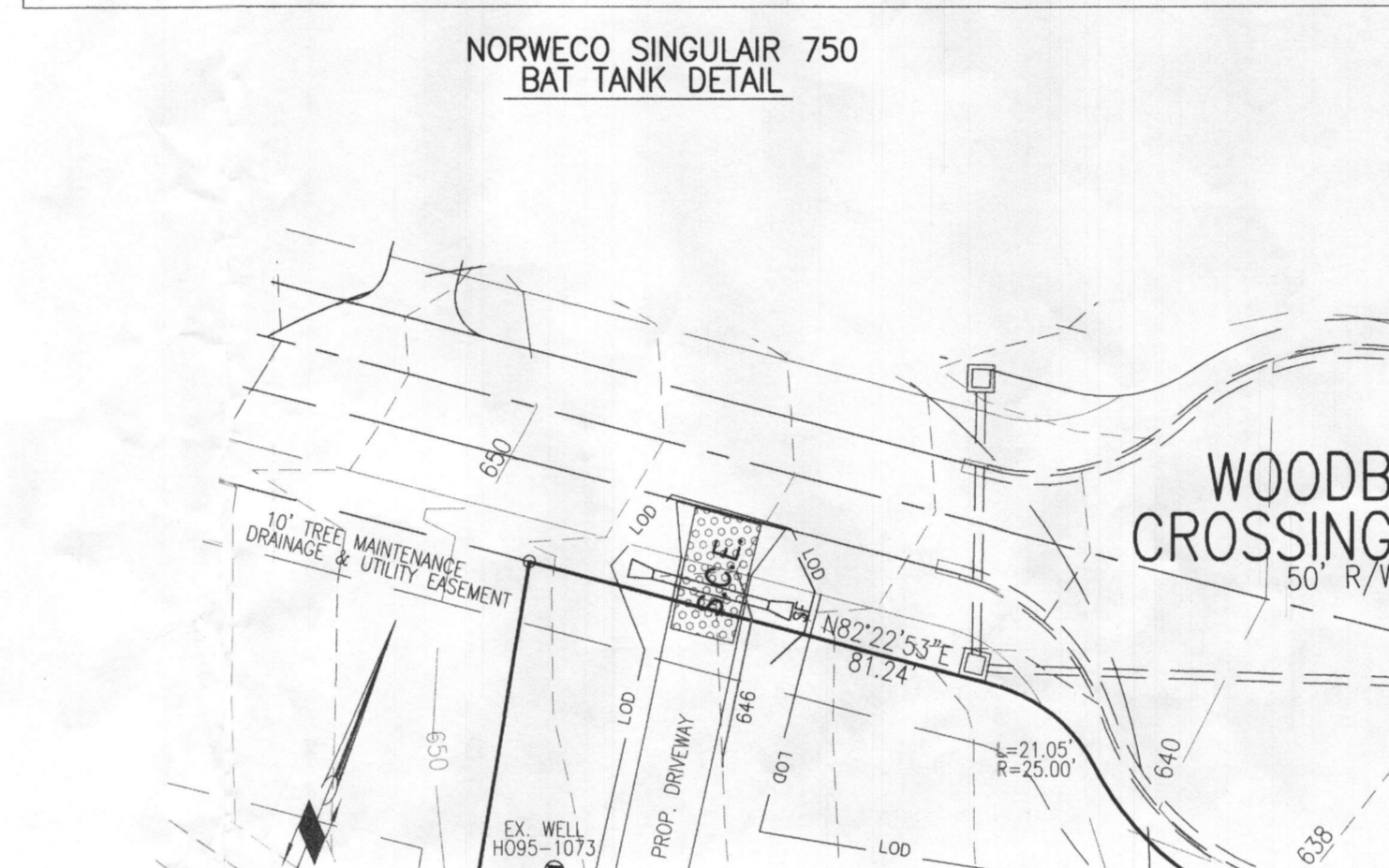
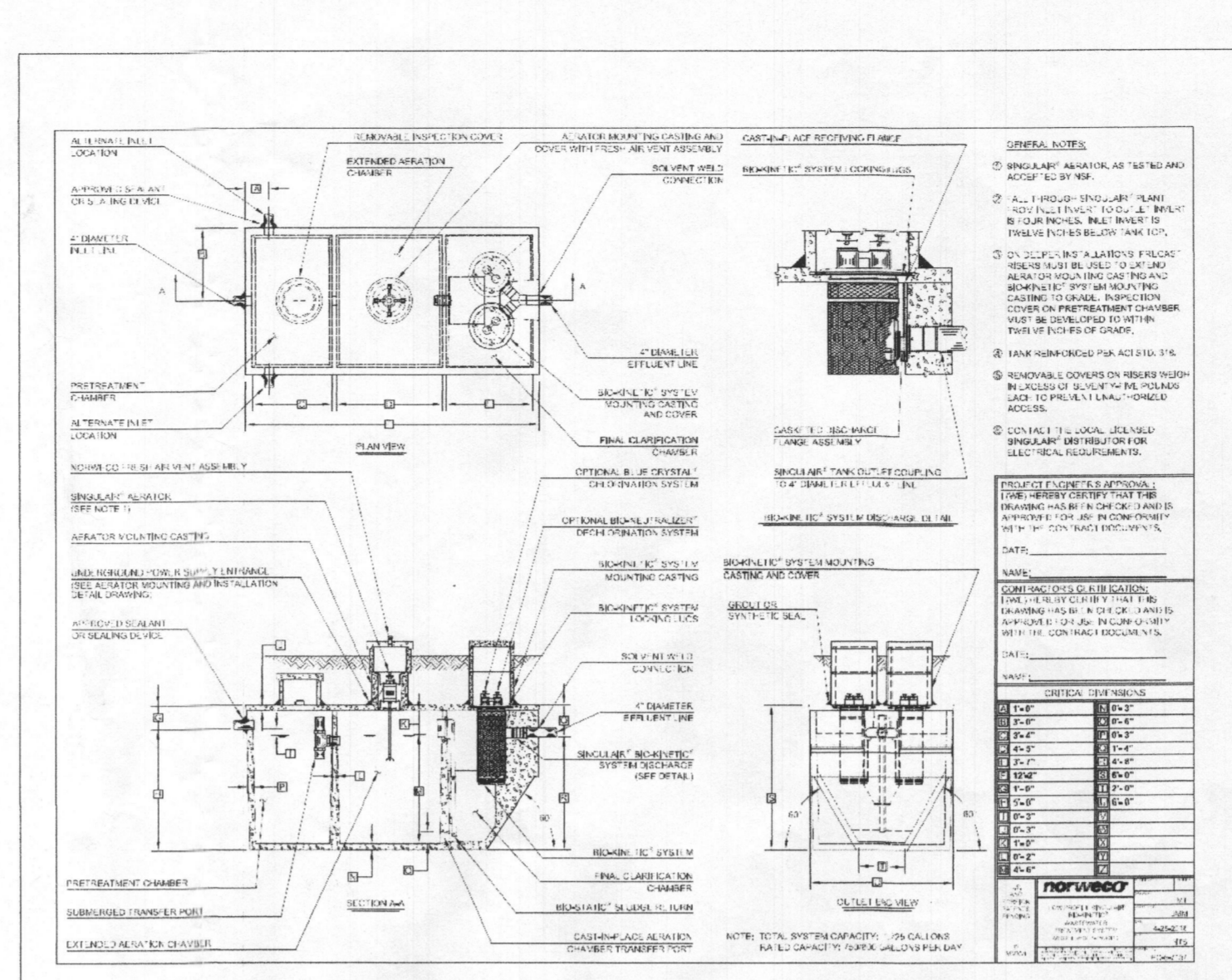
Conditions Where Practice Applies:
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

- Criteria:**
- Seeding
 - Specifications
 - All seed must meet the requirements of the Maryland Seed List. 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-4.4 regarding the quality of seed. Seed lots must be available upon request to the inspector to verify type of seed and seeding rate.
 - 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.
 - Inoculants that are included for leguminous species in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must be kept in a cool, dark, dry place and used within the recommended time period. Inoculants must be kept in a cool, dark, dry place and used within the recommended time period. Inoculants must be kept in a cool, dark, dry place and used within the recommended time period.
 - Application
 - Soil tests are required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Available salts less than 500 parts per million (ppm).
 - 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 topsoils will be planted, then a sandy soil (less than 30 percent silt plus clay) will be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions. Topsoil shall be applied to a depth of 3 to 5 inches. B-13.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Max soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake soil areas to smooth the surface to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-315-1855 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:
 - Prior to the start of earth disturbance.
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
 - Prior to the start of another phase of construction or opening of another grading unit.
 - 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.
- 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 SEDIMENTATION, and revisions thereto.
- 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.
- 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 SEDIMENTATION FOR TOPSOIL (Sec. B-4-2), permanent seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization (Sec. B-4-8) in excess of 20 ft. must be silted with stable fill. All concentrated flow, steep slopes, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- 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.
- Site Analysis

Total Area of Site	1,141.0 Acres.
Area Disturbed	0.39 Acres.
Area to be seeded or paved	0.11 Acres.
Area to be vegetatively stabilized	0.28 Acres.
Total Cut	- Cu. Yds.
Total Fill	- Cu. Yds.
Off-site waste/borrow area location	N/A.
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 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 event 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)
- Trenches for the construction of utilities are 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.
- 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 last HSCD-approved field changes.
- Disturbance shall not occur outside the LOD. A project is to be sequenced so that grading activities begin on one grading unit (maximum average of 20 ac. per grading unit at a time. Work may proceed on 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.
 - Wash water from any equipment, vehicles, wheelbarrows, and other sources must be treated in a sediment basin or other approved waste structure.
 - Top soil shall be stockpiled and preserved on-site for redistribution into final grade. This practice shall follow the following:
 - Wood cellulose fiber used as mulch with water at a maximum of 25' minimum elevation, with lower ends curled up by 2' in elevation.
 - Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - * Use I and II March 1 - June 15
 - * Use III and IIP October 1 - April 30
 - * Use IV March 1 - May 31
- 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.



- GENERAL NOTES:**
- TOPOGRAPHY & PLANNING FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD83.
 - THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
 - ZONING DISTRICT: RC-200
 - LIMIT OF DISTURBANCE (LOD) = 16,900 SQ.FT.
 - THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.
 - STORM WATER MANAGEMENT FOR THIS LOT IS PROVIDED BY EXISTING WOODBINE CROSSING STORM WATER MANAGEMENT FACILITIES FOR AND CONSTRUCTED BY THE DEVELOPER UNDER PLAN P-07-103.
 - DRIVEWAY CULVERT DESIGNED BY DEVELOPER UNDER PLAN P-07-103.

- SEPTIC SYSTEM TRENCH DESIGN**
- INITIAL NUMBER OF BEDROOMS = 6
- APPLICATION RATE = 0.8 GPD / sq.ft.
- DESIGN FLOW: 150 GPD X 6 BEDROOMS = 900 GPD
- 900 GPD / 0.8 GPD/sq.ft. = 1125 sq.ft.
- 1125 sq.ft. / 3 ft. WIDE TRENCH = 375 LF TRENCH
- 375 LF TRENCH X 0.625 REDUCTION CREDIT = 234 LF TRENCH
- TRENCH 1 (T1) EX. GRD=649.5 - INV. TRENCH=645.5 - B. TRENCH=641.5
- TRENCH 2 (T2) EX. GRD=640.5 - INV. TRENCH=644.5 - B. TRENCH=640.5
- TRENCH 2 (T2) EX. GRD=647.5 - INV. TRENCH=643.5 - B. TRENCH=639.5

- 1st REPLACEMENT**
- APPLICATION RATE = 0.6 GPD / sq.ft.
- DESIGN FLOW: 150 GPD X 6 BEDROOMS = 900 GPD
- 900 GPD / 0.6 GPD/sq.ft. = 1500 sq.ft.
- 1500 sq.ft. / 3 ft. WIDE TRENCH = 500 LF TRENCH
- 500 LF TRENCH X 0.625 REDUCTION CREDIT = 313 LF TRENCH

- 2nd REPLACEMENT**
- APPLICATION RATE = 0.6 GPD / sq.ft.
- DESIGN FLOW: 150 GPD X 6 BEDROOMS = 900 GPD
- 900 GPD / 0.6 GPD/sq.ft. = 1500 sq.ft.
- 1500 sq.ft. / 3 ft. WIDE TRENCH = 500 LF TRENCH
- 500 LF TRENCH X 0.625 REDUCTION CREDIT = 313 LF TRENCH

- BAT SITE PLAN 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.
 - MAXIMUM COVER OVER THE BAT PER MANUFACTURER'S SPECIFICATION IS 3 FEET.
 - THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON MANUFACTURER'S SPECIFICATIONS.
 - THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 - THE BAT SHALL BE OPERATED 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 ACCORDING 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.
 - REBURY DRIVEWAY.
 - 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 INSTALLATION.

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: *Handwritten Signature* DATE: 8/25/16

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."

Engineer: *Handwritten Signature* DATE: 8/25/2016

OWNER: LDG INC. 11175 STRATFIELD CT. MARRIOTTSTOWN, MD 21104 410-442-2211

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

HOWARD SOIL CONSERVATION DISTRICT DATE

TEMPORARY STABILIZATION SPECIFICATIONS TABLE

Hardness Zone (from Figure B.3): BR

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	MAY 1 - MAY 15	0.5 INCHES	436 lb/ac	2 tons/ac	
Foxtail Millet	30	AUG. 1 - OCT. 15	0.5 INCHES	10 lb/1000 sf	90 lb/1000 sf	

PERMANENT STABILIZATION SPECIFICATIONS TABLE

Hardness Zone (from Figure B.3): G3

Seed Mixture (from Table B.1):

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	Lime Rate
Kentucky Bluegrass	20	MAY 1 - MAY 15	1/4"-1/2"	45 pounds per acre	90 lb/ac	90 lb/ac	2 tons/ac	
		AUG. 1 - OCT. 15	1/4"-1/2"	10 lb/1000 sf	10 lb/1000 sf	90 lb/1000 sf	90 lb/1000 sf	

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

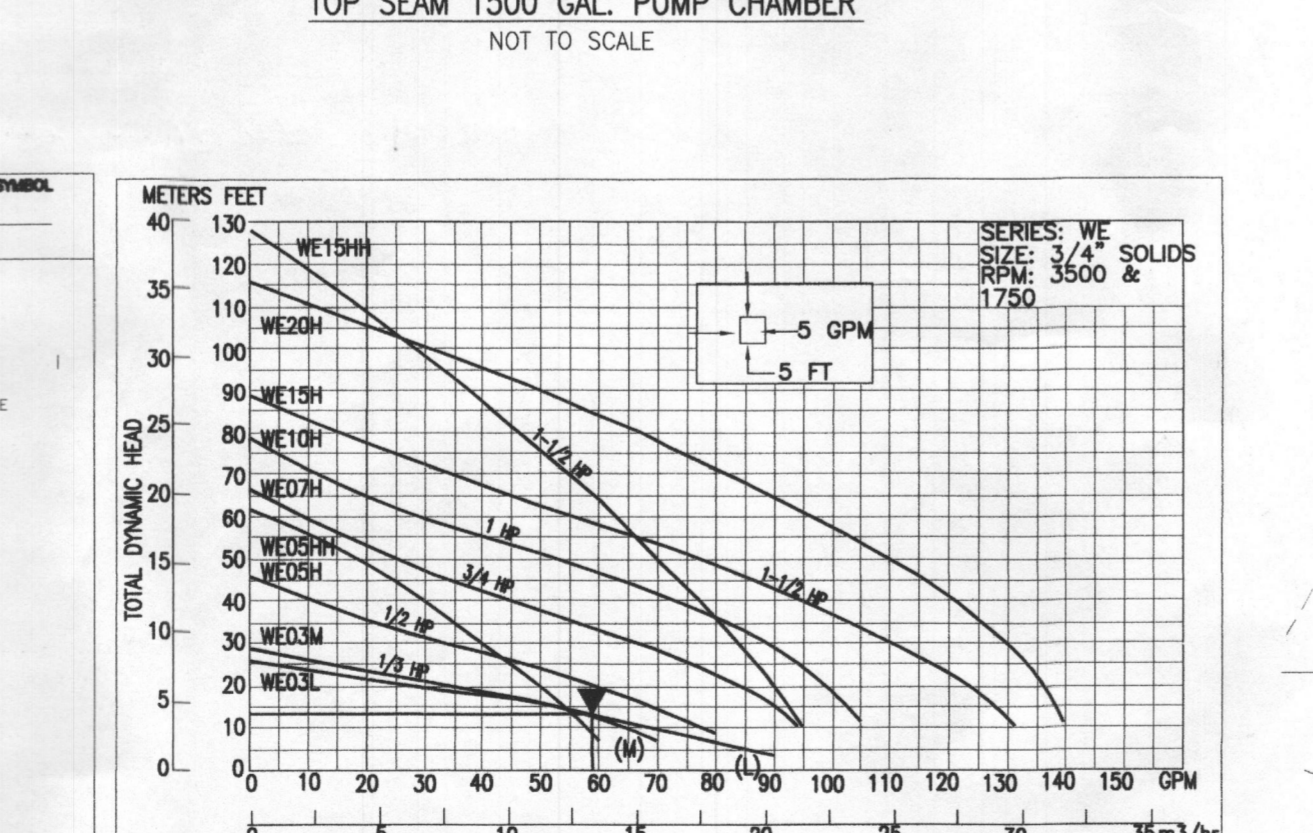
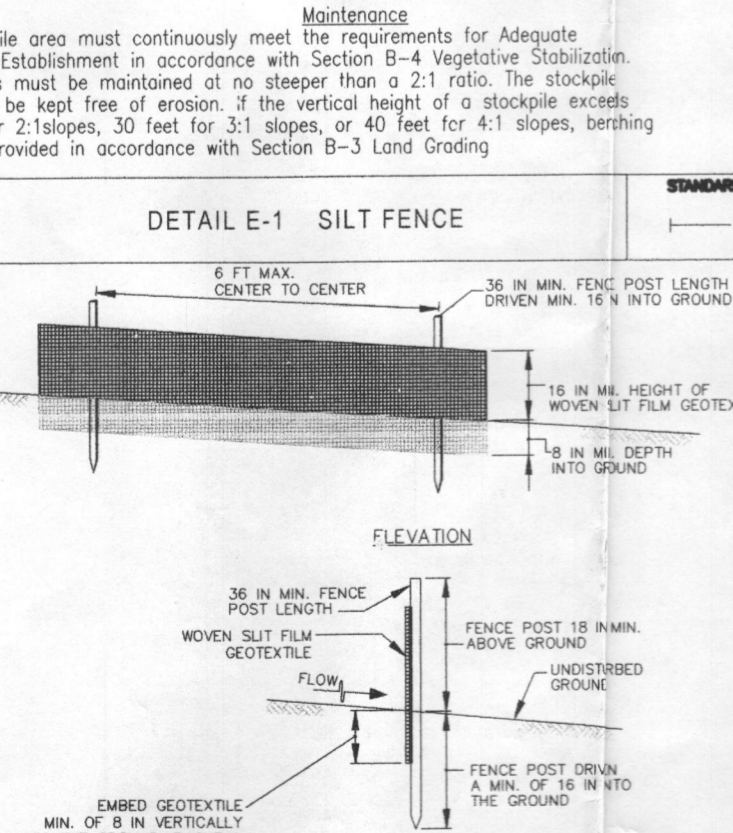
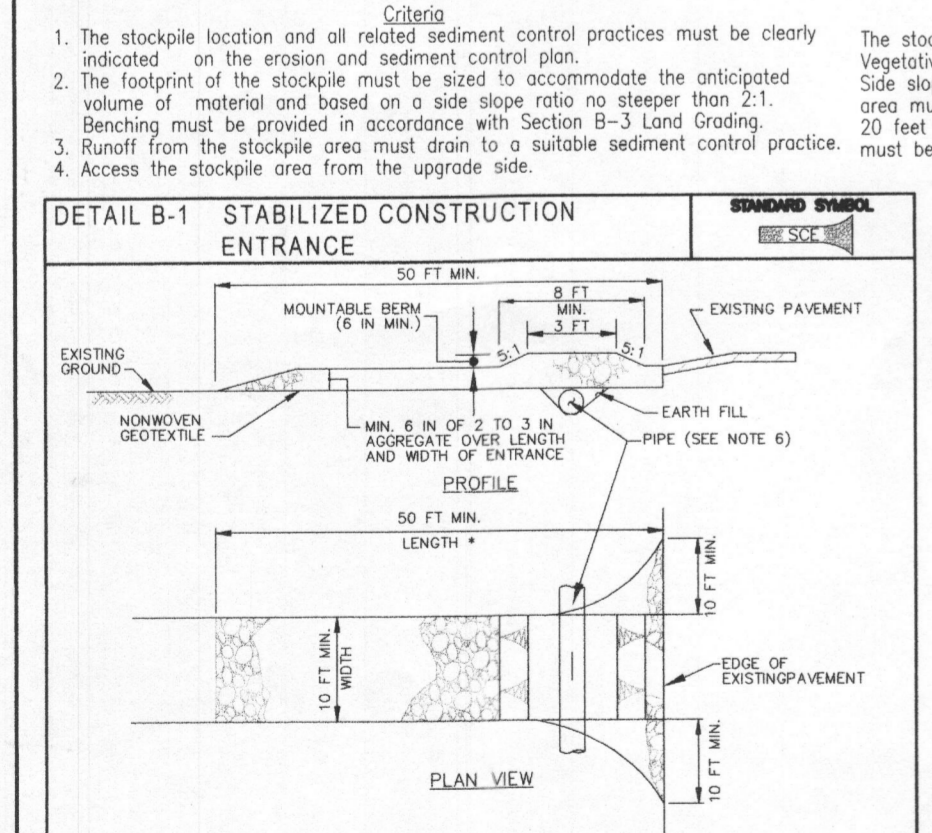
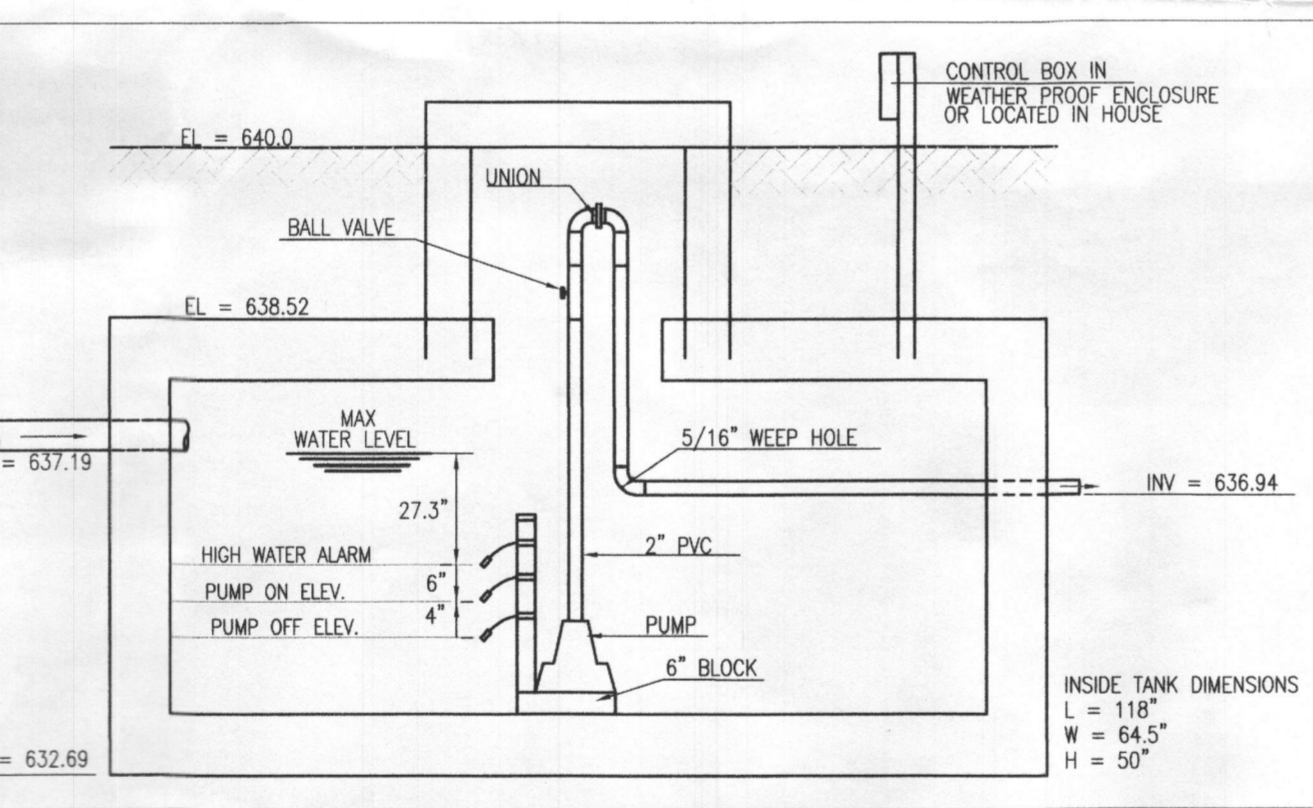
Definition:
A mound or pile of soil protected by appropriately designed erosion and sediment control practices.

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:

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be designed 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-4-3 Land Grading.
- Runoff from the stockpile must be directed to a suitable sediment control practice.
- Access to the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of diversion devices such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge. Stockpiles must be stabilized in accordance with the 1/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- 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 Requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained no steeper than 2:1 vertical to horizontal area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, berthing must be provided in accordance with Section B-3 Land Grading.



TOTAL DESIGN HEAD (TDH) COMPUTATION

STATIC HEAD (646.0-633.27)	12.73
FRICTION HEAD	3.49
PIPE 2.84x(123'+58.3')/100	
FITTINGS: 4-45', 4x6" = 24	
DISCONNECT: 1-30', 3x10" = 3	
BALL VALVE: 1-3X1" = 1.3	
TOTAL DESIGN HEAD (TDH)	13.47

LPS PUMP CHART

1500 GAL-1 CHAMBER TANK

GOULDS WE-03L

MAX. PUMP FLOW RATE = 58 GPM

PIPE = 2" PLASTIC

PIPE LENGTH = 120 FEET

ELEV. DIFF. = 12.73 FEET

TDH = 13.47 FEET

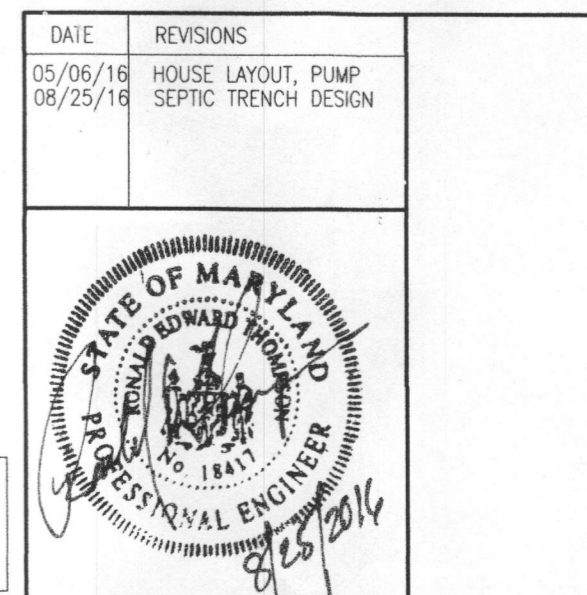
TEMPORARY STOCKPILE NOTE

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 ON SUITABLE AREA OF THE SITE AND FOLLOW TEMPORARY STABILIZATION NOTES.

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. 18417, Expiration Date: 9-18-17.

8/25/2016



PLOT PLAN

SITE PLAN FOR BAT TECHNOLOGY LOT 10

WOODBINE CROSSING PLAT No. 20055

732 WOODBINE CROSSING ROAD FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: 1" = 30' JULY, 2016

VANMAR ASSOCIATES, INC. Engineers Surveyors Planners 310 South Main Street Annapolis, Maryland 21771 (301) 829-2890 (301) 831-5015 (410) 549-2751 Fax (301) 831-5603 ©Copyright, Latest Date Shown

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:

- Soil Preparation
 - Temporary Stabilization
 - Seeded 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 more than 50 feet in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plan.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soilable salts less than 500 parts per million (ppm).
 - 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. Any nitrogen, if lowgrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be seeded and even grades as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches. B.1.3
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - 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 reseed 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 seeded 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 3 to 5 inches of soil loose and friable. Seeded loosening should be unnecessary on newly disturbed areas.

- 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.
- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth for a topsoil soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoil is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or cannot contain sufficient nutrients and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Topsoil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, 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 1 1/2 inches in diameter.
 - 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.
 - 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.

- Erosion and sediment control practices must be maintained when applying topsoil.
- 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.
- Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the soil is excessively wet or in a condition that may otherwise be detrimental to proper grading B.1.4 and seeded preparation.
- Soil Amendments (Fertilizer and Lime Specifications)
 - Soil amendments (Fertilizer and Lime Specifications)
 - Soil amendments (Fertilizer and Lime Specifications)

- 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 sampling taken for engineering purposes by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- 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.
- Lime materials must be ground limestone (hydrated or burnt lime) may be substituted except when hydroxydizing which contains at least 50 percent total calcium (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.
- 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.
- 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.

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:

- Seeding
 - Specifications
 - 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 lots must be available upon request to the inspector to verify the type and seeding rate.
 - Mix alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding rate must be applied when the ground thaws.
 - Inoculant: 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 use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Soil and 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 phytotoxic materials.
 - Application:
 - Dry Seeding: This includes use of conventional dry broadcast spreaders.
 - Hydroseeding: This includes use of the hoses presented on Temporary Seeding Table B.1. Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Incorporate seed into the subsoil at the rates presented on Temporary Seeding Table B.1. Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply soil and mulch in the same direction. Roll the seeded area with a weighted roller to provide good seed to soil contact. B.1.6
 - Drill or Catpaw Seeding: Mechanized seeders that apply and cover seed with soil.
 - Catpaw seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeding must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - 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 (phosphorus), 200 pounds per acre; K2 O (potassium), 200 pounds per acre.
 - 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.
 - Soil to be used as mulch or hydrated lime when hydroseeding.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.

- Mulching
 - Mulch Materials (in order of preference)
 - 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 contain any weed seeds, stalks, decayed, or excessively green material.
 - Wood Cellulose Fiber Mulch (WCM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCM 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.
 - WCM including dye, must contain no germination or growth inhibiting factors.
 - WCM 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 that must be uniform and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - WCM 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.1.7
 - Application:
 - Apply mulch to all seeded areas immediately after seeding.
 - When straw mulch is used, spread it over all seeded areas of the rate of 2 tons per acre to a uniform 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.
 - Wood cellulose fiber mulch must be applied at a 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 dry mulch per 100 gallons of water.
 - Anchoring:
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 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water to a maximum of 50 pounds of dry mulch per 100 gallons of water.
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 - Soil and 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 phytotoxic materials.
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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:**
- Soil Preparation
 - Temporary Stabilization
 - Seeded 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 rippers running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Suitable soils less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 20 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loess/layers will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - 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.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Max soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Disk open areas to smooth the surface where site conditions like stones and branches, and rocky areas are found for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions like stones and branches are found for seed application. 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. Seeded loosening may be unnecessary on newly disturbed areas.
 - Topsoiling
 - 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. Topsoil spread from an existing site may be used provided it meets the standards 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.
 - Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil is not adequate to produce vegetative growth.
 - The soil material is so sticky that the rooting zone is not deep enough to support plants of the genus *Pinus* and other plant nutrients.
 - The original soil is to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - Areas having slopes steeper than 2:1 require special consideration and design.
 - Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand.
 - Other soils may be used if approved by the contractor or 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 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as *Bermuda grass*, *quack grass*, *crabgrass*, *weed grass*, *nut grass*, *poison ivy*, *hibiscus*, or others as specified.
 - 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.
 - Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - 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.
 - 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.4 and seeded preparation.
 - Soil Amendments (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact ratio 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 analysis.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Mature may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully bagged according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroxydizing) 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 88 to 100 percent will pass through a #20 mesh sieve.
 - 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.
 - 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.

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:**
- Seeding
 - Specifications
 - 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 and seeding rate.
 - Locusts that are not included for testing require seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Locusts 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 hydroxydizing. 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.
 - Soil 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 phytotoxic materials.
 - Application
 - Site Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed in Temporary Seeding Table B.1.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - 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.
 - 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 Do not use roller on slopes steeper than 3:1.
 - Drill or Catclaw Seeding: Mechanized seeders that apply and cover seed with soil.
 - Catclaw seeders are required to bury the seed in such a fashion as to provide at least 1/2" of soil covering. Seeded mixtures must be firm after starting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroxydizing: Apply seed uniformly with hydroxydizer (slurry includes seed and fertilizer).
 - 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 (phosphorus), 200 pounds per acre; K2 O (potassium), 200 pounds per acre.
 - Liner: Use only ground agricultural limestone (up to 5 tons per acre may be applied by hydroxydizing). Normally, not more than 2 tons are applied by hydroxydizing at any one time. Do not use burnt or hydrated lime when hydroxydizing.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroxydizing do not incorporate seed into the soil.
 - Mulch Materials (in order of preference)
 - 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, coated, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - 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.
 - WCFM, including dye, must contain no germination or growth-inhibiting factors.
 - 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 combine with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a batter-like ground cover, on application, having moisture absorption and porosity properties that must cover and hold grass seed in contact with the soil without inhibiting the growth of the seedlings.
 - WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - 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
 - Apply mulch to all seeded areas immediately after seeding.
 - 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.
 - 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 form a slurry with a maximum of 50 pounds per acre of water.
 - Anchoring
 - 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:
 - A linked row of fertilizer spreader 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.
 - Wood cellulose fiber may be used.
 - Use of a roller or other approved equipment 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 much, such as in valleys and on crests of banks. Use of asphalt emulsion is strictly prohibited.
 - Lightweight plastic netting may be applied 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.

TEMPORARY STABILIZATION SPECIFICATIONS TABLE

Hardness Zone (from Figure B.3): 6B

Seed Mixture (from Table B.1): 6B

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)	Lime Rate
40	ANNULAR RYEGRASS FURNAL MILLET	40	MAY 1 - MAY 15 AUG. 1 - OCT. 15 JUNE 1 - JULY 31	0.5 INCHES 0.5 INCHES	436 lb/acre (10 lb/1000 sq ft)	2 tons/acre (90 lb/1000 sq ft)

PERMANENT STABILIZATION SPECIFICATIONS TABLE

Hardness Zone (from Figure B.3): 6B

Seed Mixture (from Table B.1): 6B

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	N	P205	K2O	Lime Rate
20	ANNULAR RYEGRASS Bromeograss	20	MAY 1 - MAY 15 AUG. 1 - OCT. 15	1/4-1/2 in 1/4-1/2 in 1/4-1/2 in	45 pounds (10 lb/1000 sq ft)	90 lb/acre (26/1000 sq ft)	90 lb/acre (90 lb/1000 sq ft)	2 tons/acre (90 lb/1000 sq ft)

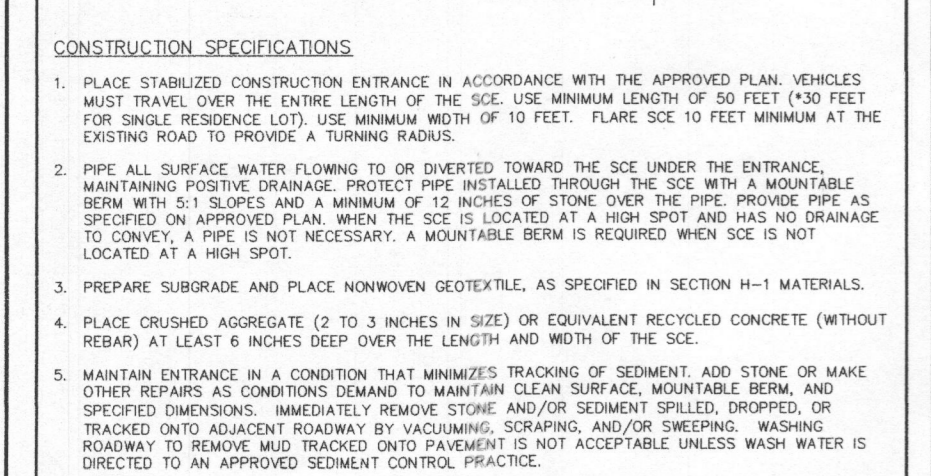
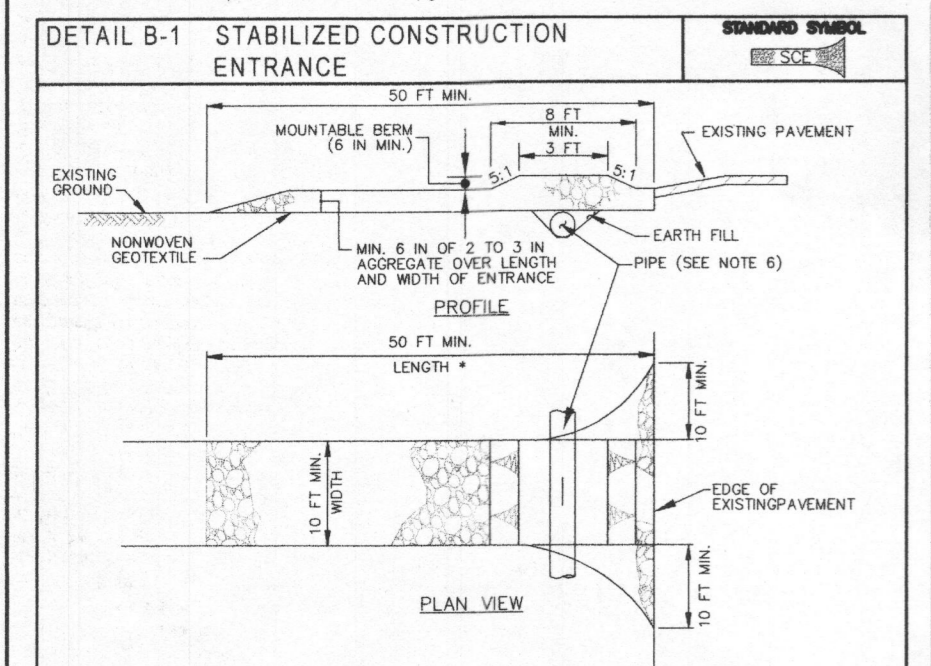
B-4-4 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition:
A mound or pile of soil protected by appropriate 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.

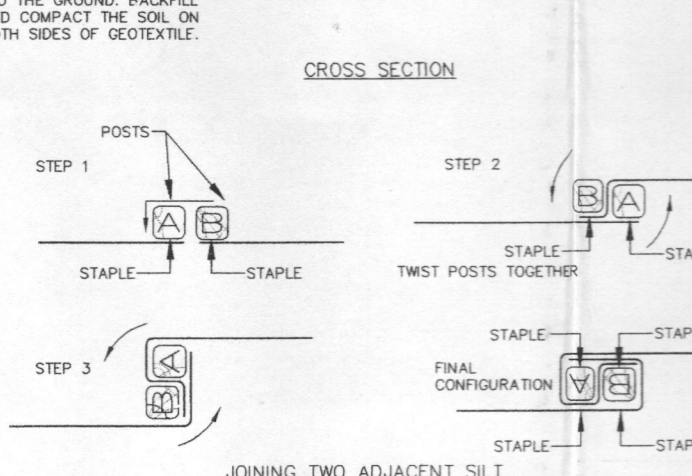
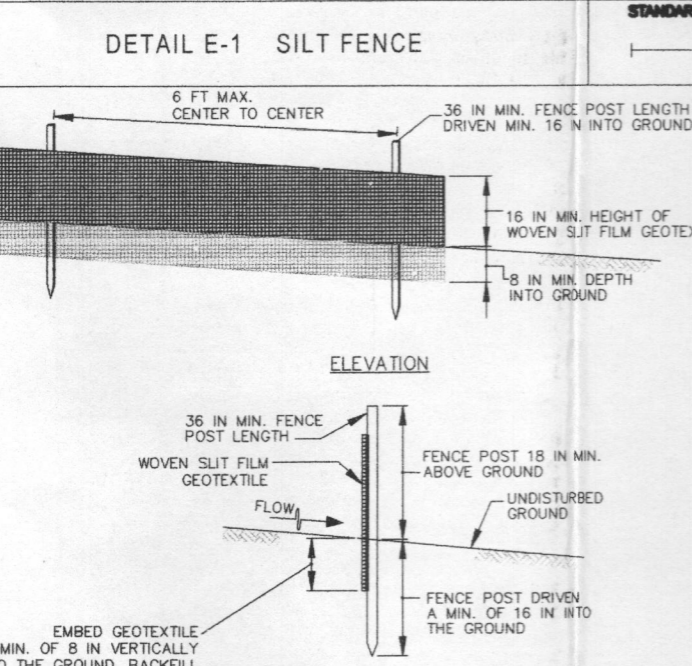
Conditions Where Practice Applies:
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

- Criteria:**
- The stockpile location and all related sediment control practices must be clearly indicated on the erosion plan.
 - 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.
 - Seeding must be provided in accordance with Section B-3 Land Grading.
 - Runoff from the stockpile area must drain to a suitable sediment control practice.
 - Access the stockpile area from the opposite side.
- 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 2:1 slopes, or 40 feet for 3:1 slopes, seeding must be provided in accordance with Section B-3 Land Grading.



CONSTRUCTION SPECIFICATIONS

- Place stabilized construction entrance in accordance with the approved plan. Vehicles must travel over the entire length of the site. Use minimum length of 50 feet (30 feet for single residence lots). Use minimum width of 10 feet. Place 3/4 inch MANKAM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO BE DIVERTED TOWARD THE SIDE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SIDE WITH A MOUNTAIN BERM WITH 50 POUNDS AND A MINIMUM OF 10 INCHES OF STONE OVER THE PIPE. PROTECT PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SIDE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTAIN BERM IS REQUIRED WHEN SIDE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CURBED 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 SIDE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAR DRIVEWAY. REMOVE BERM, AND/OR SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ON ADJACENT ROADWAY BY WASHING, SCRAPING, AND/OR OTHER MEANS. WASHING: TRACKING TO REMOVE AND TRACKS ON PAVEMENT ARE ACCEPTABLE UNLESS WASH WATER IS DROPPED ON AN APPROVED SEDIMENT CONTROL PRACTICE.



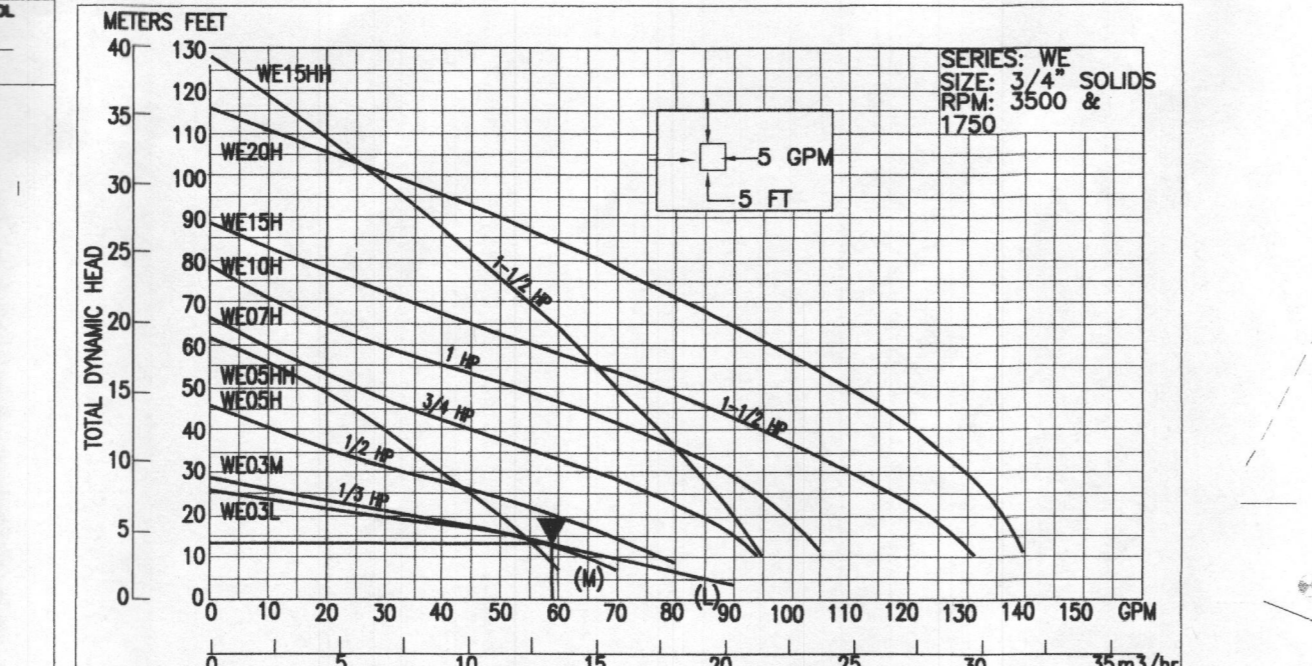
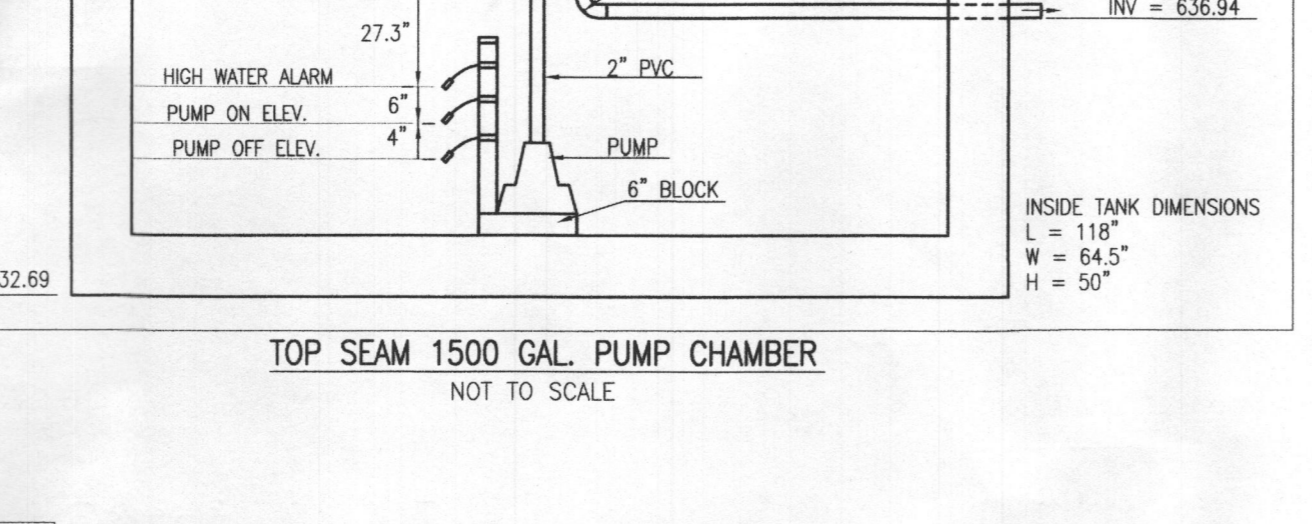
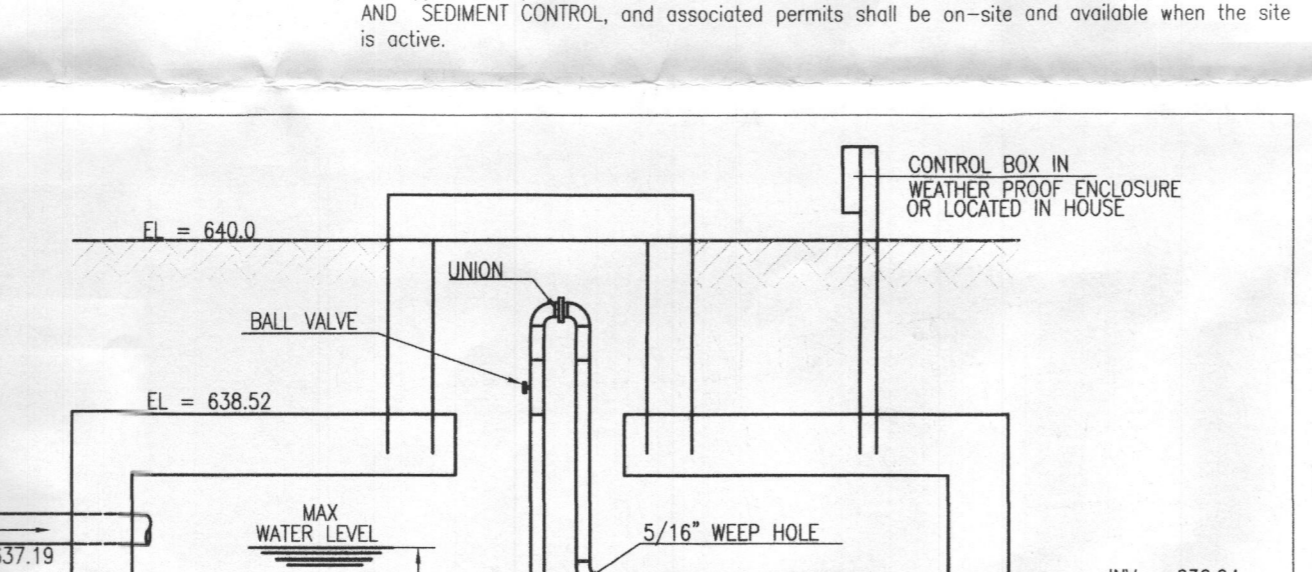
CONSTRUCTION SPECIFICATIONS

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HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A pre-construction meeting must be held with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future L.O.D. and protected area marked clearly in the field. A minimum of 48 hour notice to CID must be given a the following stages:
 - Prior to the start of earth disturbance.
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
 - Prior to the start of another phase of construction or opening of another grading unit.
 - 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.
- 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.
- 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.
- 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-4-4) in excess of 20 ft. must be finished with stable B.3 or site-specific seed, step slopes, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- All sediment control structures are to remain in place and are to be maintained in operative condition until permanent for their removal has been obtained from the CID.
- Site Analysis:

Total Area of Site	1,141.0 Acres.
Area Disturbed	0.39 Acres.
Area to be seeded or pined	0.11 Acres.
Area to be vegetatively stabilized	0.28 Acres.
Total Cut	- Cu. Yds.
Total Fill	- Cu. Yds.
Off-site waste/borrow area location	N/A.
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - 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 plant 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 required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDC)
 - Tranches for the construction of utilities is limited to three pipe lengths or that which can and should be back-filled and stabilized by the end of each workday, whichever is shorter.
 - 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.
 - Disturbance shall not occur under the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum exceed 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.
 - Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
 - Top soil shall be stockpiled and preserved on-site for redistribution onto final grade.
 - All Soil Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
 - Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - * Use I and II: March 1 - June 15
 - * Use III and IIP: October 1 - April 30
 - * Use IV: March 1 - May 31
- 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.



TOTAL DESIGN HEAD (TDH) COMPUTATION

STATIC HEAD (646.0-633.27)	12.73
FRICITION HEAD	3.49
PIPE 2.84x(123'+58.3')/100	
FITTINGS: 4-45' = 4x6 = 24	
DISCONNECT: = 3	
1-92' 3X10	
BALL VALVE: 1.3X1 = 1.3	
TOTAL DESIGN HEAD (TDH)	13.47

LPS PUMP CHART

1500 GAL-1 CHAMBER TANK

COULDS WE-03

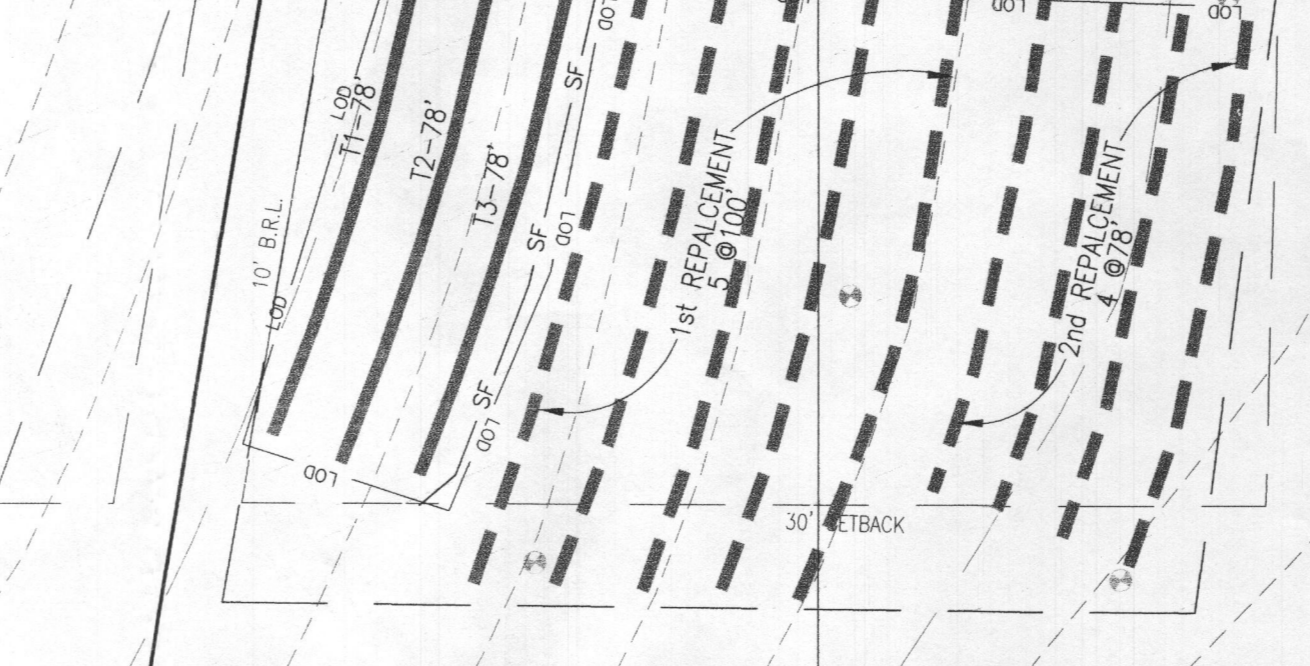
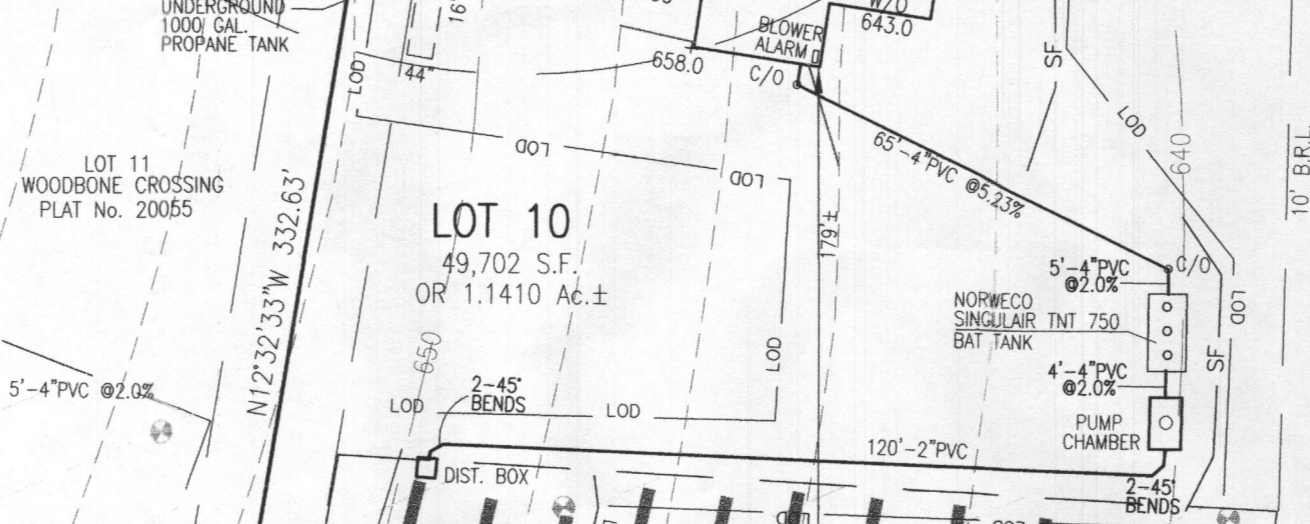
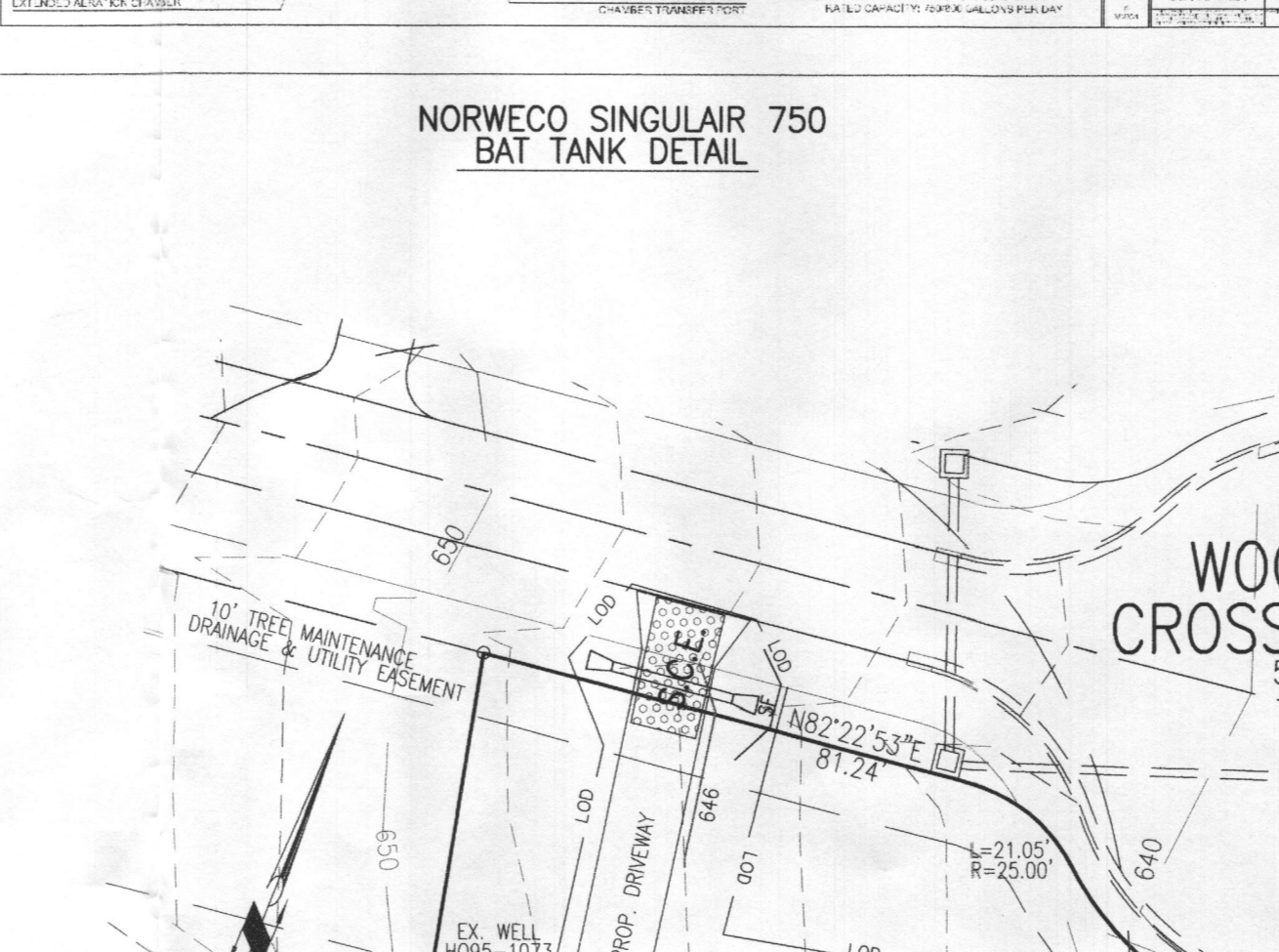
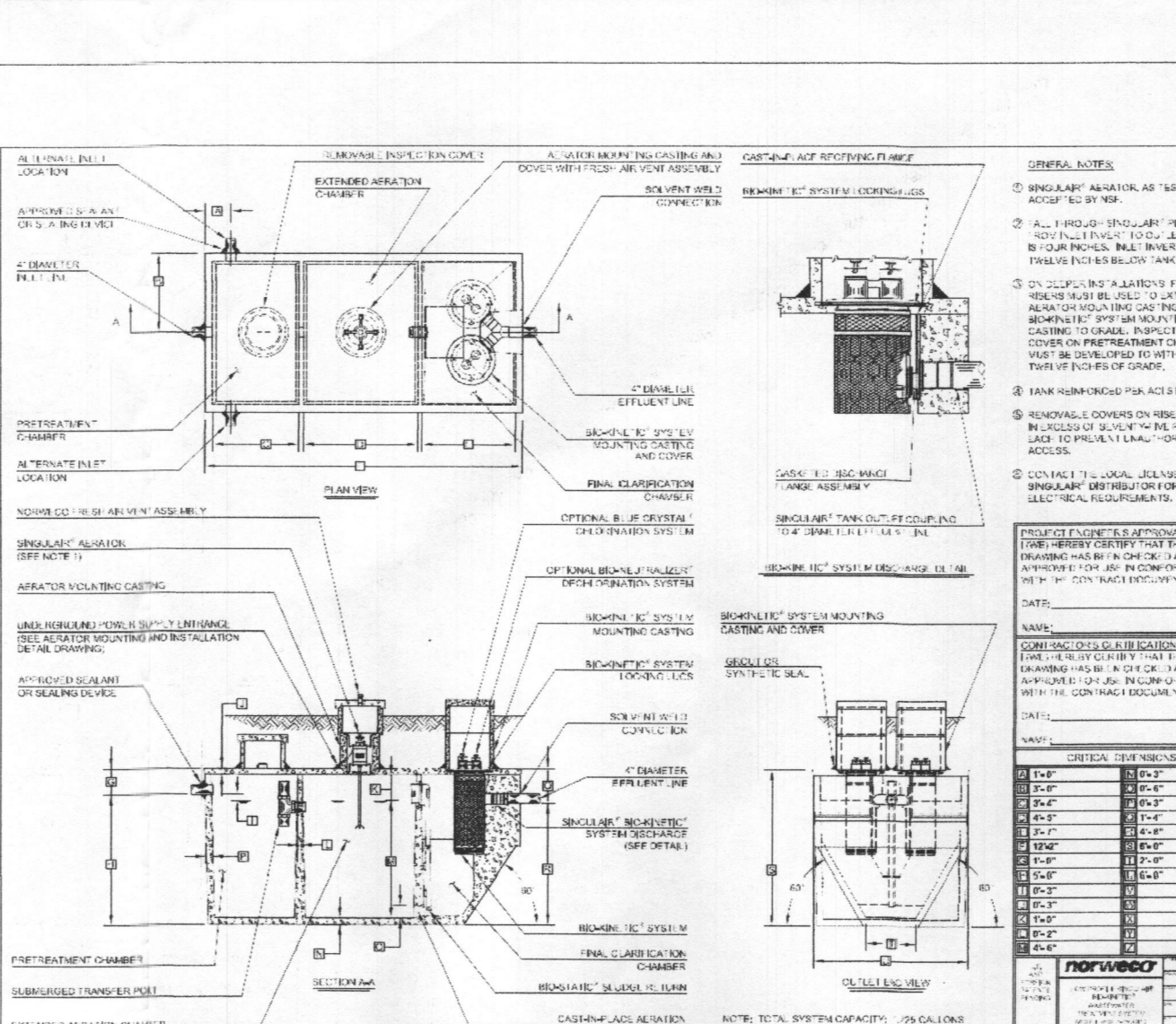
MAX. PUMP FLOW RATE = 58 GPM

PIPE = 2" PLASTIC

PIPE LENGTH = 120 FEET

ELEV. DIFF. = 12.73 FEET

TDH = 13.47 FEET

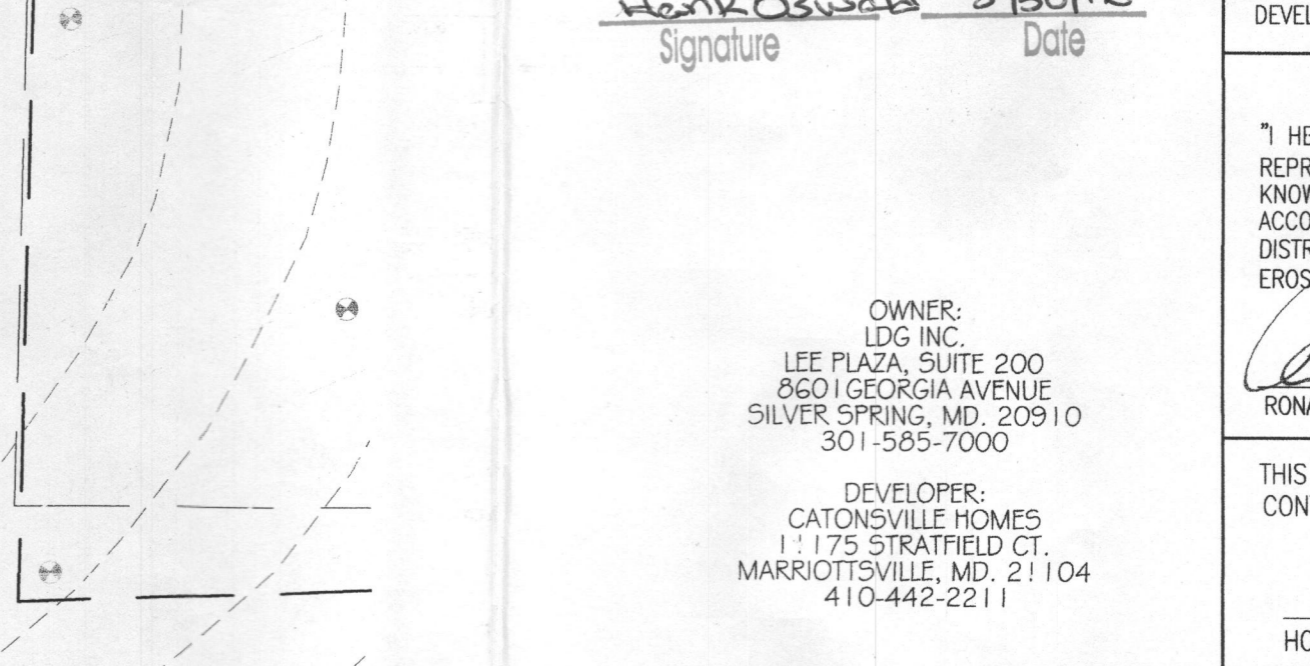
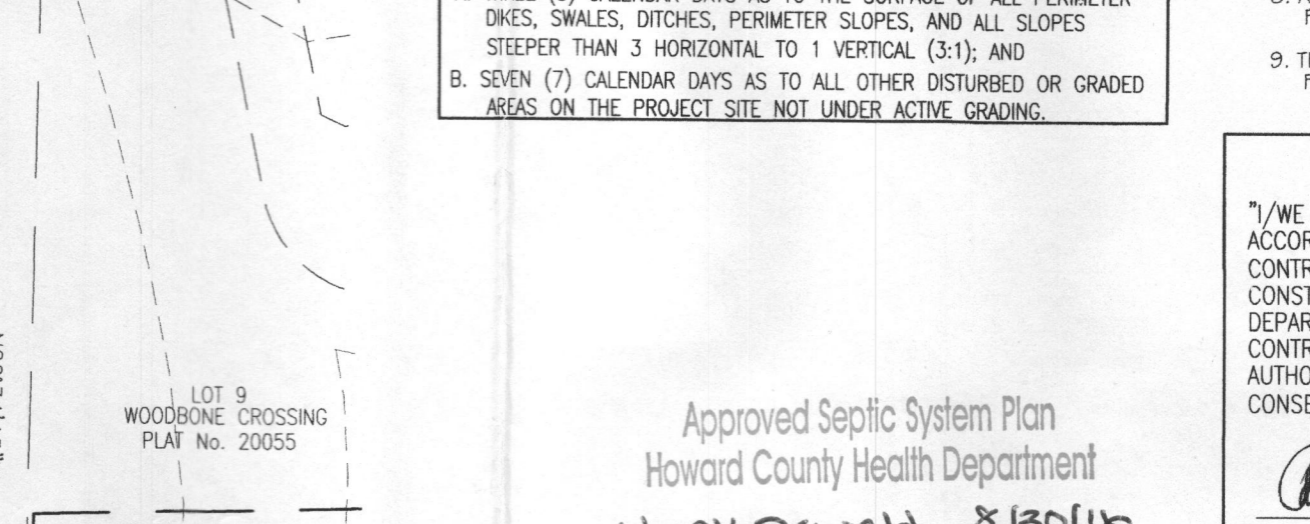
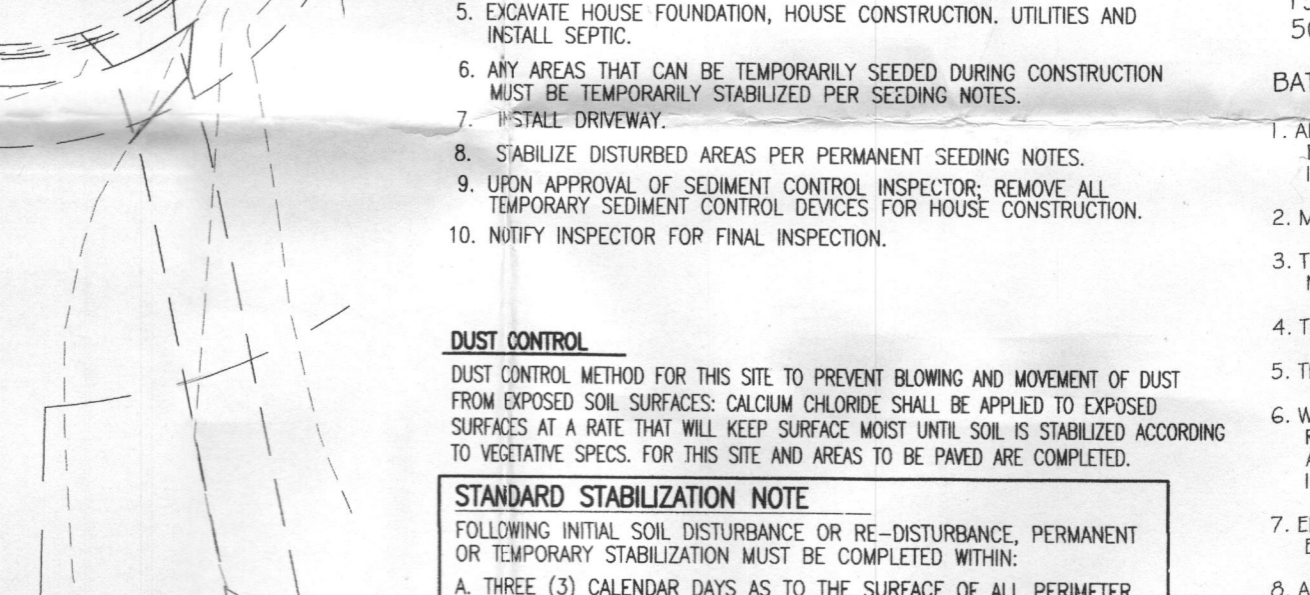
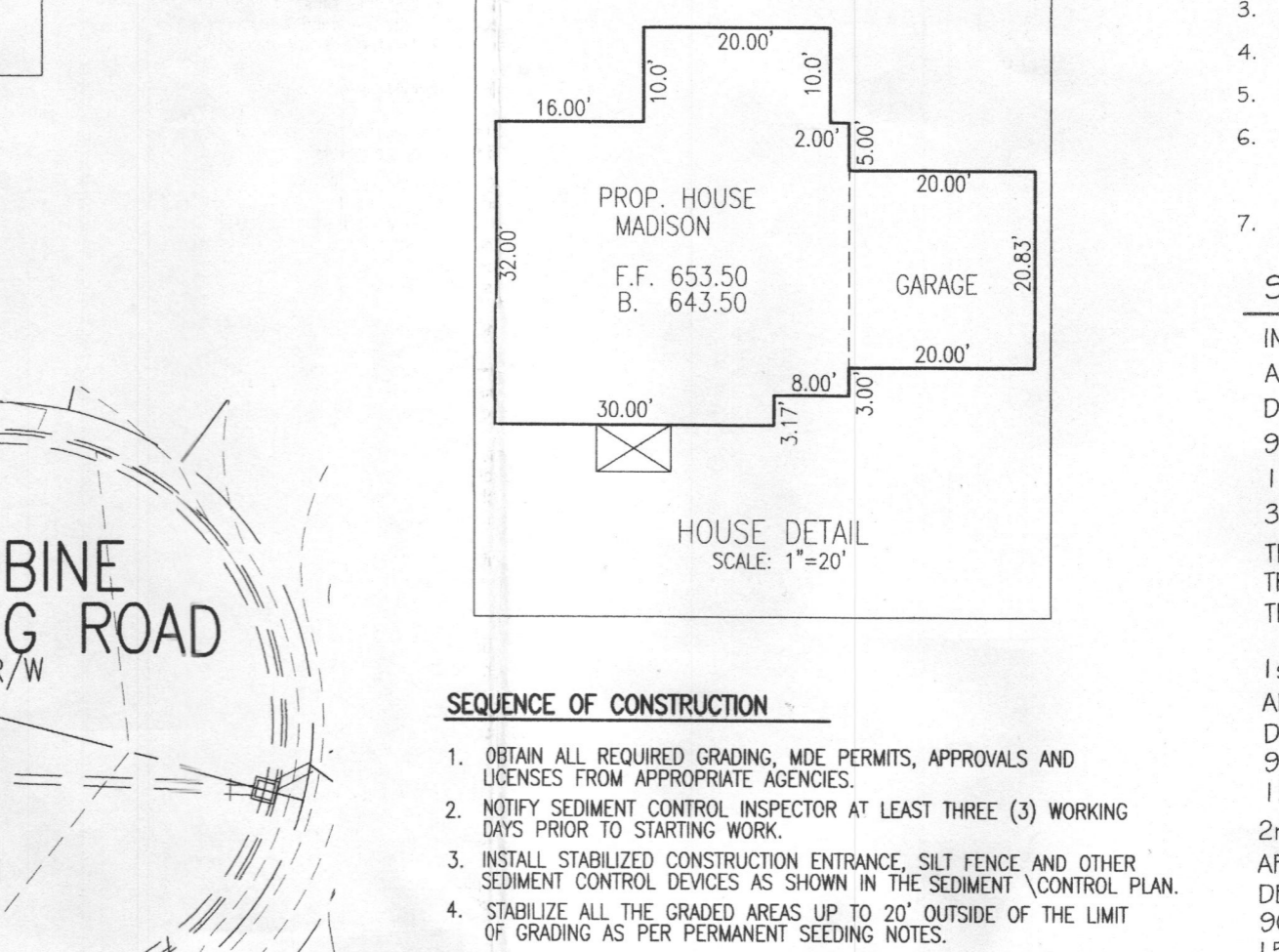
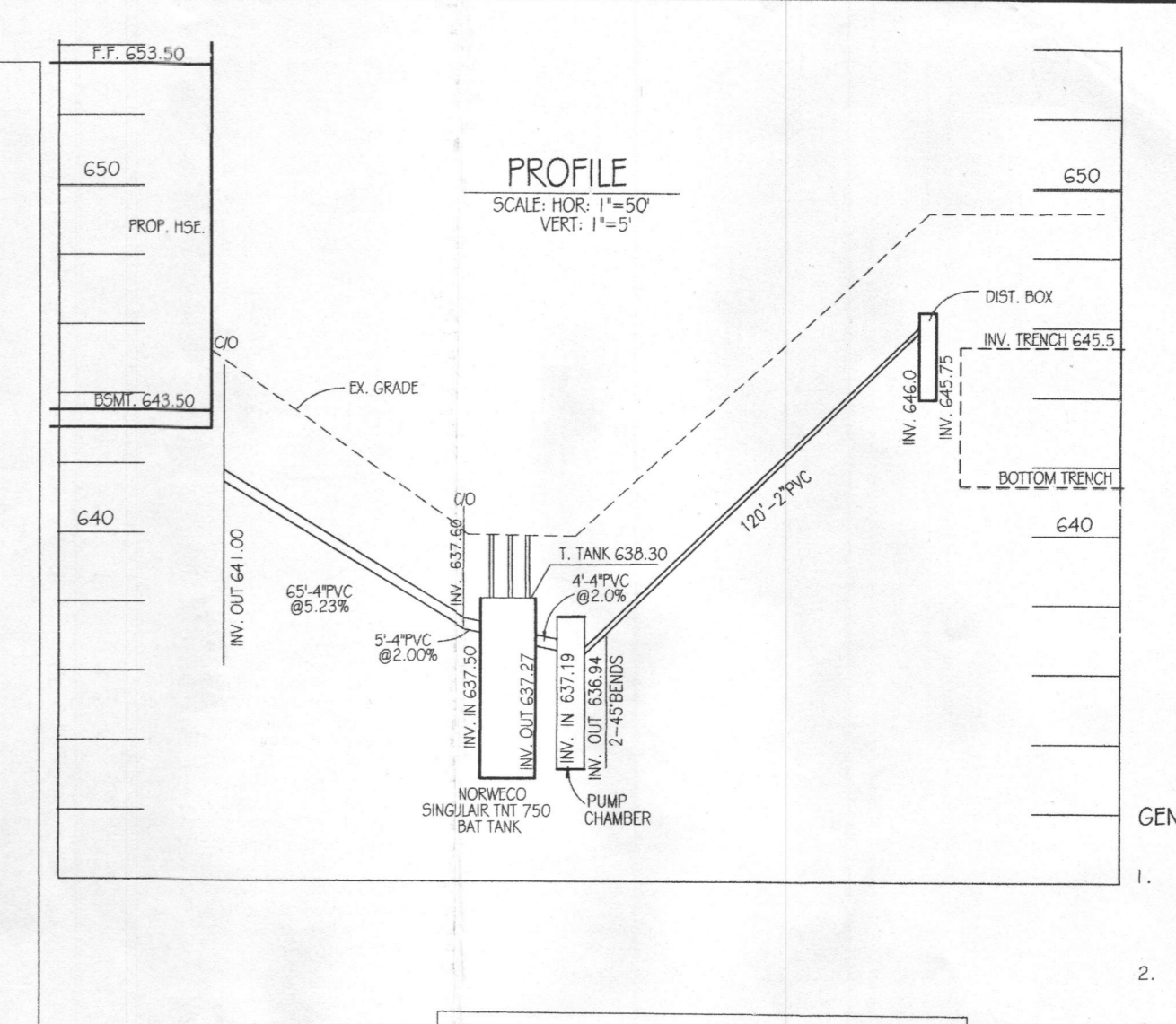


TEMPORARY STOCKPILE NOTE

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 ON SUITABLE AREA OF THE SITE AND FOLLOW TEMPORARY STABILIZATION NOTES.

PROFESSIONAL CERTIFICATION

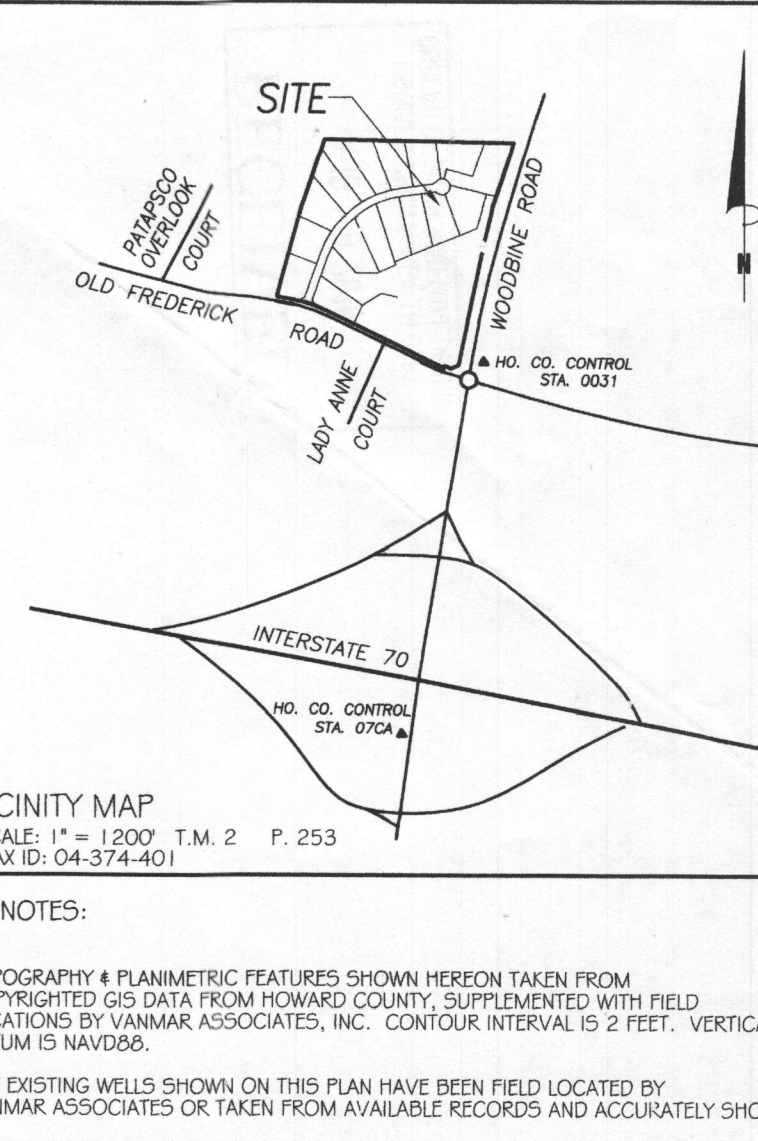
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-18-17.



SEQUENCE OF CONSTRUCTION

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

APPROVED SEPTIC SYSTEM PLAN
Howard County Health Department
Mark Osvaldo
Signature
8/30/16
Date



GENERAL NOTES:

- TOPOGRAPHY & PLANNING FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD83.
- THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
- ZONING DISTRICT: RC-DCO
- LIMIT OF DISTURBANCE (LOD) = 16,900 SQ.FT.
- THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.
- STORM WATER MANAGEMENT FOR THIS LOT IS PROVIDED BY EXISTING WOODBINE CROSSING STORM WATER MANAGEMENT FACILITIES FOR AND CONSTRUCTED BY THE DEVELOPER UNDER PLAN F-07-103.
- DRIVEWAY CURVE DESIGNED BY DEVELOPER UNDER PLAN F-07-103.

SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 6

APPLICATION RATE = 0.8 GPD / sq.ft.

DESIGN FLOW: 150 GPD X 6 BEDROOMS = 900 GPD

900 GPD / 0.8 GPD/sq.ft. = 1125 sq.ft.

1125 sq.ft. / 3 ft. WIDE TRENCH = 375 LF TRENCH

375 LF TRENCH X 0.625 REDUCTION CREDIT = 234 LF TRENCH

TRENCH 1 (T1) EX. GRD.=649.5 -INV. TRENCH=645.5 -B. TRENCH=641.5

TRENCH 2 (T2) EX. GRD.=645.5 -INV. TRENCH=644.5 -B. TRENCH=640.5

TRENCH 2 (T2) EX. GRD.=647.5 -INV. TRENCH=643.5 -B. TRENCH=639.5

1st REPLACEMENT

APPLICATION RATE = 0.6 GPD / sq.ft.

DESIGN FLOW: 150 GPD X 6 BEDROOMS = 900 GPD

900 GPD / 0.6 GPD/sq.ft. = 1500 sq.ft.

1500 sq.ft. / 3 ft. WIDE TRENCH = 500 LF TRENCH

500 LF TRENCH X 0.625 REDUCTION CREDIT = 313 LF TRENCH

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: *Mark Osvaldo* 8/30/16
Date

Engineer: *Ronald E. Thompson, P.E.* 8/25/2016
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.

DEVELOPER: CATONSVILLE HOMES 175 STRATFIELD CT. MARRIOTTVILLE, MD 21104 410-442-2211

OWNER: LDG INC. LEE F. PLAZA, SUITE 200 8600 CROSSING AVENUE SILVER SPRING, MD. 20910 301-585-7000

DEVELOPER: CATONSVILLE HOMES 175 STRATFIELD CT. MARRIOTTVILLE, MD 21104 410-442-2211

PLOT PLAN
SITE PLAN FOR BAT TECHNOLOGY LOT 10
WOODBINE CROSSING PLAT No. 20055

TAX ID: 04-374-401

732 WOODBINE CROSSING ROAD
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' JULY, 2016

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