

SITE ANALYSIS DATA CHART

1. GENERAL SITE DATA
 - a. PRESENT ZONING: NT-DMUA
 - b. APPLICABLE DPZ FILE REFERENCES:
 - FDP-DC-CRESCENT-1A
 - F-16-107
 - F-15-106
 - SP-16-009
 - ECP-16-042
 - ECP-16-041
 - c. PROPOSED USE: MASS GRADING
 - d. EXISTING USE: VACANT/OVERFLOW PARKING FOR EVENTS
 - e. PROPOSED WATER: N/A
 - f. PROPOSED SEWER: N/A
 - g. ANY OTHER RELEVANT INFORMATION: N/A
 - h. AREA OF STEEP SLOPES 15% AND GREATER: 0.68 AC.
 - i. AREA OF HIGHLY ERODIBLE SOIL: 0.56 AC.
 - j. AREA OF ONSITE FLOODPLAIN AND ITS BUFFER: 0.00 AC.
 - k. AREA OF ONSITE WETLANDS AND THEIR BUFFERS: 0.00 AC.
 - l. AREA OF FORESTS: 4.96 AC.
 - m. AREA OF ERODIBLE SOILS: 0.68 AC.±
 - n. SITE AREA: 21.39 AC±
 - o. LIMIT OF DISTURBANCE: 20.58 AC±

GENERAL NOTES

1. THERE ARE REGULATED STREAMS, WETLANDS, 100 YEAR FLOODPLAINS, ASSOCIATED BUFFERS, OR STEEP SLOPES ON OR ADJACENT TO THE SITE. JUSTIFICATIONS ARE NECESSARY AS DESCRIBED IN THE HOWARD COUNTY CODE SECTION 16.116(C). DISTURBANCE TO THE FLOODPLAIN, STREAM, WETLANDS, OR ASSOCIATED BUFFERS IS NOT ANTICIPATED WITH THESE MASS GRADING OPERATIONS. THERE WILL BE ISOLATED IMPACTS TO STEEP SLOPES WITHIN THE LIMIT OF DISTURBANCE. THESE STEEP SLOPES ARE LESS THAN 20,000 SQUARE FEET AND LESS THAN 10 VERTICAL FEET PER SECTION 16.116(B) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
2. THIS PLAN IS EXEMPT FROM FOREST CONSERVATION ACT REQUIREMENTS UNDER SUBSECTION 16.1202(B)(IV) SINCE IT IS PART OF A PLANNED UNIT DEVELOPMENT WHICH HAD PRELIMINARY PLAN APPROVAL AND 50% OR MORE OF THE LAND WAS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
3. DURING CONSTRUCTION THIS PLAN SHALL MEET THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL.
4. NO LANDSCAPING IS REQUIRED FOR THIS SITE DEVELOPMENT PLAN. THIS SITE DEVELOPMENT IS FOR MASS GRADING ONLY AND NO USE IS PROPOSED AT THIS TIME.
5. NO PUBLIC UTILITIES OR BUILDING CONSTRUCTION IS PERMITTED UNDER THIS DRAWING.
6. MASS GRADING OF AREA 3 UNDER THIS SDP WILL OCCUR DURING THE MERRIWEATHER POST PAVILION OFF-SEASON (OCTOBER TO APRIL), SO NO PARKING SPACES WILL BE DISPLACED BY THE ACTIVITY.
7. MASS GRADING SHALL NOT BEGIN UNTIL MERRIWEATHER DR AND NORTH SOUTH CONNECTOR HAVE BEEN GRADED, AND STABILIZED W/VEGETATION, STONE SUB-BASE AND STORM DRAIN OUTFALL SYSTEM HAS BEEN INSTALLED.
8. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT 410-313-1880.
9. PLEASE BE ADVISED THAT ANY PROJECT WHICH CREATES A DISTURBANCE OF FIVE (5) ACRES OR MORE WILL REQUIRE A "NOTICE OF INTENT TO COMPLY WITH GENERAL PERMIT FOR CONSTRUCTION ACTIVITY" (NOC).
10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
11. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST 5 WORKING DAYS PRIOR TO THE START OF WORK.
12. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HRS PRIOR TO ANY EXCAVATION WORK BEING DONE.
13. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
14. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15. AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW.
15. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS 36DB AND 36DA WERE USED FOR THIS PROJECT.
16. NO PERMANENT STRUCTURES ARE TO BE BUILT WITH THIS PLAN. THIS PLAN IS ONLY FOR GRADING IN PREPARATION TO THE FINAL INSTALLATION OF THE SWITCH GEAR.

SEDIMENT CONTROL PHASING NOTE

PHASING LIMITS FOR THE SITE IMPROVEMENTS ARE SHOWN IN THIS SUBMISSION SET.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
 - a. Prior to the start of earth disturbance
 - b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading
 - c. Prior to the start of another phase of construction or opening of another grading unit
 - d. Prior to the removal or modification of sediment control practices.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1) and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

6. Site Analysis:	STAGE 1	STAGE 2
Total Area of Site:	21.39 Acres	21.39 Acres
Area Disturbed:	18.51 Acres	4.36 Acres
Area to be roofed or paved:	0.00 Acres	0.00 Acres
Area to be vegetatively stabilized:	10.51 Acres	4.26 Acres
Total Cut:	55,239 Cu. Yds.	19,165 Cu. Yds.
Total Fill:	29,614 Cu. Yds.	2,616 Cu. Yds.
Offsite waste/borrow area location:	TO BE DETERMINED	TO BE DETERMINED

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
 - Inspection date
 - Inspection type (routine, pre-storm event, during rain event)
 - Name and title of inspector
 - Weather information (current conditions as well as time and amount of last recorded precipitation)
 - Brief description of project's status (e.g., percent complete) and/or current activities
 - Evidence of sediment discharges
 - Identification of plan deficiencies
 - Identification of sediment controls that require maintenance
 - Identification of missing or improperly installed sediment controls
 - Compliance status regarding the sequence of construction and stabilization requirements
 - Photographs
 - Monitoring/sampling
 - Maintenance and/or corrective action performed
 - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

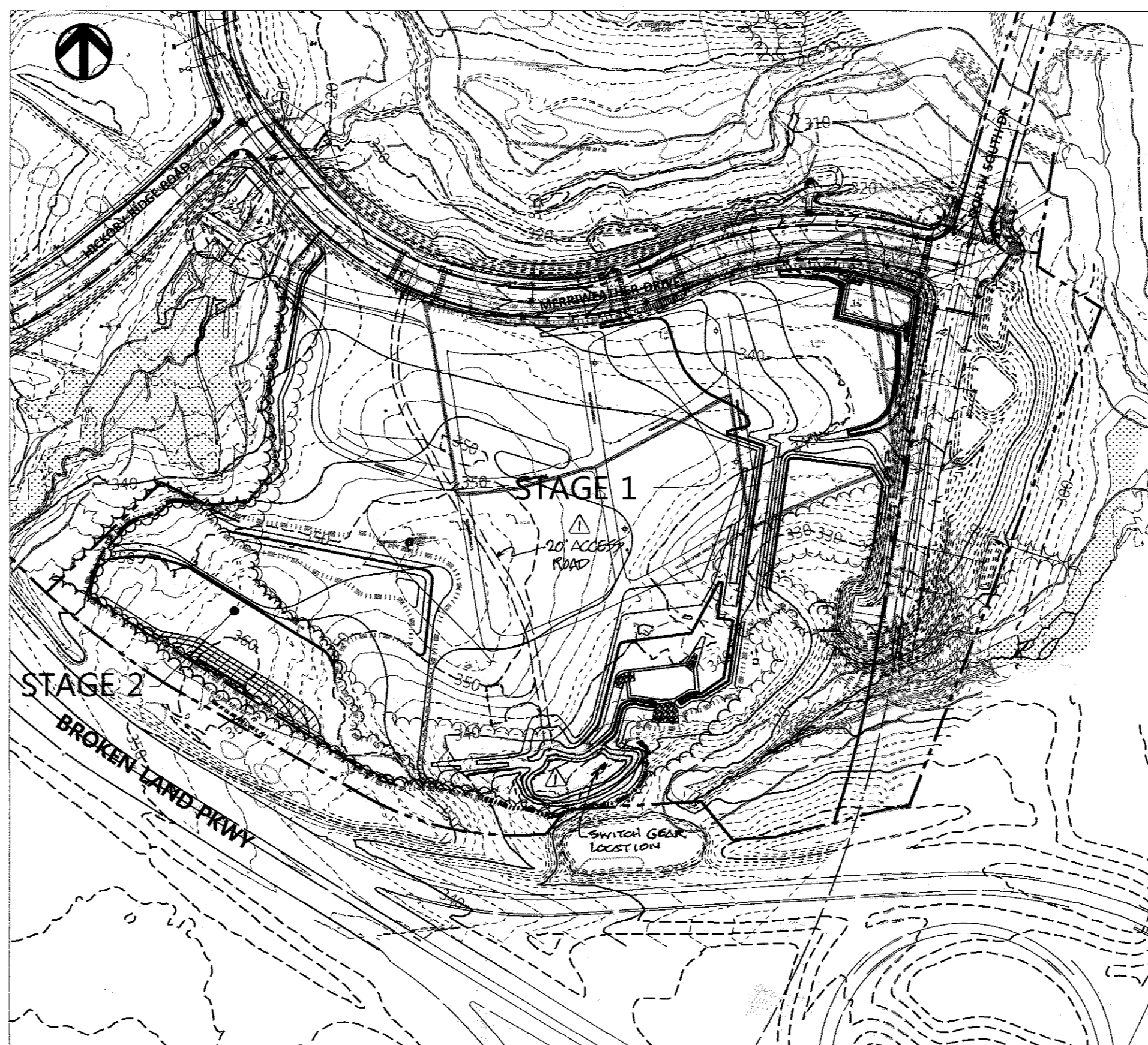
9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - Use I and IP March 1 - June 15
 - Use III and IIIIP October 1 - April 30
 - Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

SITE DEVELOPMENT PLAN FOR COLUMBIA CRESCENT PHASE 1 AREA 3, PHASE 1 MASS GRADING HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

P/O PARCEL 527 SDP-16-075 PARCEL ID

HOWARD COUNTY MARYLAND



STANDARD SEDIMENT CONTROL NOTE

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE CLEARLY MARKED IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

- a. PRIOR TO THE START OF EARTH DISTURBANCE
- b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
- c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
- d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN, WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN MASS GRADING OPERATIONS. PROVIDE POSITIVE DRAINAGE TO ALL SEDIMENT CONTROL DEVICES. (5 DAYS)

ENVIRONMENTAL DATA SOURCES

1. FLOODPLAINS EXIST WITHIN THE OVERALL TRACT BOUNDARY, HOWEVER, REMAIN OUTSIDE OF THE SUBDIVIDED AREA OF DEVELOPMENT.
2. WETLANDS EXIST WITHIN THE OVERALL TRACT BOUNDARY, HOWEVER, REMAIN OUTSIDE OF THE SUBDIVIDED AREA OF DEVELOPMENT.
3. SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
4. DECLARATION OF RESTRICTIVE COVENANT AREAS - ARMY CORPS OF ENGINEERS PERMIT NUMBER 2014-61063, SPECIAL CONDITION #14 REQUIRES THAT ANY WETLAND MITIGATION AREAS BE PROTECTED IN PERPETUITY BY A DECLARATION OF RESTRICTIVE COVENANTS TO BE RECORDED BY JULY 1, 2016. THIS DOCUMENT PROHIBITS ANY DISTURBANCE WITHIN THIS AREA INCLUDED BUT NOT LIMITED TO NEW DEVELOPMENT, INSTALLATION OF UTILITIES, GRADING, REMOVAL OF VEGETATION, ETC. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE ARMY CORPS OF ENGINEERS HAVE PLACED THESE RESTRICTIVE COVENANTS ON THE AREA TO PROTECT WATER QUALITY, ENVIRONMENTAL RESOURCES AND THE MITIGATION AREA REQUIRED TO OFF-SET IMPACTS TO WETLANDS, STREAMS AND FLOODPLAINS PROPOSED BY THIS DEVELOPMENT.

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	MASS GRADING & SEDIMENT CONTROL PLAN STAGE 1
4	MASS GRADING & SEDIMENT CONTROL PLAN STAGE 2
5	DRAINAGE AREA MAPS
6	SEDIMENT EROSION CONTROL DETAILS
7	SEDIMENT EROSION CONTROL DETAILS
8	SEDIMENT EROSION CONTROL DETAILS
9	SEDIMENT EROSION CONTROL SPECS

SEQUENCE OF CONSTRUCTION

STAGE 1

1. OBTAIN A GRADING PERMIT FOR THE PROPOSED WORK.
2. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES (DILP) AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. (2 DAYS)
3. CLEAR AND GRUB FOR AND INSTALL TWO STABILIZED CONSTRUCTION ENTRANCES (SCE), AND ALL PERIMET DEVICES, INCLUDING: SUPER SILT FENCE (SSF), SILT FENCE (SF), DIVERSION FENCE (DF), EARTH DIKE (ED), TEMPORARY GABION OUTLET STRUCTURE (TIGOS) AND ROCK OUTLET PROTECTION (ROP III). (1 WEEK)
4. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB FOR TRAP 1 (PIPE OUTLET SEDIMENT TRAP) AND TRAP 2 (STONE OUTLET SEDIMENT TRAP). (3 DAYS)
5. BEGIN INSTALLATION OF PIPE OUTLET SEDIMENT TRAP #1 IN THE FOLLOWING ORDER:
 - a. INSTALL 30" CMP BARREL PIPE AND ITS ASSOCIATED HEADWALL, HW-1, AND HORIZONTAL BEND STRUCTURE TEMPORARILY CAP AT RISER LOCATION. REFER TO SHEET 4 FOR "INITIAL EXISTING CONDITIONS PROFILE PIPE OUTLET SEDIMENT TRAP #1 OUTFALL". (3 DAYS)
 - b. EXCAVATE TO BOTTOM OF TRAP AND CONSTRUCT EMBANKMENT AREA. (4 DAYS)
 - c. REMOVE TEMPORARY CAP AND INSTALL TRAP'S RISER COMPONENTS. (2 DAYS)
 - d. INSTALL REMOVABLE PUMPING STATION AND BAFFLE BOARDS AS SHOWN ON PROPOSED SEDIMENT CONTROL PLAN. (3 DAYS)
 - e. INSTALL TEMPORARY INFLOW SWALES, EROSION CONTROL MATTING AND RIP RAP INFLOW PROTECTION AT TRAP'S INFLOW POINTS AS SHOWN ON SEDIMENT CONTROL PLAN. (4 DAYS)
 - f. ONCE MERRIWEATHER DRIVE AND NORTH/SOUTH CONNECTOR UTILITY OPERATIONS BEGIN, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE A PORTION OF BARREL PIPE FROM HW-1 TO HORIZONTAL BEND STRUCTURE. MAKE NEW 30" CMP CONNECTION FROM EXISTING PIPE STUB TO PROPOSED MH-29A. REFER TO SHEET 5 FOR "ULTIMATE PIPE OUTLET SEDIMENT TRAP #1 OUTFALL PROFILE". (3 DAYS)
- NOTE: THE REMOVABLE PUMPING STATION IS TO BE USED TO DEWATER THE TRAP IN THE EVENT OF MAINTENANCE, SUCH AS: CLEANOUT OPERATIONS AND AT TIME OF TRAP REMOVAL.
6. BEGIN INSTALLATION OF STONE OUTLET SEDIMENT TRAP #2 IN THE FOLLOWING ORDER:
 - a. EXCAVATE TO BOTTOM OF TRAP AND CONSTRUCT EMBANKMENT AREA. (3 DAYS)
 - b. INSTALL REMOVABLE PUMPING STATION AND BAFFLE BOARDS AS SHOWN ON PROPOSED SEDIMENT CONTROL PLAN. (3 DAYS)
 - c. INSTALL TRAP'S STONE OUTLET WEIR CREST AND ROCK OUTLET PROTECTION. (2 DAYS)
 - d. INSTALL TEMPORARY INFLOW SWALES, EARTH DIKES, EROSION CONTROL MATTING AND RIP RAP INFLOW PROTECTION AT TRAP'S INFLOW POINTS AS SHOWN ON SEDIMENT CONTROL PLAN. GRADING TO BE LIMITED TO THE INITIAL INSTALLATION OF SEDIMENT CONTROL PRACTICES AS SHOWN ON "EXISTING CONDITIONS DRAINAGE AREA MAP" ON SHEET 5 OF 9 ONLY. (6 DAYS)
7. UPON COMPLETION OF SEDIMENT TRAPS AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF STAGE 1 AREA AND BEGIN MASS GRADING OPERATIONS. AS MASS GRADING OPERATIONS PROGRESS, TEMPORARY SWALES SHALL BE ADJUSTED TO CONVEY RUNOFF TO TRAP. (6 DAYS)
8. PROVIDE EROSION CONTROL MATTING ALONG TEMPORARY SWALES AND EARTH DIKES AS SHOWN ON PLAN THAT CONVEY SEDIMENT RUNOFF TO TRAPS, AS WELL AS, MATTING FOR SLOPES AS SHOWN ON PLAN. (3 DAYS)
9. AFTER STAGE 1 MASS GRADING HAS BEEN COMPLETED, INSTALL PERMANENT SEED AND MULCH. (3 DAYS)

STAGE 2

10. ONCE 50% OF THE SITE HAS BEEN VEGETATIVELY STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB FOR AND INSTALL STAGE 2 PERIMETER CONTROLS, INCLUDING SILT FENCE (SF), SUPER SILT FENCE (SSF) AND MOUNTABLE BERM. (2 DAYS)
11. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN STAGE 2 MASS GRADING OPERATIONS. (3 DAYS)
12. PROVIDE EROSION CONTROL MATTING ON SLOPES 3:1 OR STEEPER AS SHOWN ON SEDIMENT CONTROL PLAN. (1 DAY)
13. AFTER STAGE 2 MASS GRADING HAS BEEN COMPLETED, INSTALL PERMANENT SEED AND MULCH. (2 DAYS)
14. ONCE ENTIRE SITE HAS BEEN VEGETATIVELY STABILIZED, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL INTERNAL SEDIMENT CONTROL MEASURES, SUCH AS: SILT FENCE AND MOUNTABLE BERM. STABILIZE THOSE AREAS DISTURBED BY THIS REMOVAL PROCESS. ALL PERIMETER DEVICES AND SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL FINAL SITE GRADING PERMIT IS ISSUED. (2 DAYS)

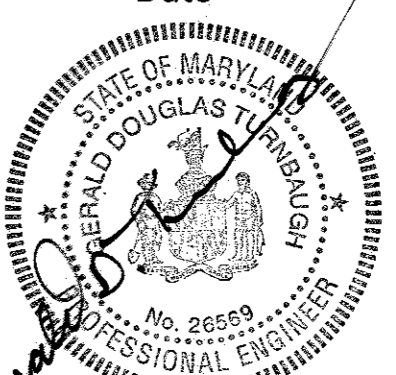
DPZ FILE REFERENCES:

- ECP-16-042
- ECP-16-041
- SP-16-009
- F-16-107
- F-15-106
- FDP-DC-CRESCENT-1A

CONTRACT NUMBERS:

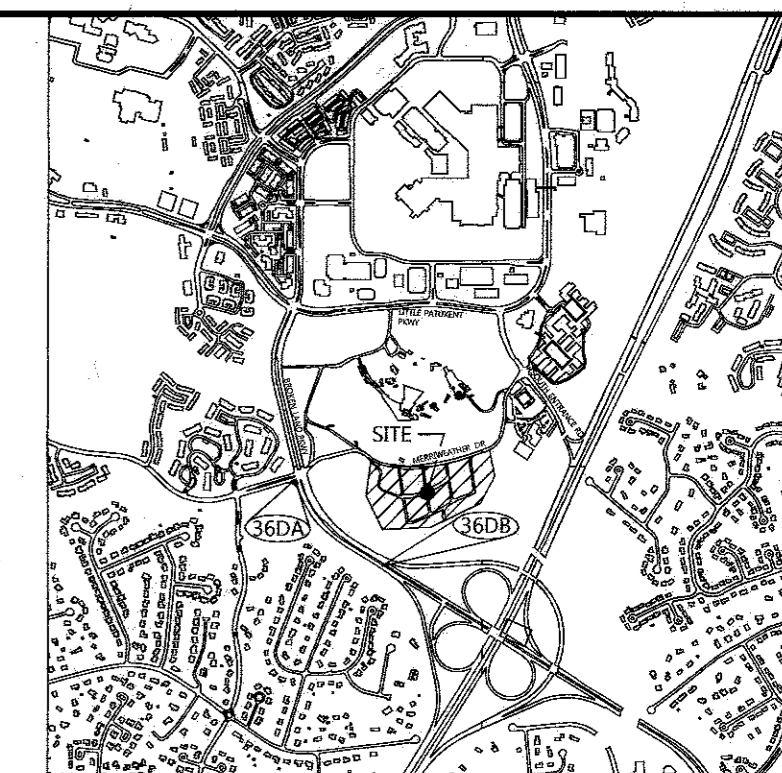
- EX. WATER & EX. SEWER: SYMPHONY DR : 172 - W & S 24-4868-D
- MERRIWEATHER DR: 24-4928-D

12-9-16
Date



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. 26569 EXPIRATION DATE: 7-16-17



VICINITY MAP

SCALE: 1"=2000'
HOWARD COUNTY ADC
MAP NUMBER 33
GRID NO. A-2

HOWARD COUNTY GEODETIC COORDINATES	
BENCH MARK ID: 36DB NORTHING: 170670.302 EASTING: 105.05	BENCH MARK ID: 36DA NORTHING: 170947.216 EASTING: 1140.84

PURPOSE STATEMENT FOR REVISION NO. 1:
THE PURPOSE OF THIS REVISION IS TO ADJUST THE LIMIT OF DISTURBANCE, MASS GRADING AND SEDIMENT CONTROLS FOR THE SOLE PURPOSE OF CONSTRUCTING MAIN POWER / SWITCHGEAR PAD & COMPONENTS AT ITS PERMANENT LOCATION AND ELEVATION. THIS POWER SOURCE WILL BE UTILIZED DURING CONSTRUCTION, AS WELL AS, PERMANENT POWER SUPPLY FOR THE FUTURE DEVELOPMENT.

ENVIRONMENTAL DATA SOURCES

1. FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIOHABITATS DATED 06/18/2015.
2. WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECTS THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
3. SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
4. ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016

DATA SOURCES:

1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15. AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
PARCEL 527	10750 BROKENLAND PKWY

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>Phil P. ...</i>	2-7-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Walt ...</i>	2-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Walt ...</i>	2-13-17
DIRECTOR, DIVISION OF LAND DEVELOPMENT	DATE

Date	No.	Revision Description
10/11/17	1	MASS GRADING CHANGES FOR SWITCHGEAR EQUIPT.

DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD AREA 3, PHASE I MASS GRADING
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
COLUMBIA REGIONAL OFFICE
10480 LITTLE PATUXENT PARKWAY SUITE 400
COLUMBIA, MD 21044
410-364-4800

P/O PARCEL 527
FDP-DC-CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042
TAX MAP 36; NT-DMUA
HOWARD COUNTY, MD

SUBDIVISION NAME	SECTION/PARCEL	LOT/PARCEL #
COLUMBIA CRESCENT	AREA 3	527/Parcel D

PERMIT INFORMATION CHART
PERMIT NO. 25202
BLOCK # 36
TAX ZONE MAP 36
ELECT. DISTRICT S-15
CENSUS TRACT 605602
WATER CODE S50
SEWER CODE LITTLE PATUXENT



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

COVER SHEET		
Des. By GOT/SLAJ	SCALE AS SHOWN	Proj. No. 04038.80
Drn. By MCB/SLAJ	Date 5/12/16	
Chk. By ER3/GOT	Approved MCB	1 of 9

SDP-16-075

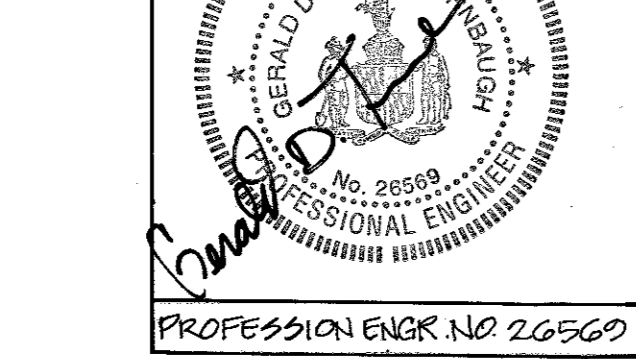
APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: December 1, 2016

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John E. Blanton 2/2/17
HOWARD SOIL CONSERVATION DISTRICT
OWNERS/DEVELOPER CERTIFICATION:

I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-WAY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.
Ami Rave 12-19-16
OWNERS/DEVELOPER'S SIGNATURE DATE
PRINTED NAME & TITLE

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. 26569, EXPIRATION DATE: 7-16-2017.
10-18-2017
FOR REVISION NO. 1 ONLY



DESIGNER CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Gerald D. Turnbaugh 12-9-16
DESIGNER'S SIGNATURE DATE
PRINTED NAME
MDE REGISTRATION NO. 26569
P.E. OR R.L.A. (CIRCLE ONE)

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. TREELINE
- LIMIT OF DISTURBANCE
- SOILS
- STABILIZED CONSTRUCTION ENTRANCE
- PROP. TREE LINE
- EROSION CONTROL MATTING (SWALE)
- EROSION CONTROL MATTING (SLOPE)
- SUPER SILT FENCE
- SILT FENCE
- DIVERSION FENCE

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

John R. Robertson
 HOWARD SOIL CONSERVATION DISTRICT
 DATE: 2.16.17

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE: December 1, 2016

PROP. 100YR FLOOD PLAIN

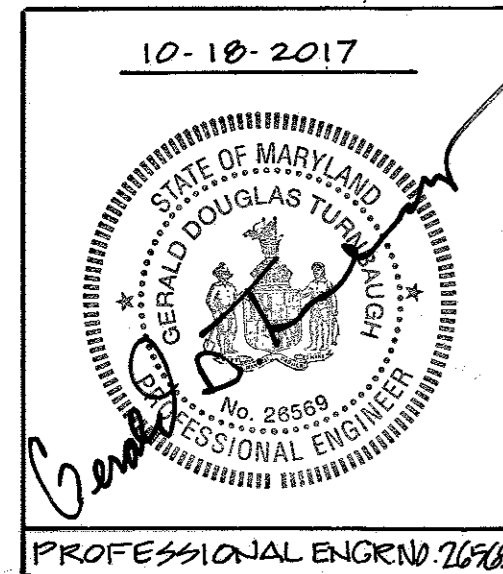
PERENNIAL STREAM

DECLARATION OF RESTRICTIVE COVENANT

PERENNIAL STREAM

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. 26569, EXPIRATION DATE: 7-18-2017.

FOR REVISION NO. 1 ONLY



PROP. 100YR FLOOD PLAIN

PERENNIAL STREAM

25' WETLAND BUFFER

ROCK OUTFALL PROTECTION III CLASS I RIPRAP ON NON-WOVEN GEOTEXTILE L=6', W=8', D50=95', T=19'

STEEP SLOPES DATA

[Dark Gray Box]	15% AND UP (HIGHLY ERODIBLE)
[Light Gray Box]	20% AND UP (STEEP SLOPES)

OWNERS/DEVELOPER CERTIFICATION:

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

OWNERS/DEVELOPER SIGNATURE: *Am D. Paik* VP
 DATE: 12-19-16

DESIGN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DESIGNER'S SIGNATURE: *Gerald D. Turnbaugh*
 DATE: 12-19-16
 M.D. REGISTRATION NO. 26569 (P.L.L.S. OR R.L.A. (CIRCLE ONE))

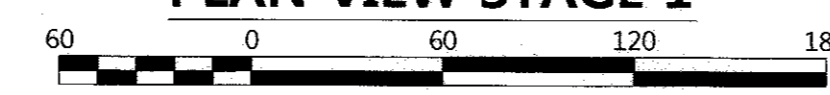
HYDROLOGIC SOIL GROUP - SUMMARY BY MAP UNIT - HOWARD COUNTY, MARYLAND

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC GROUP	K VALUE (Kw)
BaA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPE	D	0.32
GbB	GLADSTONE LOAM 3 TO 8 PERCENT SLOPES	B	0.20
GbC	GLADSTONE LOAM 8 TO 15 PERCENT SLOPES	B	0.20
MaC	MANOR LOAM 8 TO 15 PERCENT SLOPES	B	0.24
McD	MANOR LOAM 15 TO 25 PERCENT SLOPES, VERY ROCKY	B	0.24

USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY 2.0 NATIONAL COOPERATIVE SOIL SURVEY 11/26/2007 HOWARD COUNTY SOIL MAP #18

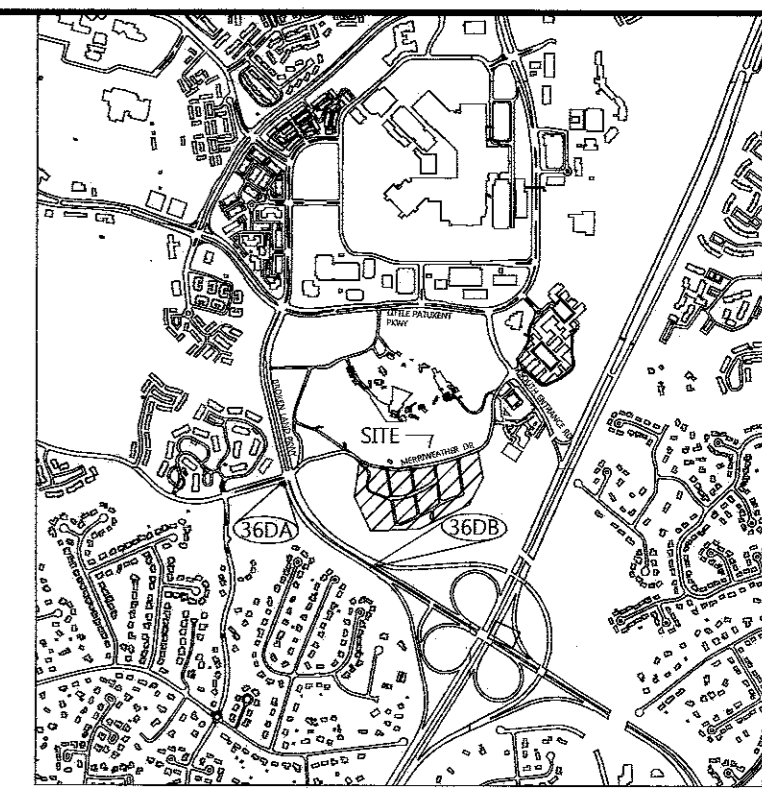
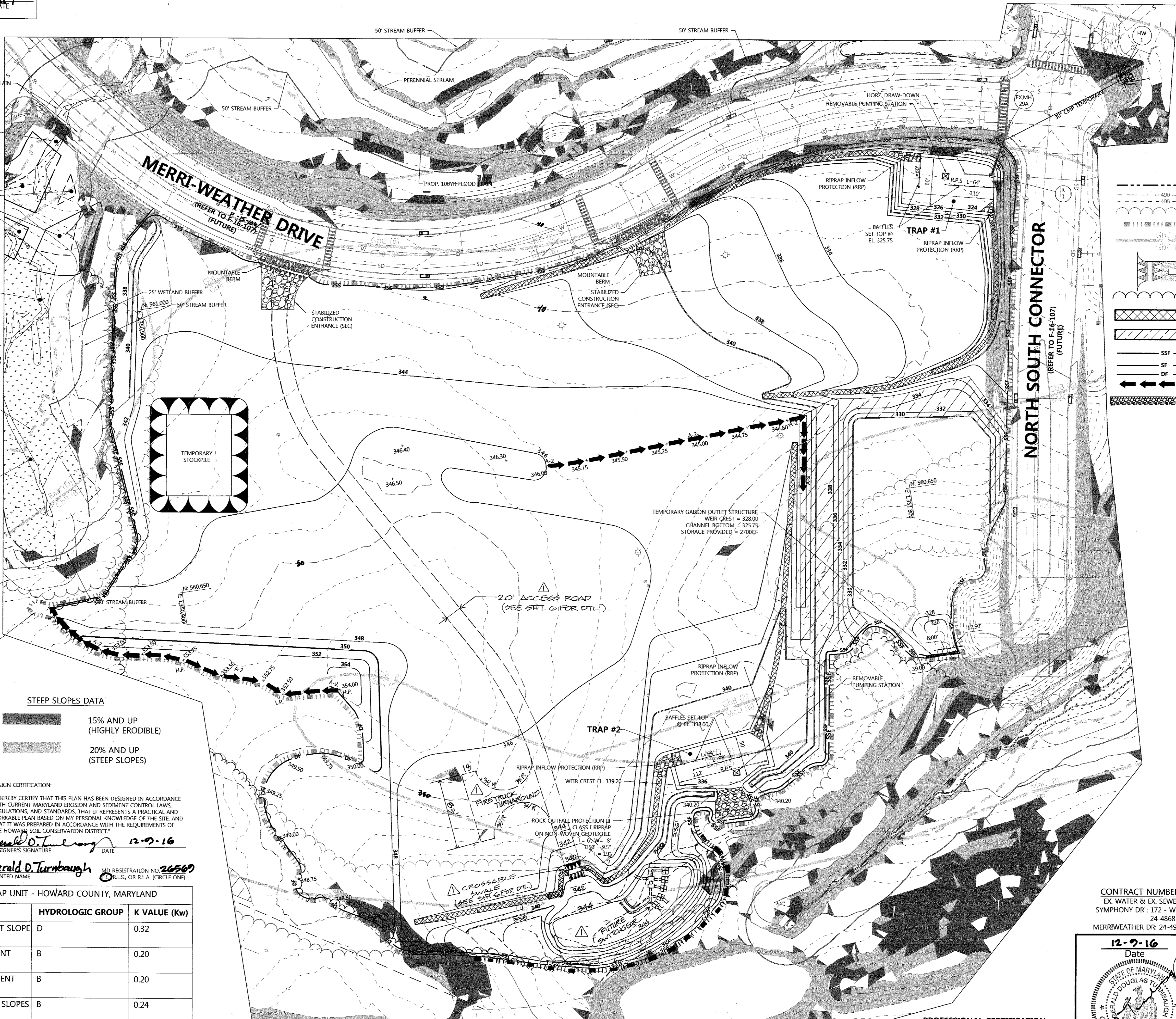
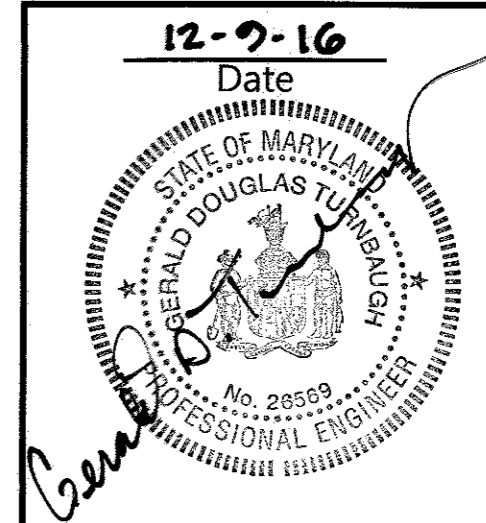
NOTE: MASS GRADING SHALL NOT BEGIN UNTIL MERRI-WEATHER DR AND NORTH SOUTH CONNECTOR HAVE BEEN GRADED, AND STABILIZED VEGETATION, STONE SUB-BASE AND STORM DRAIN OUTFALL SYSTEM HAS BEEN INSTALLED.

PLAN VIEW STAGE 1



NOTE: NO CONSTRUCTION SHALL BEGIN UNTIL ALL MATERIALS NEEDED FOR SEDIMENT CONTROL ARE ON SITE INCLUDING PIPE AND RISER STRUCTURE FOR PIPE OUTLET SEDIMENT TRAP.

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. 26569, EXPIRATION DATE: 7-18-17.



LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. TREELINE
- LIMIT OF DISTURBANCE
- SOILS
- STABILIZED CONSTRUCTION ENTRANCE
- PROP. TREE LINE
- EROSION CONTROL MATTING (SWALE)
- EROSION CONTROL MATTING (SLOPE)
- SSF
- SF
- DF
- EARTH DIKE
- TEMPORARY GABION OUTLET STRUCTURE (TGOS)

VICINITY MAP
 SCALE: 1"=2000'
 HOWARD COUNTY ADC
 MAP NUMBER 33
 GRID NO. A-2

- ENVIRONMENTAL DATA SOURCES**
- FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIOHABITATS DATED 06/18/2015.
 - WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECT THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
 - SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
 - ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016.

- DATA SOURCES:**
- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15, AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW F-16-107

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Chad Elmer 2-7-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Kate DeLoe 2-13-17
 CHIEF, DIVISION OF LAND DEVELOPMENT

Melissa J. Hall 2-13-17
 DIRECTOR, DIVISION OF LAND DEVELOPMENT

10/11/17 **MASS GRADING CHANGES FOR SWITCHGEAR EQUIP**

DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD AREA 3, PHASE I MASS GRADING

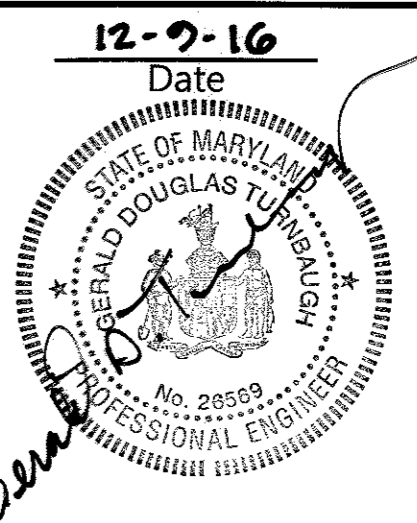
OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 COLUMBIA REGIONAL OFFICE
 10480 LITTLE PATIENT PARKWAY SUITE 400
 COLUMBIA, MD 21044
 410-964-4800

P/D PARCEL 527
 FOP-DC-CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042
 TAX MAP 36; NT DMUA
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

PERMIT INFORMATION CHART

SUBPROJECT NAME: COLUMBIA CRESCENT	SECTION/AREA: AREA 3	LOT/TRACT: 25/292
PLAT #/BLK #/ZONE: 25/292	TAX ZONE/MAP: 36	ELECT. DISTRICT: 5-15
WATER CODE: 550	SEWER CODE: 604	CENSUS TRACT: 605602
LITTLE PATIENT		

CONTRACT NUMBERS:
 EX. WATER & EX. SEWER:
 SYMPHONY DR : 172 - W & S
 24-4868-D
 MERRIWEATHER DR: 24-4928-D

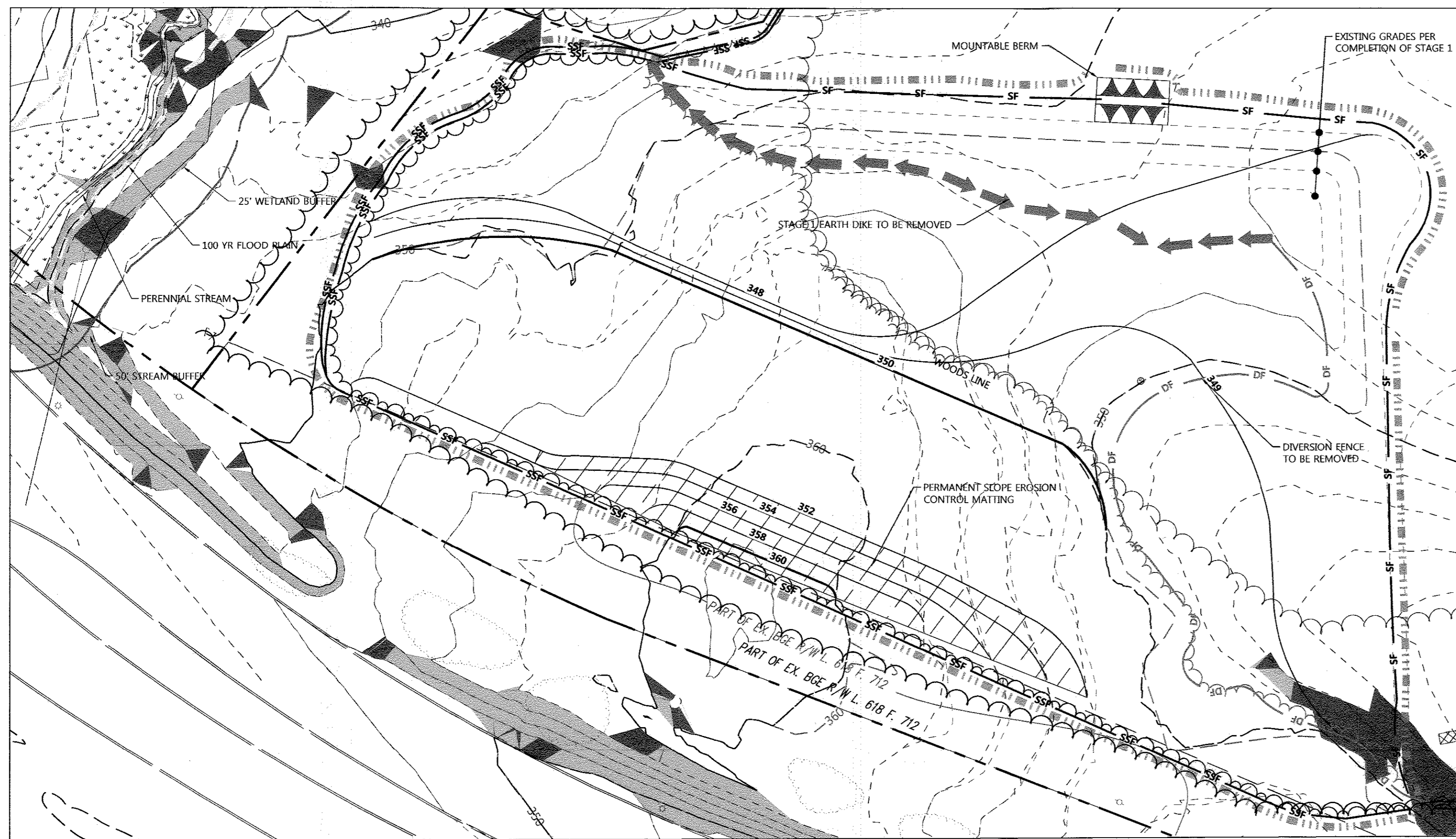


501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

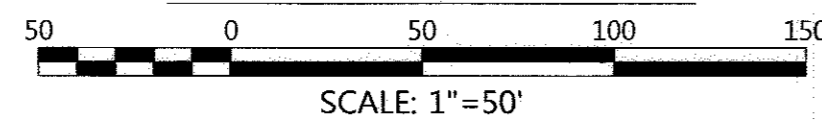
TITLE
 MASS GRADING AND SEDIMENT EROSION CONTROL PLAN STAGE 1

Des. By *GPT/SLAJ* SCALE AS SHOWN Proj. No. 04038.80
 Dm. By *MCJ/SLAJ* Date 5/12/16
 Chk. By *ER/GPT* Approved MCB 3 of 9

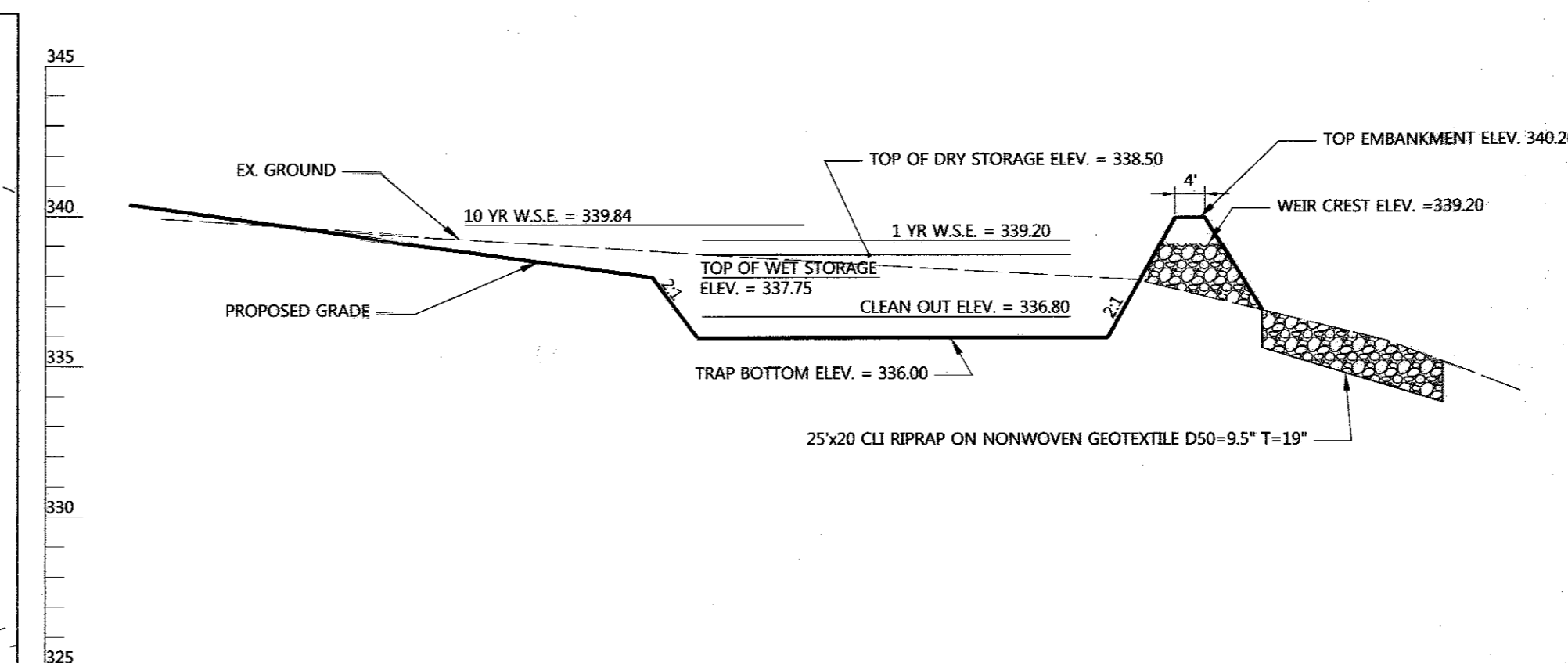
SDP-16-075



PLAN VIEW STAGE 2



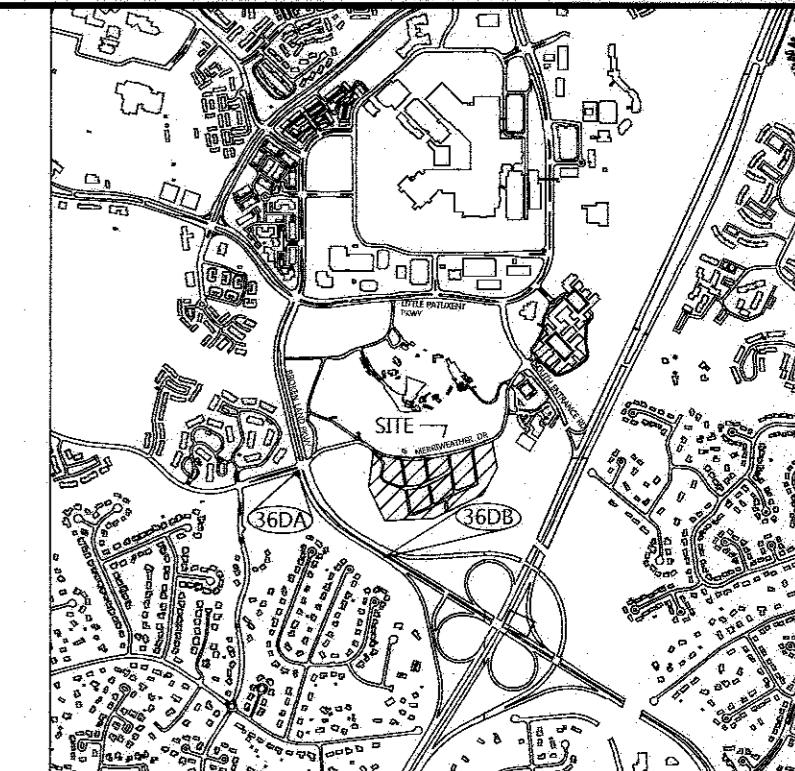
NOTE: NO CONSTRUCTION SHALL BEGIN UNTIL ALL MATERIALS NEEDED FOR SEDIMENT CONTROL ARE ON SITE INCLUDING PIPE AND RISER STRUCTURE FOR PIPE OUTLET SEDIMENT TRAP.



SECTION THRU STONE OUTLET SEDIMENT TRAP #2
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

HYDROLOGIC SOIL GROUP - SUMMARY BY MAP UNIT - HOWARD COUNTY, MARYLAND			
MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC GROUP	K VALUE (Kw)
BaA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPE	D	0.32
GbB	GLADSTONE LOAM 3 TO 8 PERCENT SLOPES	B	0.20
GbC	GLADSTONE LOAM 8 TO 15 PERCENT SLOPES	B	0.20
MaC	MANOR LOAM 8 TO 15 PERCENT SLOPES	B	0.24
McD	MANOR LOAM 15 TO 25 PERCENT SLOPES, VERY ROCKY	B	0.24

USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY 2.0 NATIONAL COOPERATIVE SOIL SURVEY 11/26/2007 HOWARD COUNTY SOIL MAP #18



VICINITY MAP
SCALE: 1"=2000'
HOWARD COUNTY ADC
MAP NUMBER 33
GRID NO. A-2

LEGEND

- PROPERTY LINE
- - - EX. CONTOURS
- - - EX. TREELINE
- - - LIMIT OF DISTURBANCE
- GbC (S)
- GbC (S)
- SOILS
- STABILIZED CONSTRUCTION ENTRANCE
- PROP. TREE LINE
- EROSION CONTROL MATTING (SWALE)
- EROSION CONTROL MATTING (SLOPE)
- SSSF SUPER SILT FENCE
- SF SILT FENCE
- DF DIVERSION FENCE
- EARTH DIKE

ENVIRONMENTAL DATA SOURCES

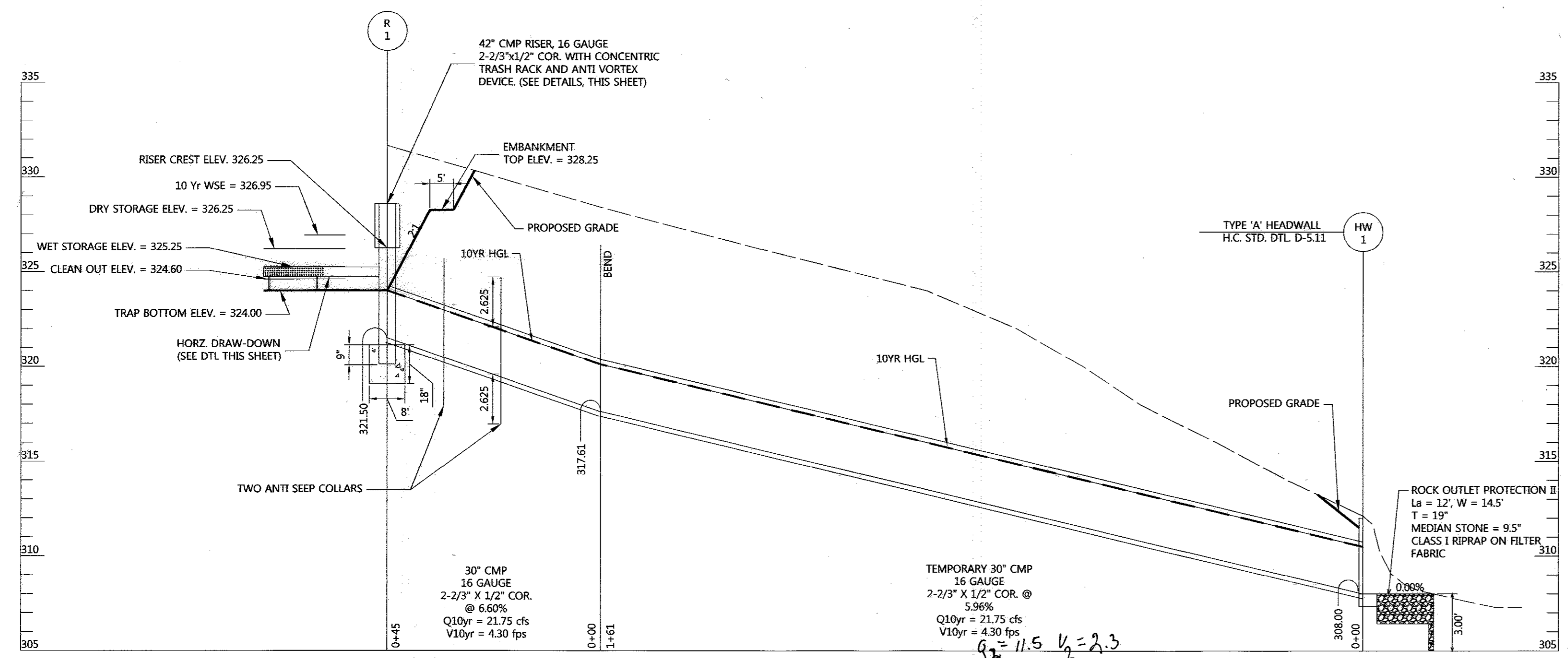
- FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIOHABITATS DATED 06/18/2015.
- WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECT THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
- SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
- ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016

DATA SOURCES:

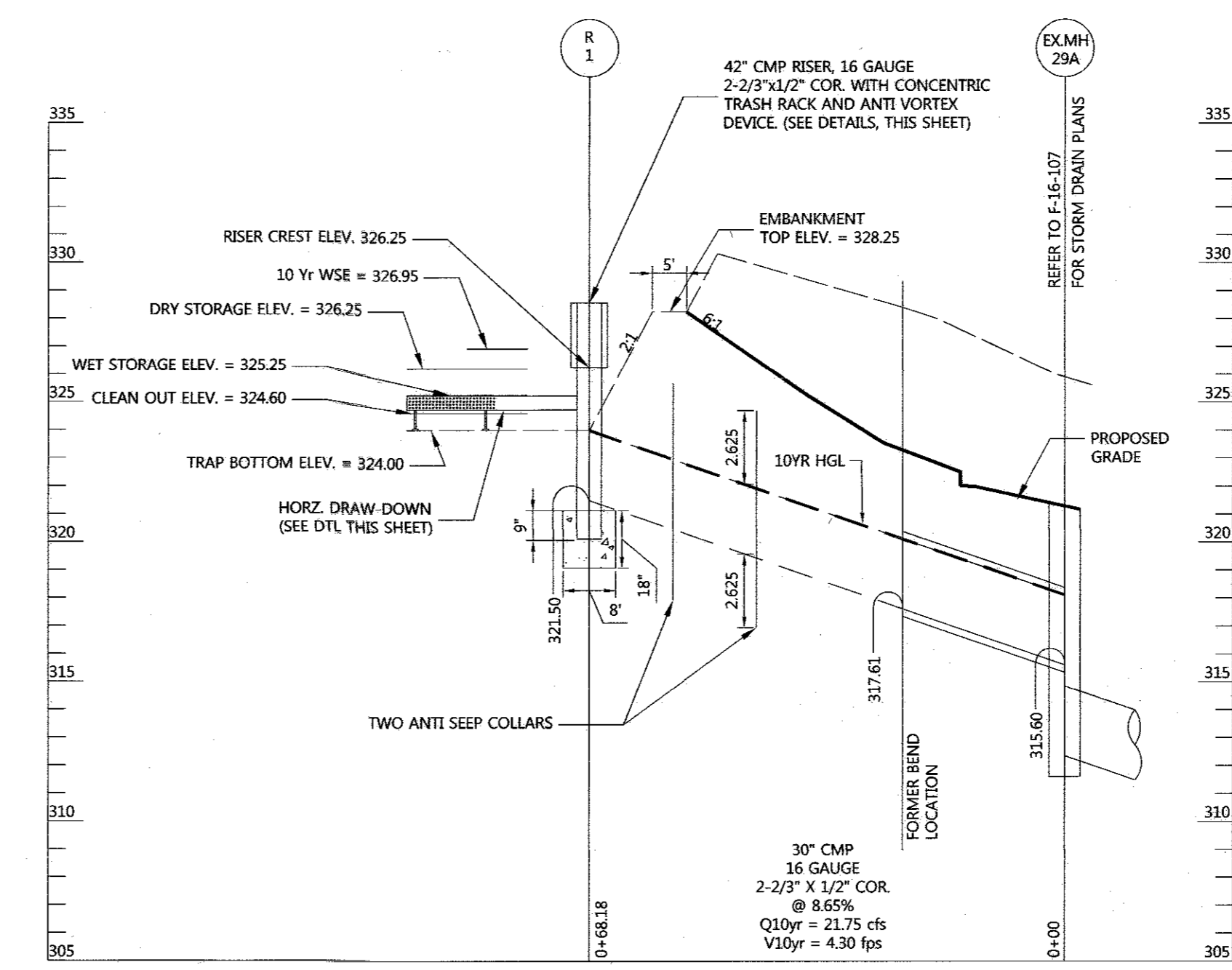
- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15, AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SWAYNE, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW F-16-107

STEEP SLOPES DATA

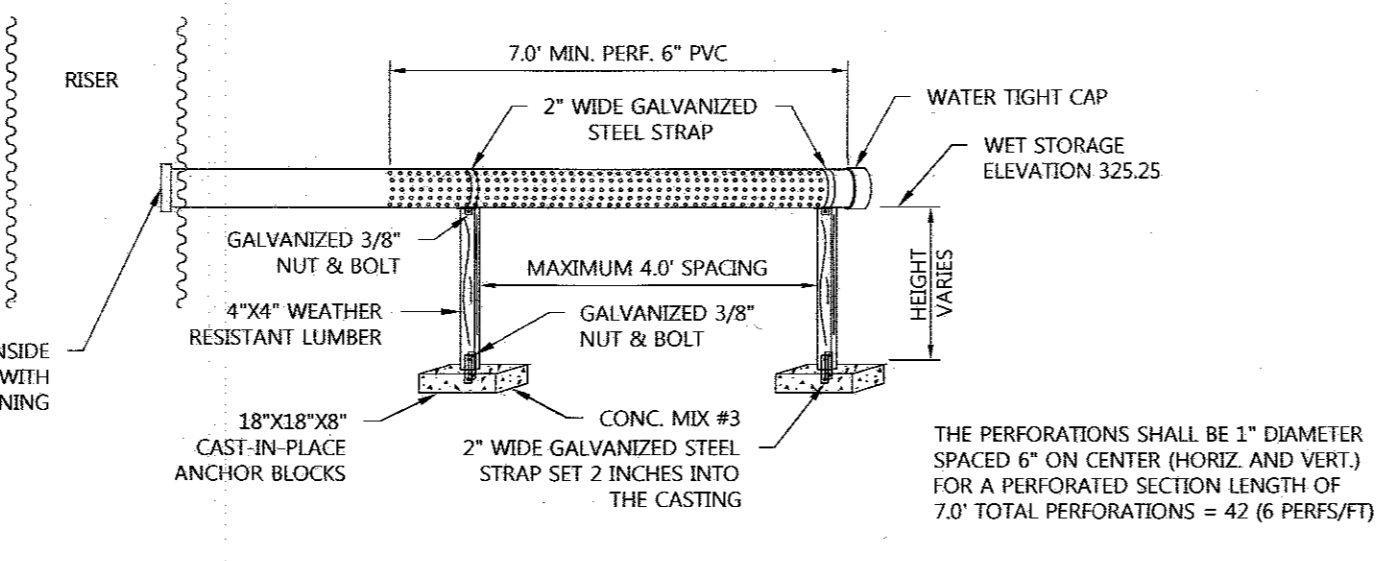
- 15% AND UP (HIGHLY ERODIBLE)
- 20% AND UP (STEEP SLOPES)



INITIAL EXISTING CONDITIONS PROFILE PIPE OUTLET SEDIMENT TRAP#1 OUTFALL
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



ULTIMATE PIPE OUTLET SEDIMENT TRAP#1 OUTFALL PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



HORIZONTAL DRAW-DOWN DEVICE ANCHOR DETAIL TRAP# 1 NOT TO SCALE

OWNERS/DEVELOPER CERTIFICATION:
"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (DMEJ) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."
OWNER/DEVELOPER SIGNATURE: *Wm J. Rowe*
DATE: 12-9-16

DESIGN CERTIFICATION:
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
DESIGNER SIGNATURE: *Gerard D. Turnbaugh*
DATE: 12-9-16

APPROVED PLANNING BOARD OF HOWARD COUNTY
DATE: December 1, 2016
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
HOWARD SOIL CONSERVATION DISTRICT
DATE: 2/2/17

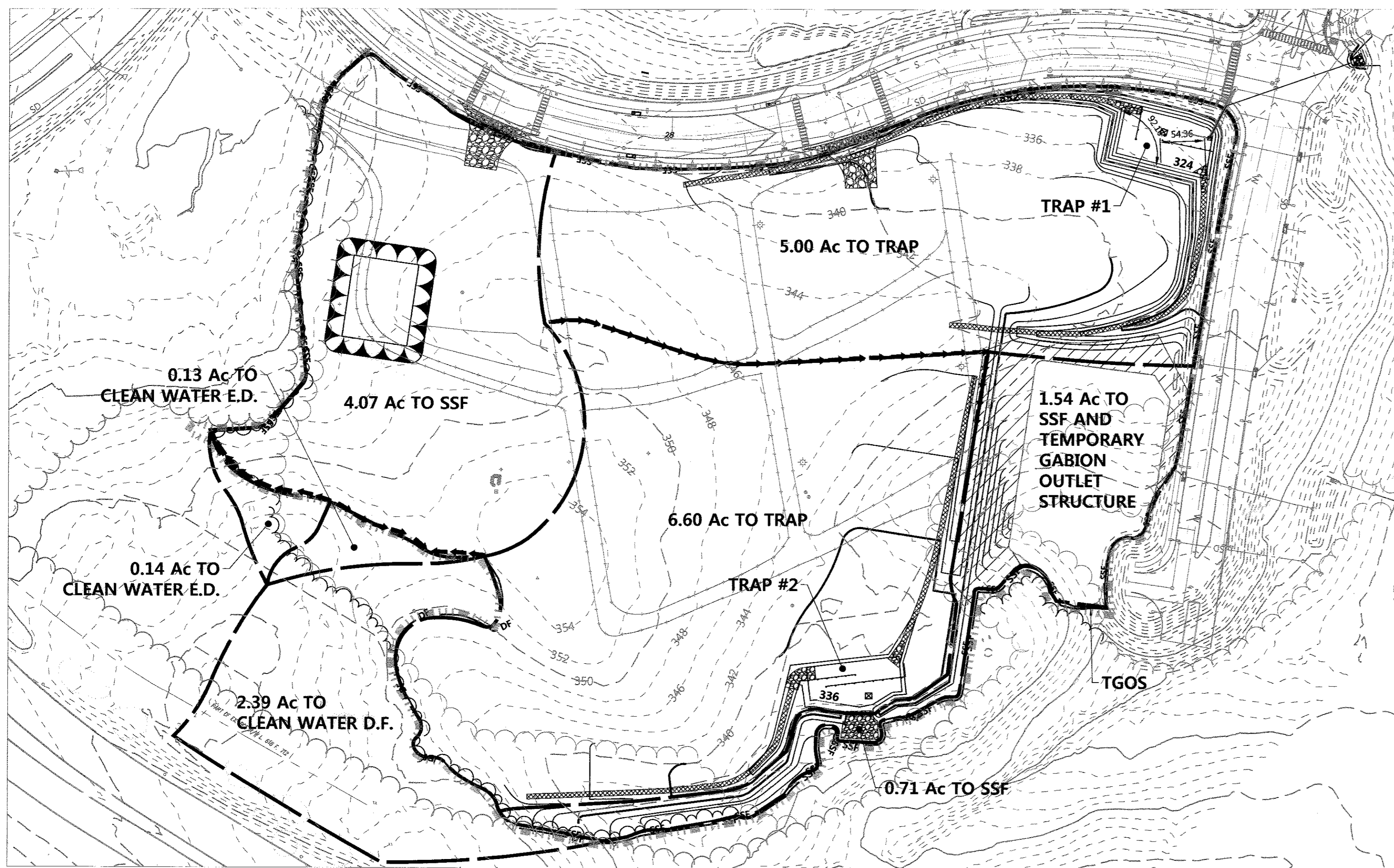
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 26569 EXPIRATION DATE: 7-18-17

CONTRACT NUMBERS:
EX. WATER & EX. SEWER: SYMPHONY DR.: 172 - W & S 24-4866-D
MERRIWEATHER DR.: 24-4928-D
12-9-16
Date
Professional Engr. No. 26569

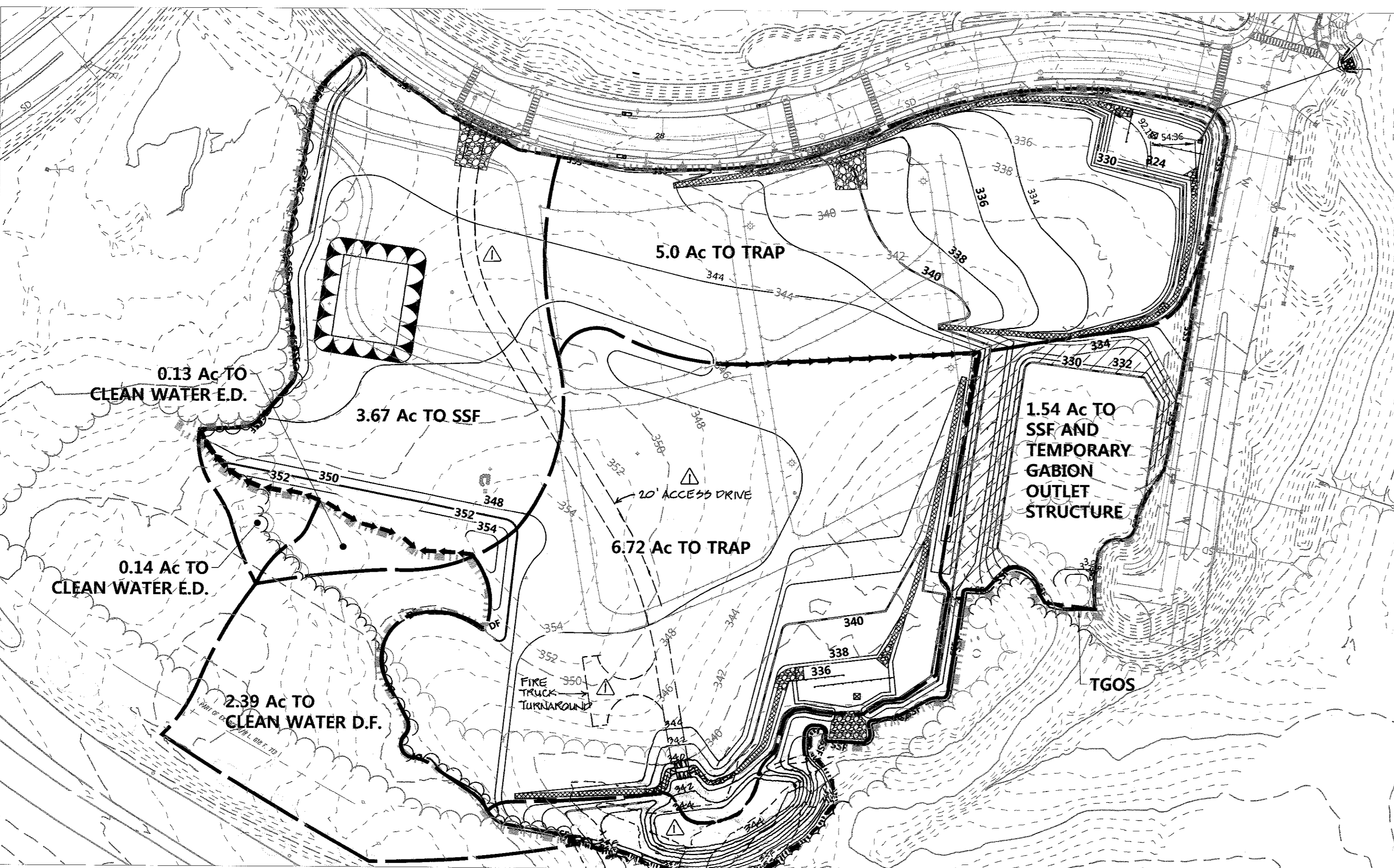
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 2-7-17
CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 2-13-17
DIRECTOR, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 2-13-17

Date	No.	Revision Description
		DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD AREA 3, PHASE I MASS GRADING
		OWNER / DEVELOPER: THE HOWARD RESEARCH & DEVELOPMENT CORPORATION COLUMBIA REGIONAL OFFICE 10480 LITTLE PATUXENT PARKWAY SUITE 400 COLUMBIA, MD 21044 410-964-4800
		P/0 PARCEL 527 FDP-DC-CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042 TAX MAP 36; NT-DMUA 5TH ELECTION DISTRICT HOWARD COUNTY, MD
		PERMIT INFORMATION CHART
		COLUMBIA CRESCENT SECTION/AREA 3 LOT 30
		PLAT OR FILE NO. 25592 BLOCK # 306 TAX ZONE/MAP 36 ELEC. DISTRICT 5-15 CENSUS TRACT 605602
		WATER CODE 550 SEWER CODE LITTLE PATUXENT

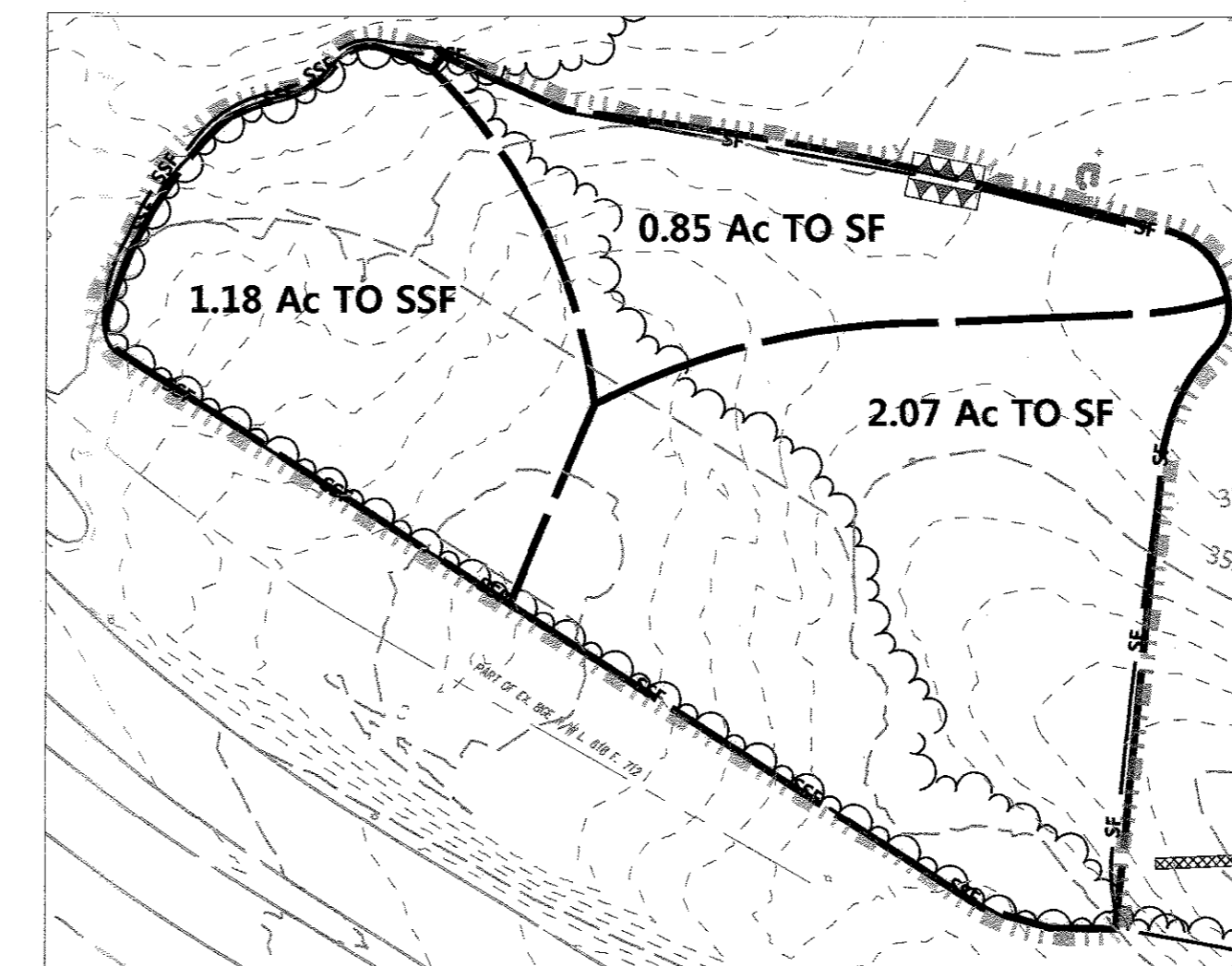
DMW
DAFT MCCUNE WALKER INC.
301 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM
TITLE: MASS GRADING AND SEDIMENT EROSION CONTROL PLAN STAGE 2
Des. By: GDT SCALE: AS SHOWN Proj. No.: 04038.80
Dwn. By: MCJ Date: 5/12/16
Chk. By: ERS Approved: MCB 4 of 9



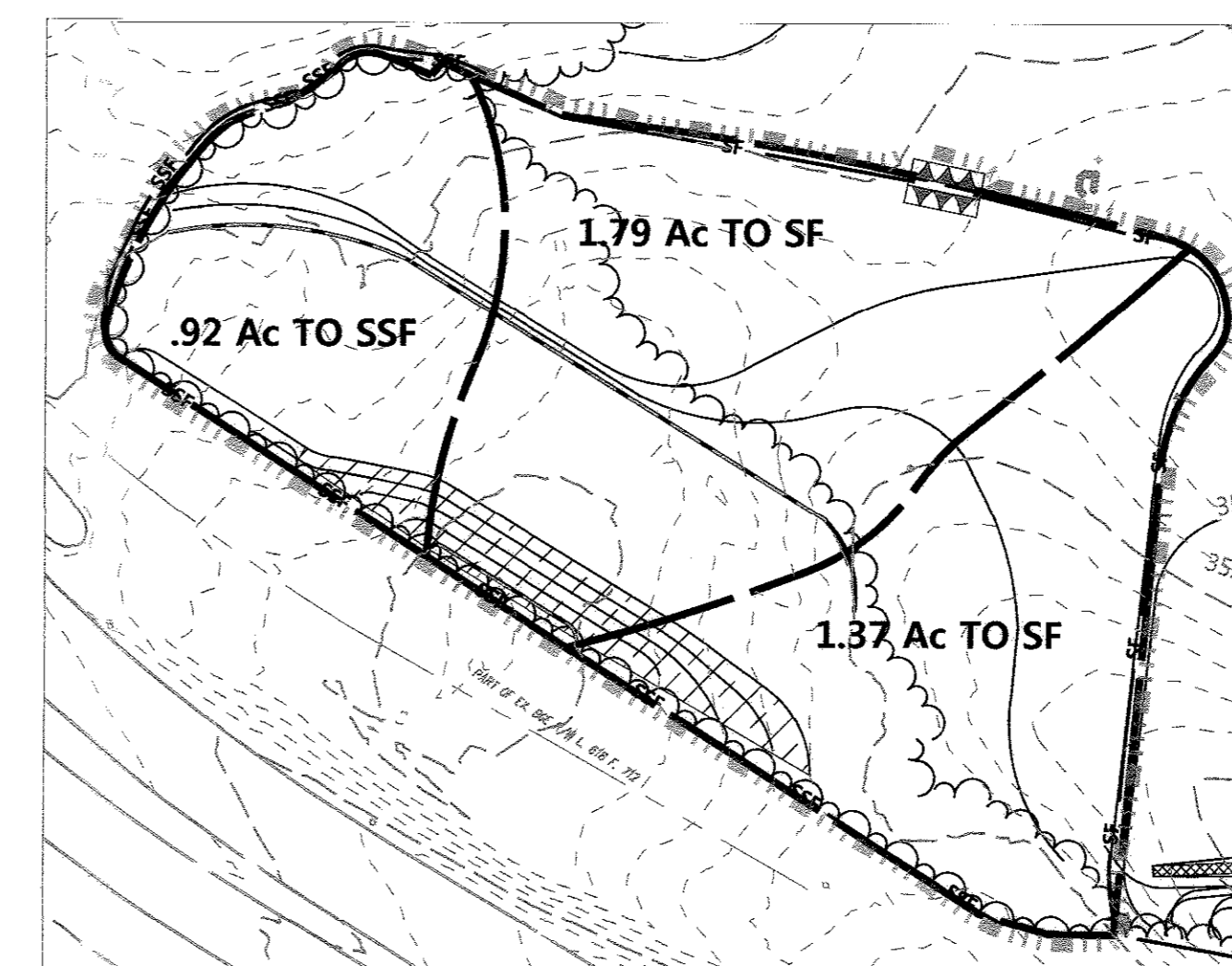
EXISTING CONDITION DRAINAGE AREA MAP STAGE 1
SCALE: 1"=100'



PROPOSED CONDITION DRAINAGE AREA MAP STAGE 1
SCALE: 1"=100'



EXISTING CONDITION DRAINAGE AREA MAP STAGE 2
SCALE: 1"=100'



PROPOSED CONDITION DRAINAGE AREA MAP STAGE 2
SCALE: 1"=100'



VICINITY MAP
SCALE: 1"=2000'
HOWARD COUNTY ADC
MAP NUMBER 33
GRID NO. A-2

ENVIRONMENTAL DATA SOURCES

1. FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIO-HABITATS DATED 06/18/2015.
2. WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECT THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
3. SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
4. ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016

DATA SOURCES:

1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15. AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW. F-16-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Ch. Chubb 2-7-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kurt S. Sauer 2-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Nadine J. Polie 2-13-17
DIRECTOR, DIVISION OF LAND DEVELOPMENT DATE

10-11-17 **MASS GRADING CHANGES FOR SWITCHGEAR EQUIP.**
Date No. Revision Description

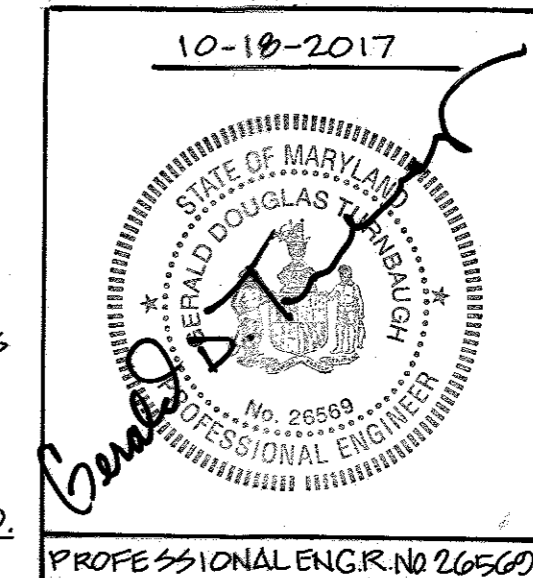
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
AREA 3, PHASE I
MASS GRADING

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
COLUMBIA REGIONAL OFFICE
10480 LITTLE PATUXENT PARKWAY SUITE 400
COLUMBIA, MD 21044
410-964-4800

P/O PARCEL 527
FDP-DC-CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042
TAX MAP 36; NT-DMUA 5TH ELECTION DISTRICT
HOWARD COUNTY, MD

PERMIT INFORMATION CHART
SUBDIVISION NAME: COLUMBIA CRESCENT SECTION/AREA: AREA 3 LOT/PARCEL: 221 Parcel D
STATE OR USE: 22-002 DMUA TAX ZONE/MAP: 36 DISTRICT: 5-15 CENSUS TRACT: 605602
WATER CODE: 550 SEWER CODE: LITTLE PATUXENT

FOR REVISION NO. 1 ONLY



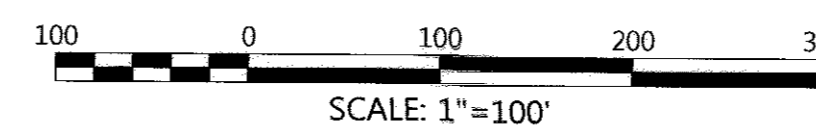
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME,
AND THAT I AM A DULY LICENSED PRO-
FESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MARYLAND.
LICENSE NO. 26569 EXPIRATION DATE: 7-18-10.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: December 1, 2016

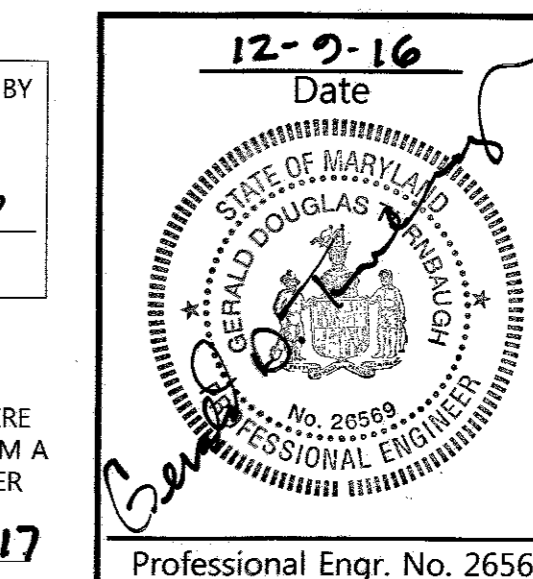
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY
THE HOWARD SOIL CONSERVATION DISTRICT
John R. Robertson 2/8/17
HOWARD SOIL CONSERVATION DISTRICT DATE

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. 26569 EXPIRATION DATE: 7-18-17



CONTRACT NUMBERS:
EX WATER & EX SEWER:
SYMPHONY DR - 112 - W & S
24-4868-D
MERRWEATHER DR: 24-4928-D

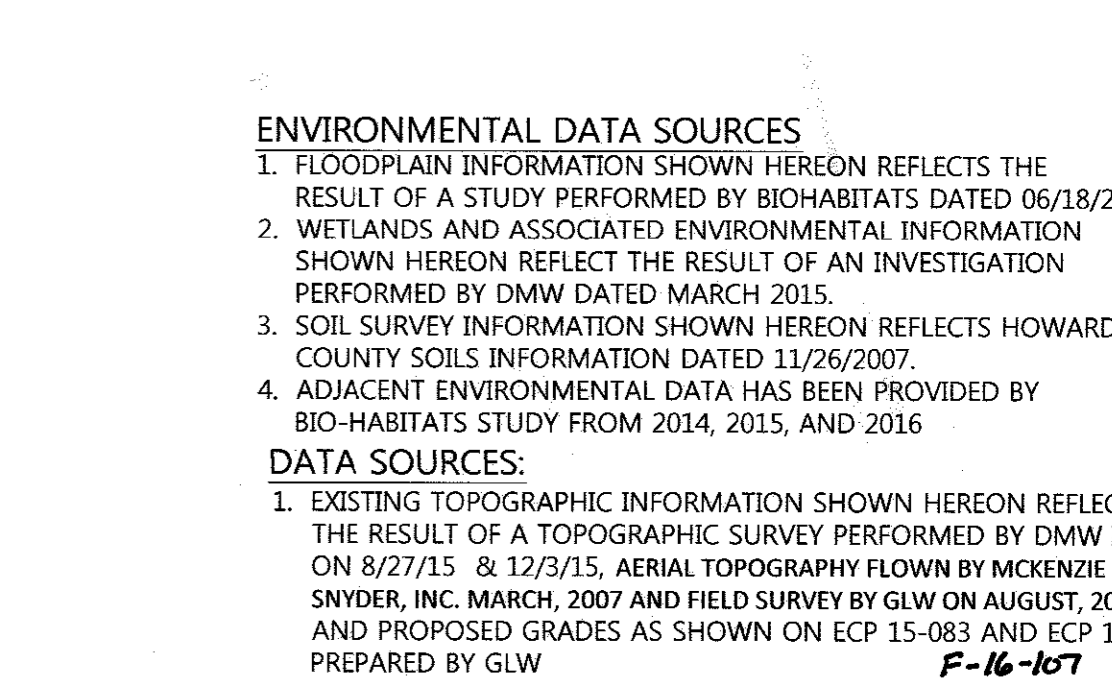
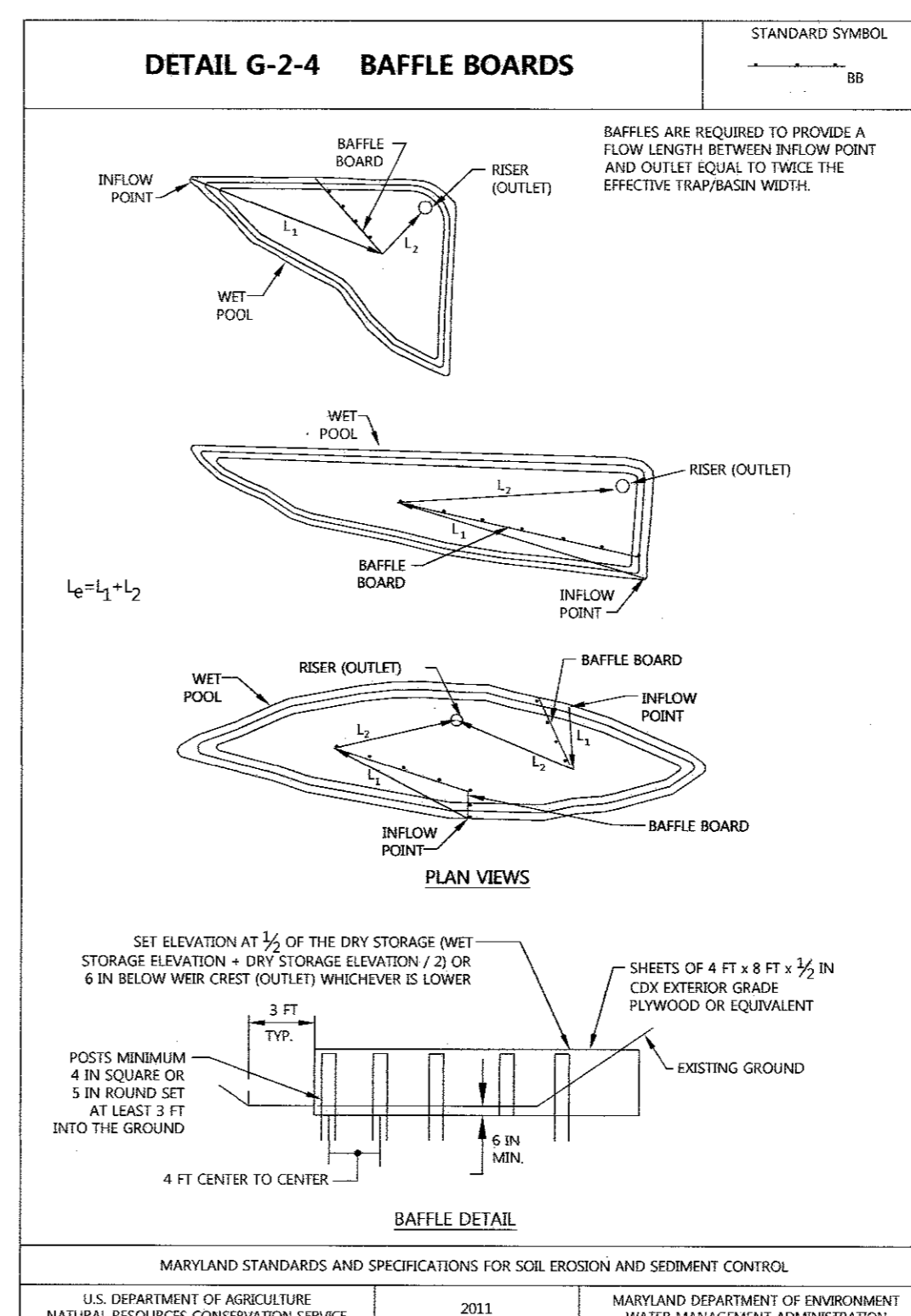
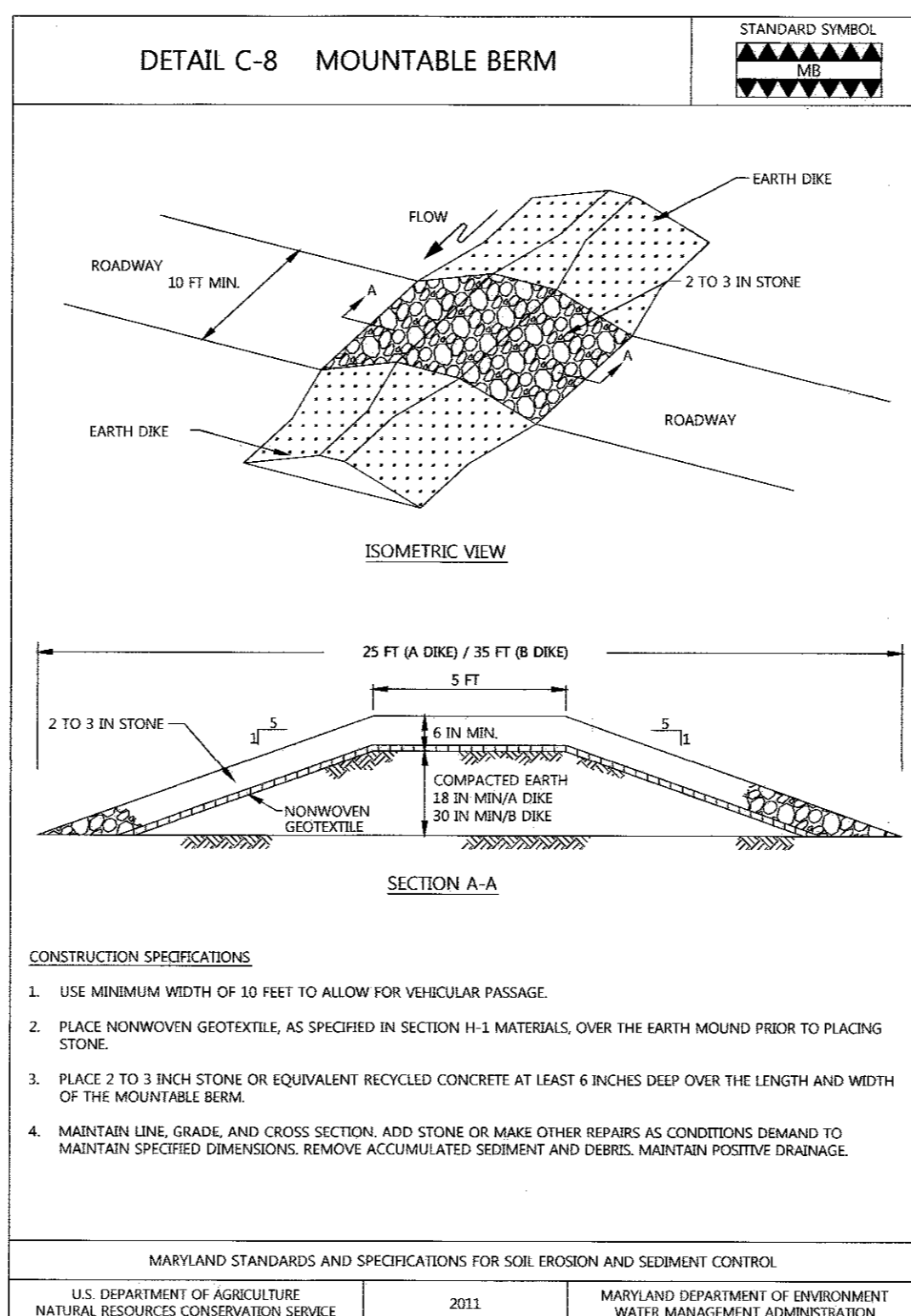
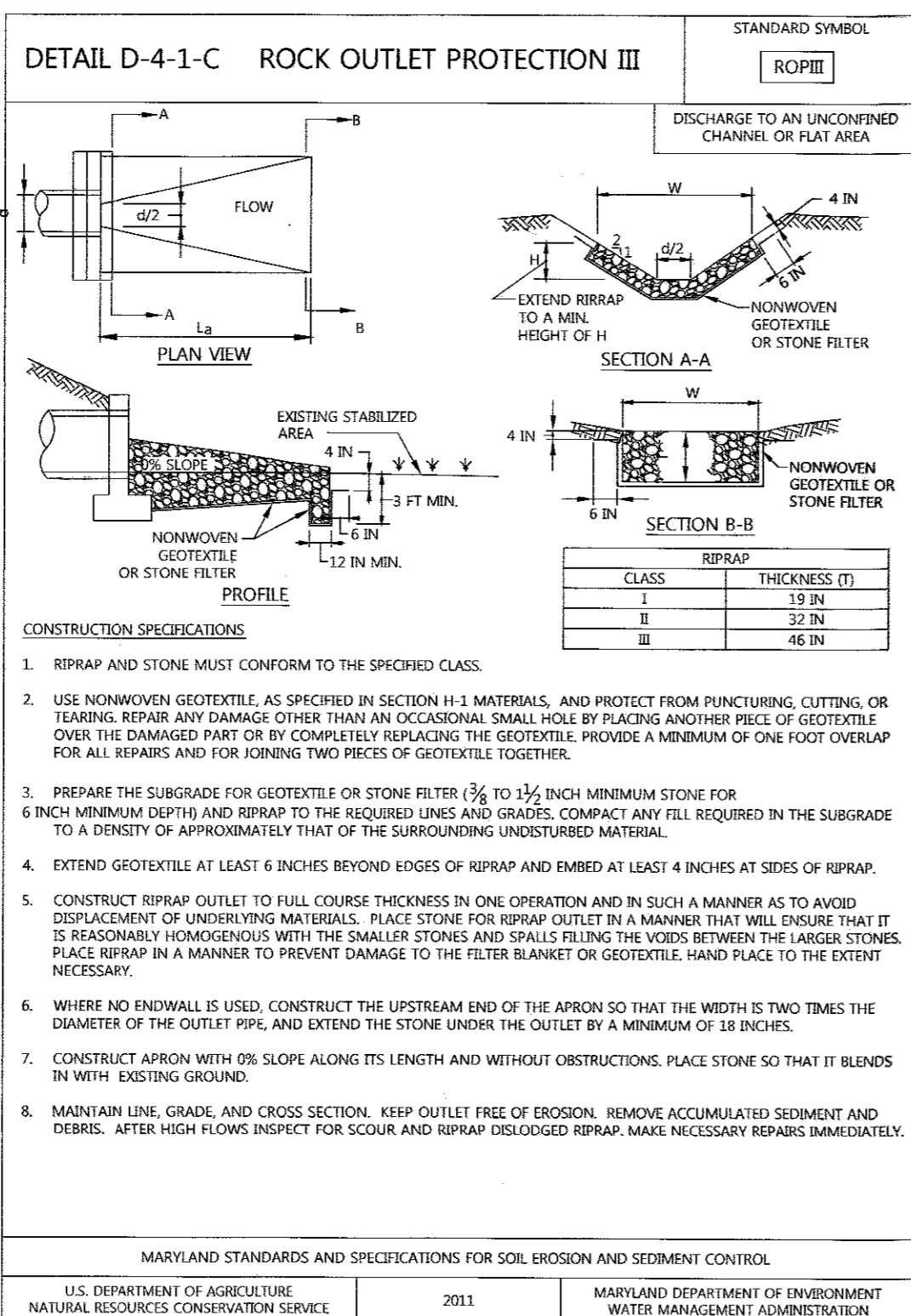
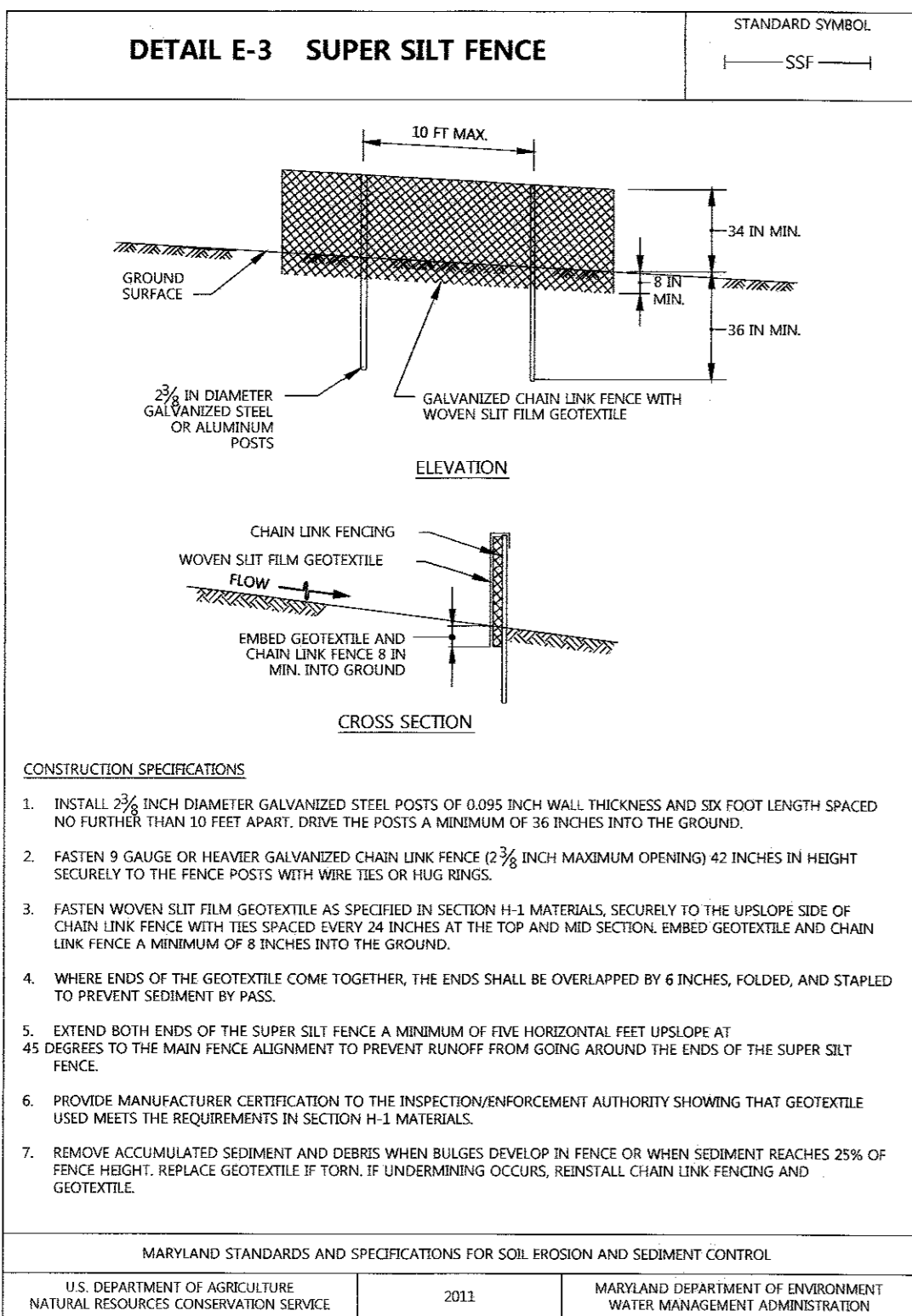
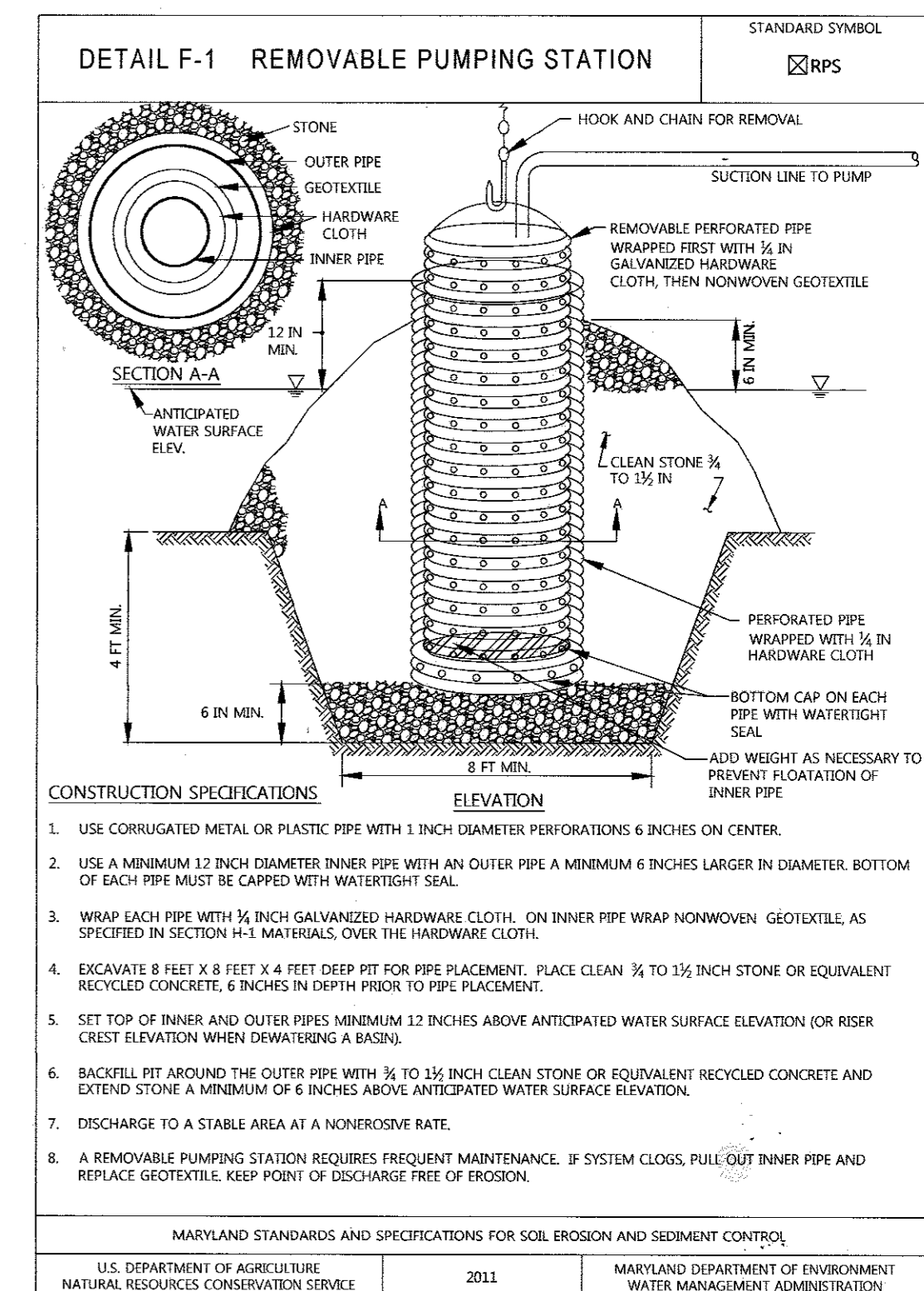
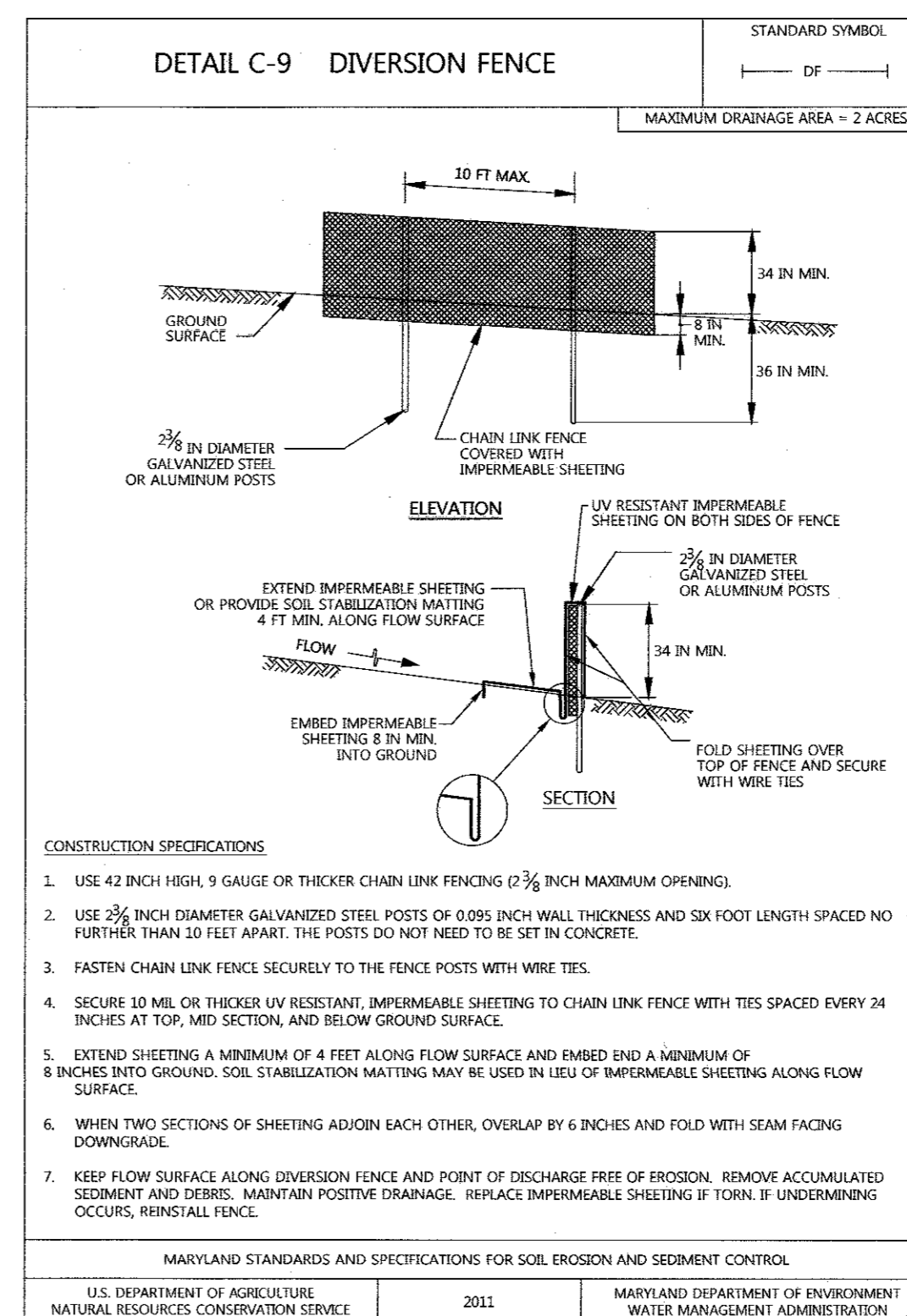
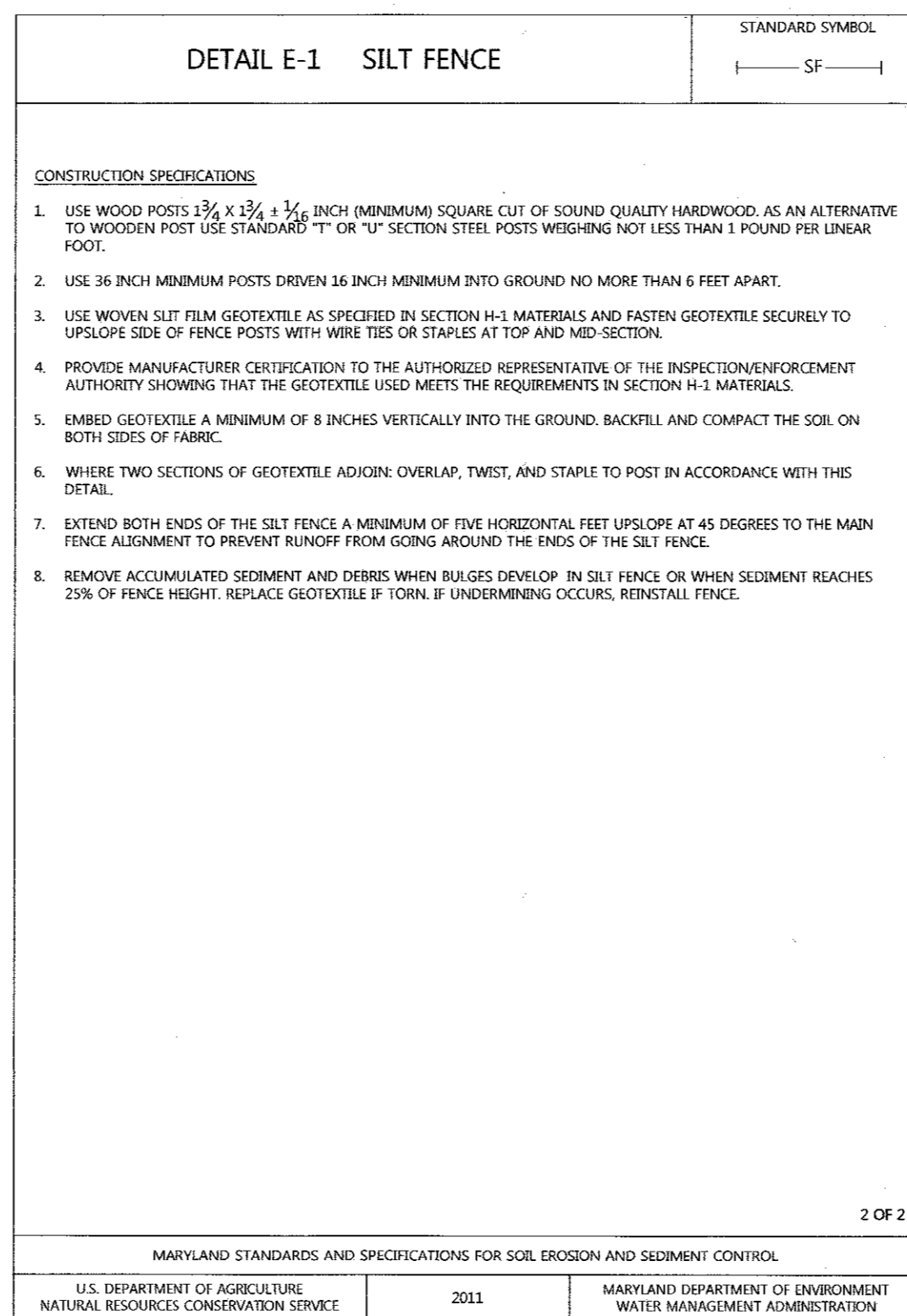
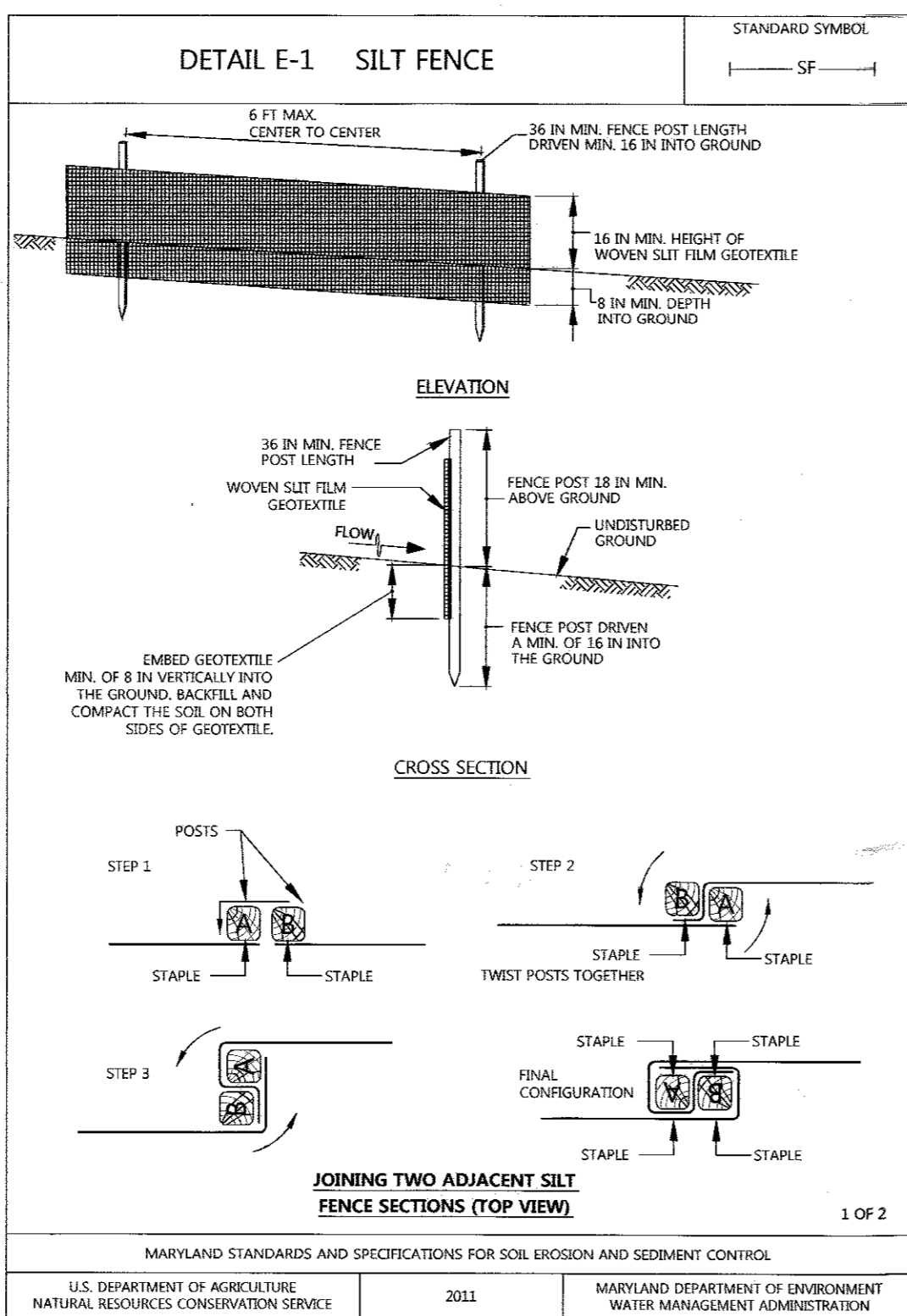
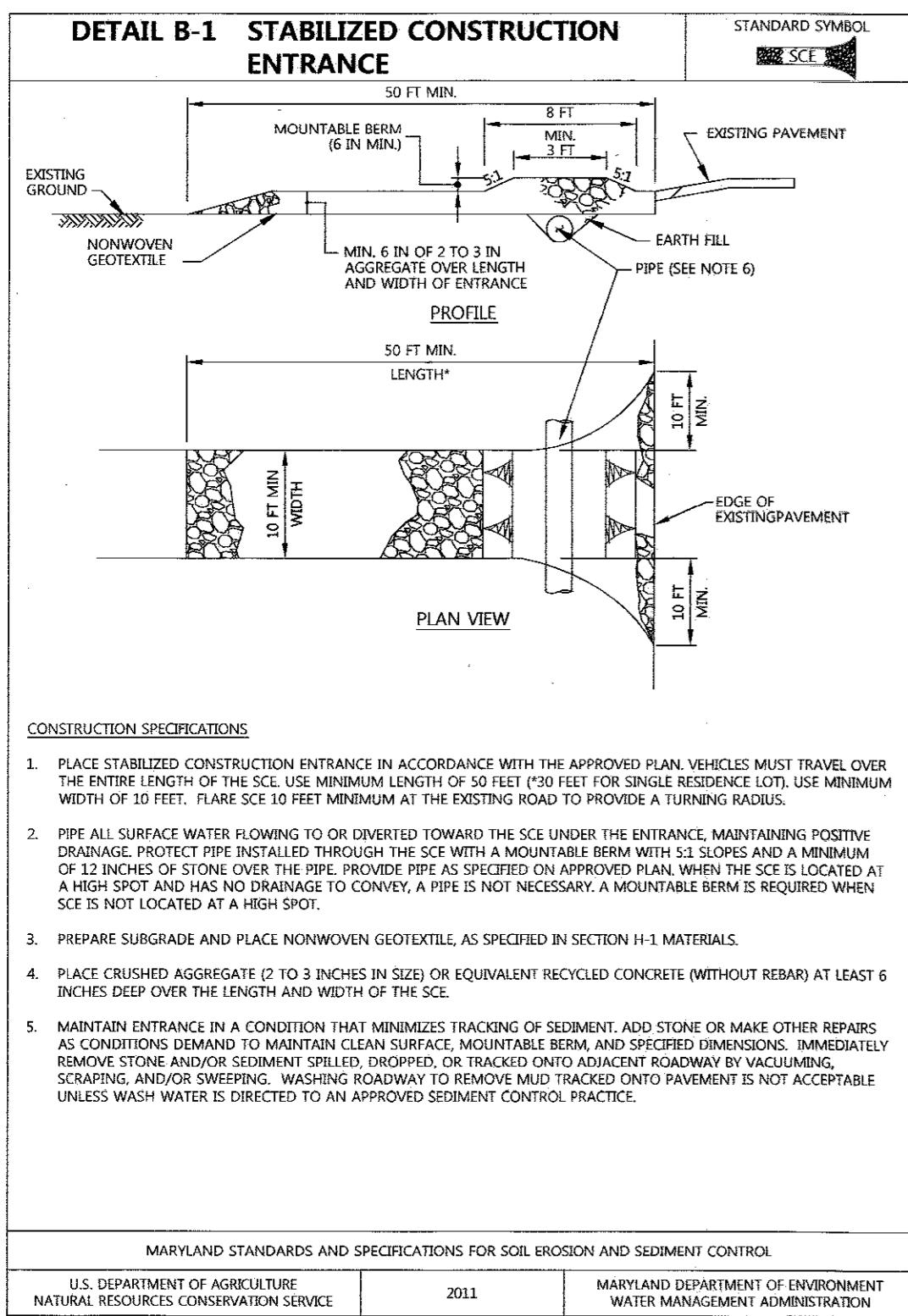


501 FAIRMONT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

TITLE
DRAINAGE AREAS

Des. By GPT/SLAJ SCALE AS SHOWN Proj. No. 04038.80
Dwn. By MCB/SLAJ Date 5/12/16
Chk. By ERS/GPT Approved MCB 5 of 9

SDP-16-075



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 2-7-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION HP DATE

[Signature] 2-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT gmf DATE

[Signature] 2-13-17
DIRECTOR, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
10-11-17	1	Mass Grading Changes for Switchgear Equipmt.

DOWNTOWN COLUMBIA CREST NEIGHBORHOOD AREA 3, PHASE I MASS GRADING

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
COLUMBIA REGIONAL OFFICE
10480 LITTLE PATUXENT PARKWAY SUITE 400
COLUMBIA, MD 21044
410-964-4800

P/O PARCEL 527
FDP-DC-CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042
TAX MAP 36, NT-DMUA

5TH ELECTION DISTRICT
HOWARD COUNTY, MD

PERMIT INFORMATION CHART

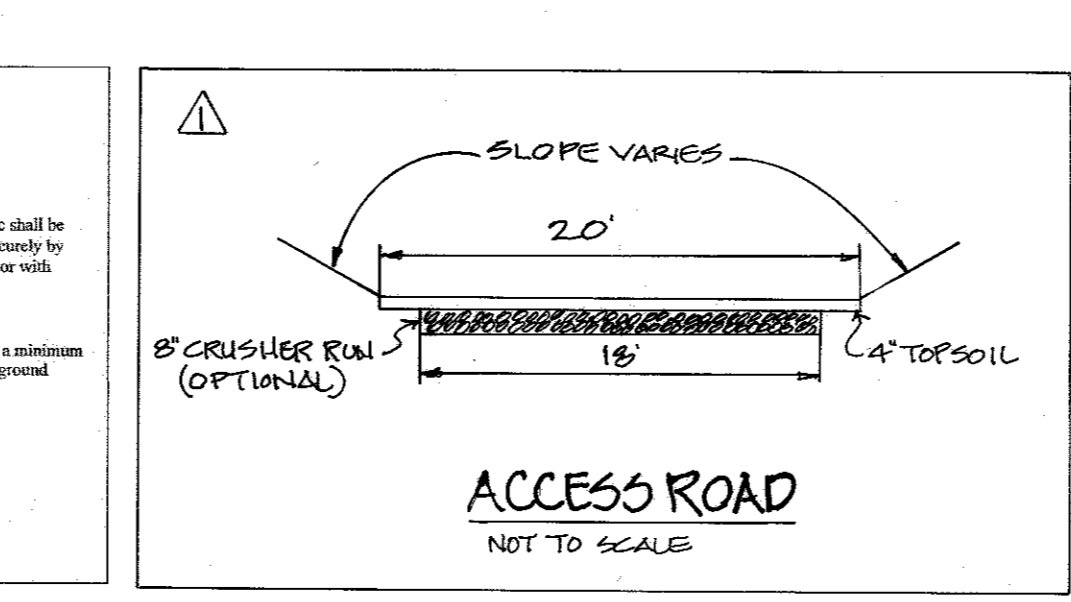
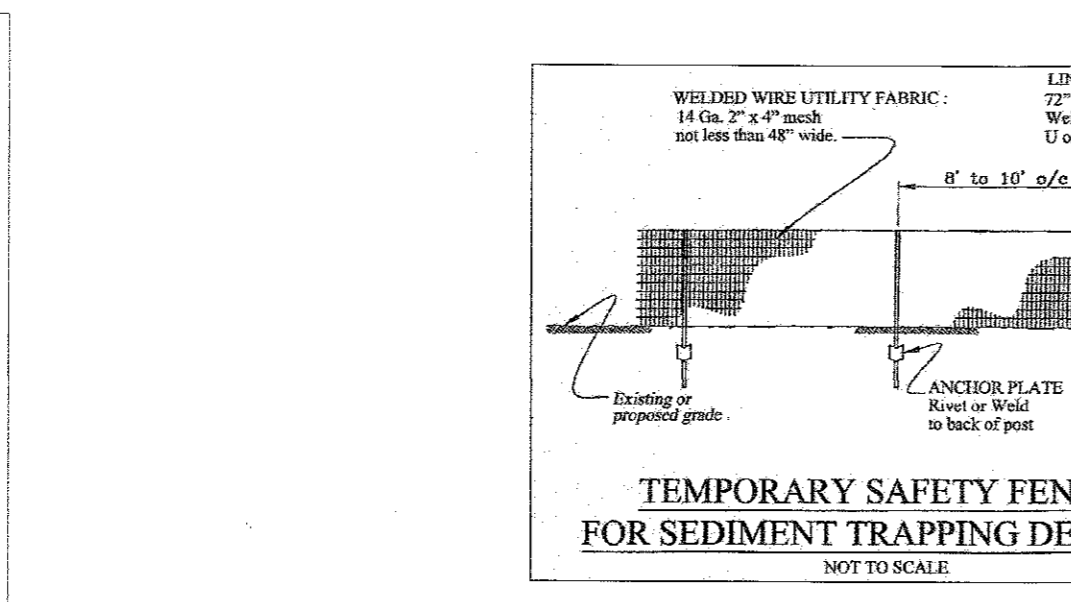
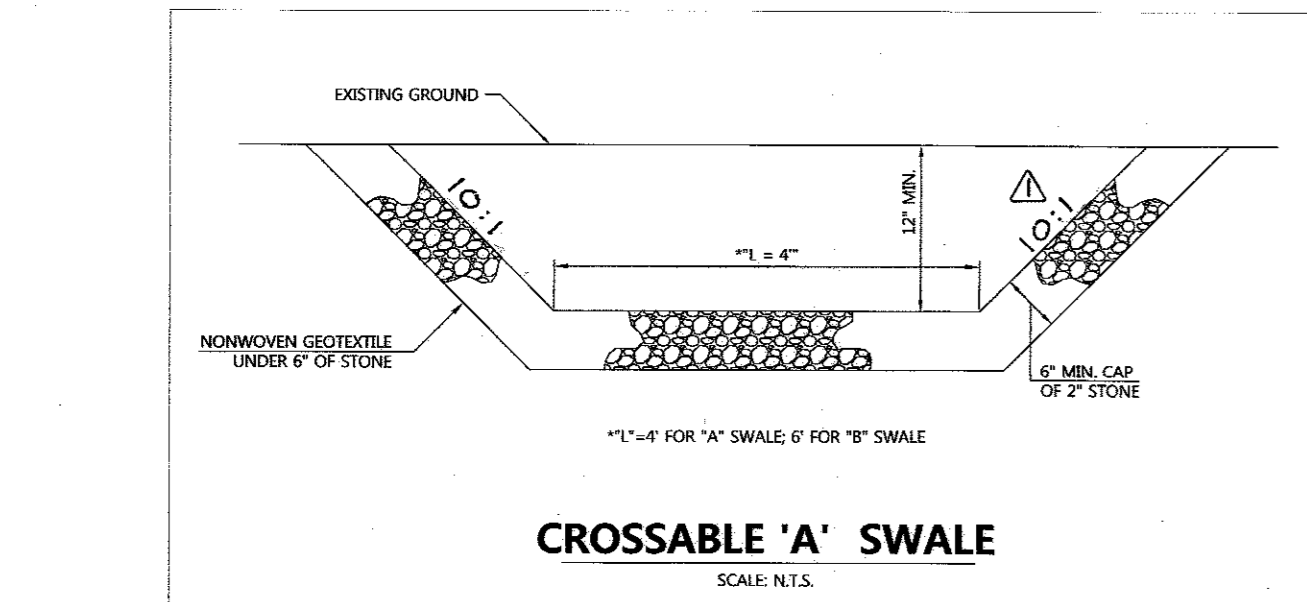
SUBDIVISION NAME	COLUMBIA CREST	SECTION/AREA	AREA 3	Parcel ID	527
PHASE OR LOT	22-002	BLOCK / ZONE	36	ELECT. DISTRICT	5-15
WATER CODE	550	SEWER CODE		CENSUS TRACT	605602

DMW
DAFT MCCUNE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

TITLE
SEDIMENT EROSION CONTROL DETAILS

Des. By	GPT/SLAJ	SCALE	AS SHOWN	Proj. No.	04038.80
Drn. By	MCJ/SLAJ	Date	5/12/16		
Chk. By	ERS/GPT	Approved	MCB		6 of 9



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 26569, EXPIRATION 7-16-2019.

10-18-2017

[Signature]
PROFESSIONAL ENGR. NO. 26569

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: December 1, 2016

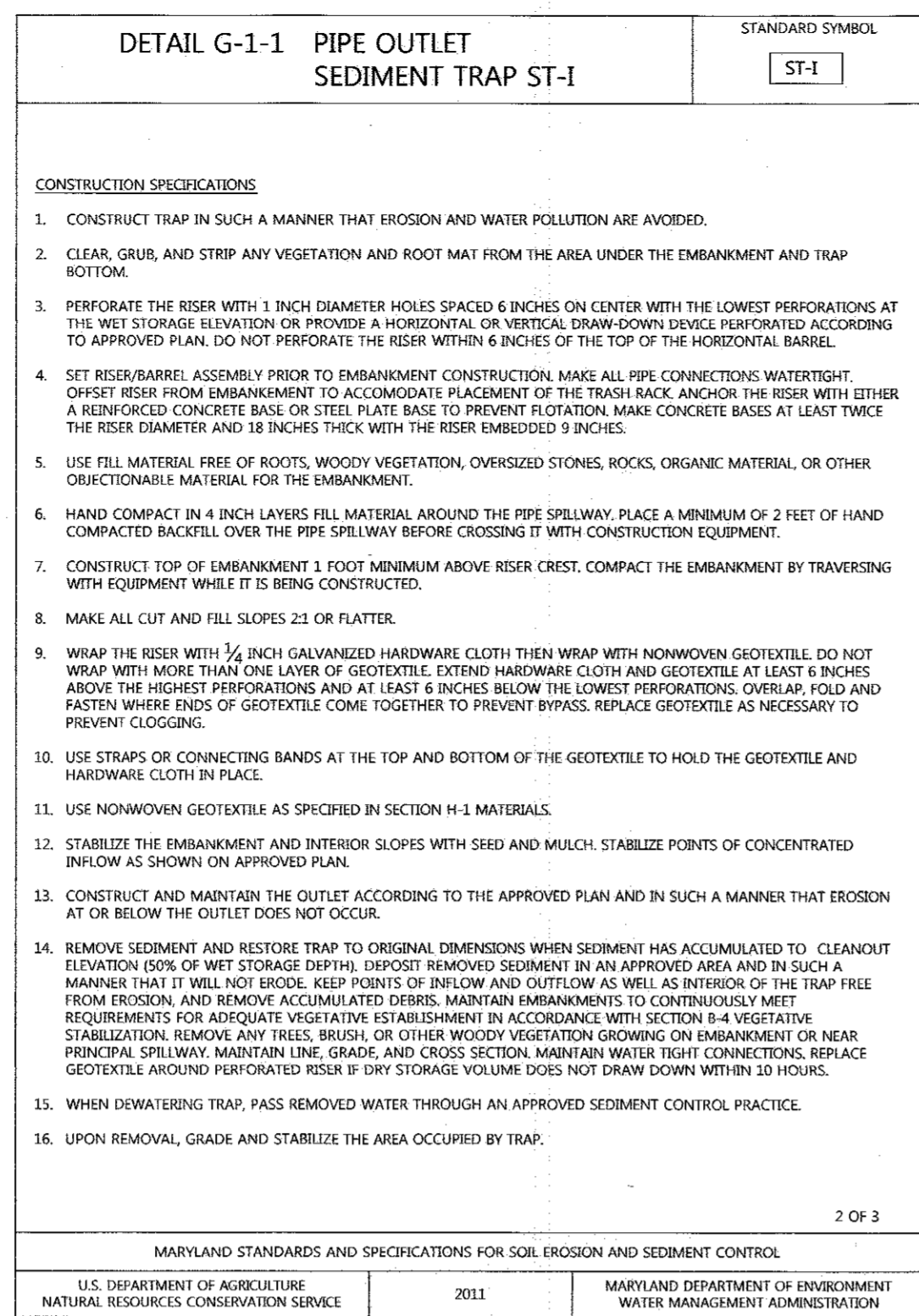
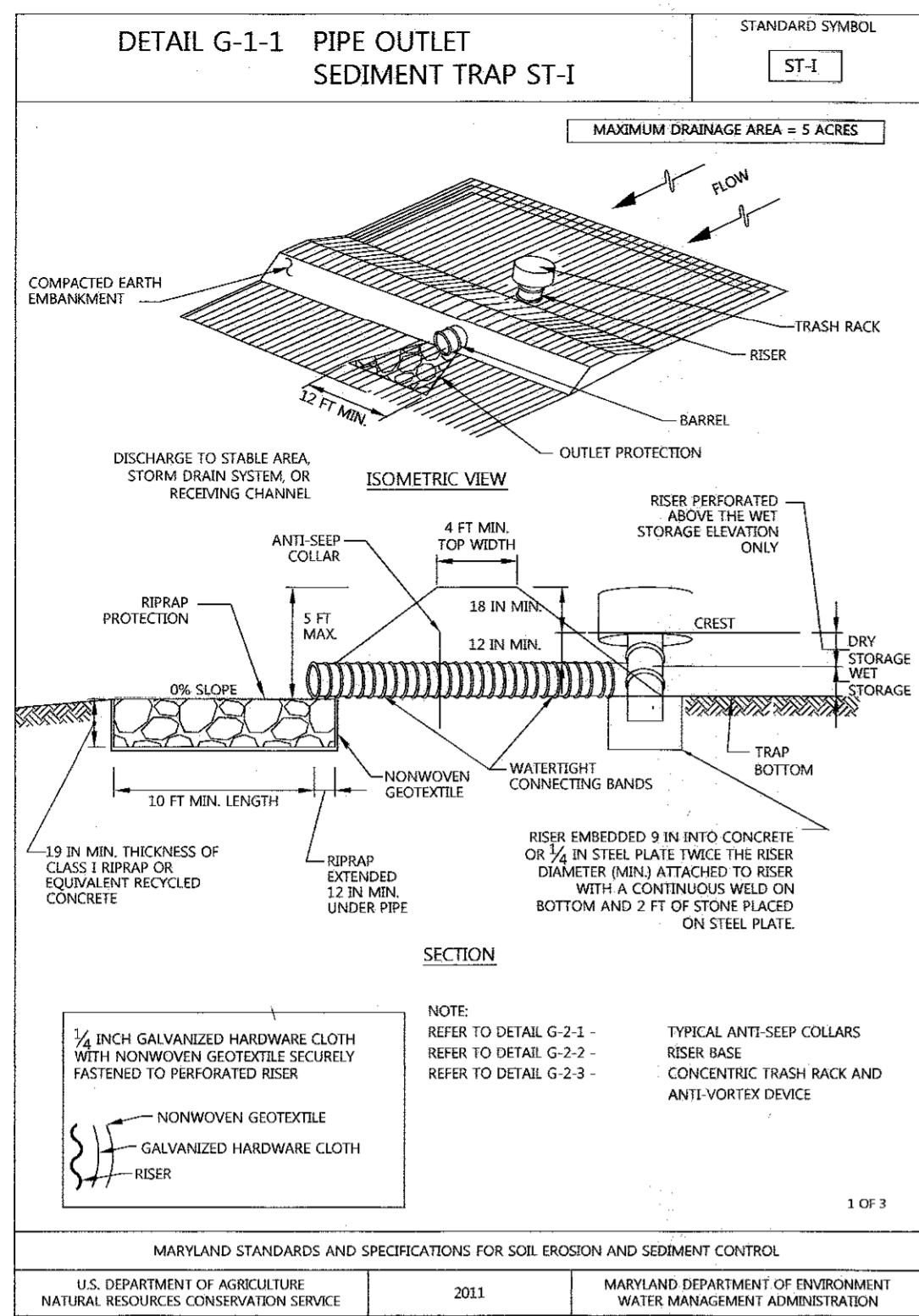
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

[Signature] 2/12/17
HOWARD SOIL CONSERVATION DISTRICT DATE

CONTRACT NUMBERS:
EX. WATER & EX. SEWER:
SYMPHONY DR. - 172 - W & S
24-4868-D
MERRILLWEATHER DR. 24-4928-D

12-9-16
Date

Professional Engr. No. 26569



DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-1

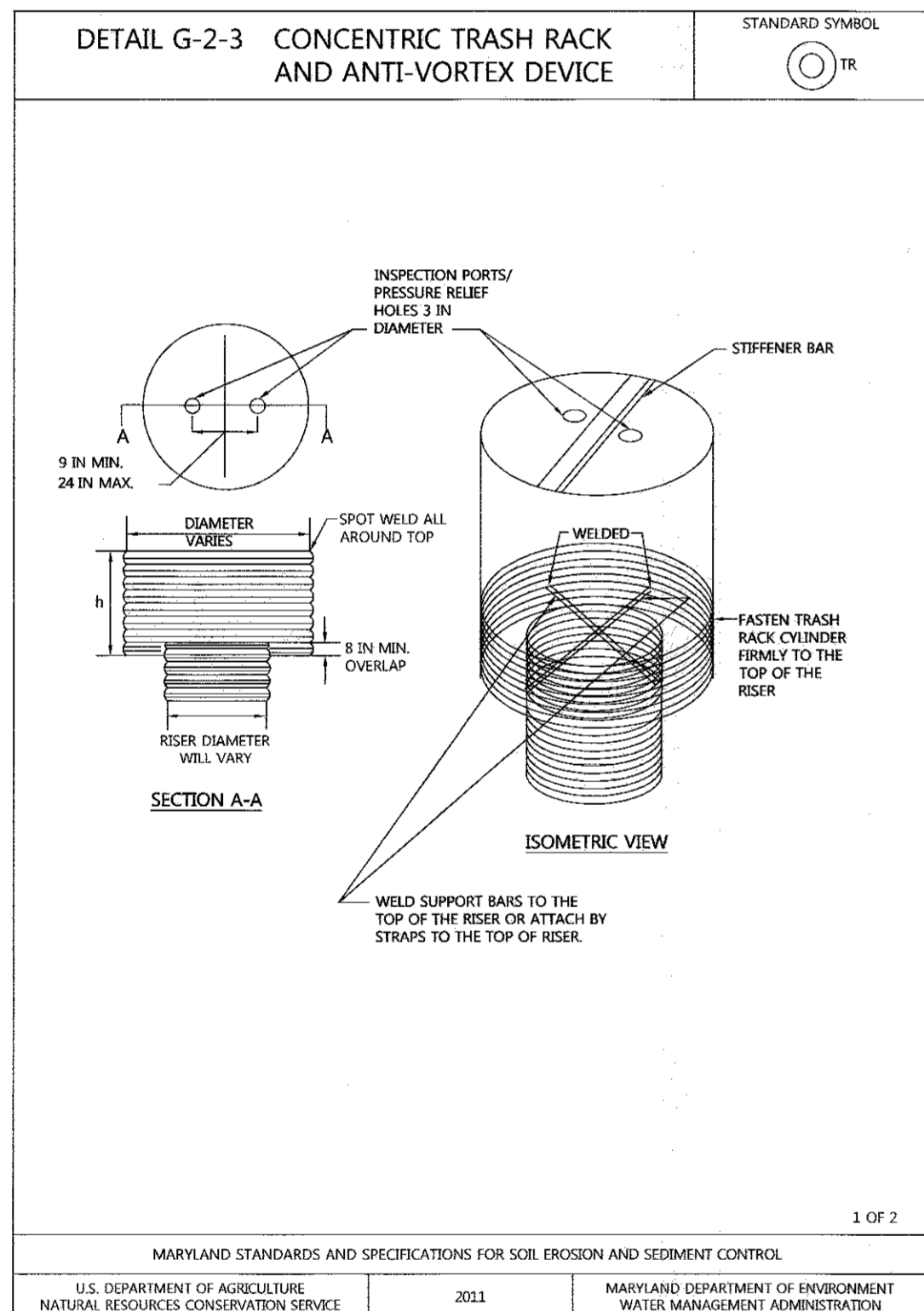
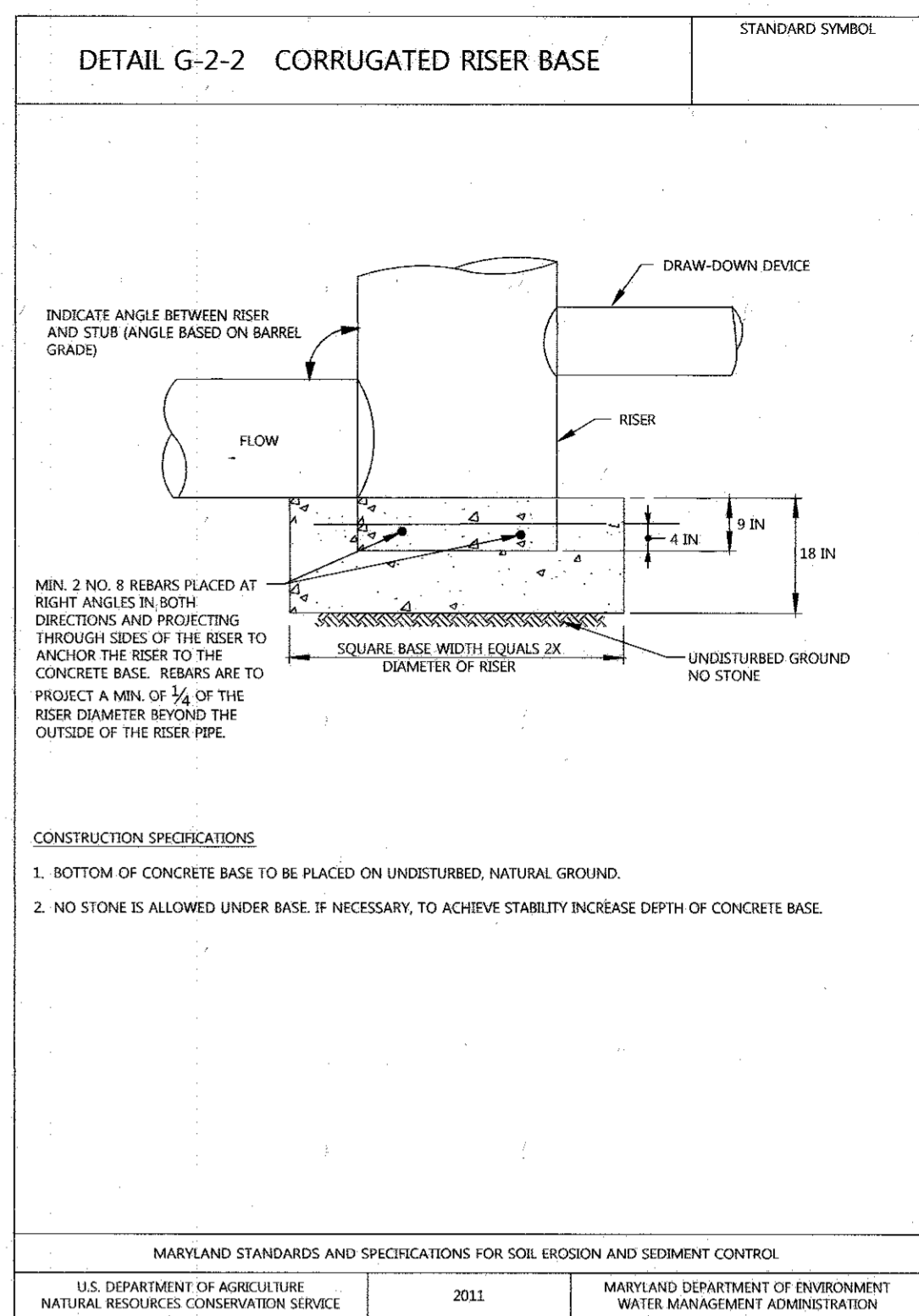
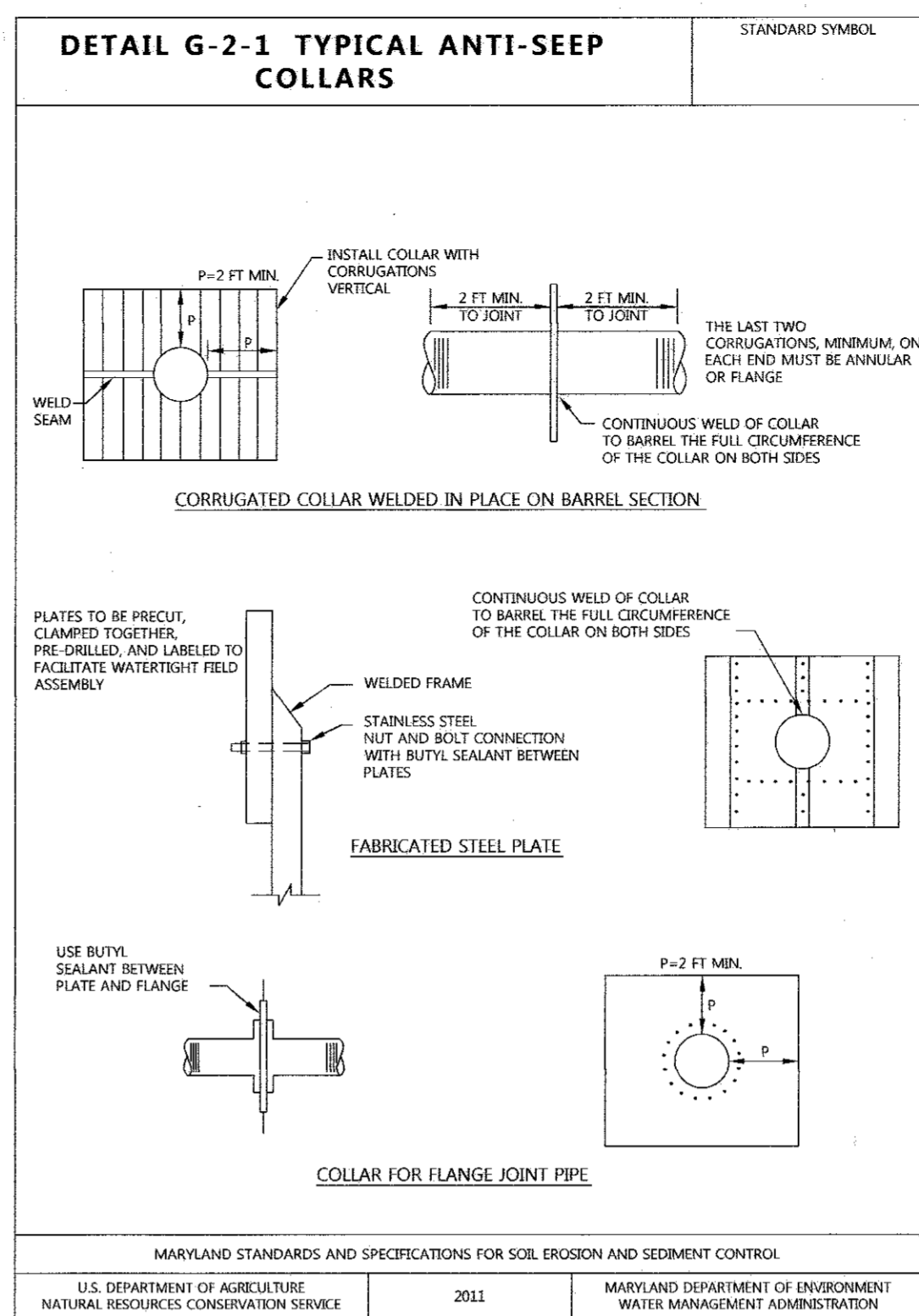
STANDARD SYMBOL: ST-1

PIPE OUTLET SEDIMENT TRAP ST-1 TRAP NO. #1		#1
DRAINAGE AREA - INITIAL	5.0	ACRES
DRAINAGE AREA - INTERIM	N/A	ACRES
DRAINAGE AREA - FINAL	5.0	ACRES
TOTAL STORAGE REQUIRED	18,000	CF
TOTAL STORAGE PROVIDED	18,140	CF
WET STORAGE REQUIRED	9,000	CF
WET STORAGE PROVIDED	9,140	CF
DRY STORAGE REQUIRED	9,000	CF
DRY STORAGE PROVIDED	9,000	CF
TRAP BOTTOM ELEVATION	324.0	FT
TRAP BOTTOM DIMENSIONS	110' X 60'	FT X FT
RISER CREST (DRY STORAGE ELEVATION)	326.25	FT
OUTLET (WET STORAGE) ELEVATION	326.25	FT
CLEANOUT ELEVATION	324.60	FT
TOP OF EMBANKMENT ELEVATION	328.00	FT
SIDE SLOPE	2:1	HV RATIO
EMBANKMENT TOP WIDTH	4'	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CMP	
RISER DIAMETER	42"	IN
BARREL DIAMETER	30"	IN
TRASH RACK DIAMETER	60"	IN
TRASH RACK HEIGHT	27"	IN
ANTI-SEEP COLLAR DIMENSIONS	2-7.75' X 7.75'	FT
OUTLET PROTECTION - LENGTH	N/A	FT
OUTLET PROTECTION - WIDTH	N/A	FT
OUTLET PROTECTION - DEPTH	N/A	IN

3 OF 3

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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



DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

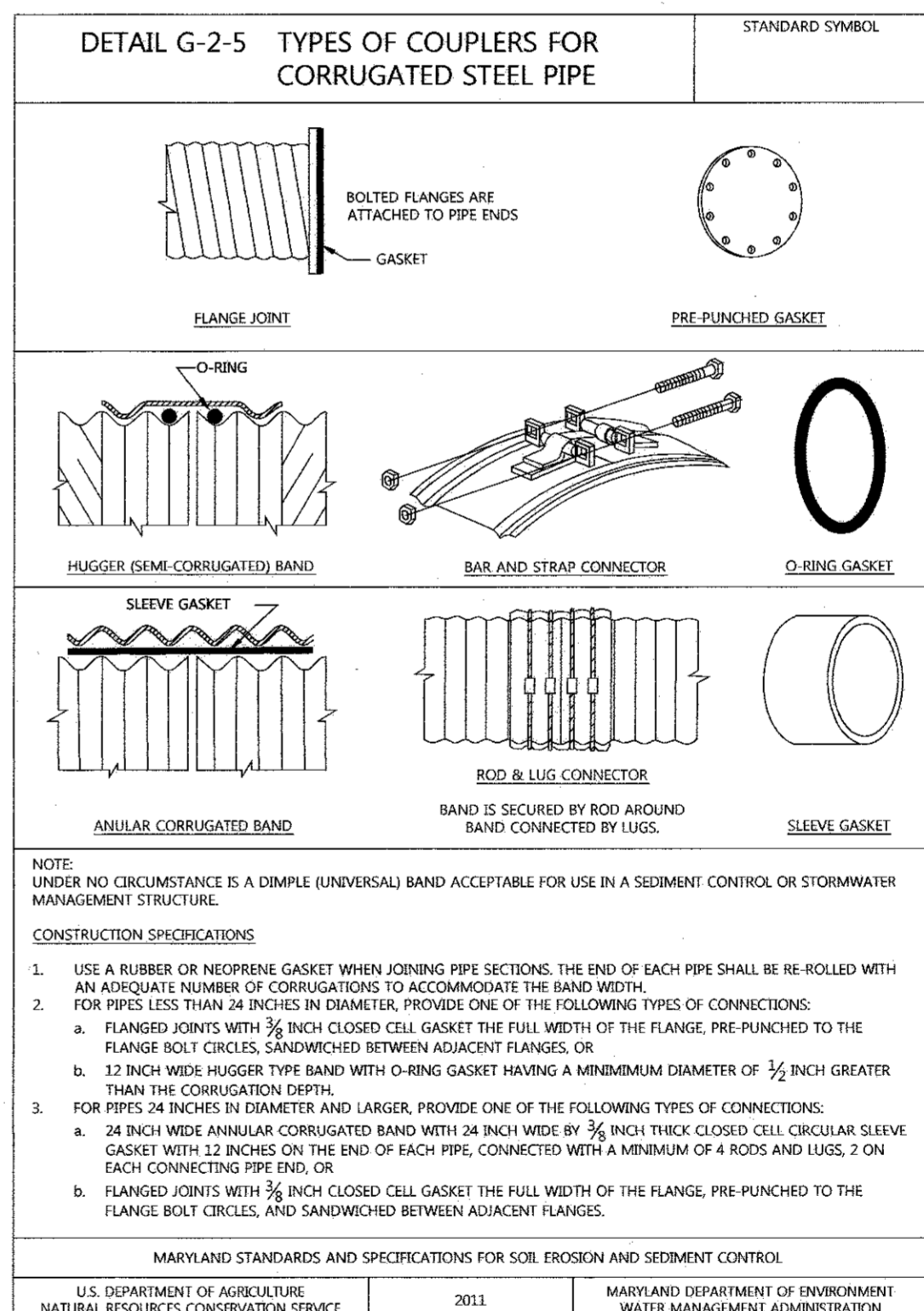
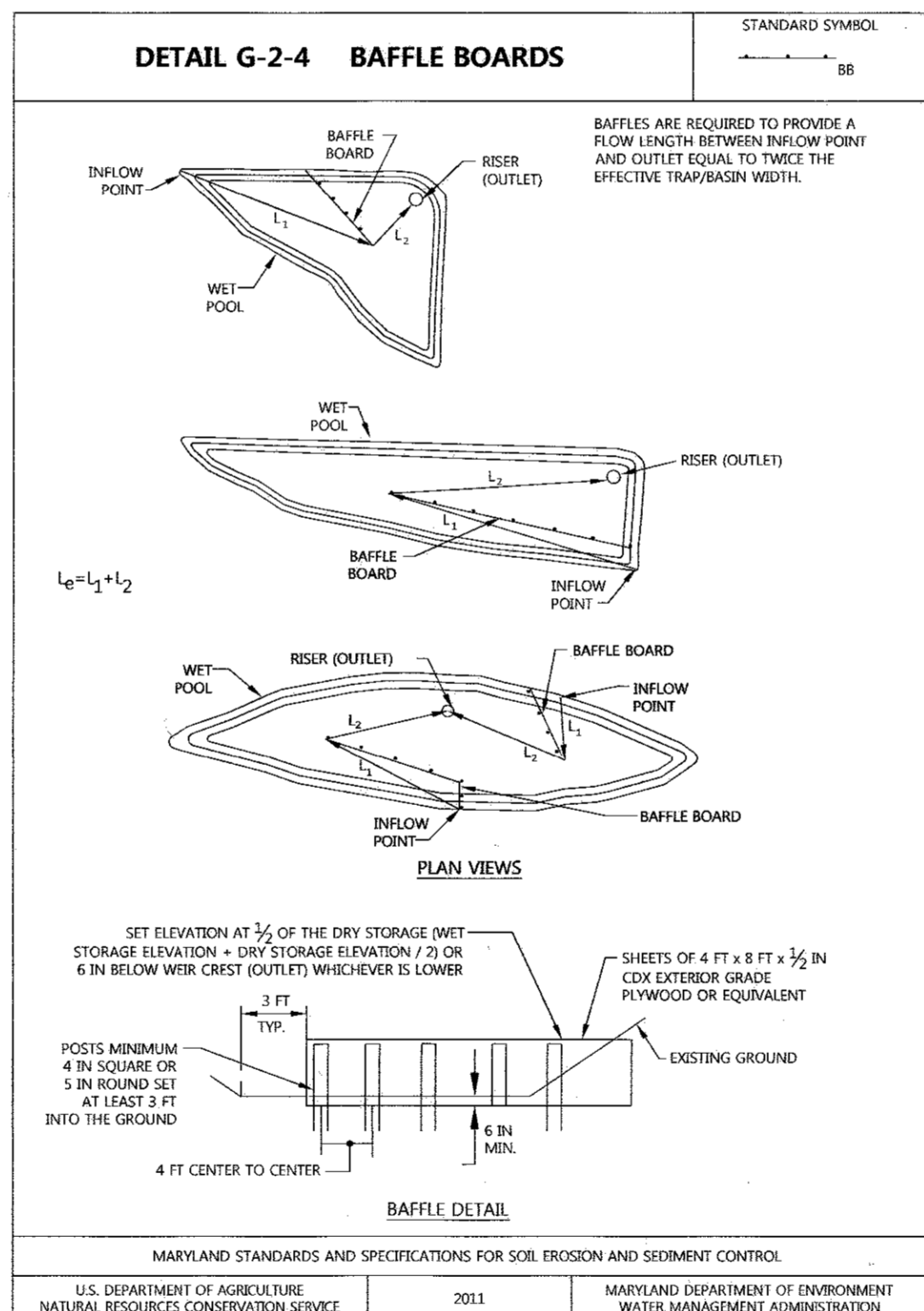
STANDARD SYMBOL: TR

RISER DIAM. (IN)	TRASH RACK CYLINDER DSAM (IN)	THICKNESS (GAUGE)	H (IN)	MINIMUM SIZE SUPPORT BAR	MINIMUM TOP	
					THICKNESS (GAUGE)	STIFFENER
12	18	16	14	#6 REBAR	16	N/A
15	21	16	15	#6 REBAR	16	N/A
18	27	16	16	#6 REBAR	16	N/A
21	30	16	19	#6 REBAR	16	N/A
24	36	16	21	#6 REBAR	14	N/A
27	42	16	21	#6 REBAR	14	N/A
36	54	14	25	#8 REBAR	12	N/A
42	60	14	27	#8 REBAR	12	N/A
48	72	12	29	1 1/4 IN PIPE OR 1 1/4 x 1 1/4 x 1/4 ANGLE	10	N/A
54	78	12	33	1 1/4 IN PIPE OR 1 1/4 x 1 1/4 x 1/4 ANGLE	10	N/A
60	90	12	37	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/4 ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 x 2 x 3/4 ANGLE
72	102	10	44	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 1/2 x 2 1/2 x 1/2 ANGLE
78	114	10	47	2 1/2 IN PIPE OR 2 x 2 x 3/4 ANGLE	8	2 1/2 x 2 1/2 x 1/2 ANGLE
84	120	10	50	2 1/2 IN PIPE OR 2 1/2 x 2 1/2 x 1/4 ANGLE	8	2 1/2 x 2 1/2 x 3/16 ANGLE

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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



- ### ENVIRONMENTAL DATA SOURCES
- FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIOHABITATS DATED 06/18/2015.
 - WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECT THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
 - SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
 - ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016
- ### DATA SOURCES:
- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15, AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 2-7-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 2-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 2-13-17
DIRECTOR, DIVISION OF LAND DEVELOPMENT

Date	No.	Revision Description
		DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD AREA 3, PHASE I MASS GRADING

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
COLUMBIA REGIONAL OFFICE
10480 LITTLE PATUXENT PARKWAY SUITE 400
COLUMBIA, MD 21044
410-964-4800

P/O PARCEL 527
FDP: DC CRESCENT-1A; F-16-107; SDP-16-009 AND ECP-16-042
TAX MAP 36; NT-DMUA

5TH ELECTION DISTRICT
HOWARD COUNTY, MD

PERMIT INFORMATION CHART			
SUBDIVISION NAME COLUMBIA CRESCENT	SECTION/AREA AREA 3	LOT/UNIT 527/Parcel D	
PLAT NO. 25992	BLOCK # ZONE DMUA 36	TAX ZONE/MAP 5-15	ELECTION DISTRICT 605602
WATER CODE 550	SEWER CODE LITTLE PATUXENT		

CONTRACT NUMBERS:
EX. WATER & EX. SEWER:
SYMPHONY DR : 172 - W & S
24-4868-D
MERRIWEATHER DR: 24-4928-D

12-9-16
Date
Professional Engr. No. 26569

Professional Engr. No. 26569

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: December 1, 2016

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

[Signature] 2/12/17
DATE

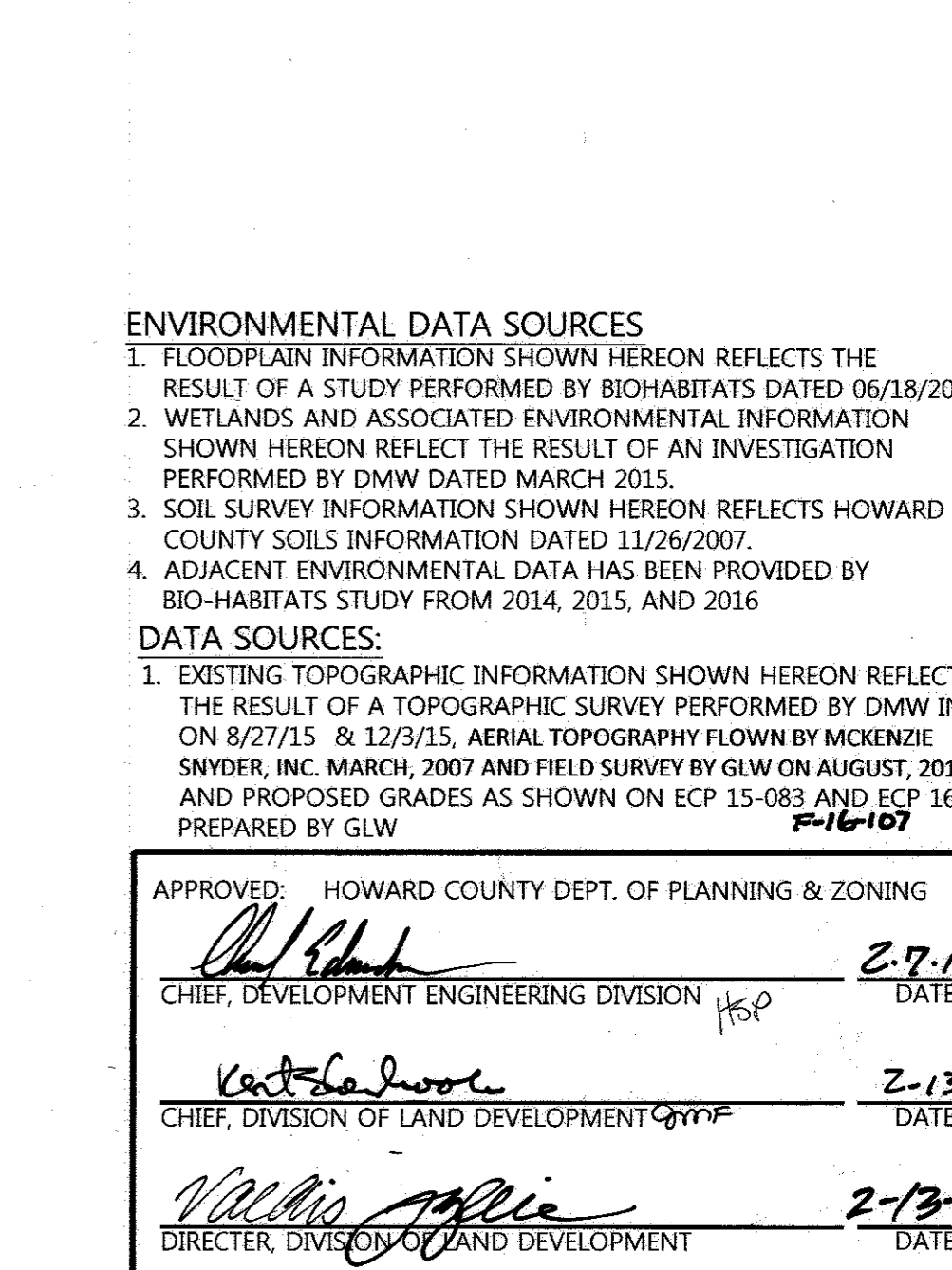
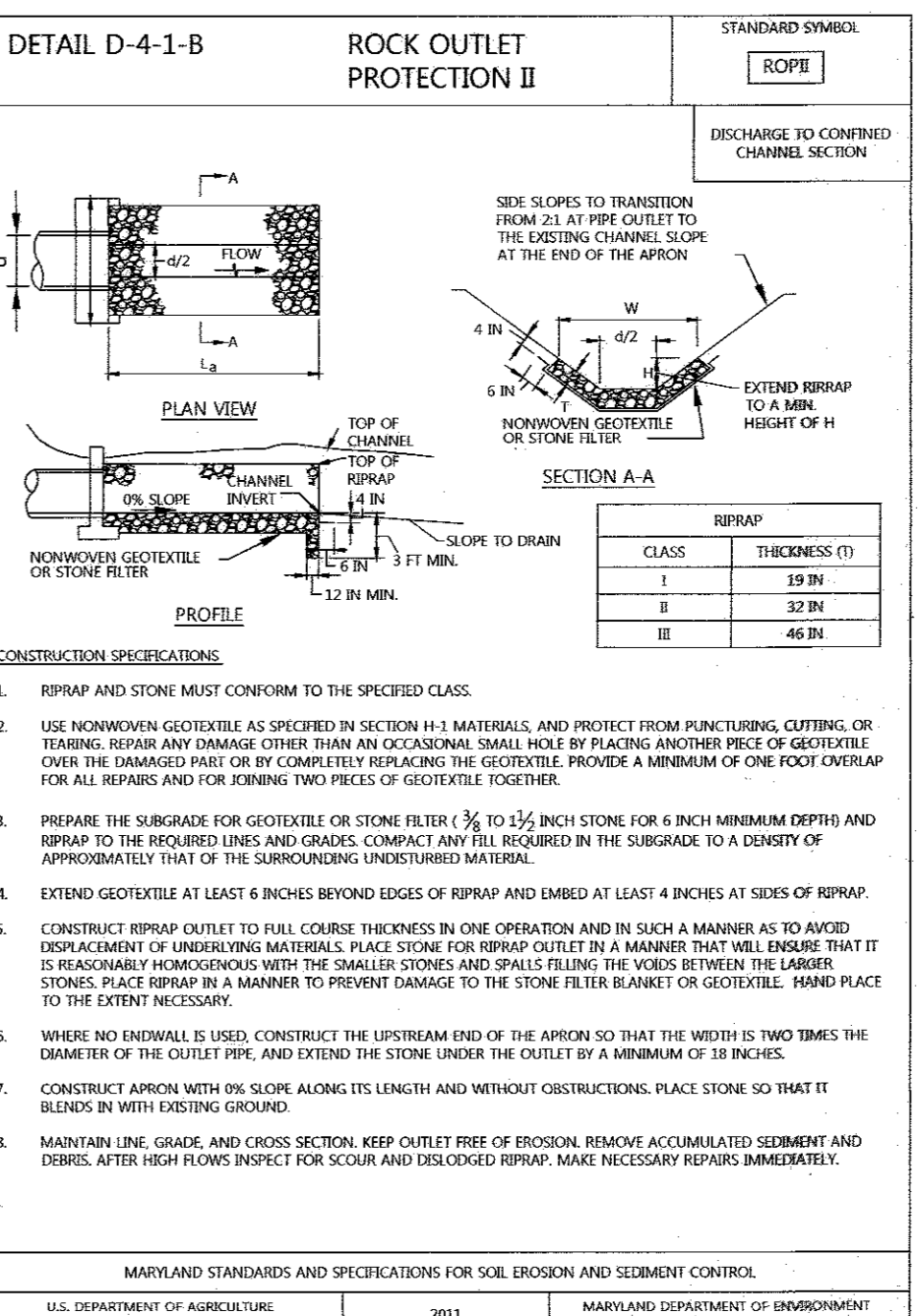
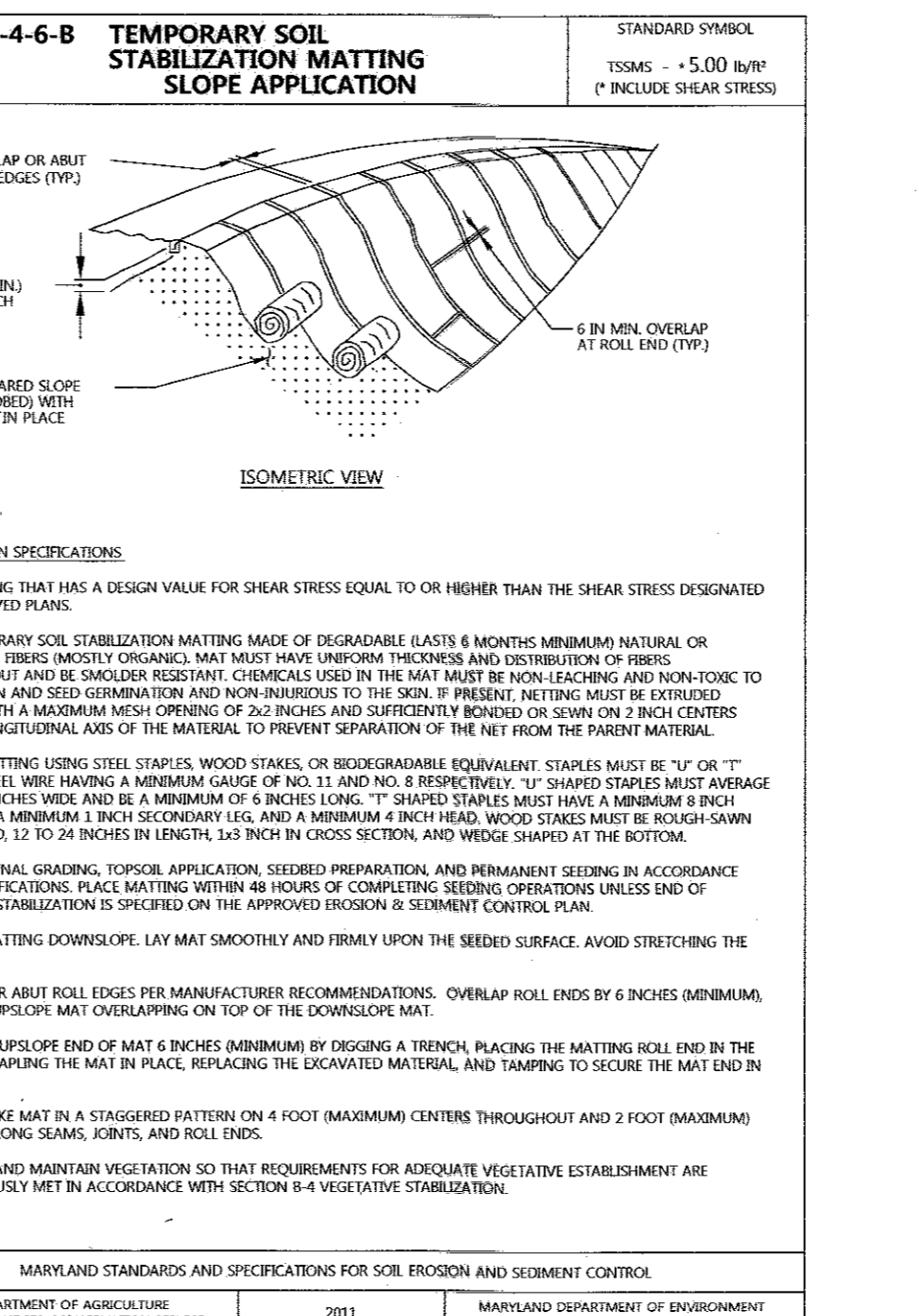
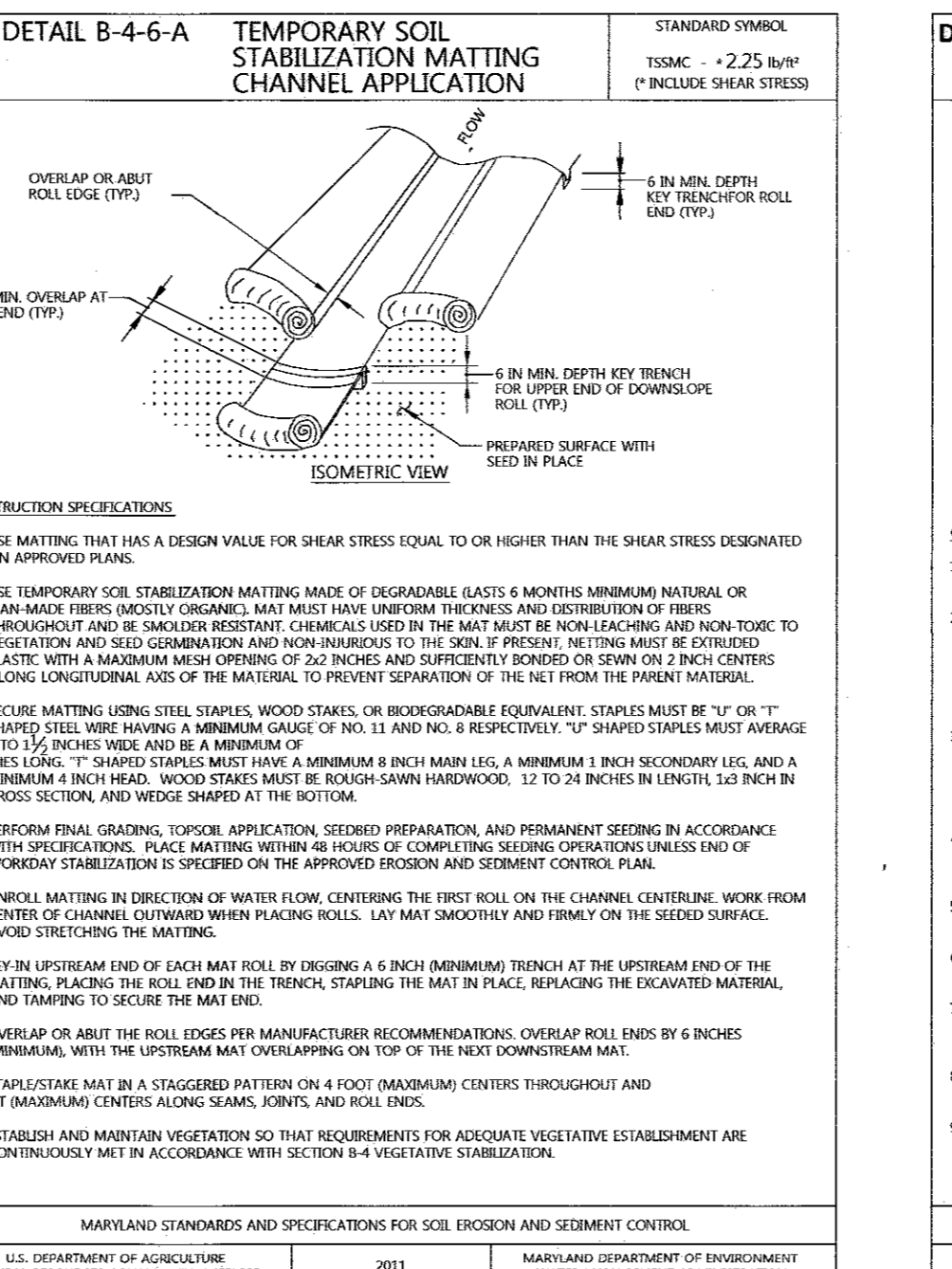
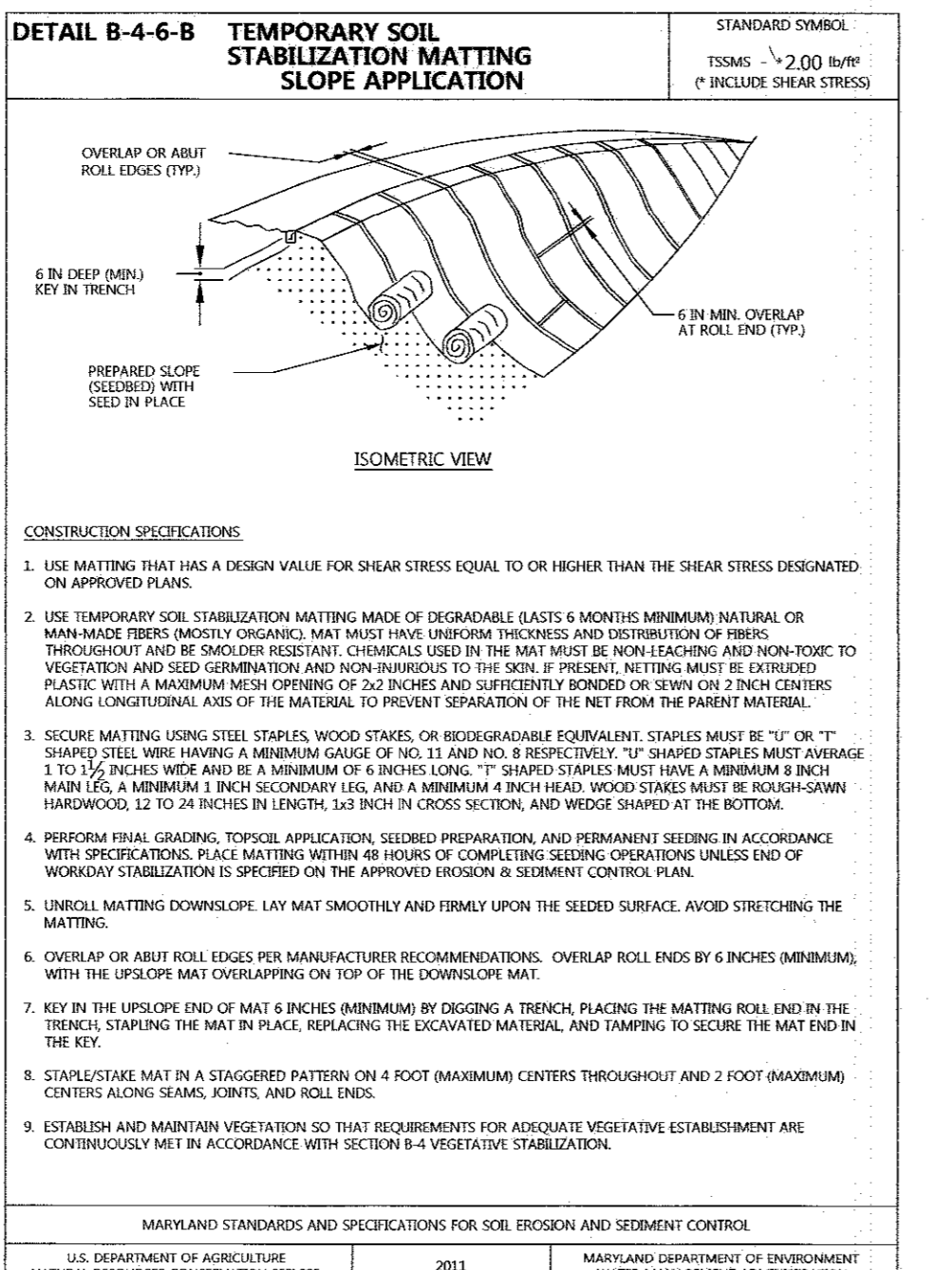
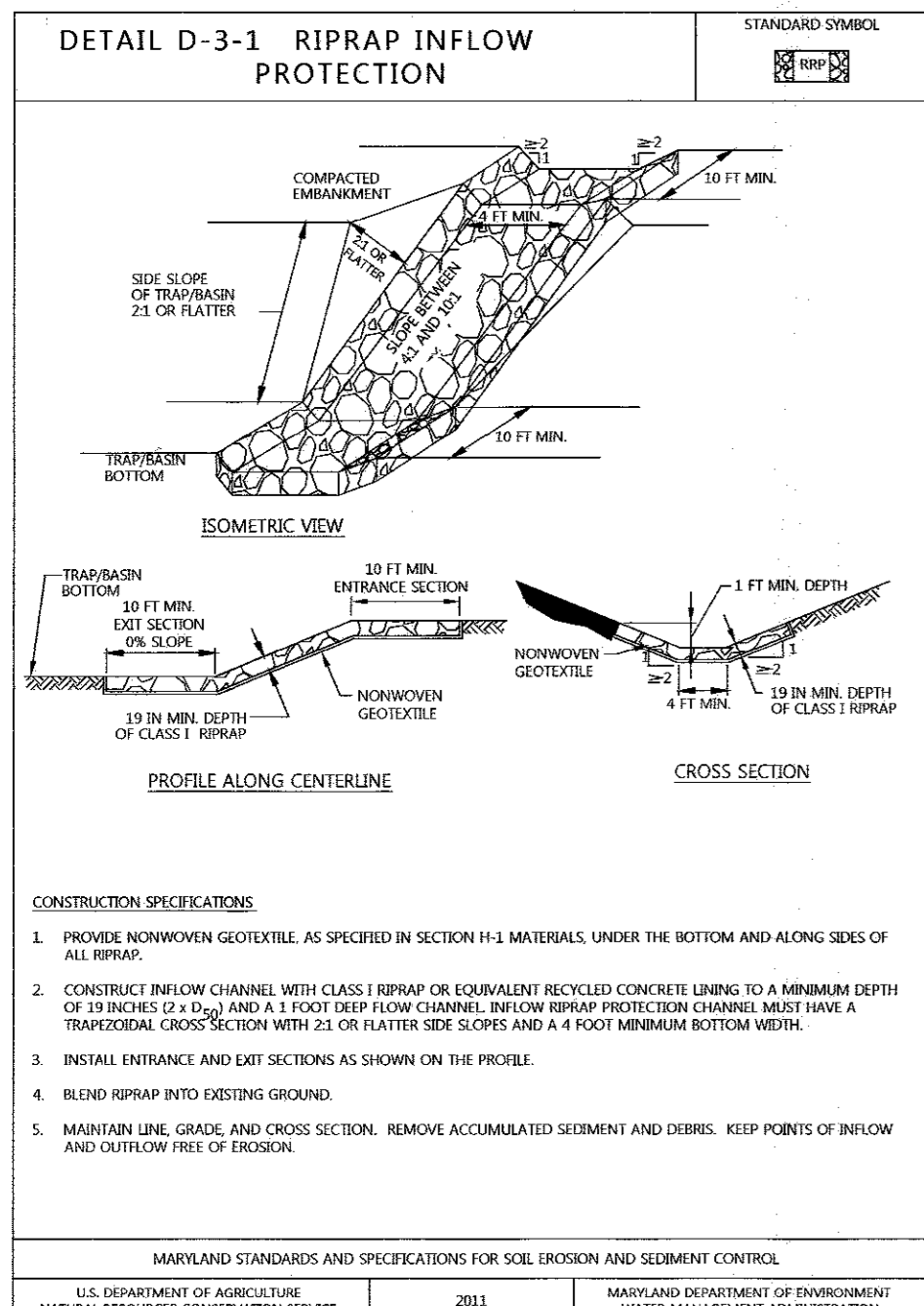
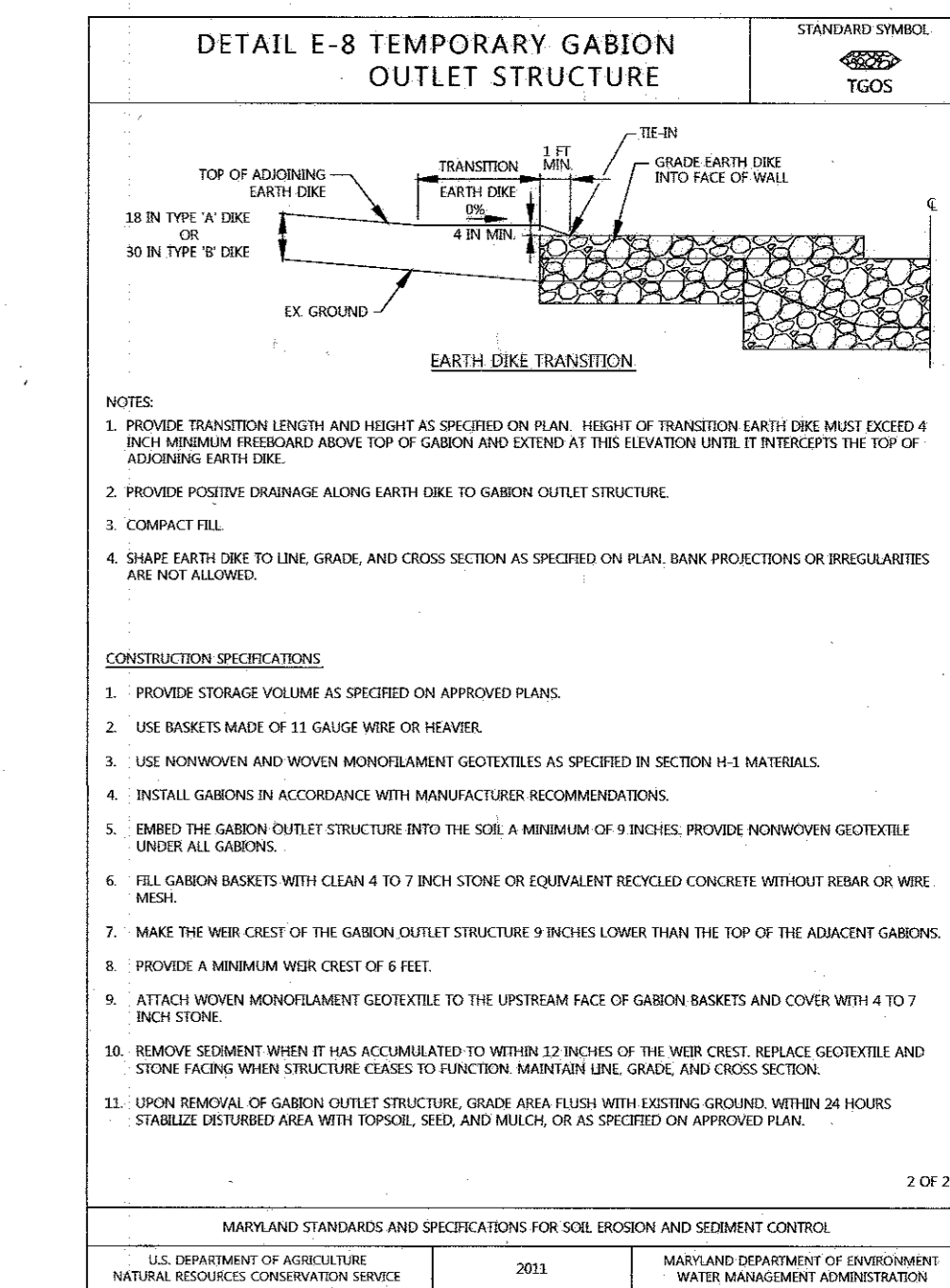
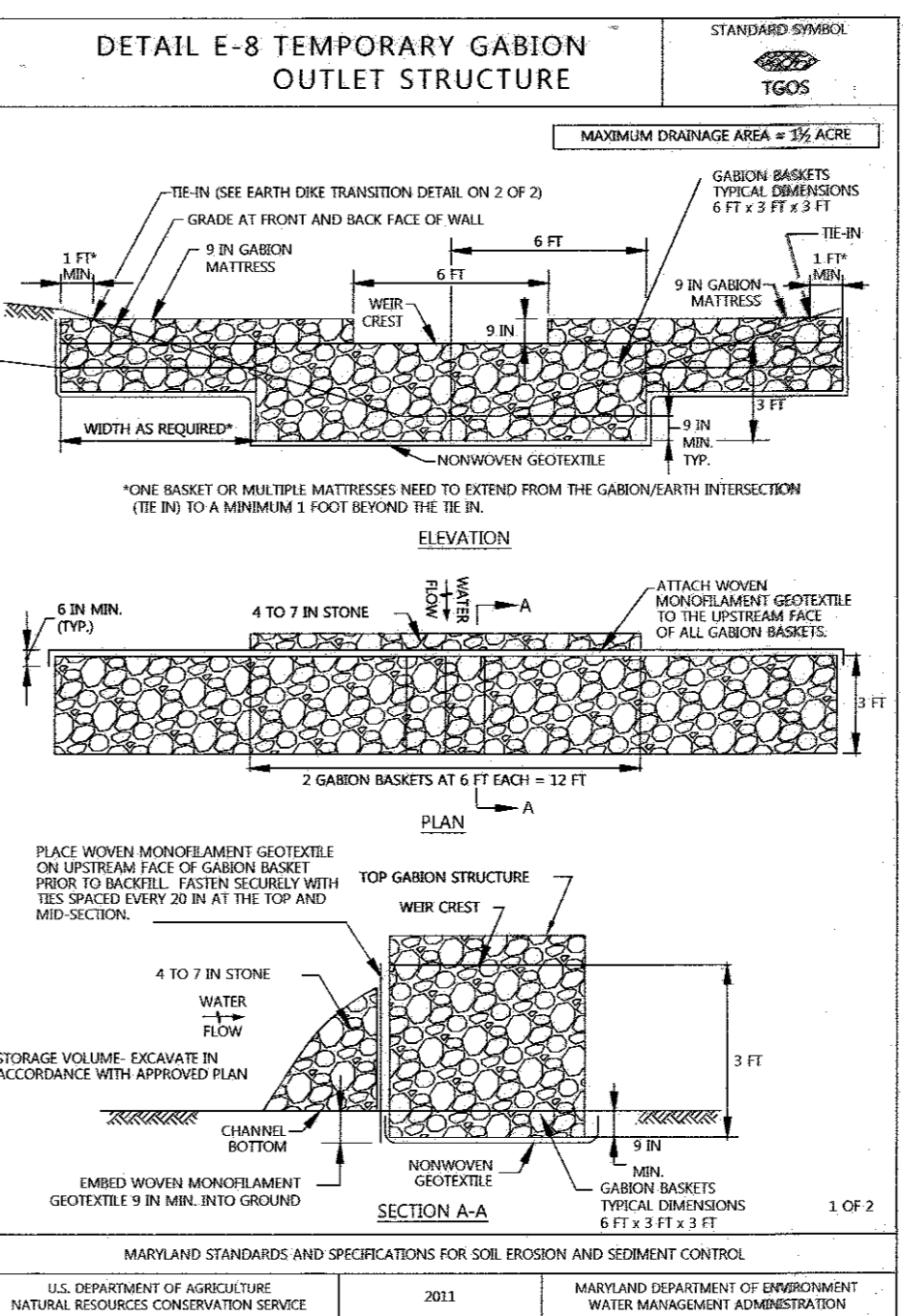
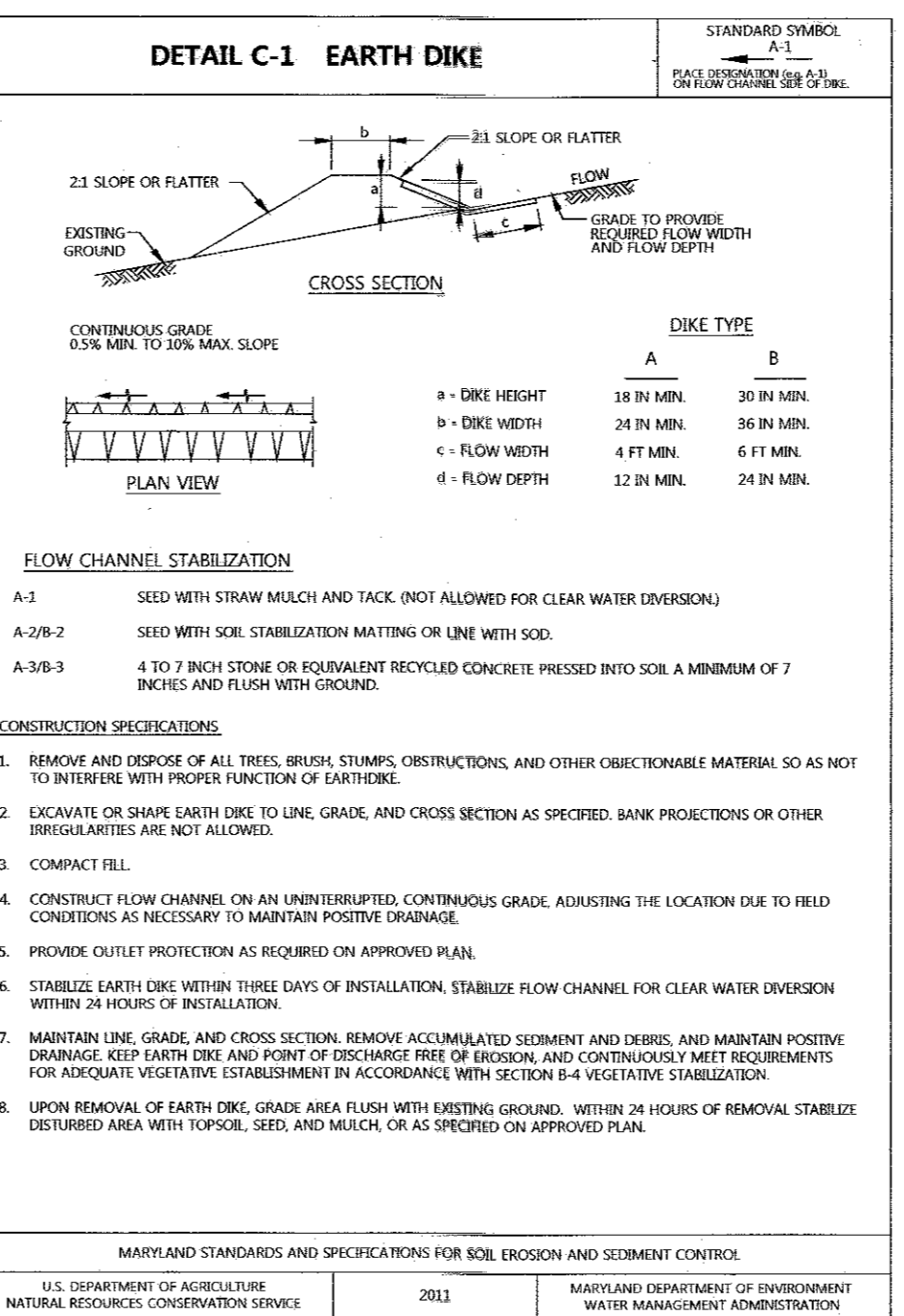
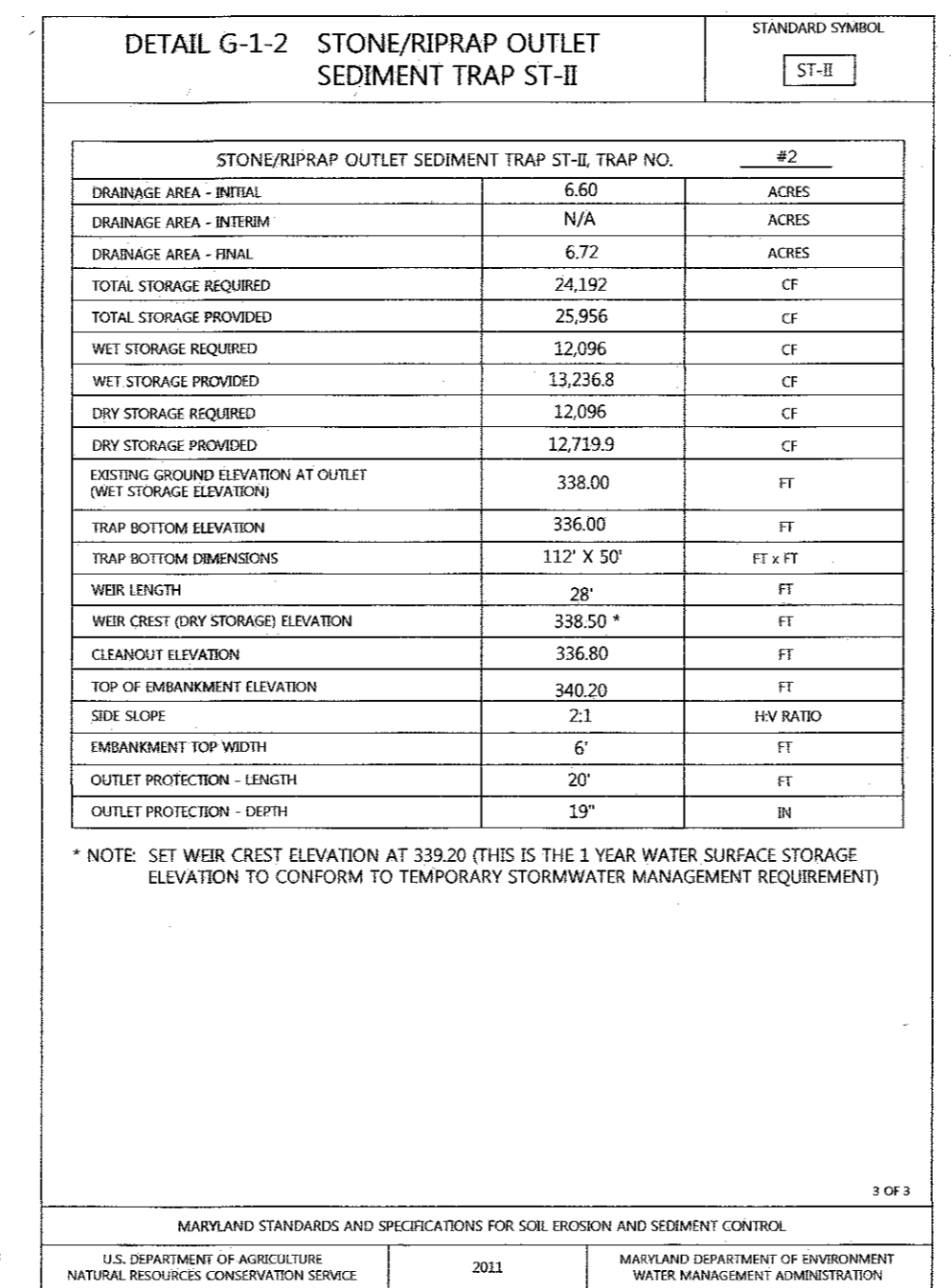
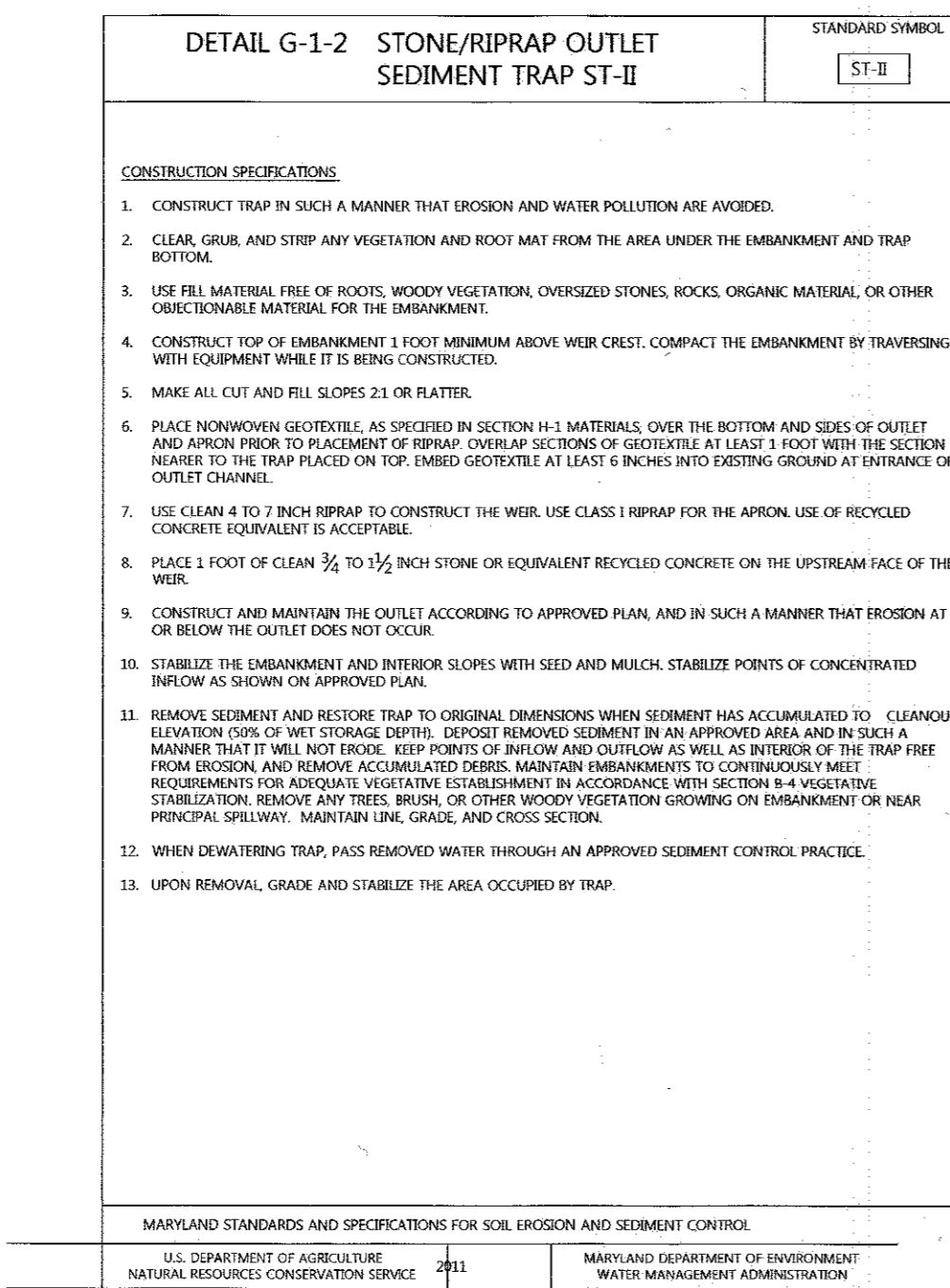
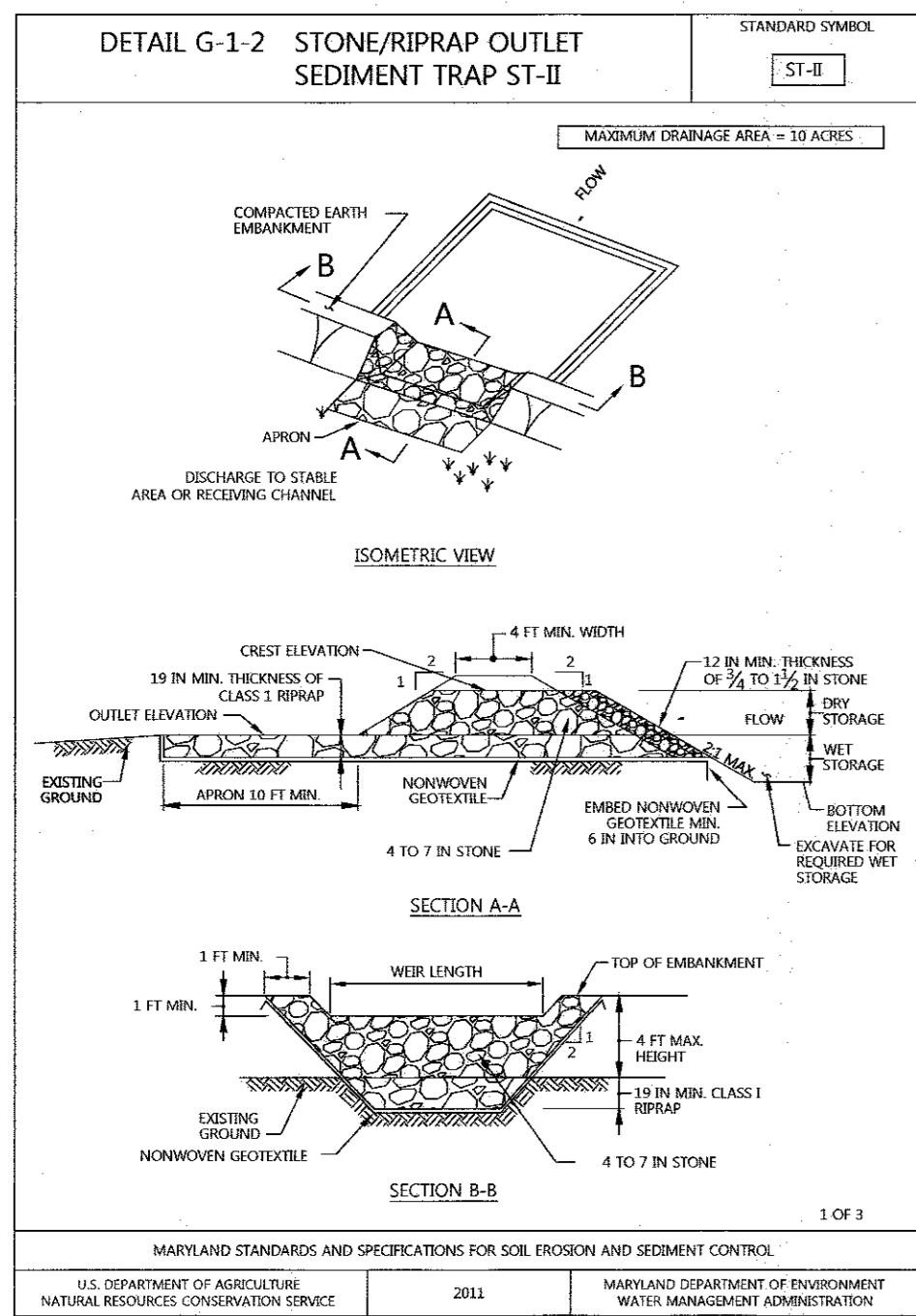
Professional Engr. No. 26569

DMW
DAFT MCCLINE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

Des. By	GDT	SCALE	AS SHOWN	Proj. No.	04038.B0
Drn. By	MCJ	Date	5/12/16		
Chk. By	ERS	Approved	MCB		7 of 9

SDP-16-075



ENVIRONMENTAL DATA SOURCES

- FLOODPLAIN INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A STUDY PERFORMED BY BIOHABITATS DATED 06/18/2015.
- WETLANDS AND ASSOCIATED ENVIRONMENTAL INFORMATION SHOWN HEREON REFLECTS THE RESULT OF AN INVESTIGATION PERFORMED BY DMW DATED MARCH 2015.
- SOIL SURVEY INFORMATION SHOWN HEREON REFLECTS HOWARD COUNTY SOILS INFORMATION DATED 11/26/2007.
- ADJACENT ENVIRONMENTAL DATA HAS BEEN PROVIDED BY BIO-HABITATS STUDY FROM 2014, 2015, AND 2016.

DATA SOURCES:

- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. ON 8/27/15 & 12/3/15. AERIAL TOPOGRAPHY FLOWN BY MCKENZIE SNYDER, INC. MARCH, 2007 AND FIELD SURVEY BY GLW ON AUGUST, 2011, AND PROPOSED GRADES AS SHOWN ON ECP 15-083 AND ECP 16-041 PREPARED BY GLW.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 2-7-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION HSP DATE

[Signature] 2-13-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 2-13-17
 DIRECTOR, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
		DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD AREA 3, PHASE I MASS GRADING
		OWNER / DEVELOPER: THE HOWARD RESEARCH & DEVELOPMENT CORPORATION COLUMBIA REGIONAL OFFICE 10480 LITTLE PATUXENT PARKWAY SUITE 400 COLUMBIA, MD 21044 410-964-4800
		5TH ELECTION DISTRICT HOWARD COUNTY, MD
PERMIT INFORMATION CHART		
SUBDIVISION NAME: COLUMBIA CRESCENT	SECTION/AREA: AREA 3	LOT/PARCEL: Parcel D
PLAT NO.: 25992	BLOCK/ZONE: DMU 36	ELECT DISTRICT: 5-15
WATER CODE: 550	SEWER CODE: LITTLE PATUXENT	CENSUS TRACT: 605602
CONTRACT NUMBERS: EX WATER & EX SEWER: SYMPHONY DR - 172 - W & S 24-4868-D MERRIWEATHER DR: 24-4928-D		
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM		
TITLE: SEDIMENT EROSION CONTROL DETAILS		
Des. By: GDT	SCALE: AS SHOWN	Proj. No. 04038.80
Drn. By: MCJ	Date: 5/12/16	
Chk. By: ERS	Approved: MCB	8 of 9

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE: December 1, 2016

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

[Signature] 2/12/17
 HOWARD SOIL CONSERVATION DISTRICT DATE

12-2-16
 Date

Professional Engr. No. 26569

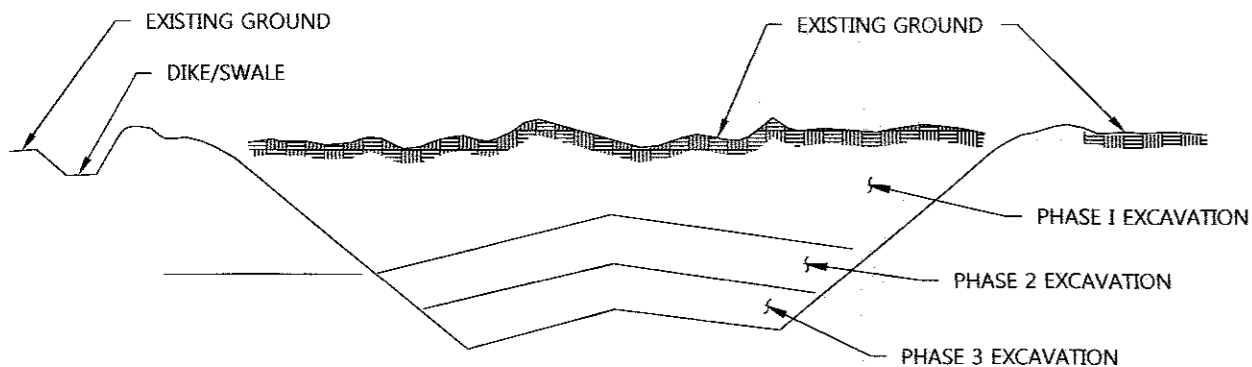
STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

(B-4-1) SECTION 1 - INCREMENTAL STABILIZATION

1. INCREMENTAL STABILIZATION - CUT SLOPES

- EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
- CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
 - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
 - PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
 - PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 - PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDD AREAS AS NECESSARY.

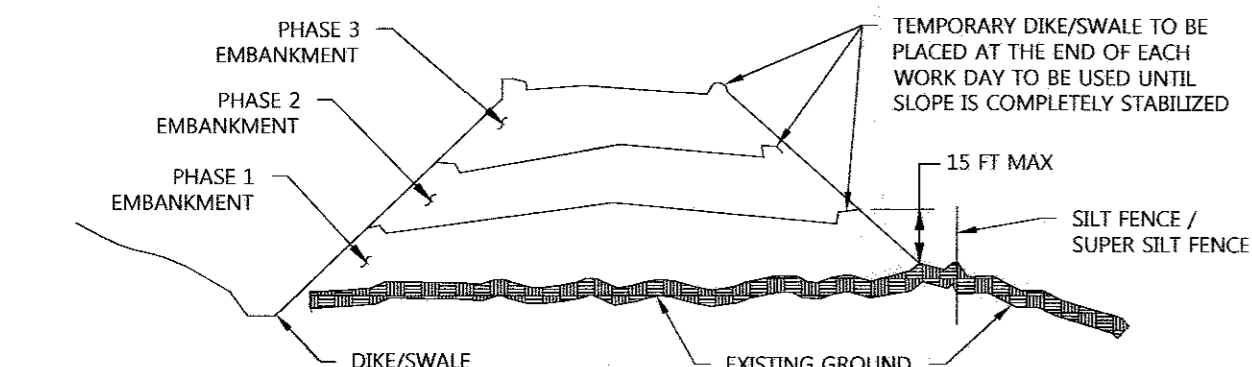
NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL. IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.



B. INCREMENTAL STABILIZATION - FILL SLOPES

- CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
- STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
- AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICES, AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
- CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
 - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 - AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICES, AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 - PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
 - PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
 - PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDD AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.



(B-4-2) SECTION 2 - SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. SOIL PREPARATION

- TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC, HARROWS OR CHISEL FLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - 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.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 80 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS LOWGRASS WHICH 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.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOIL IS PLACED OVER PREPARED SURSOIL 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 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/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 FURNISH CONTINUING SUPPLIES OF MOISTURE 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: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition: Controlling the suspension of dust particles from construction activities.
Purpose: To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.
Conditions Where Practice Applies: Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

- Specifications:**
- Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
 - Vegetative Cover: See Section B-4-4 Temporary Stabilization.
 - Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-tipped harrows, and similar plows are examples of equipment that may produce the desired effect.
 - Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
 - Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
 - Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

- TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STUBS, 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.
- 2. 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 AND SEEDBED PREPARATION.
 - 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 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. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST 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 HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - 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) SECTION 3 - SEEDING AND MULCHING

A. 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 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: 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, AND FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING.
 - 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.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION ROLL THE SEEDBED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACK SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVER. SEEDBED 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; P2O5 (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 - LIME: LIME ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. 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 WEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOISTLY, GAYED, 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 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 AN OPEN PORE SPACE OF 10 TO 15 PERCENT. THE MULCH MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - 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.

2. APPLICATION

- APPLY MULCH TO ALL SEEDD AREAS IMMEDIATELY AFTER SEEDING.
- WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDD 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 ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

- 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):
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSEAL, TERRA TACK II, TERRA TACK AR OR OTHER

- EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MUCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 5000 FEET LONG.

(B-4-4) SECTION 4 - TEMPORARY STABILIZATION

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS, FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

Seed Mixture (Hardiness Zone 7A)				Fertilizer Rate (10-20-20)	Lime Rate
Season	Species	Application Rate (Lb./Ac.)	Seeding Dates		
Cool	Annual Ryegrass Foxtail Millet	40	2/15-4/30 8/15-11/30	1/2"	436 Lbs./Ac. (10 Lbs./1000 Sq.Ft.)
Warm			5/1-8/14	1/2"	2 Tons/Ac. (90 Lbs./1000 Sq.Ft.)

SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY. AS TESTED, ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXTURES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE, GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL. BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS, CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE.

OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

- FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
- THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

(B-4-5) SECTION 5 - PERMANENT STABILIZATION

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

A. SEED MIXTURES

1. GENERAL USE

- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUNDED ON TABLE B.2. ENTER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE SECTION 342 - CRITICAL AREA PLANTING.
- FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
- FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (550 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

- AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL REQUIRE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIMUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTE: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MELO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOICE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
 - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
- TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND BAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

Seed Mixture No. 9 (Hardiness Zone 7A)				** Fertilizer Rate (10-20-20)			** Lime Rate
No.	Species	Application Rate (Lb./Ac.)	Seeding Dates	N	P ₂ O ₅	K ₂ O	** Lime Rate
9	* Tall Fescue	60		45 Lb./Ac. (1 lb./1000 Sq.Ft.)	90 Lb./Ac. (2 lb./1000 Sq.Ft.)	90 Lb./Ac. (2 lb./1000 Sq.Ft.)	2 Tons/Ac. (90 Lb./1000 Sq.Ft.)
	* Kentucky Bluegrass	40	2/15 - 4/30 8/15 - 10/31	1/2"	1/2"	1/2"	
	* Perennial Ryegrass	20					

* BLEND 3 CULTIVARS OF ANY CULTIVAR LISTED ON PAGE B.32 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

** AT TIME OF FINE GRADING, FERTILIZER AND LIME RATES WILL BE BASED ON SOIL TEST RESULTS; (SEE SECTION 2.C). COPY OF RECOMMENDED RATES TO BE SUPPLIED TO THE SEDIMENT CONTROL INSPECTOR.

*** FOR SEEDING DATES 5/1-8/14 ADD 6 LB/AC OF EITHER FOXTAIL MILLET OR PEARL MILLET TO PERMANENT SEED MIXTURE #9 ABOVE.

NOTE: ALL SEED MUST COMPLY WITH THE MARYLAND STATE SEED LAW. SEED MUST BE FREE OF PROHIBITED OR RESTRICTED NOXIOUS WEEDS, AS CURRENTLY LISTED BY THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

- CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/4 INCH AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

- DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
- LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT WEEDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
- WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
- SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR SO OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOISTURE TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.