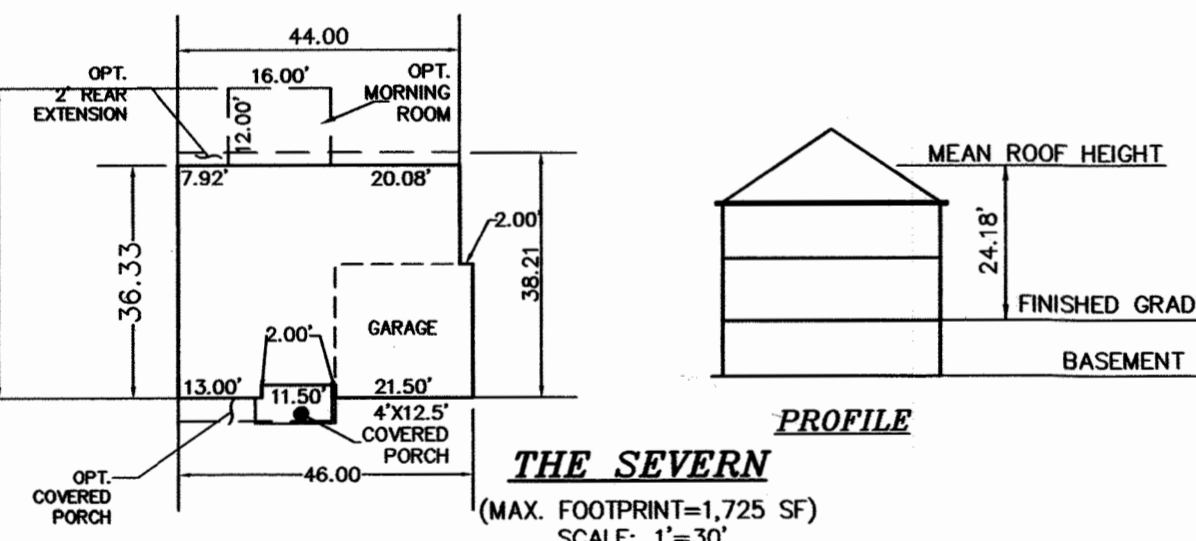
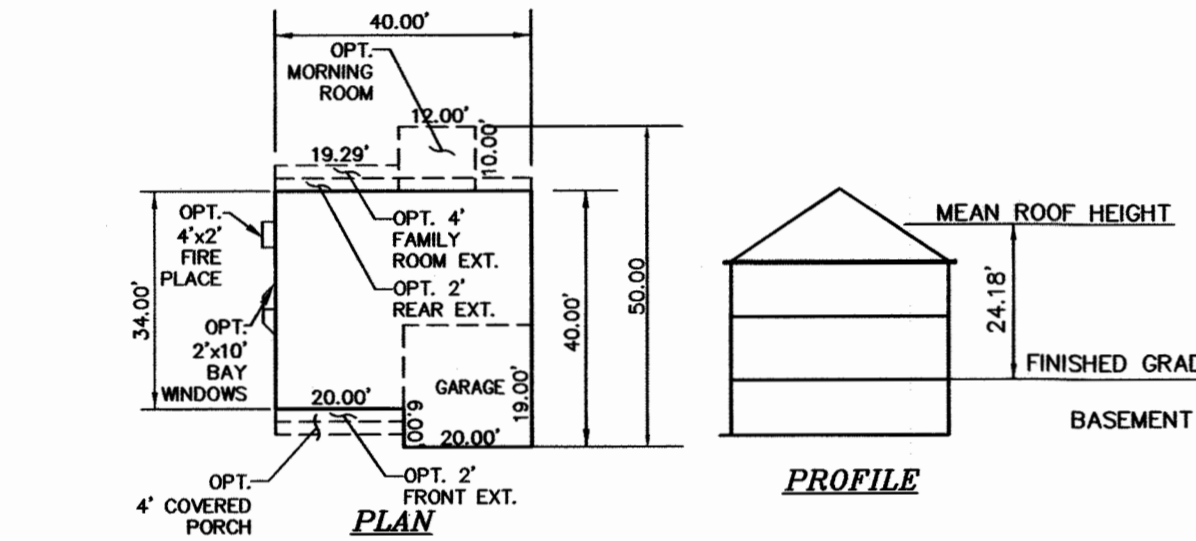
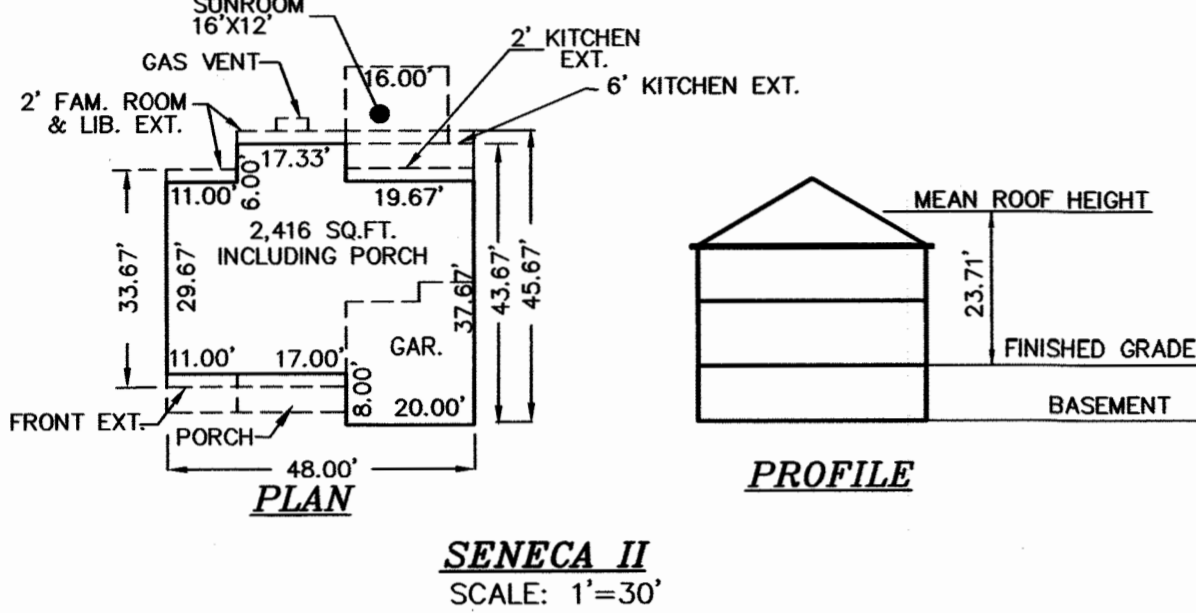
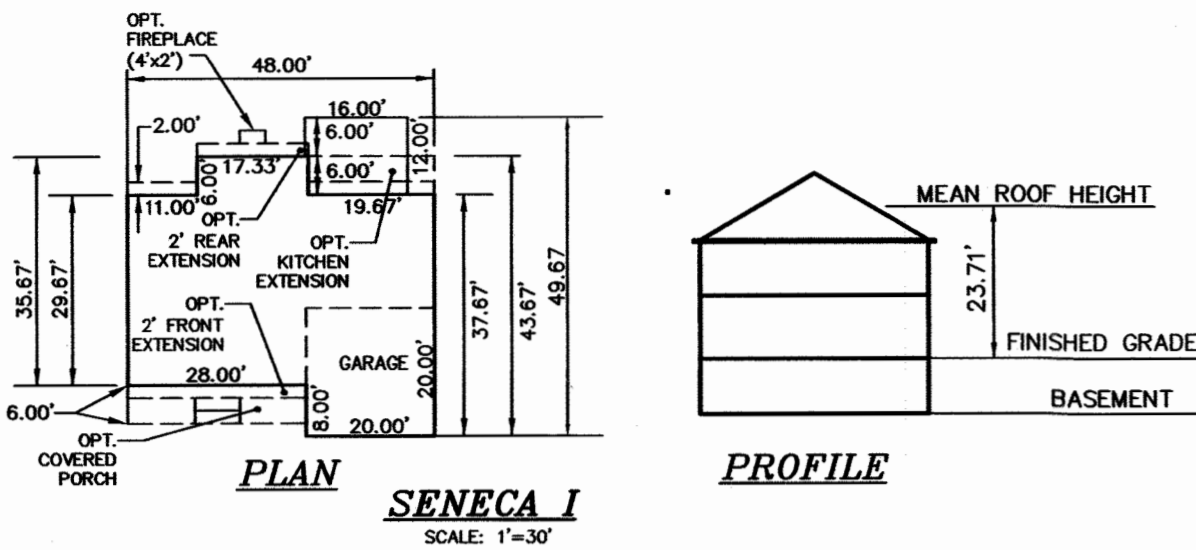


SHEET INDEX

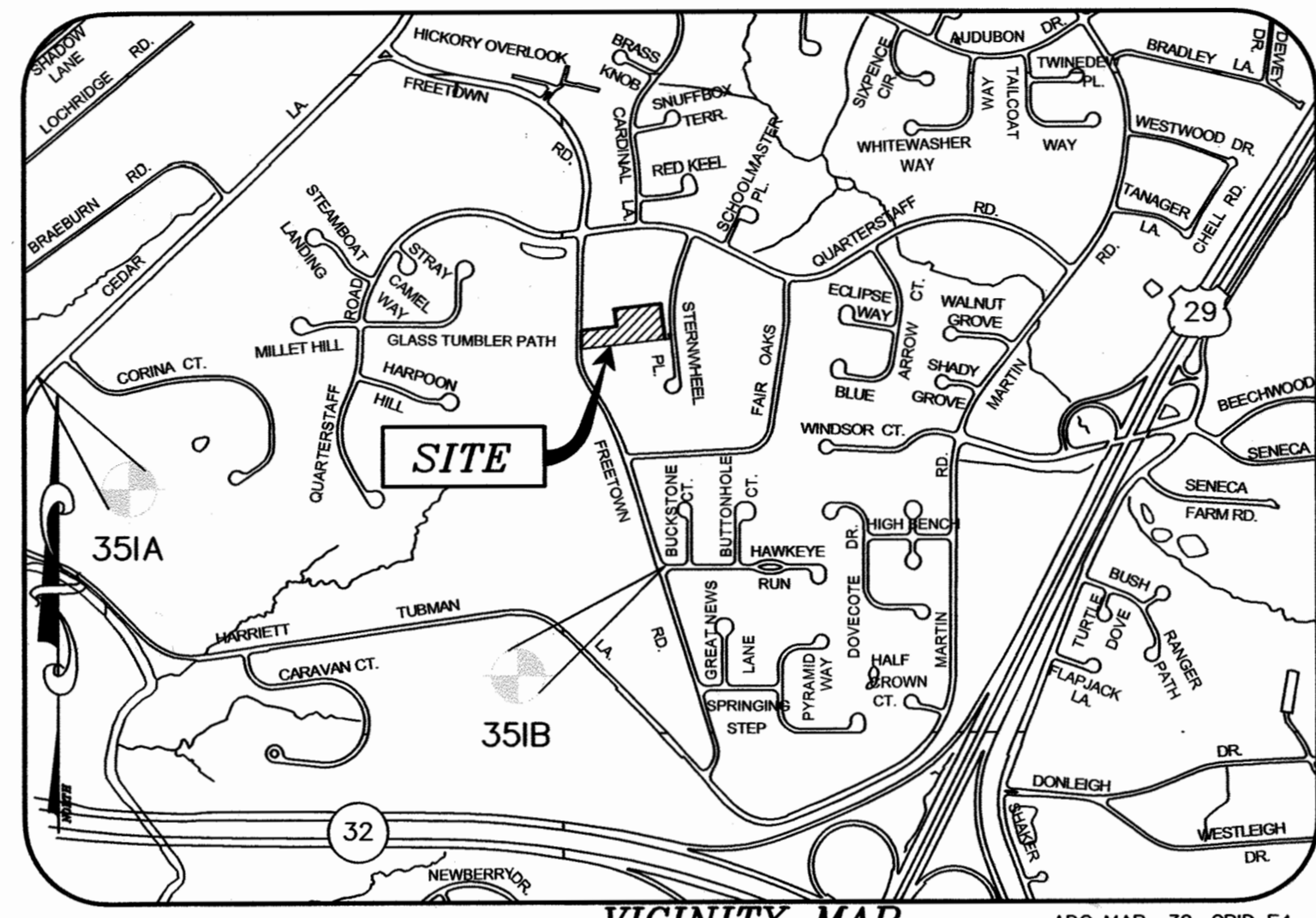
Table with 2 columns: NO, TITLE. Lists cover sheet, site development plan, stormwater management plan, and sediment control notes.

SITE DEVELOPMENT PLAN
ATHOLTON OVERLOOK
LOTS 1-5 & OPEN SPACE LOT 6
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



LEGEND

- Legend items: ST# EXIST. SPECIMEN TREE, STABILIZED CONSTRUCTION ENTRANCE, EXIST. TREE LINE, LIMIT OF DISTURBANCE, SUPER SILT FENCE, SILT FENCE, PROPOSED PAVEMENT, AREA OF WETLANDS, EX. PRIVATE USE-IN-COMMON ACCESS EASEMENT, EX. PUBLIC WATER SEWER & UTILITY EASEMENT, EX. FOREST CONSERVATION EASEMENT (RETENTION), DRY WELL, MICRO-BIORETENTION, FOREST CONSERVATION SIGN.



STORMWATER MANAGEMENT PRACTICES CHART

Table with 4 columns: LOT NO., ADDRESS, DRY WELLS M-5 (NUMBER), MICRO-BIORETENTION M-6 (NUMBER). Lists lots 1 through 5 and an open space lot.

ADDRESS CHART

Table with 2 columns: LOT NO., ADDRESS. Lists addresses for lots 1 through 5.

MIHU TRACKING CHART

Table with 2 columns: DESCRIPTION, VALUE. Tracks MIHU requirements for lots and units.

PERMIT INFORMATION BLOCK

Table with 5 columns: SUBDIVISION NAME, SECTION/AREA, PARCEL, PLAT NO., BLOCK(S), ZONING, TAX MAP NO., ELECTION DISTRICT, CENSUS TRACT.

GENERAL NOTES

- 3. SITE ANALYSIS DATA: LOCATION: TAX MAP: 35 PARCEL: 138 GRID: 24 ELECTION DISTRICT: FIFTH ZONING: R-12...
4. HORIZONTAL AND VERTICAL DATUMS ARE RELATED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM...
5. EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY...
6. IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS...
7. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY...
8. FOREST STAND AND WETLAND DELINEATION PERFORMED BY ECO-SCIENCE, INC. IN JULY OF 2018...
9. STEEP SLOPES GREATER THAN 25% AND OVER 20,000 SQ. FT. IN AREA DO NOT EXIST ON SITE...
10. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES OR HISTORIC FEATURES/STRUCTURES LOCATED ON THIS SITE...
11. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP ON OCTOBER 10, 2018...
12. STORMWATER MANAGEMENT REQUIREMENTS WILL BE SATISFIED VIA MICRO-BIORETENTION AND DRY WELL FACILITIES...
13. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED UNDER CONTRACT NUMBERS 24-0556-D AND 24-5083-D RESPECTIVELY...
14. FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE...
15. LANDSCAPING FOR THIS SUBDIVISION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE...
16. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING...
17. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE...
18. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE...
19. IN ACCORDANCE WITH SECTION 16.121(O)(2) OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS...
20. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST 48 HOURS PRIOR TO EXCAVATION...
21. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION...
22. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE...
23. FOR DRIVEWAY ENTRANCE DETAIL, REFER TO THE HOWARD COUNTY DESIGN MANUAL...
24. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS...
25. THIS PROJECT IS SUBJECT TO AN ALTERNATIVE COMPLIANCE WP-19-024, WHICH WAS APPROVED BY THE DIRECTOR OF THE DEPARTMENT OF PLANNING AND ZONING ON OCTOBER 30, 2018...
26. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM LOT AND ROAD RIGHT-OF-WAY...
27. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS...
28. ALL LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT...
29. THIS PLAN IS SUBJECT TO WP-19-098, SEEKING AN ALTERNATIVE COMPLIANCE TO SECTION 16.144(B)...
30. A COMMUNITY MEETING FOR THIS PROJECT WAS HELD ON JULY 9, 2018 AT THE CENTRAL LIBRARY...
31. EXISTING UTILITIES ARE BASED ON ACTUAL FIELD LOCATIONS, IN COMBINATION WITH EXISTING WATER AND SEWER CONTRACTS...
32. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS...

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT...

SIGNATURE OF DEVELOPER: [Signature] DATE: 4/1/20

ENGINEER'S CERTIFICATE

I 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.

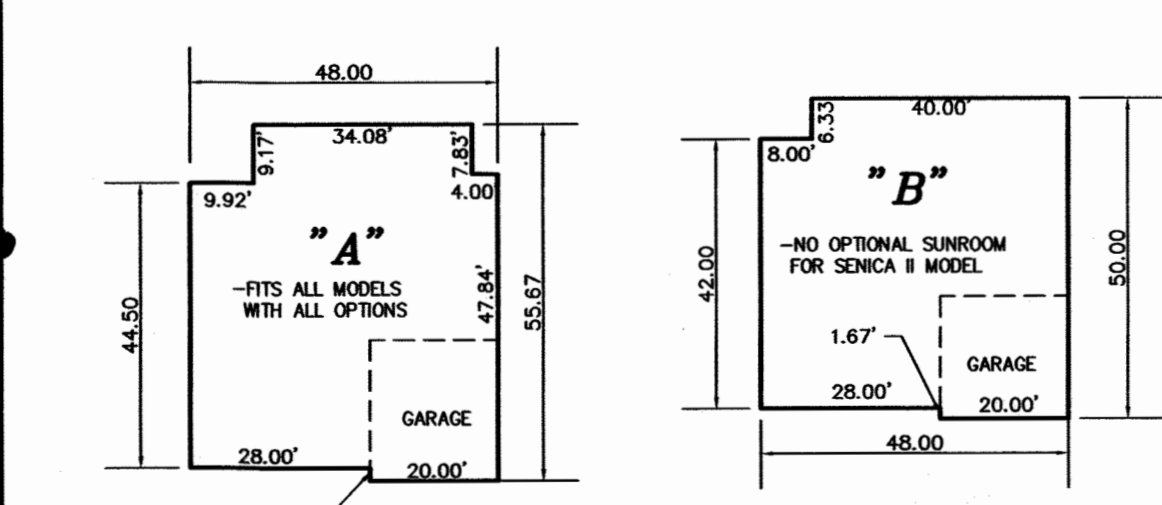
SIGNATURE OF ENGINEER: [Signature] DATE: 3/19/2020

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 6/8/20

CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 6/15/20

DIRECTOR

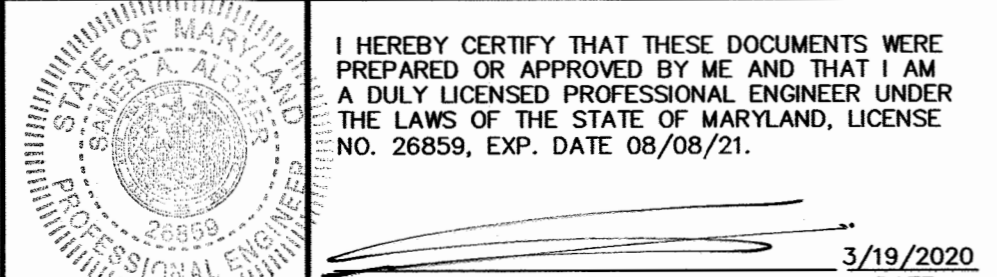


GENERIC BOX

SCALE: 1"=30'

( IN FEET )

1 inch = 30 ft.



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. 26859, EXP. DATE 08/08/21.

SIGNATURE OF OWNER/DEVELOPER: [Signature] DATE: 3/19/2020

OWNER/DEVELOPER

BURKARD HOMES LLC, 1511 RICHELIEU HWY, STE. 305, ARNOLD, MD 21012, 240-375-1052

Project information table: Project 18-014, Date MAR-2020, Engineering M/M, Approval M/M, Scale 1"=30'.

ATHOLTON OVERLOOK
LOTS 1 THRU 5 AND OPEN SPACE LOT 6
TAX MAP: 35, PARCEL: 138
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT
COVER SHEET

MILDENBERG & ASSOC., INC. logo and contact information: 7950-B Grace Drive, Columbia, Maryland 21044, (410) 997-0296 Tel., (410) 997-0298 Fax.

**SOILS TABLE**

SYMBOL	RATING	NAME	K FACTOR	MAP NO.
GbB	(B)	GLADSTONE LOAM 3 TO 8 PERCENT SLOPES	.28	17
GbC	(B)	GLADSTONE LOAM 8 TO 15 PERCENT SLOPES	.28	17
GbD	(B)	GLADSTONE-URBAN LAND COMPLEX 0 TO 8 PERCENT SLOPES	.28	17
UuB	(D)	URBAN LAND-UDORTHERTS COMPLEX 0 TO 8 PERCENT SLOPES	.37	17

**WETLANDS LINE TABLE**

LINE	BEARING	LENGTH
W1	N0716°51'W	17.07
W2	S83°32'06"W	124.11
W3	S57°25'55"E	29.23
W4	S77°49'08"E	30.22
W5	N35°02'35"E	12.53
W6	N61°43'42"E	20.27
W7	N80°44'07"E	19.44
W8	S73°58'18"E	22.27
W9	N67°49'32"E	6.12

**MINIMUM LOT SIZE CHART**

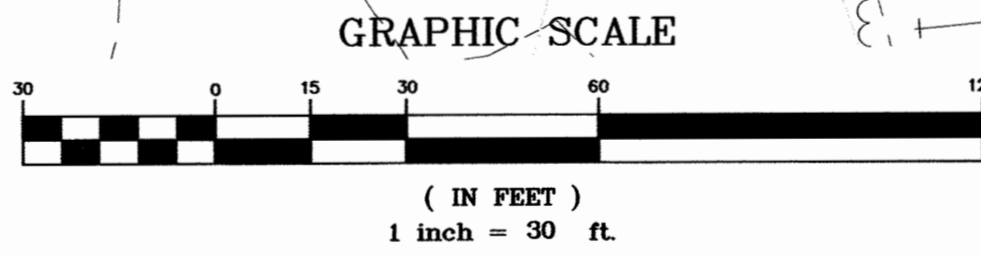
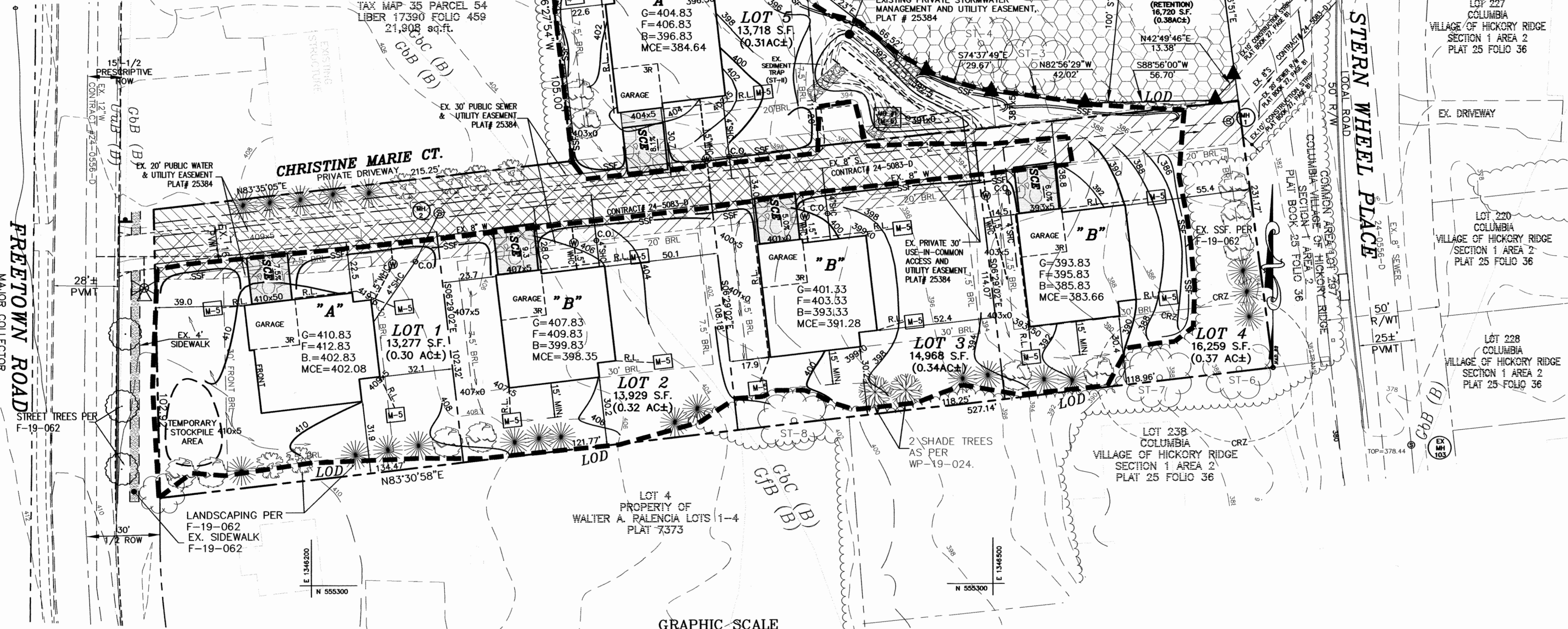
LOT NO.	MINIMUM LOT AREA	PIPESTEM	TOTAL LOT AREA
1	13,277 SQ. FT.	0	13,277 SQ. FT.
2	13,182 SQ. FT.	747 SQ. FT.	13,929 SQ. FT.
3	13,493 SQ. FT.	1,475 SQ. FT.	14,968 SQ. FT.
4	14,079 SQ. FT.	2,181 SQ. FT.	16,259 SQ. FT.
5	12,605 SQ. FT.	1,113 SQ. FT.	13,718 SQ. FT.
0/S 6	20,146 SQ. FT.	0	20,146 SQ. FT.

NOTE:  
THE MAXIMUM SLOPE ALLOWED IS 3:1

**LEGEND**

- ST# EXIST. SPECIMEN TREE
- STABILIZED CONSTRUCTION ENTRANCE
- EXIST. TREE LINE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- SILT FENCE
- PROPOSED PAVEMENT
- AREA OF WETLANDS
- EX. PRIVATE USE-IN-COMMON ACCESS EASEMENT
- EX. PUBLIC WATER SEWER & UTILITY EASEMENT
- EX. FOREST CONSERVATION EASEMENT (RETENTION)
- DRY WELL
- MICRO-BIORETENTION
- FOREST CONSERVATION SIGN
- LANDSCAPING PER F-19-062
- CRZ CRITICAL ROOT ZONE
- WATER METER

FREETOWN ROAD  
MAJOR COLLECTOR  
60' R/W



**DEVELOPERS CERTIFICATE**

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

SIGNATURE OF DEVELOPER: *Tom Burkard* DATE: 4/12/20  
PRINTED NAME OF DEVELOPER: Tom Burkard

**ENGINEER'S CERTIFICATE**

I 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.

SIGNATURE OF ENGINEER: *Samer A. Alomer P.E.* DATE: 3/19/2020  
PRINTED NAME OF ENGINEER: SAMER A. ALOMER P.E.

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

SIGNATURE OF HOWARD SOIL CONSERVATION DISTRICT: *John P. Blanton* DATE: 3/16/20

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DATE: 6.8.20  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 6/10/20  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 6/15/20  
DIRECTOR



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. 26859, EXP. DATE 08/08/21.  
DATE: 3/19/2020  
SAMER A. ALOMER, P.E.

**OWNER/DEVELOPER**

BURKARD HOMES LLC,  
1511 RICHIE HWY, STE. 305  
ARNOLD, MD 21012  
240-375-1052

**GEOTECHNICAL CONSULTANTS, INC.**  
PO. Box 2071  
Columbia, MD 21045-2071  
Phone: (410) 381-6330  
Fax: (410) 381-1056  
e-mail: moamir54@bhac.com

October 16, 2018  
Middleberg, Bender & Associates, Inc.  
7350-B Grace Drive  
Columbia, Maryland 21044

Attn: Mr. Mervin M. Middleberg  
Vice President

Ref: Labeled Subsurface Exploration  
Proposed Development:  
Atholton Overlook  
Tax Map 35, Parcel 138  
6548 Freetown Road, Columbia, Maryland 21044  
GEAT Project No. 6024

Dear Mr. Middleberg:

On October 15th, 2018, GEAT Consultants, Inc. utilized a Somo Earthprobe 200 Geoprobe to bore six (6) soil borings (B-1 through B-6) to depths of 6.0 ft to 14.0 ft below existing site grade at the locations shown on the attached Boring Location Map. The purpose of the study was to evaluate the presence/absence of bedrock and local groundwater at the locations shown within the depths explored. The locations and depths of the borings was determined by other means and the borings were drilled-out in the field by others.

Our field observations are summarized in Table 1 below:

Boring No.	Depth to Groundwater (ft)	Depth to Capillary Fracture (ft)	Boring Termination Depth (ft)	Remarks:
B-1	N/A	N/A	10.0	Offsite 10 ft North
B-2	N/A	N/A	13.0	
B-3	N/A	N/A	12.0	
B-4	N/A	N/A	11.0	
B-5	N/A	N/A	11.0	
B-6	N/A	N/A	9.0	

It should be noted that the actual level of groundwater and the amount and level of perched water should be anticipated to fluctuate through the year, depending on variations in precipitation, surface run-off, infiltration, site topography, drainage, and other factors not evident at the time of our exploration. GEAT can not be responsible for changes in groundwater conditions at the site due to seasonal variations and changes caused by other factors such as grading operations at the site.

GEAT appreciates the opportunity to provide this geotechnical engineering service to you. Should you have any questions regarding this letter report, or require additional services, please feel free to contact our office.

Sincerely,  
GEAT Consultants, Inc.  
Moamir Abourakim, PE

date	MAR. 2020	approval	SA
project	18-014	scale	1"=30'
illustration	MM	description	revisions
engineering	MM	no.	

date	
description	
revisions	

**ATHOLTON OVERLOOK**  
LOTS 1 THRU 5 AND OPEN SPACE LOT 6  
TAX MAP: 35, PARCEL: 138  
FIFTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SITE DEVELOPMENT PLAN

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
7350-B Grace Drive, Columbia, Maryland 21044  
(410) 997-0296 Tel. (410) 997-0298 Fax.

**SOILS TABLE**

SYMBOL	RATING	NAME	K FACTOR	MAP NO.
GbB	(B)	GLADSTONE LOAM, 3-8% SLOPES	.28	17
GbC	(B)	GLADSTONE LOAM, 8-15% SLOPES	.28	17
GfB	(B)	GLADSTONE-URBAN LAND COMPLEX, 0-8% SLOPES	.28	17
UuB	(D)	URBAN LAND-UDORTHERTS COMPLEX, 0-8% SLOPES	.37	17

**SWM PRACTICES SCHEDULE**

AREA	PROPOSED PRACTICES	REQUIRED ESDv	PROVIDED ESDv	REQUIRE Pe	PROVIDED Pe	REQUIRED Rev	PROVIDED Rev
LOT 1 (HOUSE)	M-5, DRYWELLS (3 EACH)	279.2 C.F.	336 C.F.	1.6"	1.9"	49 C.F.	336 C.F.
LOT 2 (HOUSE)	M-5, DRYWELLS (3 EACH)	279.2 C.F.	336 C.F.	1.6"	1.9"	49 C.F.	336 C.F.
LOT 3 (HOUSE)	M-5, DRYWELLS (3 EACH)	279.2 C.F.	336 C.F.	1.6"	1.9"	49 C.F.	336 C.F.
LOT 4 (HOUSE)	M-5, DRYWELLS (3 EACH)	279.2 C.F.	336 C.F.	1.6"	1.9"	49 C.F.	336 C.F.
LOT 5 (HOUSE)	M-5, DRYWELLS (3 EACH)	279.2 C.F.	336 C.F.	1.6"	1.9"	49 C.F.	336 C.F.
LOT 6 (VIC AND INDIVIDUAL DRIVEWAYS)	M-6, MICRO-BIORETENTION (MB #1)	1,163 C.F.	1,345 C.F.	1.6"	1.8"	191 C.F.	324 C.F.
TOTAL		2,891 C.F.	3,025 C.F.	1.6"	1.7"	436 C.F.	2,004 C.F.

**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)**

ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

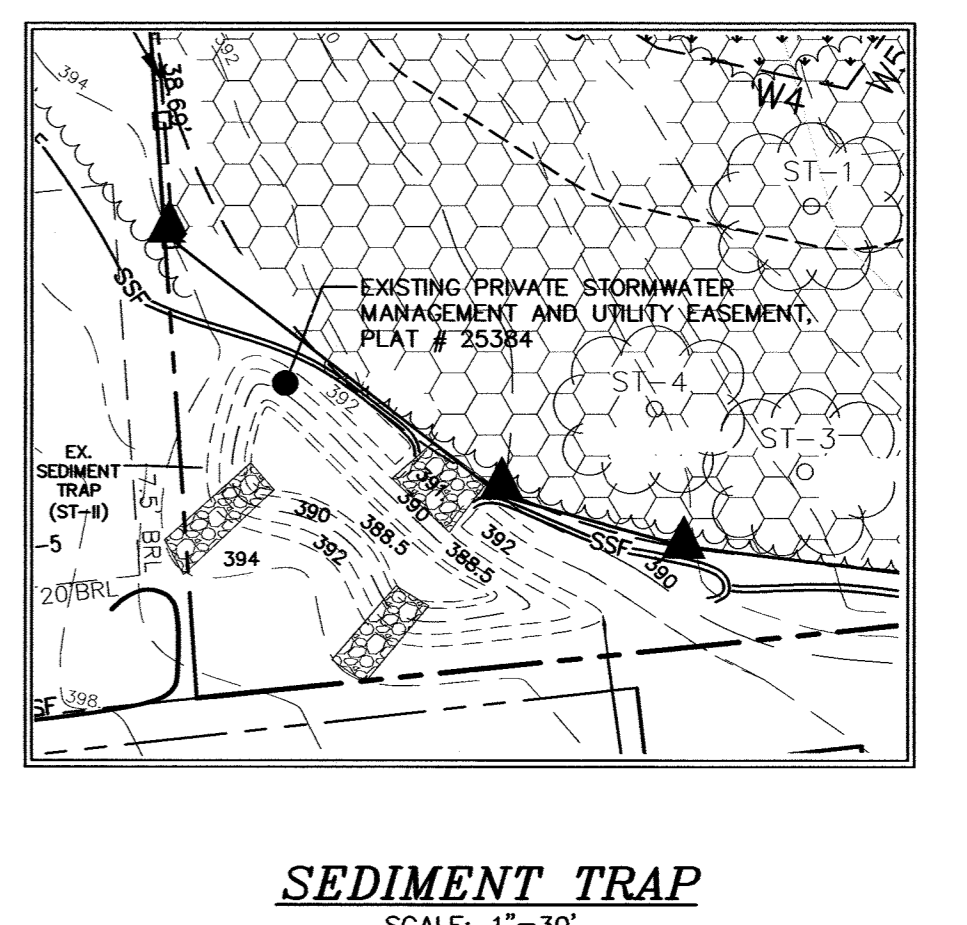
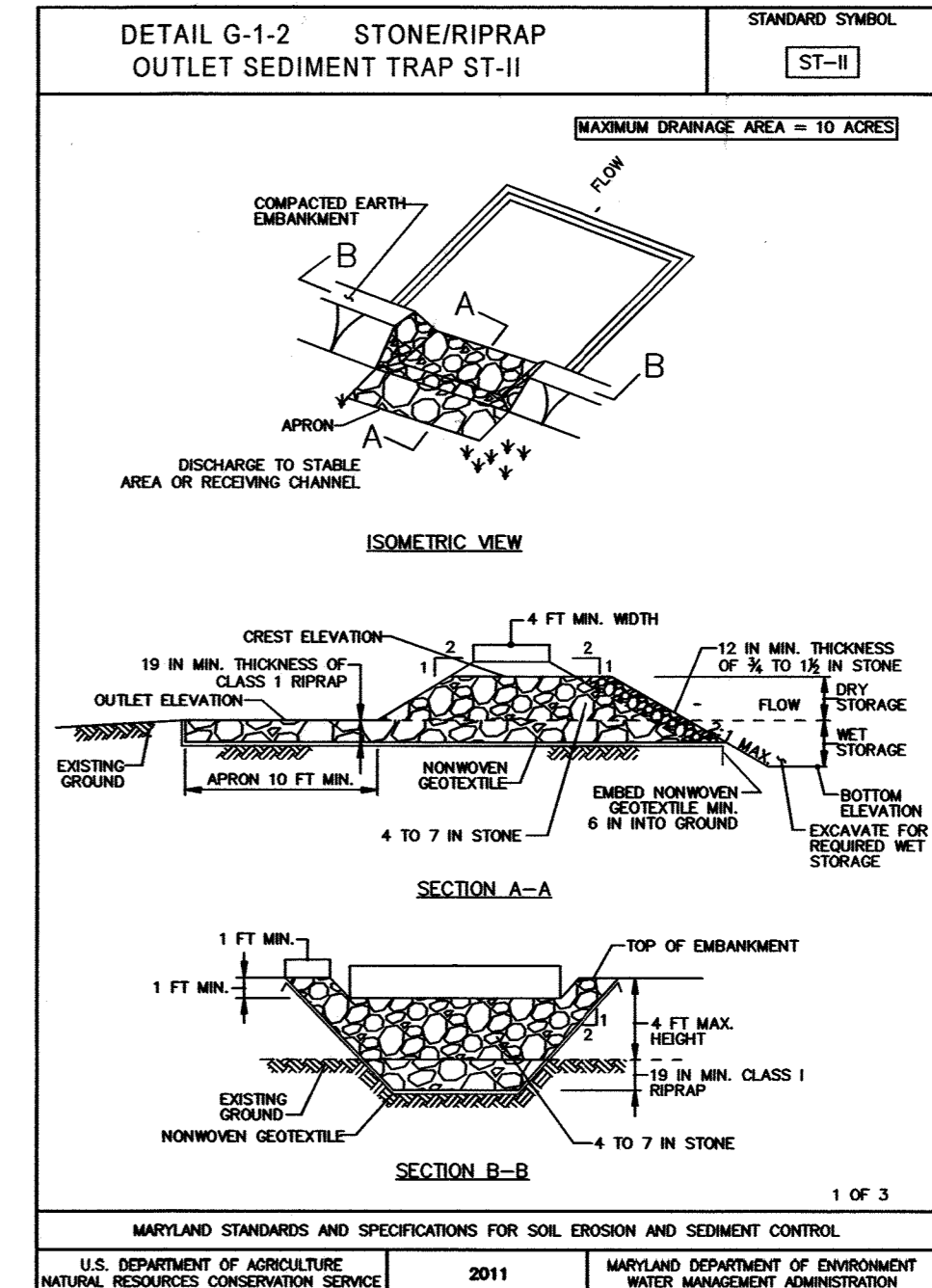
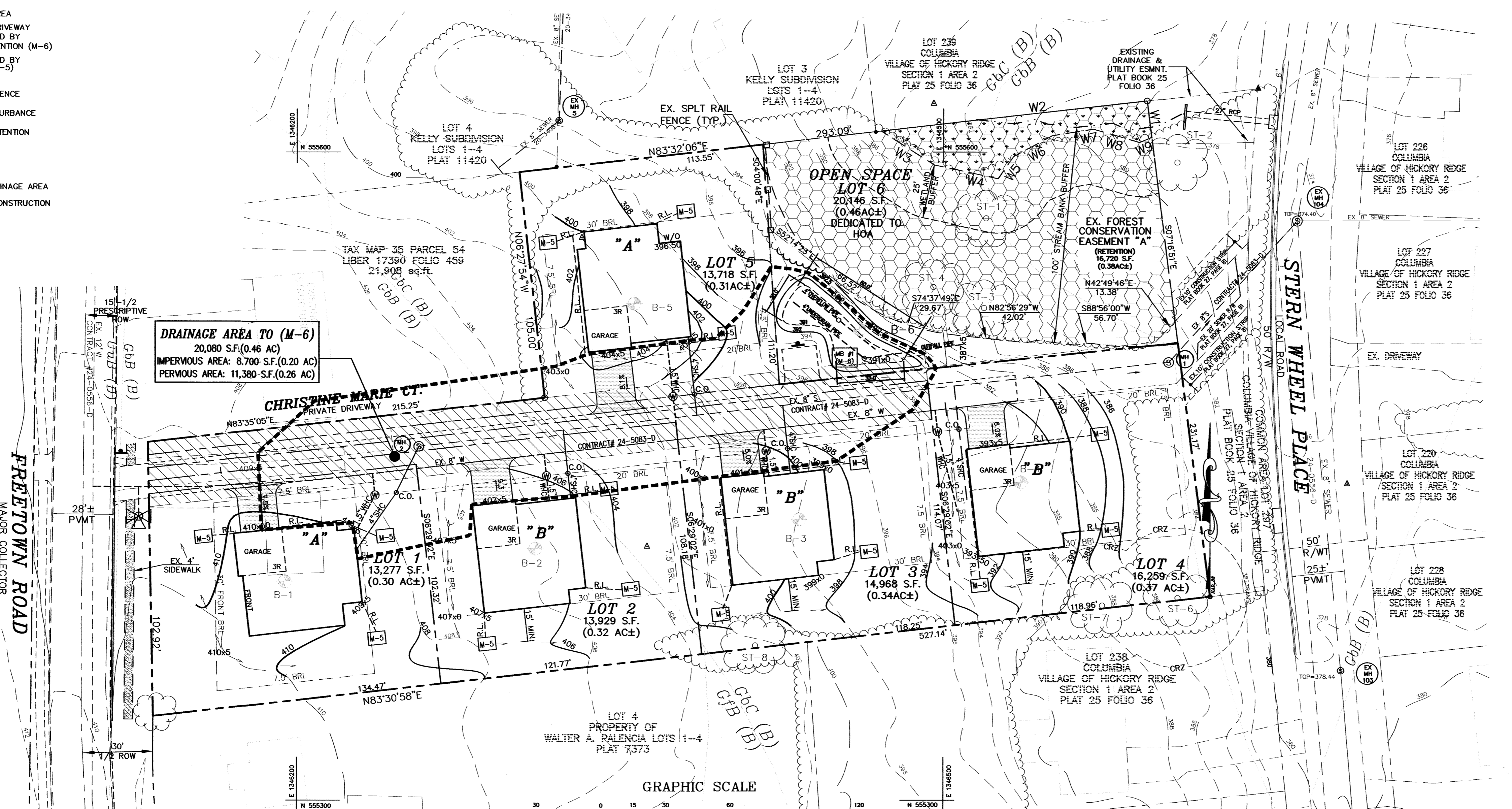
SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)**

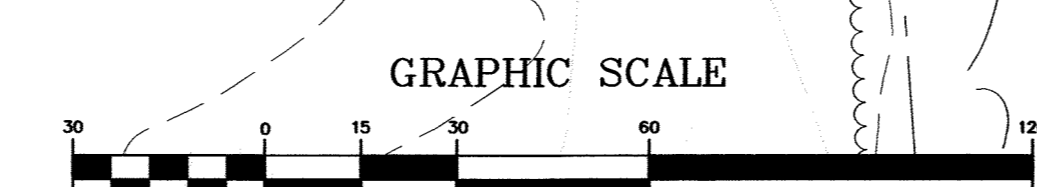
- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO ENSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**LEGEND**

- FOREST CONSERVATION EASEMENT (RETENTION)
- WETLANDS AREA
- PROPOSED DRIVEWAY AREA TREATED BY MICROBIORETENTION (M-6)
- AREA TREATED BY DRYWELLS (M-5)
- SILT FENCE
- SUPER SILT FENCE
- LOD - LIMIT OF DISTURBANCE
- MICRO-BIORETENTION
- DRYWELL
- ROOF LEADER
- LIMIT OF DRAINAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE
- EX. TREE LINE
- PR. TREE LINE

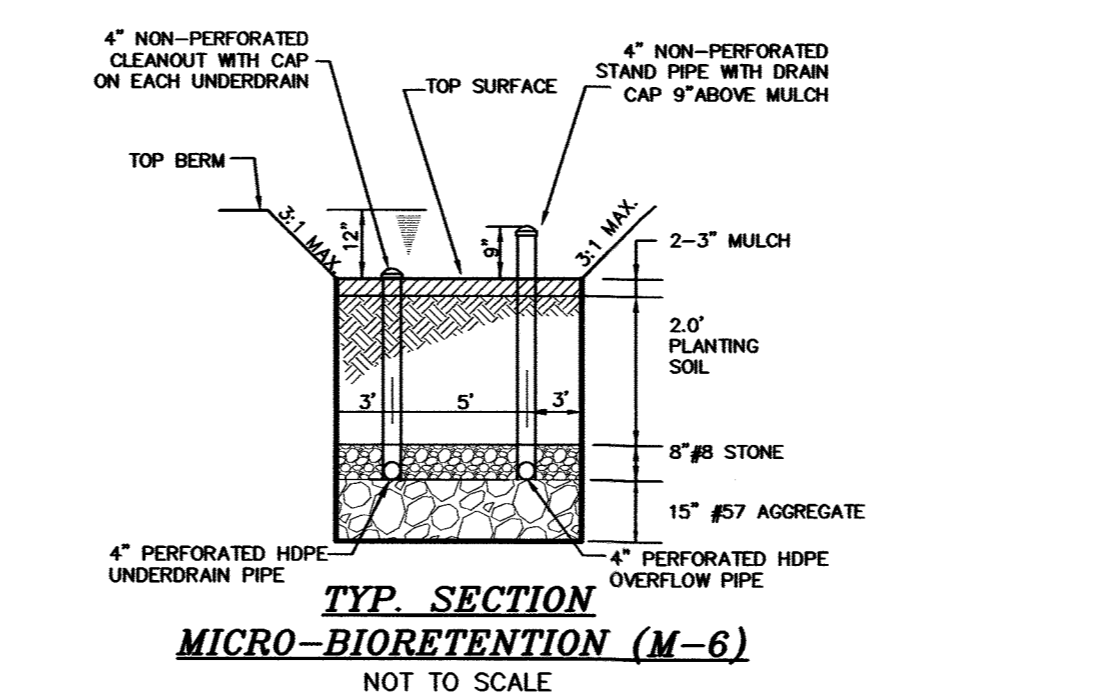
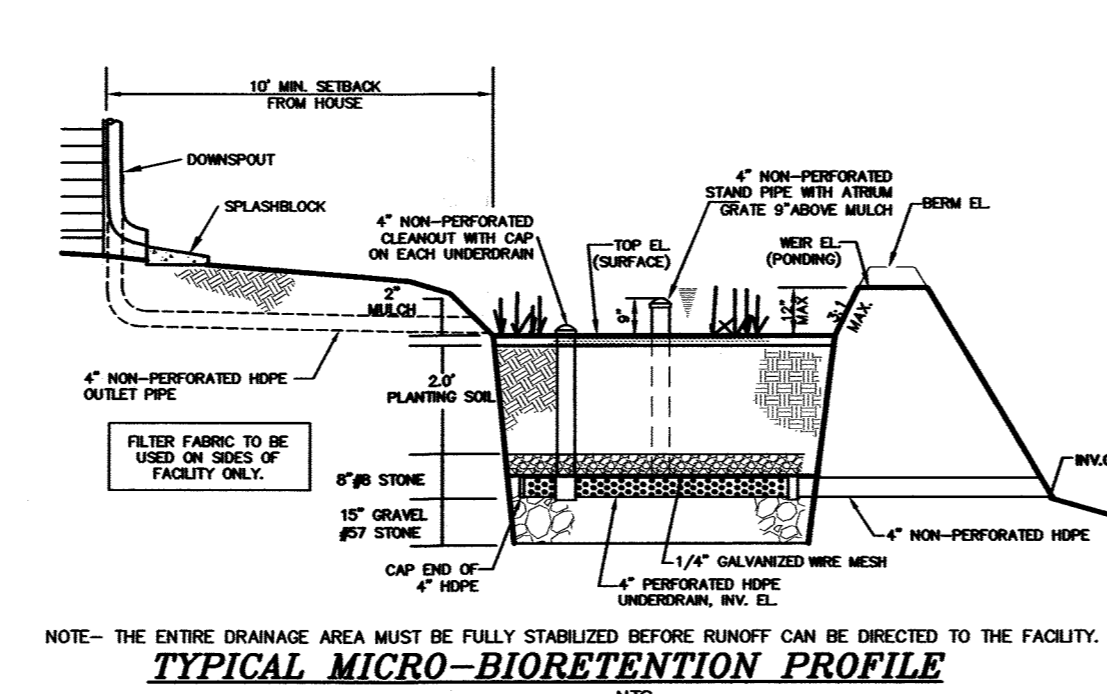
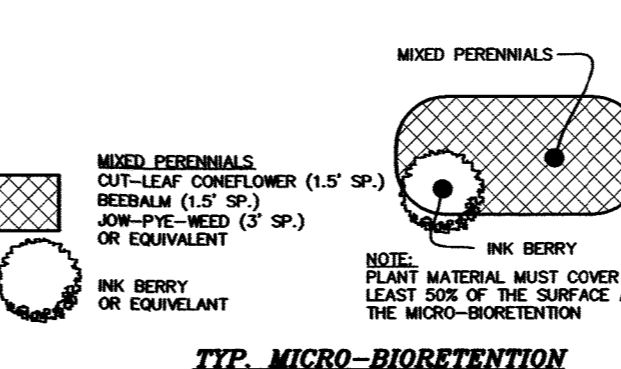


**DRAINAGE AREA TO (M-6)**  
20,080 S.F. (0.46 AC)  
IMPERVIOUS AREA: 8,700 S.F. (0.20 AC)  
PERVIOUS AREA: 11,380 S.F. (0.26 AC)



**MICRO-BIORETENTION (M-6) DESIGN DATA**

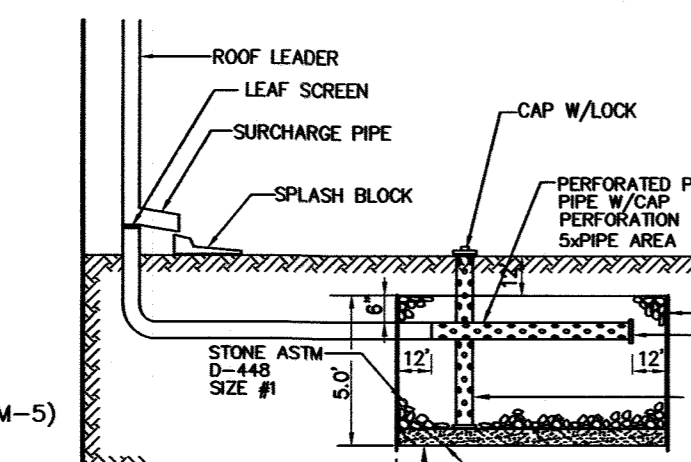
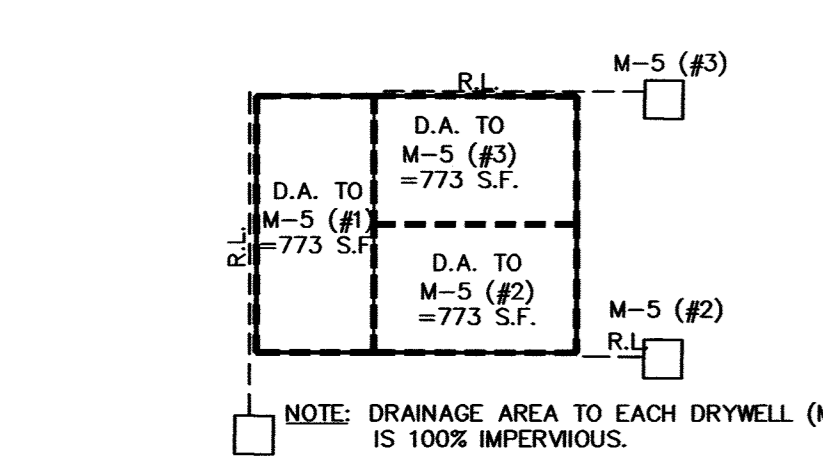
FACILITY	TOP EL. (SURFACE)	WEIR EL. (PONDING)	BERM EL.	INV. IN	INV. OUT	SURFACE AREA	PONDING AREA	PONDING DEPTH	GRAVEL DEPTH BELOW UNDERDRAIN
MB-1	391.00	392.00	392.50	388.08	387.50	730 S.F.	1,230 S.F.	12"	15"



Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretentation, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (60-65%) & compost (35-40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood	NO. 8 OR NO. 9 (108" TO 3/8")	aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 57 OR NO. 9 (108" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-275	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)		MISHA Mix No. 3, f <sub>c</sub> = 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	on-site testing of poured-in-place concrete required. 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.8.99; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking.
Sand	AASHTO M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or diatomitic sand substitutions are acceptable. No "rock dust" can be used for sand



**OWNER/DEVELOPER**  
BURKARD HOMES LLC  
1511 RICHIE HWY, STE. 305  
ARNOLD, MD 21012  
240-375-1052

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DATE: 6/8/20  
DATE: 6/15/20

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. 26859, EXP. DATE 08/08/21.

SAMER A. ALOMER, P.E.  
DATE: 3/19/2020

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
7850-B Grace Drive, Columbia, Maryland 21044  
(410) 997-0296 Tel. (410) 997-0298 Fax.

**ATHOLTON OVERLOOK**  
LOTS 1 THRU 5 AND OPEN SPACE LOT 6  
TAX MAP: 35, PARCEL: 138  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
STORMWATER MANAGEMENT PLAN AND DETAILS

date: MAR. 2020  
project: 18-014  
illustration: MAM  
scale: 1"=30'  
description: approval  
revisions: n.c.

3 OF 4  
SDP-20-015

STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS... PRIOR TO THE START OF EARTH DISTURBANCE.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

- 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 SOIL EROSION AND SEDIMENT CONTROL...

6. SITE ANALYSIS: TOTAL AREA OF SITE: 2.21 ACRES, AREA DISTURBED: 1.64 ACRES, AREA TO BE ROOFED OR PAVED: 0.45 ACRES, AREA TO BE VEGETATIVE STABILIZED: 1.19 ACRES, TOTAL CUT: 750 CU. YDS., TOTAL FILL: 750 CU. YDS.

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

- 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.

- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBERICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.

DEVELOPERS CERTIFICATE: I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFIED ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM...

ENGINEER'S CERTIFICATE: I 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING, CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE 6/8/20, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE 6/15/20.

(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.

CRITERIA: A. SOIL PREPARATION: 1. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT...

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.

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.

MULCHING: 1. MULCH MATERIALS (IN ORDER OF PREFERENCE) A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR...

ANCHORING: 1. 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.

(B-4-8) STANDARDS AND SPECIFICATION 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.

CRITERIA: 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

MAINTENANCE: THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE: TO RESTORE DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CRITERIA: A. SEEDING: 1. SPECIFICATIONS: ALL SEEDS MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO A RE-TESTING BY A RECOGNIZED SEED LABORATORY.

MULCHING: 1. MULCH MATERIALS (IN ORDER OF PREFERENCE) A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR...

HYDROSEEDING: 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE...

ANCHORING: 1. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER.

(B-4-4) STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOIL WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURB SOIL.

CRITERIA: 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY.

ANCHORING: 1. 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.

(B-4-5) STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION.

PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER OF DISTURBED EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA: A. SEED MIXTURES: 1. GENERAL USE: SELECT ONE OR MORE OF THE SPECIES OF MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE.

HYDROSEEDING: 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE...

ANCHORING: 1. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER.

PERMANENT SEEDING SUMMARY table with columns for NO., SPECIES, APPLICATION RATE (LB./AC), SEEDING DATES, SEEDING DEPTHS, N, P2O5, K2O, and LIME RATE.

TEMPORARY SEEDING FOR SITE STABILIZATION table with columns for PLANT SPECIES, SEEDING RATES, and RECOMMENDED SEEDING DATED BY PLANT HARDNESS ZONE.

(B-4-5) STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION.

PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER OF DISTURBED EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA: A. SEED MIXTURES: 1. GENERAL USE: SELECT ONE OR MORE OF THE SPECIES OF MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE.

HYDROSEEDING: 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE...

ANCHORING: 1. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

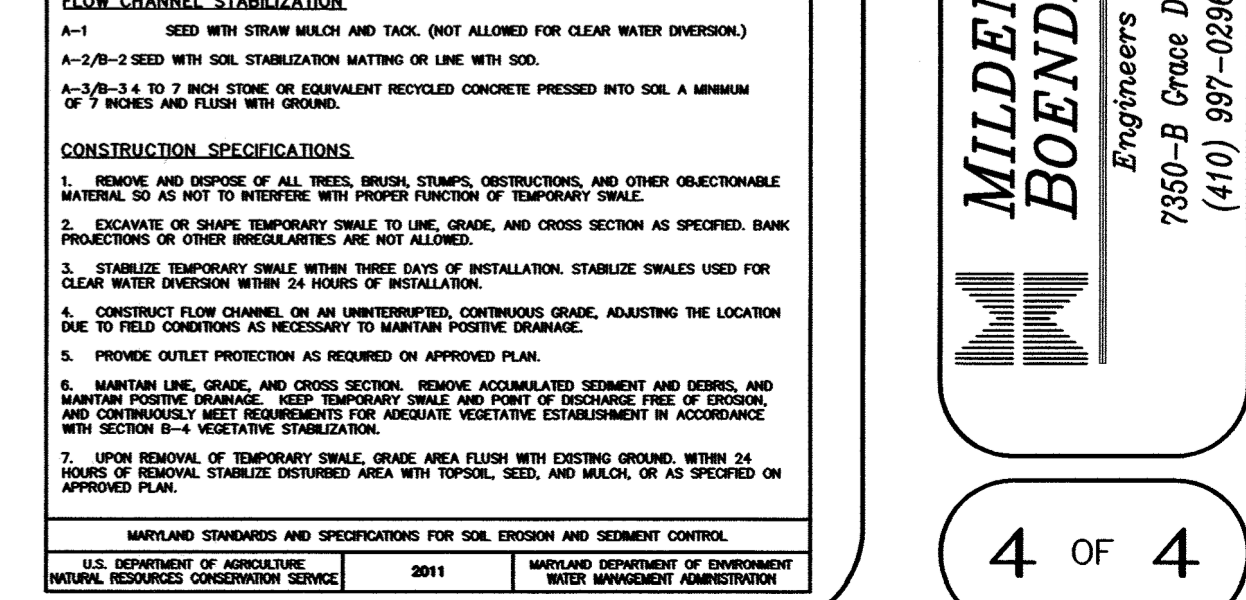
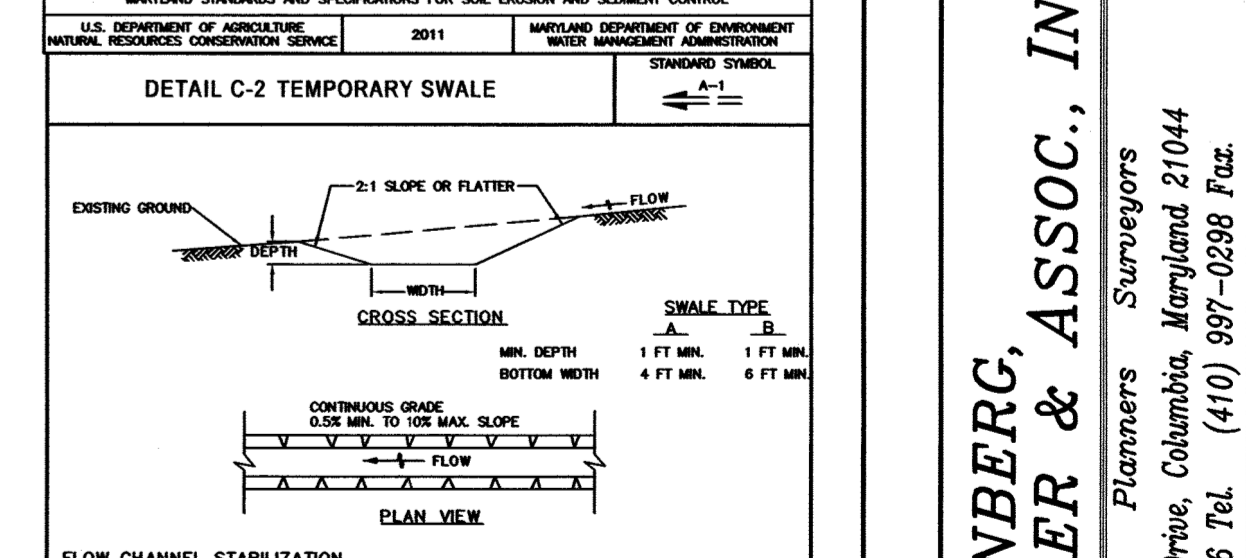
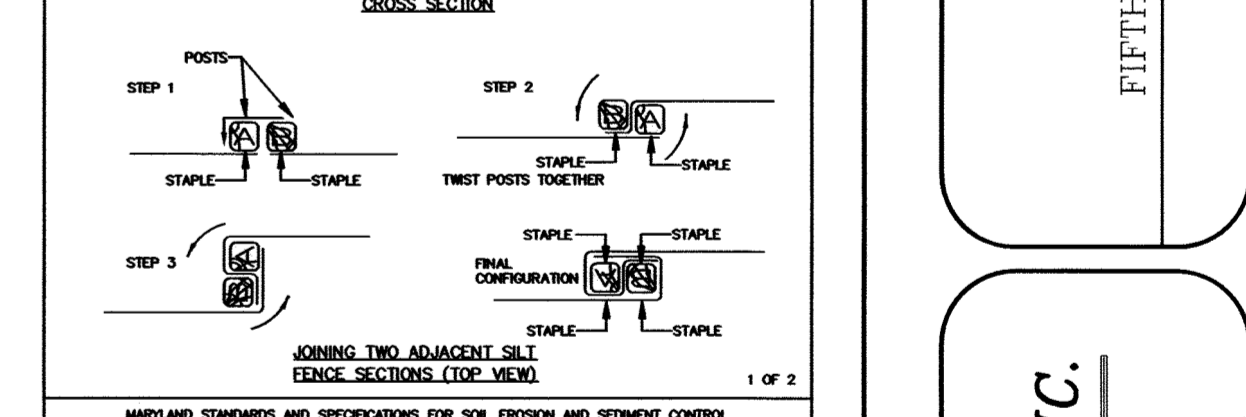
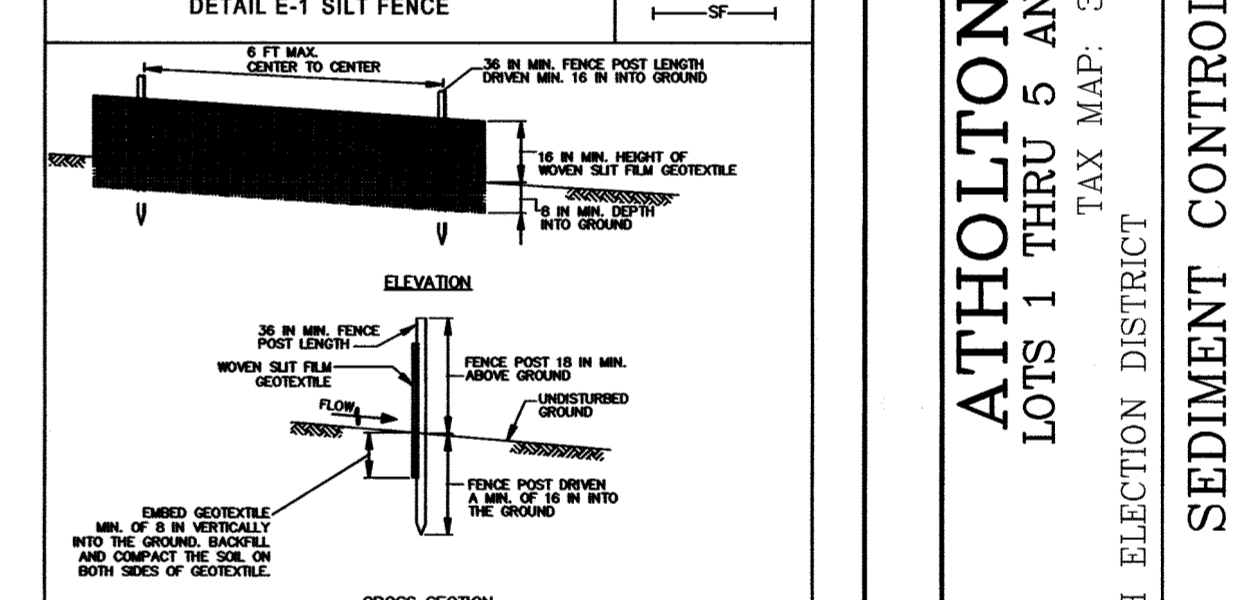
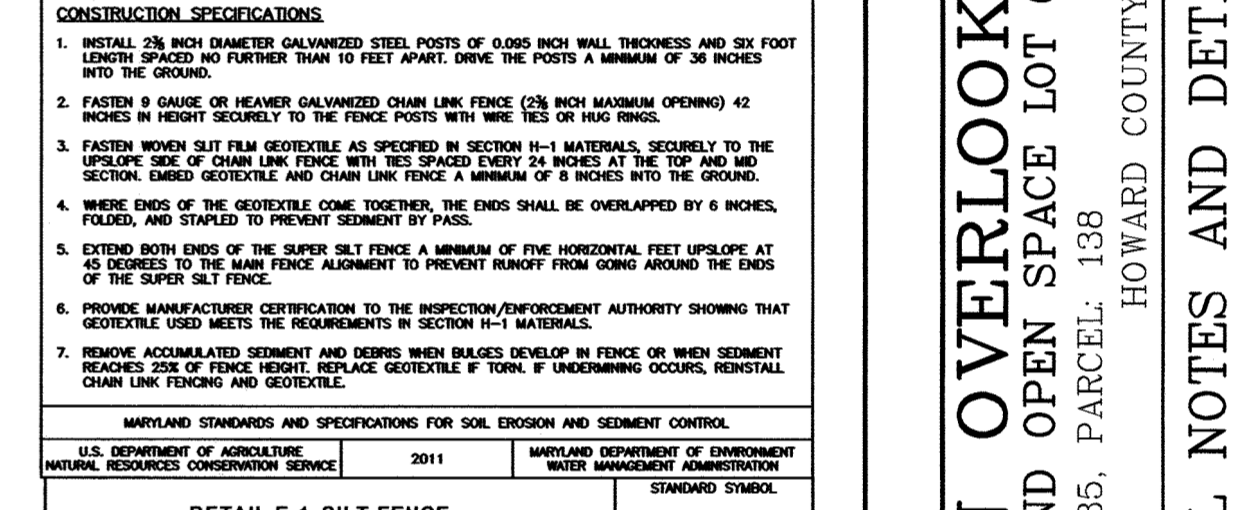
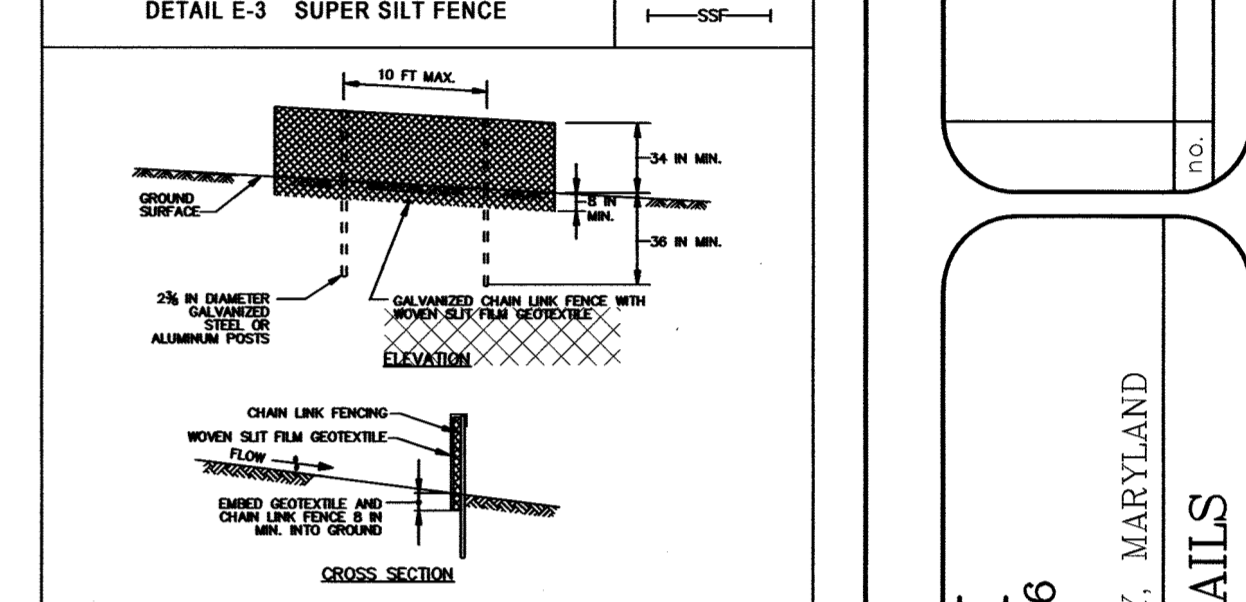
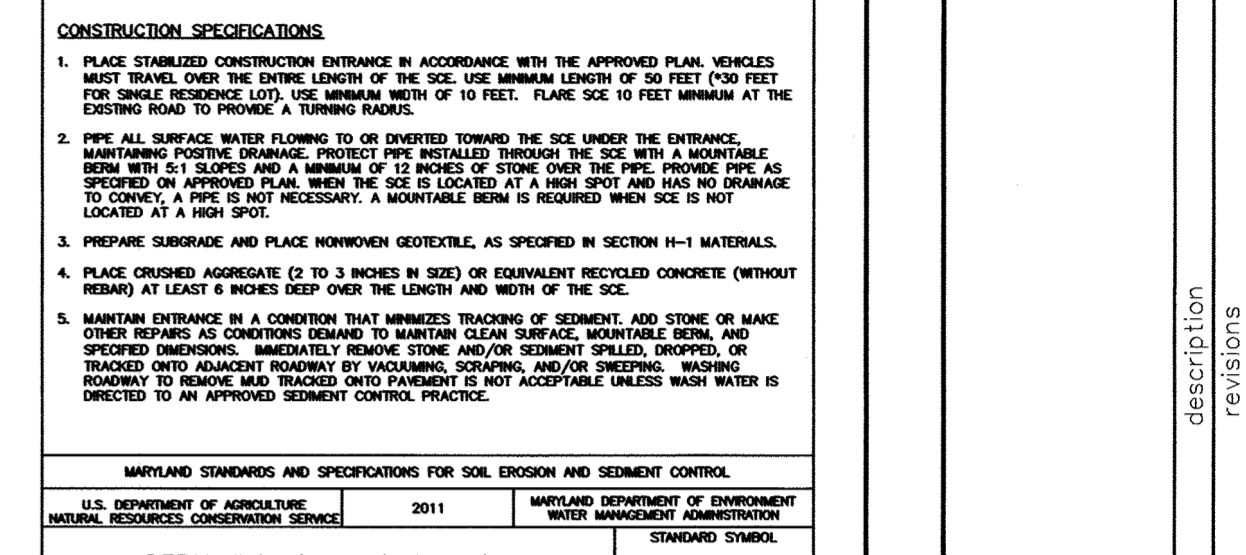
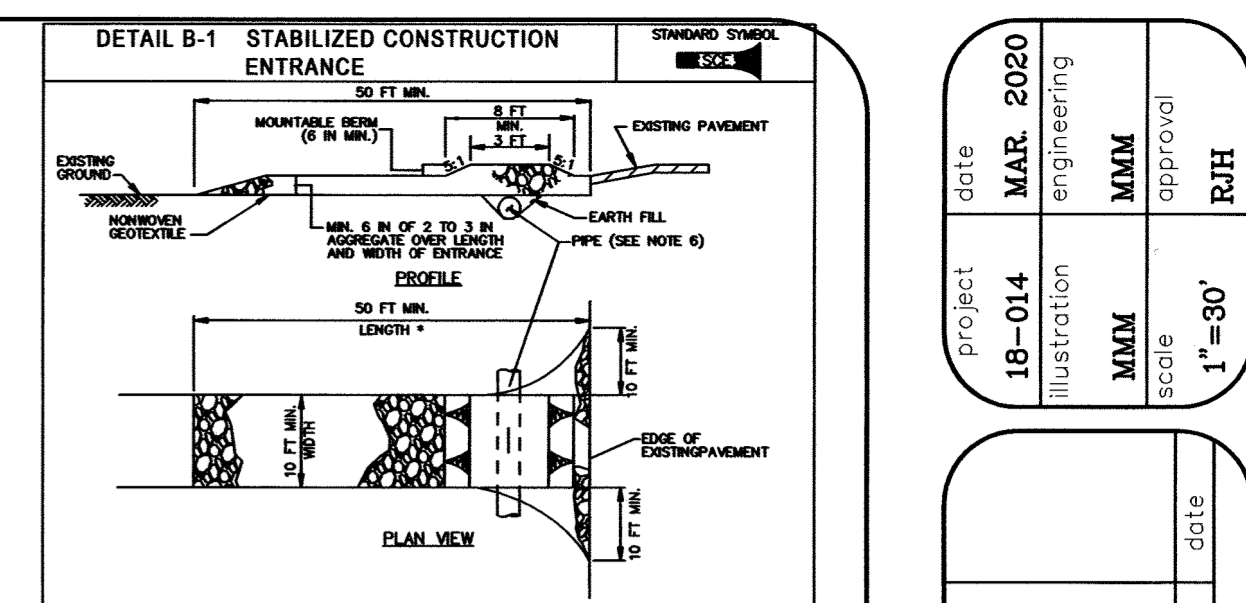
- A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

EROSION AND SEDIMENT CONTROL NOTES

- 1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT. (1 DAY)
2. INSPECT AND REPAIR AS NEEDED PERIMETER CONTROLS INSTALLED UNDER F-19-062: SILT FENCE, SUPER SILT FENCES (1 DAY)
3. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION INDICATED. (1 DAY)
4. CONSTRUCT HOUSES (90-180 DAYS PER HOUSE)
5. INSTALL DRYWELLS AND MICRO-BIORETENTION FACILITY (10 DAYS)
6. COMPLETE FINE GRADING OF SITE TO GRADES INDICATED (2 DAYS)
7. SEED AND MULCH ALL REMAINING DISTURBED AREAS. (1 DAY PER)
8. WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS (1 DAY).



Project information: ATHOLTON OVERLOOK LOTS 1 THRU 5 AND OPEN SPACE LOT 6. Includes dates (MAR-2020), project name, and contact information for MILDENBERG, BOENDER & ASSOC., INC. (Engineers, Planners, Surveyors).

P: 2004A18-014: ATHOLTON OVERLOOK (DIVE) 18-014-500-DWG