HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
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Voice/Relay

Valdis Lazdins, Director FAX 410-313-3467

TECHNICAL STAFF REPORT

Planning Board Meeting of December 1, 2016

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Case No./Petitioner: **SDP-16-075, Downtown Columbia, Crescent Area 3, Phase 1 Mass Grading**
The Howard Research & Development Corporation

Request: For the Planning Board to approve SDP-16-075, a site development plan for mass grading of a portion of Tax Map 36, Parcel 527, in an area also identified as Downtown Columbia, Crescent Neighborhood, Area 3.

Location: Mass grading will occur on a portion of Tax Map 36 Parcel 527; specifically 21.39 acres located on the south portion of the parcel, east of Broken Land Parkway, and south of the Merriweather Post Pavilion property. The area is currently a large gravel surface lot for Merriweather Post Pavilion. The property is zoned New Town (NT) and designated Downtown Mixed Use area per the Downtown Columbia Plan. On future plat F-15-106, the site is identified as Parcel D.

Recommendation: Approval subject to complying with Planning Board and SDP review comments dated November 9, 2016. In addition, for Howard Research and Development to record temporary easements in the Land Records of Howard County for 2,100 parking spaces, either within Crescent Area 3, or elsewhere in Downtown, in accordance with Note #15 on FDP-DC-Crescent-1A, prior to April 1, 2017.

Vicinal Properties:

North: The site is bounded on the north by the future Merriweather Drive. The Merriweather Post Pavilion and Symphony Woods property are located on the north side of this future road.

South: Broken Land Parkway and the Route 29 interchange are located south of the site.

East: The location of the future North-South Connector is immediately east of the site. An environmental restoration site is located further east, between the future road and Route 29.

West: Broken Land Parkway is located west of the site, as is the road's intersection with Hickory Ridge Road.

Site History:

- **FDP-DC-Crescent-1** encompasses the majority of the land area within the Crescent Neighborhood and includes four designated development areas, a network of roads that expand the overall Downtown road network, and a network of land designated for environmental restoration and Downtown Parkland. The Crescent Neighborhood Concept Plan, the Crescent Neighborhood Design Guidelines, and the Crescent Neighborhood Implementation Plan were included as part of the FDP package, which was reviewed and approved at a Planning Board Hearing held on March 19, 2015. The Decision and Order was signed by Planning Board on April 16, 2015. The Plans and Documents were recorded on July 2, 2015. "Area 3" is identified on this FDP.
- An Environmental Concept Plan (**ECP-16-042**) for The Crescent Neighborhood Area 3 was approved on July 1, 2016.
- **F-15-106** was submitted July 2, 2015, to subdivide Parcel 527 into buildable parcels and open space lots, and to construct a portion of the future Merriweather Drive and the future extended Hickory Ridge Road. Environmental Restoration Plans are also part of the Road Construction Plan set. The plan was deemed technically complete on March 23, 2016, and the Road Construction Drawings received signature approval on August 3, 2016. The plat originals must be submitted for recordation by November 18, 2016. Upon recordation, Area 3 will also be identified as Parcel D on this plat.
- **FDP-DC-Crescent-1A** is an amendment to the previously approved FDP for Phase 1 of the Crescent Neighborhood, which identifies final street and block structure of Area 3. It was approved by Planning Board at a public hearing on September 15, 2016. The Decision and Order was signed October 14, 2016. It has not yet been recorded into Land Records.
- **SP-16-009,** a preliminary equivalent sketch plan that provides initial information on road network, utilities, and future proposed uses.

Site Analysis:

Site Description: The site is 21.39 acres, the majority of which is currently a large gravel parking area for Merriweather Post Pavilion. A small portion of the disturbed area is wooded.

Proposed Site Improvements: The site development plan seeks to allow advanced mass grading of a future development area. 18.20 acres of the 21.39 acre area will be graded. Advanced site grading is desired to allow early site preparation for future final road construction drawings and site development plans and to prepare the site to allow temporary parking on a portion for the 2017 concert season. Any displaced parking must be replaced in accordance with the requirements outlined in Note #15 on FDP-DC-Crescent-1A.

Environmental Considerations: There are no floodplains, streams, wetlands or buffers within the proposed area of disturbance, nor are there regulated steep slopes.

Landscaping: Landscaping is not required in association with mass grading and it will be shown on a subsequent development plan.

Stormwater Management: Mass grading requires sediment erosion control and temporary stormwater management, using sediment traps, diversion dikes, and silt fencing per the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment control, as revised. No permanent stormwater management is required.

Forest Conservation: The project is exempt from forest conservation requirements in accordance with Subsection 16.1202(b)(1)(iv) of the Howard County Code, since it is part of a planned unit development (New Town) that had preliminary plan approval prior to December 31, 1992.

Adequate Public Facilities Act – Traffic: Mass grading is not subject to APFO for roads.

Planning Board Criteria:

Section 125.0.G of the Zoning Regulations requires Planning Board approval because more than 5,000 SF is being cleared and graded. There are no prescribed criteria in the Zoning Regulations to evaluate mass grading. Further, while the grading will occur on property identified for Downtown Revitalization, located on FDP-DC-Crescent-1A, the grading itself is not Downtown Revitalization and is not subject to the Planning Board criteria outlined for Downtown Revitalization or criteria within the approved FDP.

DPZ compared the SDP with the approved FDP to ensure grading will be within an area identified for development on the FDP. The proposed clearing and grading complies with all applicable County regulations. Adequate sediment and erosion controls are proposed while grading occurs and to stabilize the site after it is completed.

Note #15 on FDP-DC-Crescent-1A requires any existing Merriweather Post Pavilion parking displaced by development or construction staging to be provided on other downtown properties via a temporary easement recorded in the Land Records of Howard County. This is to maintain a minimum 5,000 parking spaces for each operating season (see Attachment A for the complete text). The SDP-16-075 site area contains approximately 2100 existing parking spaces. The Petitioner hopes that temporary parking will be provided in at least a portion of the site after grading has been completed. To date, the County has not reviewed a temporary parking plan for the site after the mass grading is completed. To ensure that the obligation outlined in Note #15 is upheld, DPZ recommends as a condition of approval that temporary easements for 2100 parking spaces be recorded prior to April 1, 2017.

SRC Action: The Subdivision Review Committee determined the site development plan can be approved, subject to addressing remaining comments provided on November 9, 2016.

Recommendation: Approval subject to complying with Planning Board and SDP review comments dated November 9, 2016, and for Howard Research and Development to record temporary easements in the Land Records of Howard County for 2100 spaces; either within Crescent Area 3 or elsewhere in Downtown in accordance with Note #15 on FDP-DC-Crescent-1A, prior to April 1, 2017.

This file is available for public review by appointment at the Department of Planning and Zoning's public service counter, Monday through Thursday, 8:00 a.m. to 5:00 p.m. and Friday from 8:00 a.m. to 3:00 p.m.

Valdis Lazdins, Director 11/17/16
Department of Planning and Zoning Date

Staff Report prepared by: Jill Manion-Farrar
VL/KS/JMF

ATTACHMENT A
NOTE #15 – FDP-DC-CRESCENT-1A
DISPLACEMENT OF MERRIWEATHER POST PAVILION PARKING

15. A MINIMUM OF 5,000 PARKING SPACES WILL BE PROVIDED WITHIN EXISTING OR PROPOSED PARKING AREAS LOCATED ON THE MERRIWEATHER POST PAVILION ("MPP") PROPERTY, WITHIN THE CRESCENT NEIGHBORHOOD (VIA A PERMANENT EASEMENT RECORDED IN THE LAND RECORDS) AND WITHIN ANY PUBLIC GARAGE(S), AND ON OTHER DOWNTOWN PROPERTIES (VIA A TEMPORARY EASEMENT RECORDED IN THE LAND RECORDS FOR HOWARD COUNTY, MARYLAND), TO SERVE MPP EVENTS BETWEEN APRIL 1 AND OCTOBER 31 EACH YEAR (THE "OPERATING SEASON"). THE 5,000 PARKING SPACES SHALL BE NON-EXCLUSIVE, AND THE AVAILABILITY THEREOF SHALL BE DETERMINED BY EVALUATING NON-MPP PARKNG DEMAND IN ACCORDANCE WITH THE DOWNTOWN REVITALIZATION SHARED PARKING METHODOLOGY.

PRIOR TO DEVELOPMENT WITHIN THE CRESCENT NEIGHBORHOOD, THE EXISTING BASELINE OF AVAILABLE SURFACE PARKING IS AS FOLLOWS:

MPP ON-SITE	350	
CRESCENT AREA 1	500	
AREA 2	730	
AREA 3	2,100	
CRESCENT SUBTOTAL	3,330	
TOTAL CRESCENT AND MPP ON-SITE	3,680	
OTHER DOWNTOWN PROPERTIES	1,320	
	5,000	TOTAL

IF AND WHEN SUCH SURFACE SPACES ARE DISPLACED BY DEVELOPMENT ACTIVITIES OR CONSTRUCTION STAGING, PARKING MAY BE PROVIDED IN OTHER DOWNTOWN PROPERTIES, VIA THE TEMPORARY EASEMENT RECORDED IN THE LAND RECORDS FOR HOWARD COUNTY, SO AS TO MAINTAIN THE MINIMUM 5,000 TOTAL REQUIRED SPACES DURING EACH OPERATING SEASON. SPECIFICALLY, FOR EACH SDP OR FINAL ROAD PLAN PROPOSING DISPLACEMENT OR DEMOLITION OF EXISTING MPP PARKING SPACES IN THE CRESCENT NEIGHBORHOOD, THE PETITIONER MUST SUBMIT A PARKING ANALYSIS IN ACCORDANCE WITH THE DOWNTOWN REVITALIZATION SHARED PARKING METHODOLOGY TO DEMONSTRATE WHERE THE DISPLACED SPACES WILL BE RELOCATED PURSUANT TO THE PERMANENT AND/OR TEMPORARY PARKING EASEMENT(S) REFERRED TO ABOVE.

AS PUBLIC AND PRIVATE PARKING SPACES ARE MADE AVAILABLE WITHIN THE CRESCENT NEIGHBORHOOD TO SERVE MPP EVENTS, THE NUMBER OF PARKING SPACES THAT WERE TEMPORARILY REQUIRED IN OTHER DOWNTOWN PROPERTIES IN ORDER TO PROVIDE THE TOTAL REQUIRED, CALCULATED IN ACCORDANCE WITH THE DOWNTOWN REVITALIZATION SHARED PARKING METHOLOGY, SHALL BE CORRESPONDINGLY REDUCED. IN ADDITION, PETITIONER MAY RECORD A CORRESPONDING RELEASE OF THE TEMPORARY EASEMENT FROM ONE OR MORE OF SUCH OTHER DOWNTOWN PROPERTIES THAT ARE NO LONGER NECESSARY TO PROVIDE THE REQUIRED TOTAL.

WHEN AT LEAST 5,000 PARKING SPACES ARE AVAILABLE WITHIN THE CRESCENT NEIGHBORHOOD TO SERVE MERRIWEATHER POST PAVILION EVENTS, CALCULATED IN ACCORDANCE WITH THE DOWNTOWN REVITALIZATION SHARED PARKING METHODOLOGY, PETITIONER MAY RECORD A FULL RELEASE OF THE TEMPORARY EASEMENT FROM ALL OF THE OTHER DOWNTOWN PROPERTIES.

AS WITH PAST PRACTICES, THE MPP OPERATOR SHALL SECURE ADDITIONAL PARKING SPACES LOCATED BOTH WITHIN AND OUTSIDE THE DOWNTOWN AREA FOR ANY EVENTS REQUIRING MORE THAN 5,000 PARKING SPACES. ANY REQUIREMENT FOR SUCH ADDITIONAL PARKING SPACES SHALL BE DETERMINED ON A CASE-BY-CASE BASIS PRIOR TO ISSUANCE OF AN EVENT PERMIT BY THE COUNTY.

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

HOWARD COUNTY MARYLAND

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 CONSTRUCION 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 MERRI-WEATHER DR AND NORTH SOUTH CONNECTOR HAVE BEEN GRADED, AND STABILIZED W/VEGATAITION, 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" (NOI).
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 MANUEL 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.

SEDIMENT CONTROL PHASING NOTE

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

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

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

HOWARD SOIL CONSERVATION DISTRICT DATE

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."

OWNER'S/DEVELOPER'S SIGNATURE DATE

PRINTED NAME & TITLE

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 DATE 10-21-16

Gerald D Turnbaugh
PRINTED NAME

MD REGISTRATION NO. 26569
R.L.S., OR R.L.A. (CIRCLE ONE)

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:	18.20 Acres	4.05 Acres
Area to be roofed or paved:	0.00 Acres	0.00 Acres
Area to be vegetatively stabilized:	18.20 Acres	4.05 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 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 HCSD, 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 IIIP 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.

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)

AREA VIEW
SCALE: 1"=200'

200 0 200 400 600
SCALE: 1"=200'

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

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.

DPZ FILE REFERENCES:

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

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
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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 COUTNY 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 PERIMENT DEVICES, INCLUDING: SUPER SILT FENCE (SSF), SILT FENCE (SF), DIVERSION FENCE (DF), EARTH DIKE (ED), TEMPORARY GABION OUTLET STRUCTURE (TGOS) AND ROCK OUTLET PROTECTION (ROP IID). (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 I IN THE FOLLOWING ORDER:
   a. INSTALL 30" CMP TRAP BARREL PIPE. PROVIDE OUTFALL CUT-IN TO EXISTING STORM DRAIN MANHOLE MH#300 AND TEMPORARILY CAP AT TRAP RISER LOCATION. (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)

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, TEMPORAY SWALES SHALE 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)

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

10-21-16
Date

STATE OF MARYLAND
GERALD DOUGLAS TURNBAUGH
No. 26569
PROFESSIONAL ENGINEER

Professional Engr. No. 26569

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.

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

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

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 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:

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTER, 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

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		SECTION/AREA		LOT/PARCEL #	
COLUMBIA CRESCENT		AREA 3		PARCEL 527	
PLAT# OR L/F	BLOCK #	ZONE	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT-DMUA	36	5-15	605602
WATER CODE			SEWER CODE		
550			LITTLE PATUXENT		

DAFT McCUNE WALKER INC

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

TITLE
COVER SHEET

Des. By GDT	SCALE AS SHOWN	Proj. No. 04038.80	
Drn. By MCJ	Date 5/12/16	1 of 9	
Chk. By ERS	Approved MCB		

SDP-16-075

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. TREELINE
- LIMIT OF DISTURBANCE
- SOILS
- EX. TREE LINE
- EX. MACADAM

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

EXISTING CONDITIONS

60 0 60 120 180

SCALE: 1"=60'

VICINITY MAP

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

STEEP SLOPES DATA

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

ENVIRONMENTAL DATA SOURCES

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTER, 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

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

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT			AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT DMUA	36	5-15	605602
WATER CODE			SEWER CODE		
550			LITTLE PATUXENT		

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

10-21-16
Date

STATE OF MARYLAND — RICHARD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

Professional Engr. No. 26569

PROFESSIONAL CERTIFICATION

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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

EXISTING CONDITION PLANS

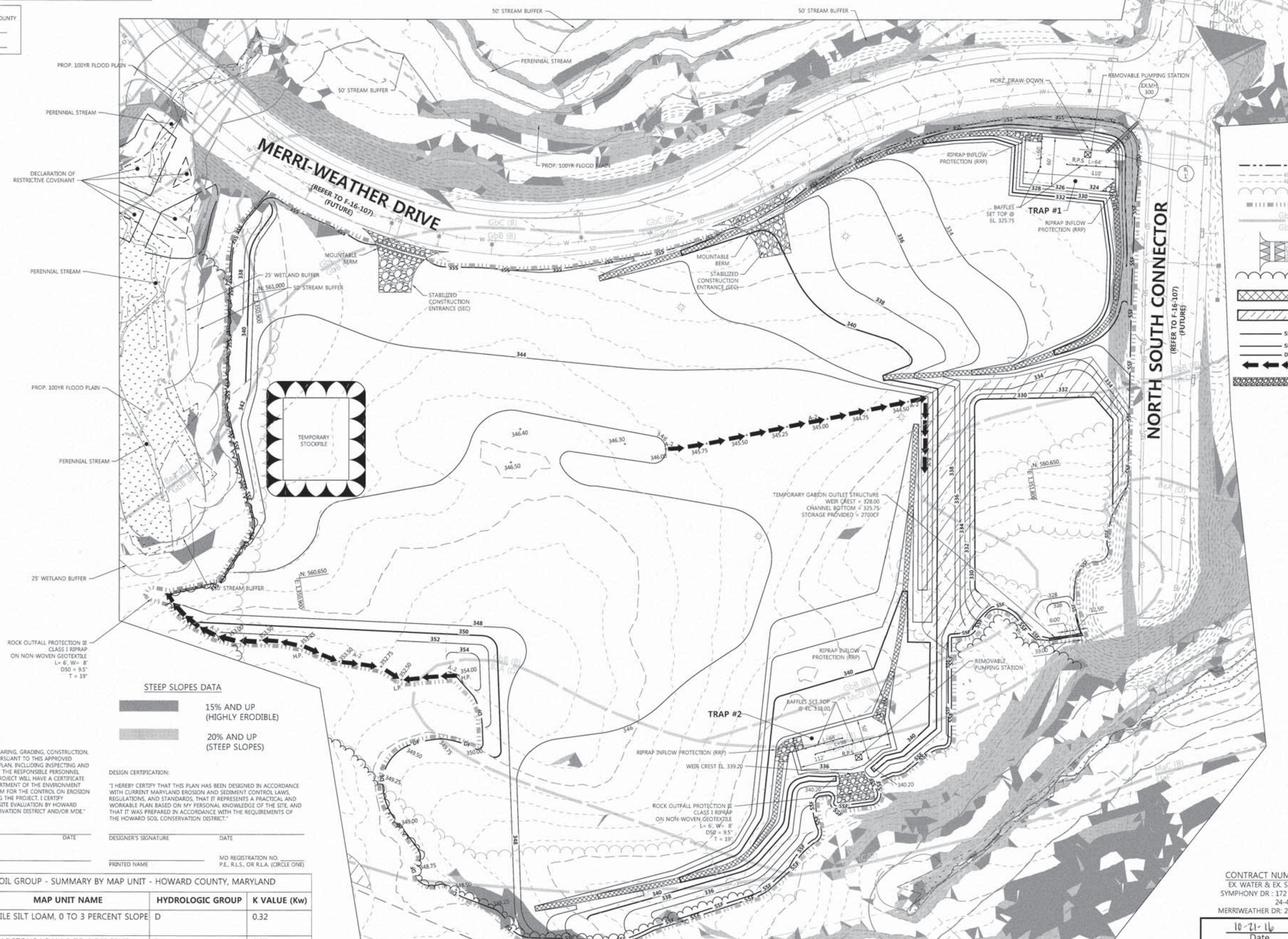
Des. By	GDT	SCALE AS SHOWN	Proj. No. 04038.B0
Drn. By	MCJ	Date 5/12/16	2 of 9
Chk. By	ERS	Approved MC8	

SDP-16-075

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE:



STEEP SLOPES DATA

- ▨ 15% AND UP (HIGHLY ERODIBLE)
- ▨ 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."

OWNER'S/DEVELOPER'S SIGNATURE DATE

PRINTED NAME & TITLE

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 DATE

PRINTED NAME

MD REGISTRATION NO. ______
P.E., R.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 W/VEGATAITION, STONE SUB-BASE AND STORM DRAIN OUTFALL SYSTEM HAS BEEN INSTALLED.

PLAN VIEW STAGE 1

60 0 60 120 180
SCALE: 1"=60'

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.

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
- SOILS
- STABILIZED CONSTRUCTION ENTRANCE
- PROP. TREE LINE
- EROSION CONTROL MATTING (SWALE)
- EROSION CONTROL MATTING (SLOPE)
- SSF — SUPER SILT FENCE
- SF — SILT FENCE
- DF — DIVERSION FENCE
- EARTH DIKE
- TEMPORARY GABION OUTLET STRUCTURE (TGOS)

ENVIRONMENTAL DATA SOURCES
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTER, 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

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			SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT			AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT-DMUA	36	5-15	605602
WATER CODE			SEWER CODE		
550			LITTLE PATUXENT		

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

10-21-16
Date

STATE OF MARYLAND
GERALD DOUGLAS TURNBAUGH
NO. 26569
PROFESSIONAL ENGINEER

Professional Engr. No. 26569

PROFESSIONAL CERTIFICATION

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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
MASS GRADING AND SEDIMENT EROSION CONTROL PLAN STAGE 1

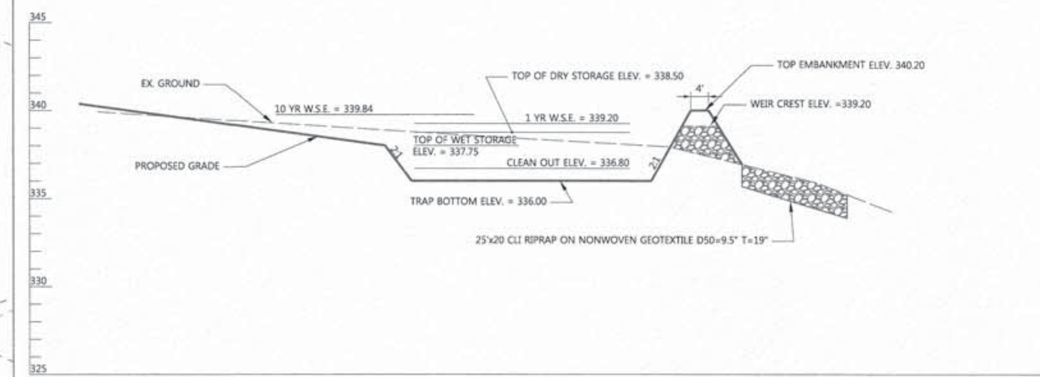
Des. By GDT	SCALE AS SHOWN	Proj. No. 04038.B0
Drn. By MCJ	Date 5/12/16	3 of 9
Chk. By ERS	Approved MCB	

SDP-16-075

PLAN VIEW STAGE 2

SCALE: 1"=50'

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'

VICINITY MAP

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

STEEP SLOPES DATA

▇	15% AND UP (HIGHLY ERODIBLE)
▒	20% AND UP (STEEP SLOPES)

HYDROLOGIC SOIL GROUP - SUMMARY BY MAP UNIT - HOWARD COUNTY, MARYLAND			
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USDA NATURAL RESOURCES CONSERVATION SERVICE	WEB SOIL SURVEY 2.0 NATIONAL COOPERATIVE SOIL SURVEY		11/26/2007 HOWARD COUNTY SOIL MAP #18

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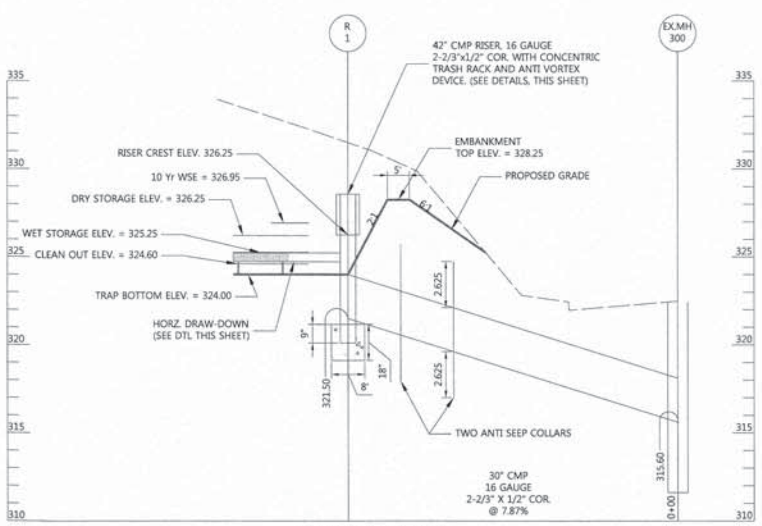
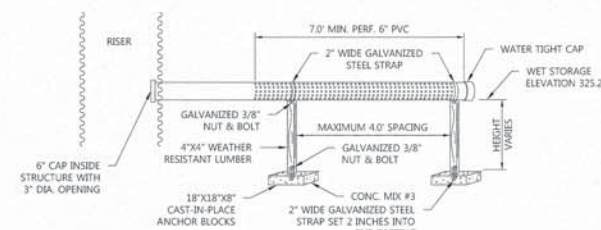


PROFILE PIPE OUTLET
SEDIMENT TRAP#1 OUTFALL
SCALE: HORIZ. 1" = 20'
VERT. 1" =5'



HORIZONTAL DRAW-DOWN DEVICE ANCHOR DETAIL
TRAP# 1
NOT TO SCALE
THE PERFORATIONS SHALL BE 1" DIAMETER SPACED 6" ON CENTER (HORIZ. AND VERT.) FOR A PERFORATED SECTION LENGTH OF 7.0' TOTAL PERFORATIONS = 42 (6 PERFS/FT)

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
EARTH DIKE

OWNERS/DEVELOPER CERTIFICATION:

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OWNER'S/DEVELOPER'S SIGNATURE DATE

PRINTED NAME & TITLE

DESIGN CERTIFICATION:

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DESIGNER'S SIGNATURE DATE

PRINTED NAME

MD REGISTRATION NO. ______
P.E., R.L.S., OR R.L.A. (CIRCLE ONE)

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: ______

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

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10-21-16
Date

STATE OF MARYLAND
GERALD DOUGLAS TURNBAUGH
NO. 26569
PROFESSIONAL ENGINEER

[illegible]

Professional Engr. No. 26569

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTER, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
AREA 3, PHASE I
MASS GRADING

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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
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WATER CODE			SEWER CODE		
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DMW
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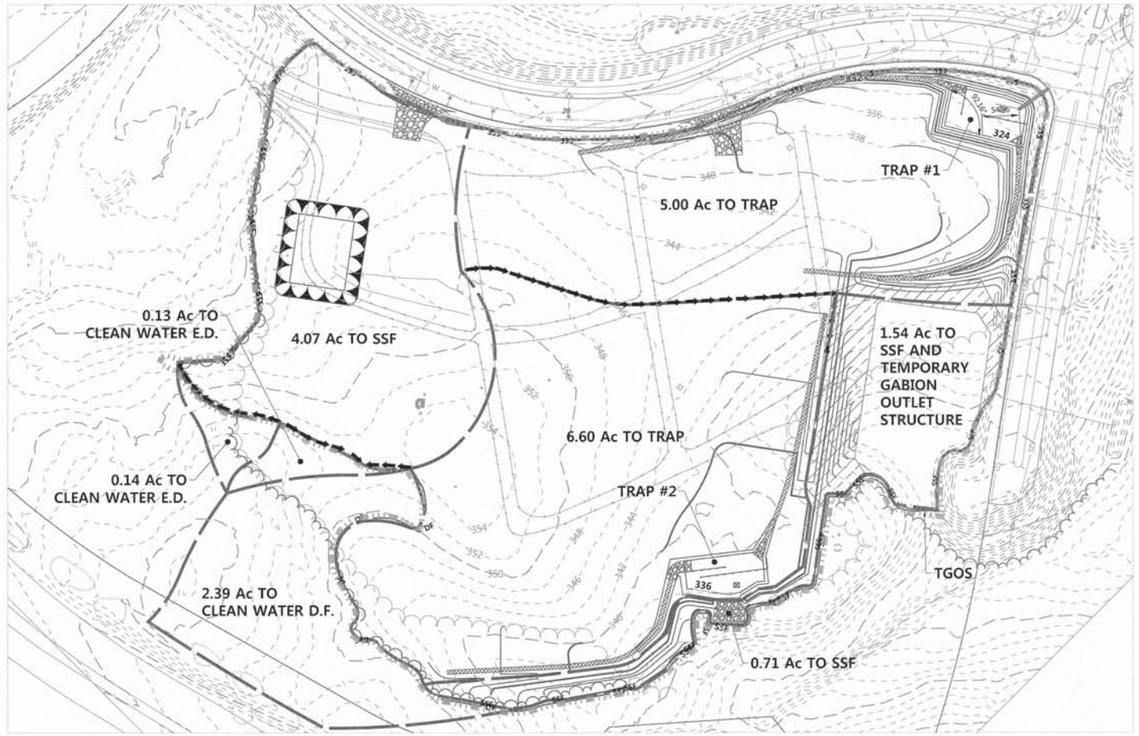
TITLE
MASS GRADING AND SEDIMENT EROSION CONTROL PLAN STAGE 2

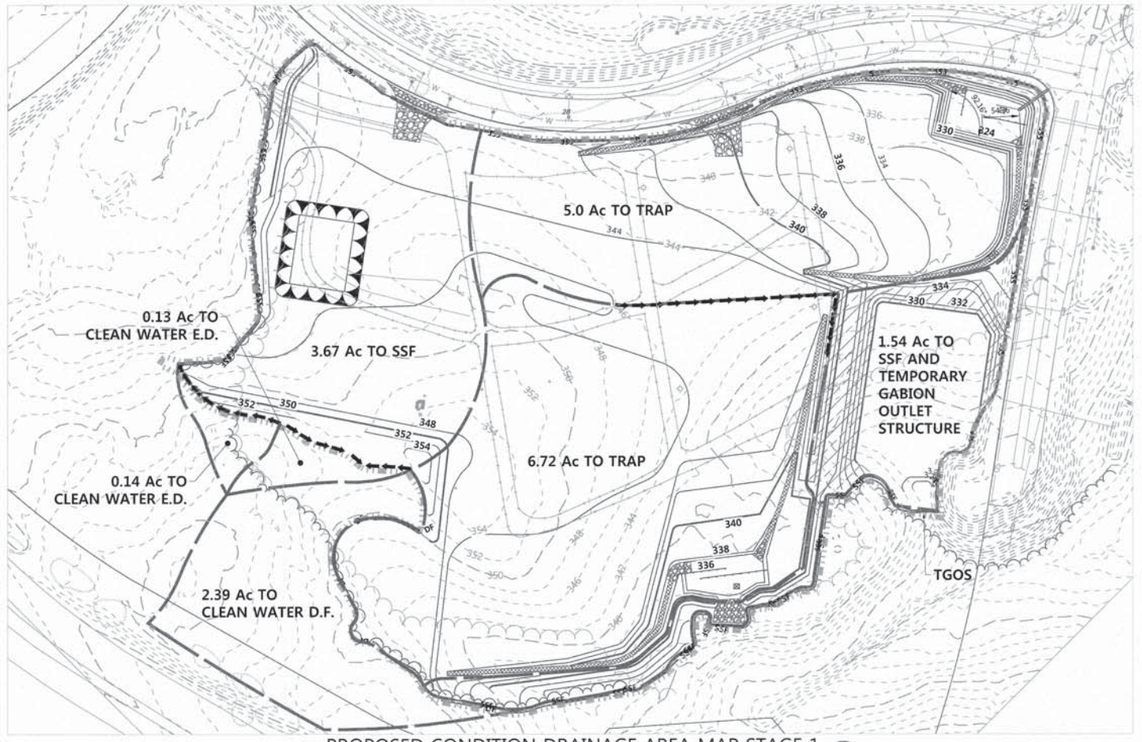
Des. By GDT	SCALE AS SHOWN	Proj. No. 04038.B0
Drn. By MCJ	Date 5/12/16	4 of 9
Chk. By ERS	Approved MCB	

SDP-16-075



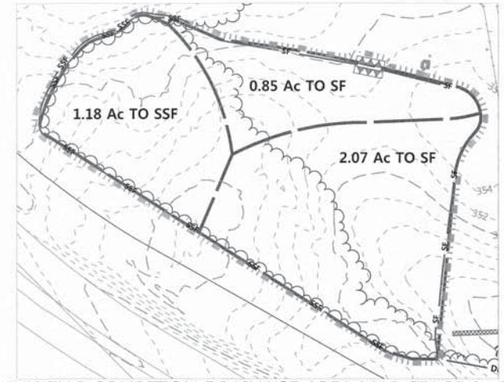
EXISTING CONDITION DRAINAGE AREA MAP STAGE 1

SCALE: 1"=100'



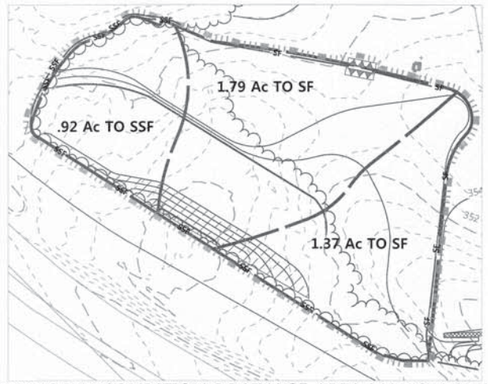
PROPOSED CONDITION DRAINAGE AREA MAP STAGE 1

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 BIOHABITATS 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.
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DATA SOURCES:

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTER, 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

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		SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT		AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE NT-DMUA	TAX ZONE/MAP	ELEC. DISTRICT	CENSUS TRACT
N/A			36	5-15	605602
WATER CODE		SEWER CODE		
550		LITTLE PATUXENT		

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

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

100 0 100 200 300
SCALE: 1"=100'

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

10-21-16
Date

STATE OF MARYLAND — GERALD DOUGLAS WALKER — No. 26569 — PROFESSIONAL ENGINEER

Professional Engr. No. 26569

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

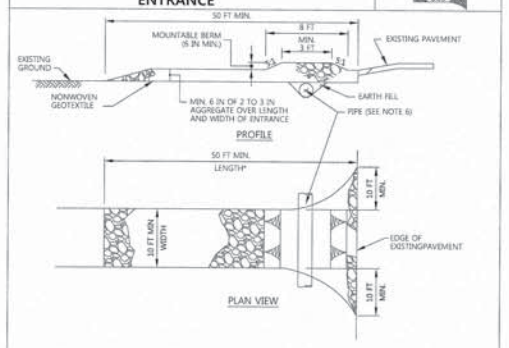
DRAINAGE AREAS

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

SDP-16-075

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL
SCE



CONSTRUCTION SPECIFICATIONS

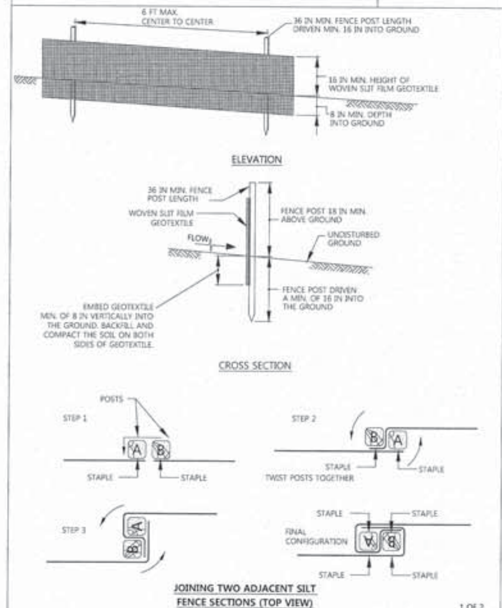
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

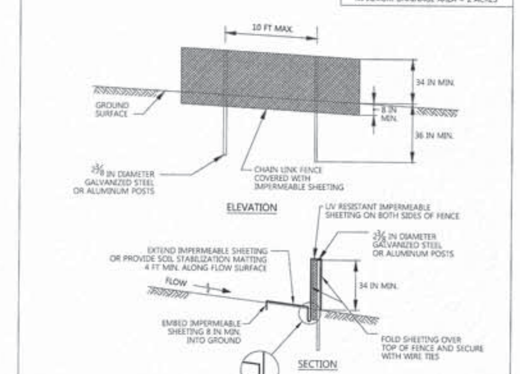
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL
DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

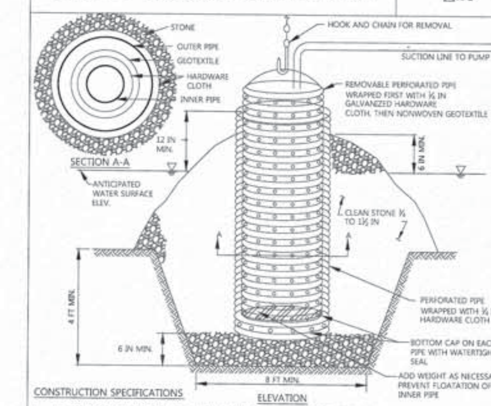
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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 F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL
☒RPS



CONSTRUCTION SPECIFICATIONS

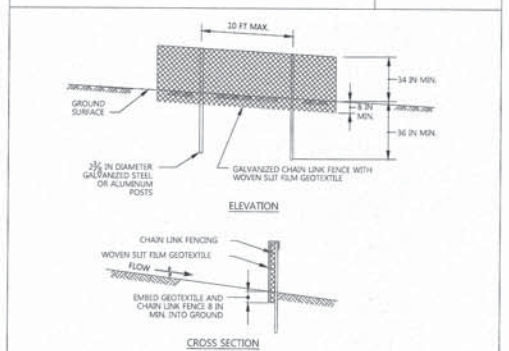
1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

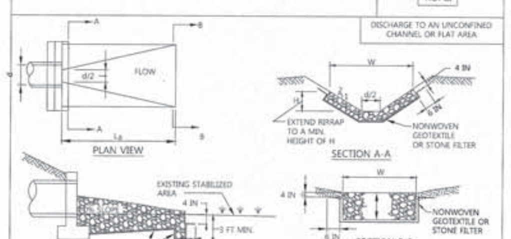
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL
ROPIII

DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

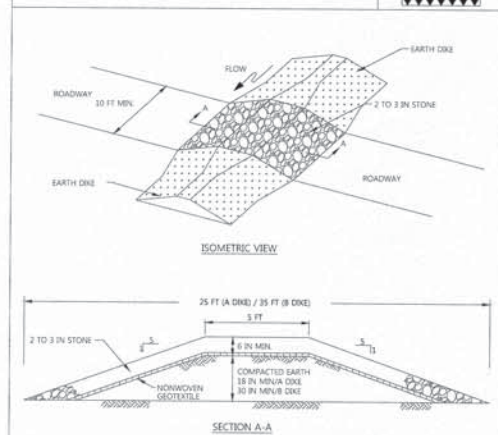
1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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 C-8 MOUNTABLE BERM

STANDARD SYMBOL
MB



CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

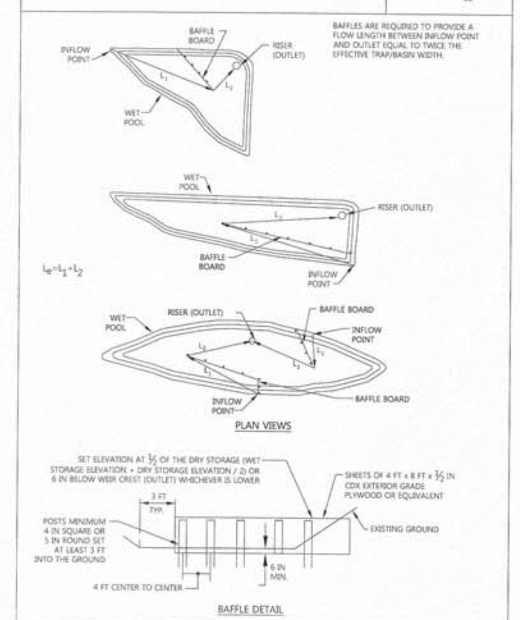
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL
BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.



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

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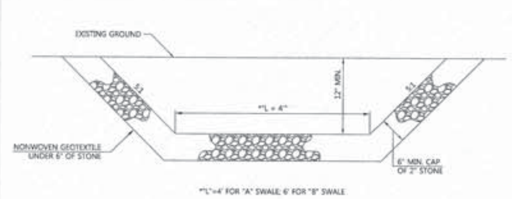
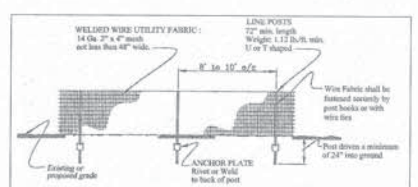


CROSSABLE 'A' SWALE

SCALE N.T.S.



TEMPORARY SAFETY FENCE
FOR SEDIMENT TRAPPING DEVICES

NOT TO SCALE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: ____________

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

HOWARD SOIL CONSERVATION DISTRICT DATE

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

10-21-16
Date

STATE OF MARYLAND
GERALD DOUGLAS TURNBAUGH
NO 26569
PROFESSIONAL ENGINEER

[illegible]

Professional Engr. No. 26569

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTER, 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

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			SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT			AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT-DMUA	36	5-15	605602
WATER CODE			SEWER CODE		
550			LITTLE PATUXENT		

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

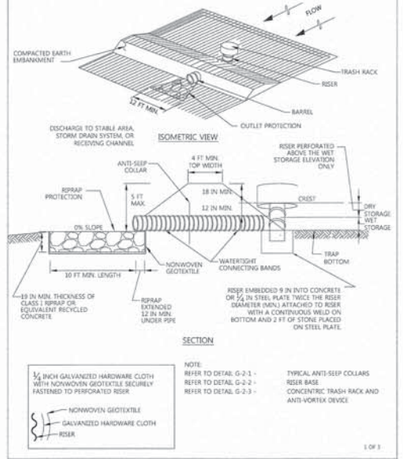
SEDIMENT EROSION CONTROL DETAILS

Des. By GDT	SCALE AS SHOWN	Proj. No. 04038.B0
Drn. By MCJ	Date 5/12/16	6 of 9
Chk. By ERS	Approved MCB	

SDP-16-075

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

STANDARD SYMBOL: ST-I



NOTE:
REFER TO DETAIL G-2-1 - TYPICAL ANTI-SEEP COLLARS
REFER TO DETAIL G-2-2 - RISER BASE
REFER TO DETAIL G-2-3 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

1 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-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. PERFORATE THE RISER WITH 3 INCH DIAMETER HOLES SPACED 6 INCHES ON CENTER WITH THE LOWEST PERFORATIONS AT THE WET STORAGE ELEVATION OR PROVIDE A HORIZONTAL OR VERTICAL DRAW-DOWN DEVICE PERFORATED ACCORDING TO APPROVED PLAN. DO NOT PERFORATE THE RISER WITHIN 6 INCHES OF THE TOP OF THE HORIZONTAL BARREL.
4. SET RISER/BARREL ASSEMBLY PRIOR TO EMBANKMENT CONSTRUCTION. MAKE ALL PIPE CONNECTIONS WATERTIGHT. OFFSET RISER FROM EMBANKMENT TO ACCOMODATE PLACEMENT OF THE TRASH RACK. ANCHOR THE RISER WITH EITHER A REINFORCED CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. MAKE CONCRETE BASES AT LEAST TWICE THE RISER DIAMETER AND 18 INCHES THICK WITH THE RISER EMBEDDED 9 INCHES.
5. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
6. HAND COMPACT IN 4 INCH LAYERS FILL MATERIAL AROUND THE PIPE SPILLWAY. PLACE A MINIMUM OF 2 FEET OF HAND COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
7. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE RISER CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
8. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
9. WRAP THE RISER WITH ½ INCH GALVANIZED HARDWARE CLOTH THEN WRAP WITH NONWOVEN GEOTEXTILE. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE. EXTEND HARDWARE CLOTH AND GEOTEXTILE AT LEAST 6 INCHES ABOVE THE HIGHEST PERFORATIONS AND AT LEAST 6 INCHES BELOW THE LOWEST PERFORATIONS. OVERLAP, FOLD AND FASTEN WHERE ENDS OF GEOTEXTILE COME TOGETHER TO PREVENT BYPASS. REPLACE GEOTEXTILE AS NECESSARY TO PREVENT CLOGGING.
10. USE STRAPS OR CONNECTING BANDS AT THE TOP AND BOTTOM OF THE GEOTEXTILE TO HOLD THE GEOTEXTILE AND HARDWARE CLOTH IN PLACE.
11. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
12. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
13. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO THE APPROVED PLAN AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
14. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.
15. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
16. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

2 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-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

PIPE OUTLET SEDIMENT TRAP ST-I TRAP NO.	#1	
DRAINAGE AREA - INTIAL	5.0	ACRES
DRAINAGE AREA - INTERM	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 RFQUIRED	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	H:V 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

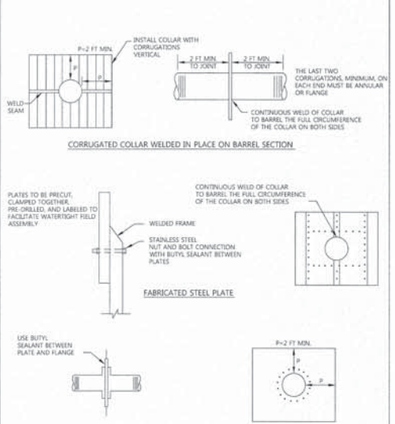
3 OF 3

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-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL

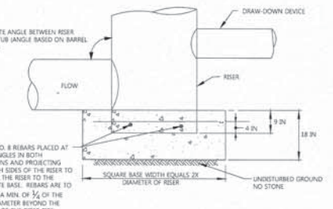


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL G-2-2 CORRUGATED RISER BASE

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

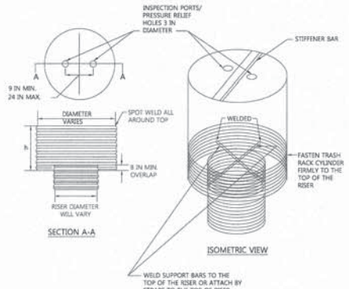
1. BOTTOM OF CONCRETE BASE TO BE PLACED ON UNDISTURBED, NATURAL GROUND.
2. NO STONE IS ALLOWED UNDER BASE. IF NECESSARY, TO ACHIEVE STABILITY INCREASE DEPTH OF CONCRETE BASE.

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



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

STANDARD SYMBOL: TR

TRASH RACK CYLINDER RISER DIAM. (IN)	DIAM. (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	1¼ IN PIPE OR 1½ x 1½ x ¼ ANGLE	10	N/A
54	78	12	33	1¼ IN PIPE OR 1½ x 1½ x ¼ ANGLE	10	N/A
60	90	12	37	1½ IN PIPE OR 1½ x 1½ x ¼ ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 x 2 x 5/16 ANGLE	8	2 x 2 x ¼ ANGLE
72	102	10	44	2 IN PIPE OR 2 x 2 x 5/16 ANGLE	8	2½ x 2½ x ¼ ANGLE
78	114	10	47	2½ IN PIPE OR 2 x 2 x ¾ ANGLE	8	2½ x 2½ x ¼ ANGLE
84	120	10	50	2½ IN PIPE OR 2½ x 2½ x ¼ ANGLE	8	2½ x 2½ x 5/16 ANGLE

NOTE:
THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

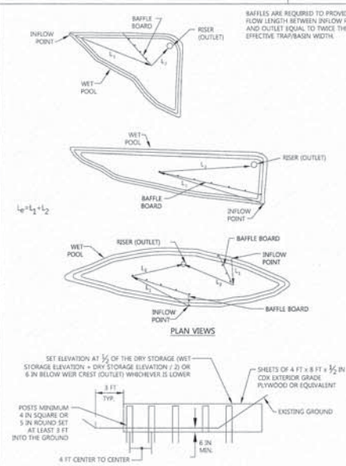
2 OF 2

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

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL: BB



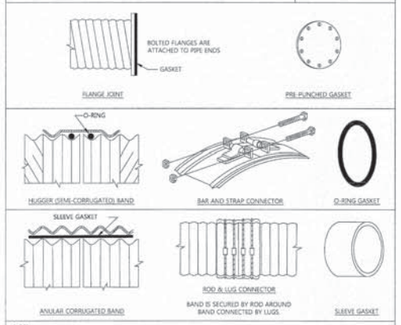
BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

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-2-5 TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

STANDARD SYMBOL



NOTE:
UNDER NO CIRCUMSTANCE IS A DEMPLE (UNIVERSAL) BAND ACCEPTABLE FOR USE IN A SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE.

CONSTRUCTION SPECIFICATIONS

1. USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED WITH AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH.
2. FOR PIPES LESS THAN 24 INCHES IN DIAMETER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES, SANDWICHED BETWEEN ADJACENT FLANGES, OR
   b. 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKET HAVING A MINIMUM DIAMETER OF ½ INCH GREATER THAN THE CORRUGATION DEPTH.
3. FOR PIPES 24 INCHES IN DIAMETER AND LARGER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. 24 INCH WIDE ANNULAR CORRUGATED BAND WITH 24 INCH WIDE BY ⅜ INCH THICK CLOSED CELL CIRCULAR SLEEVE GASKET WITH 12 INCHES ON THE END OF EACH PIPE, CONNECTED WITH A MINIMUM OF 4 RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, OR
   b. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES AND SANDWICHED BETWEEN ADJACENT FLANGES.

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

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 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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTER, 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

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		SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT		AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE NT-DMUA	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT-DMUA	36	5-15	605602
WATER CODE			SEWER CODE	
550			LITTLE PATUXENT	

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

10-21-16
Date

Professional Engr. No. 26569

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

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

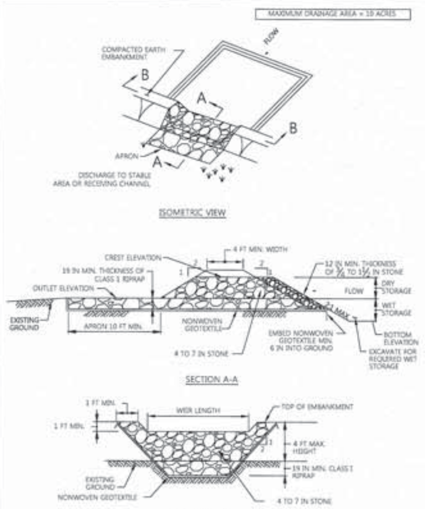
Des. By	GDT	SCALE	AS SHOWN	Proj. No.	04038.B0
Drn. By	MCJ	Date	5/12/16	7 of 9	
Chk. By	ERS	Approved	MCB		

SDP-16-075

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

MAXIMUM DRAINAGE AREA = 10 ACRES



1 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-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. PLACE 1 FOOT OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
9. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
10. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
12. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
13. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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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-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO.	#2	
DRAINAGE AREA - INITIAL	6.60	ACRES
DRAINAGE AREA - INTERIM	N/A	ACRES
DRAINAGE AREA - FINAL	6.72	ACRES
TOTAL STORAGE REQUIRED	24,192	CF
TOTAL STORAGE PROVIDED	25,956	CF
WET STORAGE REQUIRED	12,096	CF
WET STORAGE PROVIDED	13,236.8	CF
DRY STORAGE REQUIRED	12,096	CF
DRY STORAGE PROVIDED	12,719.9	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	338.00	FT
TRAP BOTTOM ELEVATION	336.00	FT
TRAP BOTTOM DIMENSIONS	112' X 50'	FT x FT
WEIR LENGTH	28'	FT
WEIR CREST (DRY STORAGE) ELEVATION	338.50 *	FT
CLEANOUT ELEVATION	336.80	FT
TOP OF EMBANKMENT ELEVATION	340.20	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	6'	FT
OUTLET PROTECTION - LENGTH	20'	FT
OUTLET PROTECTION - DEPTH	19"	IN

* NOTE: SET WEIR CREST ELEVATION AT 339.20 (THIS IS THE 1 YEAR WATER SURFACE STORAGE ELEVATION TO CONFORM TO TEMPORARY STORMWATER MANAGEMENT REQUIREMENT)

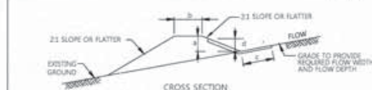
3 OF 3

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

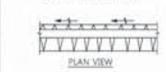
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1



CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE



DIKE TYPE	A	B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

- A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
- A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
- A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTH DIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

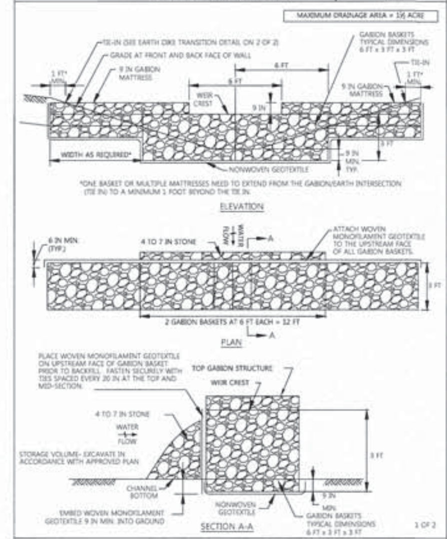
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE



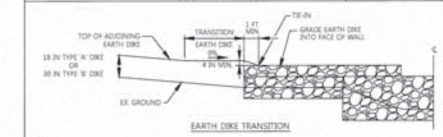
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

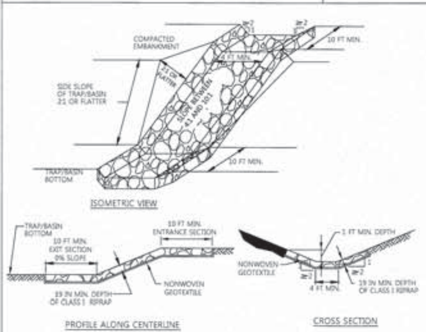
2 OF 2

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

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RIP



CONSTRUCTION SPECIFICATIONS

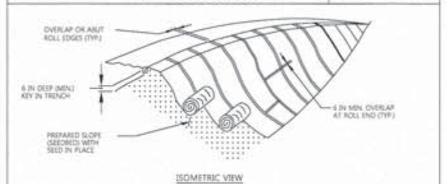
1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

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 B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS - *2.00 lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

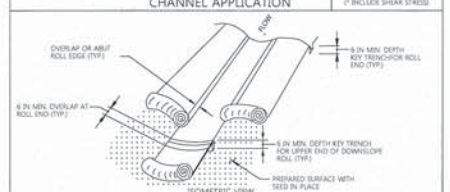
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x1 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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 B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: TSSMC - *2.25 lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

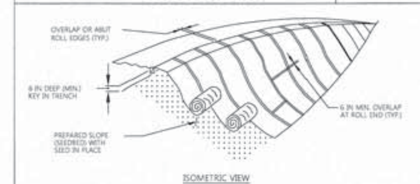
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD. 12 TO 24 INCHES IN LENGTH, 1x1 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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 B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS - *5.00 lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x1 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

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 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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION ______ DATE

CHIEF, DIVISION OF LAND DEVELOPMENT ______ DATE

DIRECTER, 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

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			SECTION/AREA		LOT/PARCEL #
COLUMBIA CRESCENT			AREA 3		PARCEL 527
PLAT# OR L/F	BLOCK #	ZONE	TAX ZONE/MAP	ELECT. DISTRICT	CENSUS TRACT
N/A		NT-DMUA	36	5-15	605602
WATER CODE			SEWER CODE		
550			LITTLE PATUXENT		

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

10-21-16
Date

STATE OF MARYLAND · GERALD DOUGLAS TURNBAUGH · NO 26569 · PROFESSIONAL ENGINEER

Professional Engr. No. 26569

DMW
DAFT McCUNE WALKER INC

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

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: ______

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

HOWARD SOIL CONSERVATION DISTRICT ______ DATE

TITLE
SEDIMENT EROSION CONTROL DETAILS

Des. By GDT	SCALE AS SHOWN	Proj. No. 04038.B0
Drn. By MCJ	Date 5/12/16	8 of 9
Chk. By ERS	Approved MCB	

SDP-16-075

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

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

A. INCREMENTAL STABILIZATION - CUT SLOPES

1. 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.

2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):

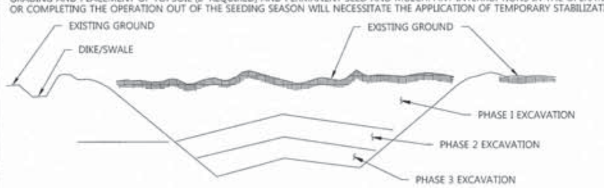
a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.

b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.

c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.

d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED 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

1. 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.

2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.

3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):

a. 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.

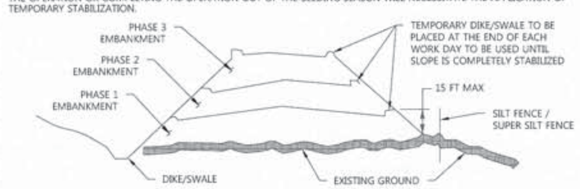
b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.

d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.

e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED 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

1. TEMPORARY STABILIZATION

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

i. SOIL PH BETWEEN 6.0 AND 7.0.

ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.

b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

6. TOPSOIL APPLICATION

a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL ADMENMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE 200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

(B-4-3) SECTION 3 - SEEDING AND MULCHING

A. SEEDING

1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING.

NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P_2O_5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (POTASSIUM), 200 POUNDS PER ACRE.

ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

(B-4-4) 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:

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 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.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. 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[1] Rate (Lb./Ac.)	Seeding[2] Dates	Seeding[3] Depths		
Cool	Annual Ryegrass	40	2/15-4/30 8/15-11/30	1/2"	436 Lbs./Ac. (10 Lbs./ 1000 Sq.Ft.)	2 Tons/Ac. (90 Lbs./ 1000 Sq.Ft.)
Warm	Foxtail Millet	30	5/1-8/14	1/2"		

1. 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 MIXES, 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.

2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.

3. 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

a. 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 FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

b. 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.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

i. 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.

ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM 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.

iii. 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.

iv. 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.

NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE 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

c. 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)

d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE 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.

e. 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***	Seeding Depths	N	P_2O_5	K_2O	
	*Tall Fescue	60						
9	*Kentucky Bluegrass	40	2/15 - 4/30 8/15 - 10/31	¼"-½"	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.)
	Pennfine 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

a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

b. 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.

c. 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.

d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. 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 VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

c. 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 SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

d. 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.

3. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

c. 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.

(H-1) STANDARDS AND SPECIFICATIONS FOR MATERIALS

TABLE H.1: GEOTEXTILE FABRICS

		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec -1		0.28 sec -1		1.1 sec -1	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

1. ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION; CD IS CROSS DIRECTION.

2. VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPEP) AND CONFORM TO THE VALUES IN TABLE H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

TABLE H.2: STONE SIZES

	SIZE RANGE	d50	d100	AASHTO	MIDSIZE WEIGHT[3]
NUMBER 57[1]	⅜ to 1½ in	½ in	1½ in	M-43	N/A
NUMBER 1	2 to 3 in	2½ in	3 in	M-43	N/A
RIPRAP[2] (CLASS 0)	4 to 7 in	5½ in	7 in	N/A	N/A
CLASS I	N/A	9½ in	15 in	N/A	40 lb
CLASS II	N/A	16 in	24 in	N/A	200 lb
CLASS III	N/A	23 in	34 in	N/A	600 lb

1. THIS CLASSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.

2. THIS CLASSIFICATION IS TO BE USED FOR GABIONS.

3. OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW THE MIDSIZE.

STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZED SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THAN THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D100 SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE SMALLER AND 50 PERCENT WILL BE LARGER.

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

TABLE H.3: COMPOST

PARAMETERS[1]	ACCEPTABLE RANGE
pH	5.0 - 8.5
Moisture content	30% - 60%, wet weight basis
Organic matter content	25% - 65%, dry weight basis
Particle size	% passing a selected mesh size, dry weight basis 3 in (75 mm), 100% passing 1 in (25 mm), 90 - 100% passing 0.75 in (19 mm), 70 - 100% passing 0.25 in (6.4 mm), 30 - 60% passing 0.04 in (1 mm), 30% min. passing
Physical contaminants (manmade inerts)	<1% dry weight basis

ADAPTED FROM AASHTO STANDARDS SPECS FOR COMPOST FILTER SOCKS AND EPA EXAMPLE COMPOST FILTER PARAMETERS.

1. RECOMMENDED TEST METHODOLOGIES ARE PROVIDED IN TEST METHODS FOR THE EXAMINATION OF COMPOSTING AND COMPOST (TMEC, THE U.S COMPOSTING COUNCIL).

(B-4-8) STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION:

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE:

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES:

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

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

2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.

5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.

6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.

7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
B.43

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:

1. 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.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. 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-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. 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.
5. 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.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: ____________

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

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

10-21-16
Date

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — NO. 26569 — PROFESSIONAL ENGINEER

Professional Engr. No. 26569

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTER, 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

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

DMW — DAFT McCUNE WALKER INC
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
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TITLE
SEDIMENT EROSION CONTROL SPECIFICATIONS

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

SDP-16-075