HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING



3430 Court House Drive Ellicott City, Maryland 21043

410-313-2350
 Voice/Relay

Amy Gowan, Director

FAX 410-313-3467

March 17, 2022

Paul Walsky Department of Public Works 7120 Oakland Mills Rd. Columbia, MD 21046

Sent via email to pwalsky@howardcountymd.gov

RE: WP-22-001 Huntington Park

Dear Mr. Walsky:

This letter is to inform you that your request for alternative compliance to the Howard County Subdivision and Land Development Regulations for the subject project was reviewed.

On March 16, 2022 and pursuant to Section 16.104, the Director of the Department of Planning and Zoning, considered and **approved** your request for alternative compliance with respect to **Section 16.155(a)(1)(i)** of the Subdivision and Land Development Regulations to use the alternative compliance exhibit as a substitute for the site development plan to expand a pathway system, construct a basketball court, baseball backstop and stormwater management facilities at Huntington Park.

The Department of Planning and Zoning hereby determines that you have demonstrated to its satisfaction that strict enforcement of Section 16.155(a)(1)(i) would result in an unreasonable hardship or practical difficulty. This determination is made with consideration of your alternative compliance application and the one (1) item you were required to address, pursuant to Section 16.104(a)(1):

1. Unreasonable hardship or practical difficulties may result from strict compliance with the regulations.

Huntington Park serves the Columbia Village or King's Contrivance community. It is an 11-acre facility that includes an open field, forest, basketball court, playground and pathway. The Howard County Department of Recreation and Parks is proposing to expand on the pathway system, construct a basketball court, baseball backstop and stormwater management facilities. Strict compliance with the regulations would require the applicant to submit a formal Site Development Plan for the proposed project. This would result in an unreasonable hardship since the alternative compliance plan exhibit contains all necessary information for permitting and construction. Approval of the alternative compliance promotes efficiency of the plan review process as the alternative compliance drawings include all relevant information needed for this project's minor improvements.

Approval of this Alternative Compliance is subject to the following conditions:

1. The alternative compliance plan exhibit shall serve as the substitute for a site development plan. No disturbance is permitted beyond the limit of disturbance as shown on the alternative compliance exhibit, unless it can be sufficiently demonstrated by the applicant to be justified.

- 2. Revise the alternative compliance plan exhibit per the attached comments from the Division of Land Development and Howard Soil Conservation District. The construction plans for the stormwater management system that was approved with the Simplified Environmental Concept Plan on December 22, 2021 must be incorporated within the alternative compliance plan exhibit set to be submitted and signed by the Department of Planning and Zoning.
- 3. Electronic copies of the alternative compliance plan exhibit shall be submitted to the Department of Planning and Zoning for signatures within 60 days of the approval of this alternative compliance request (on or before May 16, 2022).
- 4. The applicant shall comply with all grading permit requirements from the Department of Inspections, Licenses and Permits and Howard Soil Conservation District. The grading permit cannot be applied for until the alternative compliance plan exhibit is signed by the Department of Planning and Zoning.

Indicate this alternative compliance petition file number, request, section of the regulations, action, conditions of approval, and date on all related plats, and site development plans, and building permits. This alternative compliance approval will remain valid for one year from the date of this letter or as long as a subdivision or site development plan is being actively processed in accordance with the processing provisions of the Regulations.

If you have any questions, please contact Julia Sauer at (410) 313-2350 or email at <u>isauer@howardcountymd.gov</u>.

Sincerely,

DocuSigned by: 1EB75478A22B49A... Anthony Cataldo, AICP, Chief **Division of Land Development**

AC/js

cc: Research DLD - Julia Sauer

Howard County Department of Planning and Zoning Division of Land Development ALTERNATIVE COMPLIANCE APPLICATION

[Alternative Compliance from Subdivision and Land Development Regulations]

Site Description					
Subdivision Name/Pro	operty Identification:	Huntington Park			
Location of property:	9695 Clock Tower Lane,	ColumbiaMaryland 21046			
	(Street Add	iress and/or Road Name)	· · · · · · · · · · · · · · · · · · ·		
Public Park		Public Park			
(Existing Use)		(Proposed Use)			
42	23	443, (Lot 310)	6		
(Tax Map No.)	(Grid/Block No.)	(Parcel No.)	(Election District)		
NT		11.00 Acres			
(Zoning District)	, , , , , , , , , , , , , , , , , , , 	(Total Site Area)			

the County (subdivision plans, Board of Appeals petitions, alternative compliance petitions, etc.) The site has been used as a public community park since the 1980s. It was originally owned by the developer of Columbia and last year transferred to the Howard County Board of Education. It will in the near future be transferred to Howard County Department of Recreation and Parks.

There are no sensitive environmental features including wetlands, wetland buffers, streams or floodplains. There is an existing forest on site.

II. Alternative Compliance Request

In accordance with Section 16.104 of the Howard County Subdivision and Land Development Regulations, the Department of Planning and Zoning, in conjunction with the Subdivision Review Committee may grant alternative compliances or modifications to the minimum requirements stipulated within the Regulations if it is determined that extraordinary hardships or practical difficulties may result from strict compliance with the regulations, or if it is determined that the regulations may be served to a greater extent by an alternative proposal.

In the area below, the petitioner shall enumerate the specific numerical section(s) from the Subdivision and Land Development Regulations for which an alternative compliance is being requested and provide a brief summary of the regulation. Attach a separate sheet if additional information is appropriate.

	Section Reference No.	Summary of Regulation
1.	16.155(a)(1)(i)	A Site Development Plan, approved by the Dept. of Planning and
		Zoning, is required for new or expanded nonresidential development.
2.		
3.		
4.		
5.		

III. Justification

All alternative compliance requests must be fully justified by the petitioner. Incomplete or inadequate justification may result in rejection of the application at the time of submission. Justification must be specific to the subject property. The justification provided by the petitioner should include all factors which rationalize or substantiate the request in accordance with the following criteria:

- a. Summarize any extraordinary hardships or practical difficulties which may result from strict compliance with the Regulations.
- b. Verify that the intent of the Regulations will be served to a greater extent through the implementation of the alternative proposal.
- c. Substantiate that approval of the alternative compliance will not be detrimental to the public interests.
- d. Confirm that approval of the alternative compliance will not nullify the intent of the Regulations.

PLEASE ATTACH A SEPARATE LETTER OF JUSTIFICATION TO SUPPORT THE ALTERNATIVE COMPLIANCE REQUESTS.

IV. Pre-Submission Meeting Requirements

- →→→a. Community Meeting Requirement - If no previous subdivision plans and/or zoning or conditional use petitions were processed, a pre-submission community meeting is required for the initial plan submittal of all new residential development and for new non-residential development located within 200 feet of a residential zoning district or an existing non-residential development which is located within 200 feet of a residential zoning district and proposed for a floor area expansion of more than 25% in accordance with Sections 16.156(a) and 16.128 of the Subdivision and Land Development Regulations for alternative compliance of the site development plan requirement. [See DPZ policy memo dated 3/22/04 for existing lots/parcels]. The property owner/developer must provide 3 weeks advance notice regarding the community meeting's date, time and location to all adjoining property owners identified in the records of the State Department of Assessments and Taxation and any community association that represents the geographic area of the subject property by first class mail: and sent electronically to any community association registered with the County for projects in a certain geographic area; the Howard County Council; and DPZ, which will place the meeting notice on the DPZ's website. The developer shall send a copy of the minutes and written responses to the meeting attendees and DPZ, either electronically or by first class mail. A certification that meeting notices were mailed, contact information for the attendees and a copy of the minutes and a written response with a dated return mail receipt or dated email attached to all of the major comments recorded at the meeting must be submitted to DPZ along with the initial plan application. The meeting minutes, including a written response to all questions, shall be sent to all meeting attendees within 60 days of the meeting either electronically or by first class mail [Council Bill 6-2011].
- HPC Meeting Requirement A pre-submission advisory meeting with the Historic Preservation Commission is required for new development located within a Historic District or if the site contains a historic structure (50 years or older) in accordance with Section 16.603A of the Howard County Code. Verify this requirement by checking the Historic Sites Inventory list and maps available at the DPZ public service desk or checking with the Resource Conservation Division. The property owner/developer must contact the DPZ, Resource Conservation Division for the HPC scheduling process and procedures. The property owner/developer must submit a copy of the minutes from the HPC Advisory Meeting to DPZ along with the initial subdivision or site development plan application.
- MAA Meeting Requirement For all proposed subdivisions or developments located within the BWI Airport Noise Zone or the Airport Zoning District (4 mile radius from the center of the airport), the review and approval by the Maryland Aviation Administration is required prior to signature approval of final plan road and SWM construction drawings, and/or site development plans, or alternative compliance approval of SDP. Please contact the MAA at P.O. Box 8766, BWI Airport, Maryland, 21240-0766, or (410) 859-7100. A copy of the MAA approval letter must accompany the submission of the final road/SWM construction plan original drawings, and/or site development plan original, or alternative compliance application.

Design Advisory Panel (DAP) – A pre-submission advisory meeting with the Design Advisory Panel is required for sketch and preliminary equivalent sketch plans that are submitted on or after November 3, 2008 for new development or redevelopment projects on parcels located in the U.S. Route 1 corridor that are zoned 'CE', 'CAC' or 'TOD' or that adjoin the Route 1 right-of-way and that are subject to the Route 1 Design Manual; on parcels located within the U.S. Route 40 corridor that are zoned 'TNC' or that are subject to the Route 40 Design Manual; on parcels which age-restricted adult housing is to be constructed pursuant to a conditional use; on redevelopment parcels located in the New Town Village Centers with boundaries proposed by a property owner or established by the Zoning Board or County Council; and for revitalization and redevelopment of Downtown Columbia in accordance with Sections 16.1501 and 16.1504 of the Howard County Code. The property owner/developer must contact the DPZ, Division of Comprehensive and Community Planning to verify this requirement and for information concerning the DAP meeting scheduling process and procedures. The property owner/developer must submit a copy of the DAP project design recommendations to DPZ along with the initial subdivision plan application.

V. Plan Exhibit

A. Number of Copies Required

The alternative compliance application must be accompanied by copies of a detailed plot plan, subdivision plat or site development plan (<u>15 sets of the completed alternative compliance application and plan exhibit if the subject property adjoins a County road; 19 sets for properties adjoining a State road</u>). In instances where the alternative compliance request concerns an approval extension or if an associated plan is in active processing, only 2 sets of plans are required along with 15 or 19 copies of the application form. Plans must be folded to a size no larger than 7-1/2" x 12". The pre-packaging of plans and supplemental reports by SRC agency will be permitted by DPZ provided that each package contains a cover letter which itemizes all plans, reports and documents included in the package.

<u>Please be advised that all plan application submissions are ACCEPTED BY</u> <u>APPOINTMENT ONLY</u>. All plan submission appointments must be scheduled with the Division of Land Development at (410) 313-2350.

Plan applications are available on the DPZ website at <u>https://howardcountymd.gov/Departments/Planning-and-Zoning/Land-Development</u>.

B. Plan Requirement Checklist

The detailed alternative compliance exhibit, plot plan, subdivision plan or site development plan must indicate the following required information relevant to the alternative compliance request to ensure acceptance of the alternative compliance application for processing.

	Legend:	NA	Information Provided Not Applicable	<u>X</u> Information Not Provided, Justification Attached
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- 1. Vicinity map scale 1" = 2,000' indicating and identifying the total boundary of the property, exact site location, vicinity roads and north arrow.
 - 2. Bearings and distances of property boundary lines for the entire tract and size of tract area.
 - 3. North arrow and scale of plan.
 - 4. Location, extent, boundary lines and area of any proposed lots.
 - 5. Any existing or proposed building(s), structures, points of access, driveways, topography, natural features and other objects and/or uses on the subject and adjacent properties which may be relevant to the petition; i.e. historic structures, cemeteries or environmentally sensitive areas.
- 6. Delineation of building setback lines.
 - 7. Delineation of all existing public road and/or proposed street systems.
 - 8. Identification and location of all easements.
 - 9. Approximate delineation of floodplain, streams, wetland and forested areas, if applicable, and/or

provide a professional certification that environmental features do not exist on the property.

10. Road profile to evaluate sight distance, if the application includes a request for direct access to a major collector or more restrictive roadway classification.

- 11. Any additional information to allow proper evaluation (e.g. for alternative compliance to wetland buffers an alternative analysis and mitigation proposal are needed; for alternative compliance to SDP requirements where there is no subdivision of land, an APFO Roads Test evaluation may be needed, for alternative compliance of final plat or SDP, a copy of property deeds to confirm legal creation or status of property is needed).
- ✓ 12. Photographs, perspective sketches or cross-sections as necessary to adequately portray the alternative compliance request.
 - 13. The exhibit plans should be highlighted to accurately illustrate the requested alternative compliance(s) to allow proper evaluation (i.e. proposed grading, tree clearing or other disturbances within environmentally sensitive areas or buffers).
 - 14. Submit 2 sets of photographs for all existing on-site structures.
 - 15. Identify the location of any existing wells and/or private septic systems.

16. Route 1 Manual

Compliance with the Route 1 Manual is required for new development and some alterations or enlargements located in the CE, TOD and CAC zoning districts and for other zoning districts located within the Route 1 corridor. All plan submissions, beginning with the initial subdivision or site development plan, shall show all applicable streetscape, site and building designs responding to the Route 1 Manual's requirements and recommendations. All plan submissions shall provide a written summary of how the proposed design achieves the objectives of the Route 1 Manual. Also, building design and schematic architectural elevation details must be included with the initial subdivision or site development plan submission.

17. Route 40 Design Manual

Compliance with the Route 40 Design Manual is required for new development and redevelopment projects located in the Traditional Neighborhood Center (TNC) zoning districts and on parcels located within the Route 40 Corridor as defined in the Route 40 Design Manual. All plan submissions within the Route 40 corridor, beginning with the initial subdivision or site development plan, shall show all applicable streetscape, site and building designs responding to the Route 40 Design Manual's requirements and recommendations. All plan submissions within the Route 40 corridor shall provide a written summary of how the proposed design achieves the objectives of the Route 40 Design Manual. Also, building design and schematic architectural elevation details must be included with the initial subdivision or site development plan submission.

18. <u>Property Deeds</u> – Information to confirm the legal creation or status of the property to be improved. (Copy of deeds from Howard County Land Records Office or record plat name and recording reference number). A complete chronological deed history is required for all deeded residential properties. Provide 2 copies of the recorded deeds for the subject property tracing its history back to 1960.

19. Please complete the following:

A pre-submission meeting was held with DPZ on _____ with [date]

, if applicable.

[DPZ, Director, DLD Division Chief or other SRC representatives]

VI. Fees

The Alternative Compliance application fee shall be in accordance with the adopted fee schedule. All checks shall be made payable to the *Director of Finance*. The petition will not be accepted for processing until the fee has been paid. Incomplete, incorrect or missing information may result in the rejection of the application and could cause additional time to be required to revise the application for resubmittal and rereview. For more information or questions, contact DPZ at (410) 313-2350.

VII. Owner's/Petitioner's Certification

I/WE the undersigned fee simple owner(s) hereby make application to the Howard County Department of Planning and Zoning to provide an alternative compliance request of the minimum requirements of the Howard County Subdivision and Land Development Regulations. The undersigned hereby certifies the information supplied herewith is correct and complete, confirms that the regulations and policies as referred to in the attached are understood, and authorizes periodic on-site inspections by the Howard County Subdivision Review Committee agencies. *If the applicant is the owner's agent, written documentation from owner granting that authority is required at the time of the submission.

Owner's auth	orization attached *				
Digitally signed by Daniel Daniel Lubeley Date: 2021.06.25 14:33:33-04'00'	06-25-2021				
(Signature of Property Owner) (Fee Simple Owner Only)	(Date) (Signatu	e of Petition Preparer) *	(Date)		
Board of Education of Howa	ard County Paul	Walsky			
(Name of Property Owner)	(Name o or A	Petition Preparer, Survey gent/Developer	or/Engineering/Architect		
10910 Clarksville Pik	e 7120	7120 Oakland Mills Road			
(Address)	Address				
Ellicott City, Md. 21042	Colu	mbia, Md. 2104	6		
(City, State, Zip Code)	(City, Sta	te, Zip Code)			
_{E-Mail} bruce_gist@h	cpss.org	pwalsky@howa	ardcountymd.gov		
410-313-6798 410-365-0248		410 313-1695 410	313-4646		
(Telephone)	(Fax)	(Telephone)	(Fax)		
Contact Person:	e Gist	Person: Paul Wals	sky		

WP-22-001 HUNTINGTON PARK ALTERNATIVE COMPLIANCE EXHIBIT 9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND CONSTRUCTION FUNDING: WBS- N0009.3.5000 AND N0010.3.5000

GENERAL NOTES

- OWNER: HOWARD COUNTY PUBLIC SCHOOLS ADDRESS: 10910 CLARKSVILLE PIKE, ELLICOTT CITY, MD. 21042 TELEPHONE NO.: 410 313-6600
- 2) DEVELOPER: HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS ADDRESS: 7120 OAKLAND MILLS ROAD, COLUMBIA, MD. 21046 TELEPHONE NO.: 410 313-1695
- SUBJECT PROPERTY ZONED: NEW TOWN
- PROPERTY ADDRESS: 9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 MAP 42 GRID 23 PARCEL 443, LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.023 ACRES
- PUBLIC WATER AND PUBLIC SEWER ARE NOT PRESENTLY USED WITHIN THIS SITE BUT ARE AVAILABLE. THE TOPOGRAPHY SHOWN HEREON HAS BEEN FIELD RUN BY HOWARD COUNTY
- SURVEY DIVISION ON 10-19-2016 AND 5-13-2019. THE TOPOGRAPHY DISPLAYED BEYOND THE LIMIT OF FIELD RUN SURVEY IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2011.
- THE SOILS INDICATED ARE FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE WEB SOIL SERVICE WEBSITE.
- THERE ARE NO WETLANDS. WETLAND BUFFERS. STREAMS OR STREAM
- BUFFERS WITHIN THE LIMIT OF THIS SITE. 10) THERE ARE NO EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE LIMIT OF DISTURBANCE.
- EXISTING UTILITIES ARE LOCATED BY THE USE ON ALL OF THE FOLLOWING CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE INDICATED FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARRY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENCE.
- 12) SOILS INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT AGRICULTURE. NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE AND FIELD INVESTIGATIONS. IF FUTURE INVESTIGATIONS SHOW UNSATISFACTORY SOIL CONDITIONS FOR ANY OF THE STORMWATER MANAGEMENT TREATMENTS SHOWN, EITHER UNDERDRAINS WILL BE PROVIDED OR A DIFFERENT PRACTICE WILL BE SUBSTITUTED.
- THE STORMWATER MANAGEMENT OBLIGATIONS WILL BE MET BY TWO MICRO **BIORETENTION FACILITY.** 15) THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION IN ACCORDANCE WITH
- SECTION 16.1202(b)(1)(iii) OF THE HOWARD COUNTY CODE. 16) NO GRADING. REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW
- STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS AND FLOODPLAIN.
- 17) PERIMITER LANDSCAPING FOR THIS DEVELOPMENT IS SATISFIED BY EXISTING VEGETATION.



2

Red.







9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942 11.0 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION APRIL 19, 2022 SHEET 1 OF 15



Huntington Park
9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942 11.0 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION APRIL 19, 2022 SHEET 2 OF 15
WP-22-001



DESIGN PROFESSIONAL: PAUL WALSKY HOWARD CO. DEPT. OF REC. & PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MARYLAND 21046 TELEPHONE NUMBER: 410 313-1695

6/22/2022 Chief, Development fragmenting Division Date DocuSigned b 6/22/2022 Date Chief, Division of Land Developn DocuSigned I 6/23/2022 Date Director

APPROVED: DEPARTMENT OF PLANNING AND ZONING

EXISTING CONDITIONS AND DEMOLITION PLAN

ALTERNATIVE COMPLIANCE EXHIBIT

REVISION	DATE

	EXISTING EVERGREEN TREE
	EXISTING FOREST LIMIT
	EXISTING FOREST TO BE REMOVED: 0.35 ACRES
	TEMPORARY ORANGE BLAZE FENCE

••	EXISTING ELECTRIC OUTLET OR CONNECTION
Ē	EXISTING ELECTRIC METER
滎	EXISTING LIGHT POLE
2	EXISTING RAIN DRAIN
0	EXISTING SENTRICON DISK
	EXISTING WATER VALVE, METER OR SPIGOT
6	EXISTING FIBER OPTICS
400	EXISTING CONTOUR
* 3	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
\mathbf{m}	EXISTING FOREST LIMIT

1) ALL EXISTING TREES WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED. 2)ALL REQUIRED DEMOLITION NOT INDICATED SHALL BE INCLUDED IN THE CONTRACT.

EXISTING STORM DRAIN PIPE & INLET



			SOILS LEGEND	_		В.	MAD RU	
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GmB MaC	MANOR	LOAM, 8-15%	SLOPES	B	N/A 0.28			
ENTC			END				VOLLMER	AUSEN RD
		E S	CLEAN WATER PIPE				Q. Y	
		®	STONE CHECK DAM			NRA	٢	
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		REVISIO	N r	DATE		warden Bratch H8D5BA9B64C1	б/23/2022	
					Howard SoilC	onservation District	Date	
					APPROVED	: BEPARTNENT C (HID Edmond)F PLANNING AND ZQ	5012022
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		9695 C Map 42	LOCK TOWER LANE, COL GRID 23 PARCEL 443	UMBIA, M LOT 310	ARYLAND 210 L.F.18973/2	46 ZONIN(314 TAX AC	3: NEW TOWN COUNT: 16-155	ELEC. DIST.: 3 942 11.0 ACRE
		••	OWNER: HOWARD COUNT	Y BOARD	OF EDUCATION	MAY 16,	2022 SHEET 3	3 OF 15 2-008 WP-22-00





<u>NO.</u>	REVISION

B-4-5 STANDARDS AND SPECIFICATIONS PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

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

<u>CRITERIA</u>

A. SEED MIXTURES

I. GENERAL USE A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. 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 FASTERN SHORE RECOMMENDED CERTIFIED KENTLICKY BILLEGRASS 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: 11/2 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
- WESTEM MD: MARCH 15 TO JUNE 1, AUGUST ITO OCTOBER 1 (HARDINESS ZONES: SB, 6A) - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 11/4 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.

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 ¼ INCH. AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM 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 É. SOD MUST BE HARVESTÉD, 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

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.

MARYLAND •

Department of

Recreation & Parks

- R-4-2 STANDARDS AND SPECIFICATIONS
- SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS
- **DEFINITION** THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

<u>PURPOSE</u>

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

<u>CRITERIA</u>

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 À MODERATE AMOUNT OF MOISTURE. AN EXCÉPTION: 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

- I. 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 CONCEM 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-
- 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 FLIRNISH 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 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING
- 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% 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 AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) I. 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.

FERTILIZER

PERMANENT SEEDING SUMMARY HADDINESS JONE (EDON FIGURE D.3). JONE 66

	SEED MIXTURE (FROM TABLE B.3): 9					RATE (10-20-20)		
10	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	seeding Depths	N	P ₂ 0 ₅	к ₂ 0	
I	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/A (90 LB PE 1000 SF
3	TALL FESCUE	T.F.100 LB / AC	FEB.15-APRIL30 AUG.15-OCT.31	*				
11	CREEPING RED FESCUE CHEWINGS FESCUE KENTUCKY BLUEGRASS	30 30 20	29 39 39	" "				

B. MULCHING

DEFINITION

<u>PURPOSE</u>

GRADING

<u>CRITERIA</u>

A. SEEDING

PHYTO-TOXIC

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

3. ANCHORING

IS STRICTLY PROHIBITED.

1.99 acres.

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

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE

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

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 8.1, PERMANENT SEEDING TABLE 8.3, 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

FFRTII I7FR) 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; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (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.

I. MULCH MATERIALS (IN ORDER OF PREFERENCE)

A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, 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. I. 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

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.

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.

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

I. 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

/. 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

Erosion and Sediment Control Narrative

Huntington Parkis a community facility located in the King's Contrivance area of Columbia, just west of the intersection of Maryland Route 32 and I-95. The existing park consists of pathways, one playground, one mult-purpose field and one basketball court. At the request of the adjacent community we are proposing to remove the existing basketball basket and construct a new court away from the existing residences. Additionally we are proposing a loop configured pathway to connect to the new basketball court from the existing pathway, install one baseball backstop near where there was an existing backstop and construct required stormwater bio-retension facilities.

The soils consist of Glenelg Loam (3-8% slopes), Glenelg-Urban Land Complex (0-8% slopes), Legore-Montalto-Urban Land (0-8% slopes) and Manor Loam (8-15% slopes).

The park comprises of 10.91 acres and was developed in the late 1980s. The proposed disturbance is

For storm water management we are proposing two micro-bioretention basins located adjacent to the new basketball court and one located in an existing drainage sump.

The proposed erosion and sediment control measures include installing the following devices from the 2011 Standards and Specifications for Soil Erosion and Sediment Control by the Maryland Department of the Environment. They include super silt fence, silt fence, diversion fence, stabilized construction entrance, standard inlet protection, stone check dam and temporary soil stabilization.

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT LAM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF TH ESTATE OF MARYLAND, LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.

> DESIGN PROFESSIONAL: PAUL WALSKY HOWARD CO. DEPT. OF REC. & PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MARYLAND 21046

TELEPHONE NUMBER: 410 313-1695



B-4-4 STANDARDS AND SPECIFICATIONS

TEMPORARY STABILIZATION DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

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. <u>Criteria</u>

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 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 8.1 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 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.

	TEMPORARY SEEDING SUMMARY							
	HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b SEED MIXTURE (FROM TABLE B.1):					LIME RATE		
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	seeding Depths	(10–20–20)			
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)		
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.				

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

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

<u>PURPOSE</u>

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.

<u>CRITERIA</u>

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF THE STOCKPILE MUST BE 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.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- 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. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL
- STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

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.

NO.	REVISION	

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 3:1 horizontal to vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B- - 4-2), permanent seeding (Sec. B- - 45), 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 grounds 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 (SecB-4-6).

SiteAnalysis Total Area of Site: 11 Acres Area Disturbed: 2.13 Acres Area to be roofed or paved: 0.42 Acres Area to be vegetatively stabilized: 1.57 Acres Total Cut: 2000 Cu. Yds. (for estimating only Total Fill: 2000 Cu. Yds. (for estimating only) Site with an active grading permit Offsite waste/borrow area location:

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

Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

- Inspection date precipitation)
- Identification of plateficiencies
- Photographs Monitoring/sampling
- Mainteance and/or corrective acportformed

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in sediment basin or other approved washout structure.

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.

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

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 f48hour 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, Prior to the start of another phase of construction or opening of anotheitgrading 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.

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 there to.

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.

• Inspection type (routine,-prestorm event, during rain event)

Name and title of inspector

Weather information (current conditions as well as time and amount of last recorded

• Brief description of project's status (e.g., percent complete) and/or current activities

Evidence of sedimedischarges

• 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

• Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be backfilled and stabilized by the end of each workday, whichever is shorter

10. Any majorchanges or revisions to the plan or of sequence 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.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto finalgrade.

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.

• Use IV March 1- May 31

Decign Cortification:	
Design Certification:	
"I hereby certify that this plan has been designed in acc erosion and sediment control laws, regulations, and sta and workable plan based on my personal knowledge of accordance with the requirements of the Howard Soil C	ordance with current Maryland ndards, that it represents a prac the site, and that it was prepare onservation District."
Paul Walsky 6/1	6/2022
Designer's Signature	ate
Paul S.Walsky M	D Registration No.
Printed Name P.	E., R.L.S., or R.L.A (circle one)
Professional Certification:	
"I hereby certify these documents were prepared or a licensed landscape architect under the laws of the Stat	oproved by me, and that I am a c e of Maryland,
License No. <u>490</u> , Expiration Date: 6/17/202	2
(Title block, certification, seal, and signature shall app	ear close to each other)
Howard SCD Signature Block: This plan is approved for soil erosion and sedimer control by the 94% and 9001 Conservation District. Olevander Brately 28/2022 <u>65648D5BA9B64C1</u> Howard Soil Conservation District Date	nt
APPROVED: DEPARTMENT OF PL	ANNING AND ZONII
APPROVED: DEPARTMENT OF PL	ANNING AND ZONII 6/22/2022
APPROVED: DEPARTMENT OF PLA DocuSigned by: UHD ELmondson Chief, DevelopmentsErgineering Division	ANNING AND ZONI 6/22/2022 Date
APPROVED: DEPARTMENT OF PL	ANNING AND ZONI 6/22/2022 Date 6/22/2022
APPROVED: DEPARTMENT OF PL	ANNING AND ZONIN 6/22/2022 Date 6/22/2022 Date
APPROVED: DEPARTMENT OF PL	ANNING AND ZONIN 6/22/2022 Date 6/22/2022 Date 6/23/2022
APPROVED: DEPARTMENT OF PLA DocuSigned by: UHD ELMON JSON Chief, DevelopmentsEffeitideering Division DocuSigned by: Chief, Division offlamat Development DocuSigned by: The Gonan Director Director	ANNING AND ZONIN 6/22/2022 Date 6/22/2022 Date 6/23/2022 Date

SEDIMENT CONTROL

pursuant to this approved erosion and sediment control plan, including inspecting and

maintaining controls, and that the responsible personnel involved in the construction

(MDE) approved training program for the control on erosion and sediment prior to

County, the Howard Soil Conservation District and/or MDE."

project will have a Certificate of Training at a Maryland Department of the Environment

beginning the project. I certify right -of- entry for periodic on site evaluation by Howard

6/10/2022

Date

"I/We hereby certify that any clearing, grading, construction, or development will be done

Owners/Developer Certification:

Brue Gist

Owner's/Developer's Signature



EROSION & SEDIMENT CONTROL NOTES ALTERNATIVE COMPLIANCE EXHIBIT Huntington Park

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942. 10.91 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 5 OF 15



NOTE:

WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED	<u>NO.</u>	REVISION
LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.		
DESIGN PROFESSIONAL:		
PAUL WALSKY HOWARD CO. DEPT. OF REC. & PARKS		
7120 OAKLAND MILLS ROAD		
TELEPHONE NUMBER: 410 313-1695		
6/16/2022		





GEOMETRY TABLE					
PT.NO.	NORTHING	EASTING	DESCRIPTION		
	543976.88	1355875.41			
	543983 70	1355896.00			
4	543992 84	1355892 71	PT 1		
5	543990.40	1355871.45	PT		
6	544003.99	1355852.15	PC		
7	543996.27	1355850.03	PC		
8	<u>544004.16</u>	1355777.25	RADIUS		
9	544023.26	1355817.99			
12	544105 44	1355751.09			
13	544106.97	1355748.93	RADIUS		
14	544129.80	1355756.73	PC		
15	544137.98	1355756.93	PC		
16	544148.73	1355794.91	RADIUS		
17	544138.73	1355797.67	PC		
18	544132.90	1355/95.24			
19	544143.37	1355846.01			
20	544150.77	1355851 88			
22	544185.00	1355838.30	RADIUS		
23	544165.78	1355869.76	PC PC		
24	544147.31	1355897.24	PT		
25	544132.02	1355895.54	PT		
26	544120.51	1355900.31			
2/	544095.19	1355898.66			
	<u>544094.11</u> 544070 70	1355017 78			
30	544212.60	1355775.92	RADIUS		
31	544202.36	1355861.24	PC		
32	544314.27	1355631.48	RADIUS		
33	544441.15	1355815.15	PC		
34	544441.13	1355808.09	RADIUS		
35	544448.11	1355808.53			
30	544405.20	1355806.98			
38	544463 21	1355807.37			
39	544433.09	1355676.58	PC		
40	544437.39	1355484.86	PT		
41	544441.02	1355517.76	PC		
42	544471.84	1355534.36	RADIUS		
43	5444/1.84	1355499.36			
44	544536.40	1355425 36			
46	544572.83	1355464.36	RADIUS		
47	544572.83	1355499.36	PC		
48	544605.06	1355478.00	PC		
49	544628.08	1355487.75	RADIUS		
50	544636.06	1355462.11	PC PC		
51					
53	544071.00	1355496.28			
54	544736.12	1355697.61	PC.		
55	544941.61	1355729.82	RADIUS		
56	544747.64	1355804.90	PC		
57	544733.65	1355810.36	RADIUS		
58	544748.07	1355814.42			
<u>60</u>	<u>344/30.62</u> 544750.57	1355930.82			
61	544755.10	1355832.85			
62	544790.47	1355853.06	PC		
63	544774.03	1355853.03	PČ		
64	544765.98	1355858.95	RADIUS		
65	544771.78	1355867.09	PC		
66	544/31.34	1355871.56			
68	<u> </u>	1355865 73			
69	544707 12	1355870 40			
70	544704.35	1355866.24	RADIUS		
71	544703.28	1355871.12	PC		
72	544703.99	1355803.56	PT		
	544703.99	1355819.56			
/4	544692.6/	1355830.8/			
76	5440/0.0/	1355605 40			
77	544651.85	1355787.03	RADIUS		
78	544031.65	1355931.61	RADIUS		
the second se					

NOTE

1) THE GEOMETRIC LAYOUT INFORMATION FOR STORM WATER MANAGEMENT REQUIREMENTS AND WATER FOUNTAIN ARE LOCATED ON OTHER SHEETS.

2) THE DETAILS FOR CONCRETE, ASPHALT, BASKETBALL COURT, ENTRANCE FROM VOLLMERHAUSEN ROAD AND REMOVABLE BOLLARD ARE LOCATED ON SHEET 6 OF 15.

2) THE REMOVABLE BOLLARDS (QUANTITY - 2) SHALL BE FIELD LOCATED, FURNISHED BY OWNER AND INSTALLED BY THE CONTRACTOR.

REVISION DATE NO. APPROVED: DEPARTMENT OF PLANNING & ZONING 6/22/2022 (HAD Edmondson Chief, Development Englisheering Division Date 6/22/2022 Date Chief, Division16#76474d2Developr DocuSigned I 6/23/2022 Any Gonan Director 5B4D5DD9470C4D4 Date LAYOUT AND GEOMETRY PLAN ALTERNATIVE COMPLIANCE EXHIBIT Huntington Park

DESIGN PROFESSIONAL: PAUL WALSKY HOWARD CO. DEPT. OF REC. & PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MARYLAND 21046 TELEPHONE NUMBER: 410 313–1695

WP-22-001

DAVE MORICONI LICENSE NO. 16156 EXPIRATION DAE: 8/28/2022

Moriconi, Dave Discon=Moriconi, Dave, Du=USHNV01, email=dave.moriconi@aecom.com Date: 2022.06.08 09:53:07 -04'00'

-PROPOSED MICRO-BIORETENTION (MB-1) - SEE ECP-02 FOR LAYOUT

80 SCALE: 1'' = 40'

---- PROPERTY BOUNDARY EXISTING WOODS LINE CD [] SIP SCE

• • • • • • •

LEGEND

EXISTING CONTOUR SOIL BOUNDARY EXISTING WATER LINE EXISTING SANITARY SEWER EXISTING STORM DRAIN DISCONNECT AREA PROPOSED CONTOUR LIMIT OF DISTURBANCE (LOD) SILT FENCE (SF) SUPER SILT FENCE (SSF) DIVERSION FENCE (DF) STONE CHECK DAM (CD) STANDARD INLET PROTECTION (SIP)

STABILIZED CONSTRUCTION ENTRANCE (SCE)

STEEP SLOPES (15-25%) STEEP SLOPES (>25%) PROPOSED MICROBIORETENTION AREA PROPOSED IMPERVIOUS AREA PAVEMENT REMOVAL

APPROVED: DEPARTMENT OF PLANNING & ZONING 6/22/2022 (HAD Edmondso Date a prince protection 6/22/2022 Chief, Division 108 15and 2003 xelopment Date DocuSigned by 6/23/2022 tmy 610. Director 5B4D5DD9470C4D4 Date

REVISION DATE NO.

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 8 OF 15 EP-22-008 WP-22-001

NON-ROOFTOP DISCONNECT - TYPICAL SECTION

NOT TO SCALE

NOTES:

1. PROVIDE PERFORATED 6" PVC UNDERDRAIN BENEATH THE BIORETENTION AREA ONLY. THE REMAINDER SHALL BE SOLID 6" PVC PIPE.

2. COMPLETELY WRAP 6" PERFORATED UNDERDRAIN PIPE WITH FILTER FABRIC DURING INSTALLATION.

CLEANOUT (C.O.) DETAIL

NOT TO SCALE

NOTE: GEOTEXTILE MUST EXTEND AT LEAST 6" FROM EDGE OF RIP-RAP AND BE EMBEDDED AT LEAST 4" AT SIDES OF RIPRAP

CLASS I RIPRAP OUTFALL AND INFLOW PROTECTION DETAIL

NOT TO SCALE

PROFESSIONAL CERTIFICATION:

OBSERVATION WELL DETAIL

NOT TO SCALE

"I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,

> DESIGN PROFESSIONAL DAVE MORICONI LICENSE NO. 16156 EXPIRATION DAE: 8/28/2022

Moriconi, Dave DN: cn=Moriconi, Dave, ou=USHNV01, mail-dave.moriconi@aecom.com Date: 2022.06.08 09:54:46 -04'00'

FACILITY SUMMARY TABLE - M	ICRO-BIORETENTION (M-6) MB-1
WATERSHED	MIDDLE PATUXENT RIVER
STRUCTURE CLASSIFICATION	"A" (NOT A MD 378 POND)
STRUCTURE TYPE	MICRO-BIORETENTION (M-6)
WATER QUALITY TYPE	FILTERING
POI/LOI	2 & 3
DRAINAGE AREA TO FACILITY	0.80 AC
IMPERVIOUS AREA TREATED	0 10 / 0 00
PROVIDED / REQUIRED (AC)	0.107 0.09
TARGET Pe PROVIDED / REQUIRED (IN)	2.6 / 2.45
ESDv STORAGE PROVIDED / REQUIRED (CF)	1,265 / 756
WQv STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE WQV MET
Rev STORAGE PROVIDED / REQUIRED (CF)	195 / 70
CPv STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE CPV MET
LEVEL OF MANAGEMENT REQUIRED	RECHARGE, WATER QUALITY
LEVEL OF MANAGEMENT PROVIDED	ESD TO THE MEP
FACILITY SUMMARY TABLE - M	ICRO-BIORETENTION (M-6) MB-2
WATERSHED	MIDDLE PATUXENT RIVER
STRUCTURE CLASSIFICATION	"A" (NOT A MD 378 POND)
STRUCTURE TYPE	MICRO-BIORETENTION (M-6)
WATER QUALITY TYPE	FILTERING
POI/LOI	1
DRAINAGE AREA TO FACILITY	1.16 AC
IMPERVIOUS AREA TREATED	0 33 / 0 34
PROVIDED / REQUIRED (AC)	0.337 0.34
TARGET Pe PROVIDED / REQUIRED (IN)	2.6 / 2.60
ESDv STORAGE PROVIDED / REQUIRED (CF)	3,331 / 3,065
WQv STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE WQV MET
Rev STORAGE PROVIDED / REQUIRED (CF)	564 / 306
CPv STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE CPV MET
LEVEL OF MANAGEMENT REQUIRED	RECHARGE, WATER QUALITY
LEVEL OF MANAGEMENT PROVIDED	ESD TO THE MEP
DESIGN SUM	MARY TABLE
LIMIT OF DISTURBANCE (AC)	2.13
EXISTING IMPERVIOUS AREA (AC)	0.03
NEW IMPERVIOUS AREA (AC)	0.43
RECONSTRUCTED IMPERVIOUS AREA (AC)	0.00
IMPERVIOUS AREA REMOVED (AC)	0.01

PROPOSED IMPERVIOUS AREA (AC)

0.45

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

B.4.C Specifications for Micro-Bioretention. Rain Gardens, Landscape Infiltration & **Infiltration Berms**

Material Specifications

The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the microbioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content Media shall have a clay content of less than 5%.
- pH Range Should be between 5.5 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

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B.4.4

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

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-					
Material	Specification	Size	Notes		
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific		
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%		
Organic content	Min. 10% by dry weight (ASTM D 2974)				
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips		
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")			
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"			
Geotextile		n/a	PE Type 1 nonwoven		
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")			
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¹ / ₄ -inch galvanized hardware cloth		
Poured in place concrete (if required)	MSHA Mix No. 3; $f_c^2 = 3500$ psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) <i>not using previously approved State or local</i> <i>standards</i> requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking		
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.		

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failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

final grade.

compact loader or a dozer/loader with marsh tracks.

4. **Plant Material**

Section A.2.3.

5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

cover after installation.

PROFESSIONAL CERTIFICATION:

"I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER JNDER THE LAWS OF THE STATE OF MARYLAND,

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

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a

Recommended plant material for micro-bioretention practices can be found in Appendix A,

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so $1/8^{\text{th}}$ of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed

B.4.5

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

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

6. Underdrains

Underdrains should meet the following criteria:

- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations If perforated pipe is used, perforations should be ³/₈" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a $\frac{1}{4}$ (No. 4 or 4x4) galvanized hardware cloth.
- Gravel The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (1/8" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

These practices may not be constructed until all contributing drainage area has been stabilized

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B.4.6

MICRO-BIORETENTION (M-6) STRUCTURE INSPECTION SCHEDULE

- 1. THE PERMITTEE SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. CONSTRUCTION INSPECTION DIVISION (CID), (410)-313-1855, AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND PRACTICES.
- 2. PRIOR NOTIFICATION SHALL BE GIVEN TO THE CERTIFYING ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES
- a. UPON COMPLETION OF EXCAVATION TO THE SUBFOUNDATION AND WHERE REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO: INLET/OUTLET STRUCTURES AND ANTI-SEEP STRUCTURES, WATERTIGHT CONNECTORS ON PIPES; AND TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES
- b. DURING PLACEMENT OF THE REINFORCING AND CONCRETE, STONE, FILTER FABRIC, FOOTPLATE, PERFORATED AND NONPERFORATED PIPE, AND PERMEABLE SOIL
- c. DURING BACKFILL OF FOUNDATIONS AND TRENCHES
- d. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION
- NO WORK SHALL PROCEED UNTIL THE ENGINEER INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED.
- 3. A COPY OF ALL MATERIAL SUPPLY TICKETS MUST BE GIVEN TO THE DESIGNATED ENGINEER IN CHARGE OF THE AS-BUILTS.

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER, AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME ii, TABLE A.4.1 AND A.4.2.
- 2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- 4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM. INSPECT CLEAN OUTS AND OBSERVATION WELLS ALONG WITH OVERFLOW INLETS AND OUTFALL/EXIT PIPES AT LEAST ONCE A MONTH AND AFTER HEAVY STORMS.
- 5. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE (1) INCH. CHECK FOR DEWATERING WITHIN 48 HOURS.

DESIGN PROFESSIONAL DAVE MORICONI ICENSE NO. 16156 EXPIRATION DAE: 8/28/2022

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MICRO-BIORETENTION (M-6) OPERATION AND MAITENANCE SCHEDULE

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	APPROVED: DEPARTMENT OF PLANNING & ZONING		
	(HAD Edmondson	6/22/2022	
	Chief, Develop개위한개한運行형태위원ering Division	Date	
		6/22/2022	
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	Director5B4D5DD9470C4D4	Date	
NO.	REVISION	DATE	

STORMWATER MANAGEMENT NOTES ALTERNATIVE COMPLIANCE EXHIBIT **Huntington Park** 9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 11 OF 15 EP-22-008 WP-22-001

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<u>MASTER PLANT SCHEDULE</u>						
REQUIREMENT	QUANTITY	BOTANICAL NAME/COMMON NAME	ROOT & MINIMUM SIZE			
MICRO-	66	EUPATORIUM DUBIUM 'LITTLE JOE' / 'LITTLE JOE' JOE PYE WEED	1 QT. CONTAINER	24 INCHES O. C. SPACING		
BIORETENTION	24	HIBISCUS MOSCHEUTOS / MARSH HYBISCUS	1 QT. CONTAINER	30 INCHES O. C. SPACING		
	218	IRIS VISCOLOR / BLUE FLAG	1 QT. CONTAINER	15 INCHES O. C. SPACING		
	203	PACKERA AUREUS / GOLDEN RAGWORT	2" PLUG	12 INCHES O. C. SPACING		
	187	PANICUM VERGATUM / SWITCHGRASS	1 GAL. CONTAINER	24 INCHES O. C. SPACING		

Table A.3 Planting Soil Characteristics

(Adapted from EQR, 1996; ETAB, 1993)

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25%
Silt	30 to 55%
Sand	35 to 60%

PROFESSIONAL CERTIFICATION:

"I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME [ENVIRONMENTAL QUALITY RESOURCES (EQR), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993]. SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUGWORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12" TO 18" LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

MULCH LAYER

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIORETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIORETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANT ADAPTED TO DRYER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM WHICH RESEMBLES A RANDOM AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETA&B, 1993 OR CLAYTOR AND SCHUELER, 1997.

DESIGN PROFESSIONAL DAVE MORICONI LICENSE NO. 16156 EXPIRATION DAE: 8/28/2022

Moriconi, Dave

NO.		REVISION	DATE

(HAD Edmondson

Chief, Development Engineering Division

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Amy Gonan

Chief, Division of East de Development

Director 5B4D5DD9470C4D4...

APPROVED: DEPARTMENT OF PLANNING & ZONING

6/22/2022

6/22/2022

6/23/2022

Date

Date

Date

		SOILS TABLE								
<u> </u>	MAP UNIT	MAP UNIT NAME	SLOPES	HYDROLOGIC SOIL GROUP	K-FACTOR	DRAINAGE CLASS	SOIL ER			
	GgB	GLENELG LOAM	3 TO 8% SLOPES	В	0.24	WELL DRAINED	MOI			
	GhB	GLENELG-URBAN LAND COMPLEX	0 TO 8% SLOPES	В	N/A	N/A	NOT			
	LoB	LEGORE-MONTALTO-URBAN LAND	0 TO 8% SLOPES	С	N/A	WELL DRAINED	MOI			
	Mac	MANOR LOAM	8 TO 15% SLOPES	В	0.28	WELL DRAINED	MOI			

Recreation & Parks

MAP UNIT	MAP UNIT NAME	SLOPES	HYDROLOGIC SOIL GROUP	K-FACTOR	DRAINAGE CLASS	SOIL EF	
GgB	GLENELG LOAM	3 TO 8% SLOPES	В	0.24	WELL DRAINED	MOI	
GhB	GLENELG-URBAN LAND COMPLEX	0 TO 8% SLOPES	В	N/A	N/A	NOT	
LoB	LEGORE-MONTALTO-URBAN LAND	0 TO 8% SLOPES	С	N/A	WELL DRAINED	MOI	
Mac	MANOR LOAM	8 TO 15% SLOPES	В	0.28	WELL DRAINED	MOI	

_	SOILS TABLE						
MAP UN	IIT MAP UNIT NAME	SLOPES	HYDROLOGIC SOIL GROUP	K-FACTOR	DRAINAGE CLASS	SOIL ERODIBILITY	HYDRIC RATING
GgB	GLENELG LOAM	3 TO 8% SLOPES	В	0.24	WELL DRAINED	MODERATE	NOT HYDRIC
GhB	GLENELG-URBAN LAND COMPLEX	0 TO 8% SLOPES	В	N/A	N/A	NOT RATED	NOT HYDRIC
LoB	LEGORE-MONTALTO-URBAN LAND	0 TO 8% SLOPES	C	N/A	WELL DRAINED	MODERATE	NOT HYDRIC
Mac	MANOR LOAM	8 TO 15% SLOPES	В	0.28	WELL DRAINED	MODERATE	NOT HYDRIC

		LEGEND
	*	POINT OF INVESTIGATION (POI)
		LINE OF INVESTIGATION (LOI)
		POI/LOI DESIGNATION
		EXISTING CONTOUR PROPERTY BOUNDARY EXISTING WOODS LINE
		SOIL BOUNDARY EXISTING WATER LINE EXISTING SANITARY SEWER EXISTING STORM DRAIN DISCONNECT AREA PROPOSED CONTOUR
STONE	LOD SF SSF	LIMIT OF DISTURBANCE (LOD) SILT FENCE (SF) SUPER SILT FENCE (SSF)
		STEEP SLOPES (15-25%) STEEP SLOPES (>25%)
		PROPOSED MICROBIORETENTION AREA
		PROPOSED IMPERVIOUS AREA
		PAVEMENT REMOVAL
(PI)		

NO.	REVISION	DATE

Huntington Park 9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3 MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 15 OF 15 EP-22-008 WP-22-001

DRAINAGE AREA MAP ESD PRACTICES ALTERNATIVE COMPLIANCE EXHIBIT