

MICRO-BIORETENTION (M-6)DETAIL (NOT TO SCALE)

DATE

10.1.ZO

DATE

10/23/20

DATE

10-23-26

DATE

STORMWATER MANAGEMENT SUMMARY

FACILITY	ESDv CREDIT	TARGET Pe	REQUIRED Pe	CONTRIBUTING AREA	% IMPERVIOUS
MICRO-BIORETENTION (M-6)-1	273 CF	1.6"	2.6"	1,449 SF.	91.4%
MICRO-BIORETENTION (M-6)-2	397 CF	1.6"	2.6"	4,955 SF.	36.1%
TOTAL	670 CF			6,404 SF.	

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

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CHIEF, DEVELOPMENT ENGINEERING DIVISION 🛵 🥻

CHEF, DIVISION OF LAND DEVELOPMENT 46

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THE HOWARD SOIL CONSERVATION DISTRICT.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL

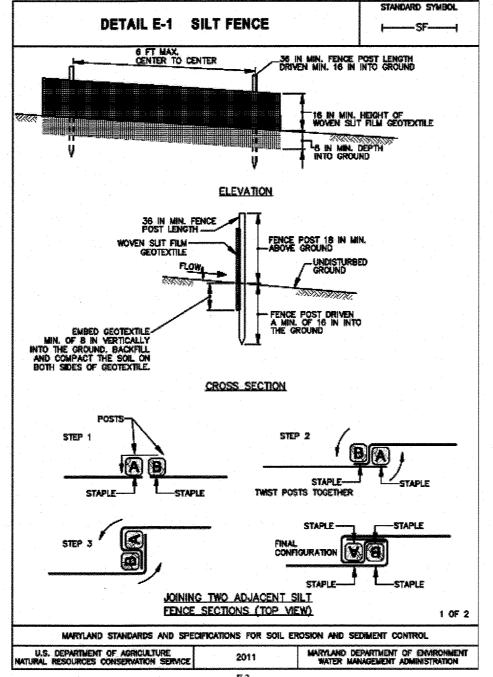
DEPARTMENT OF PLANNING AND ZONING

ESDv	PROVIDED	=	670 CF
ESDv	REQUIRED	=	469 CF
ESDv	SURPLUS	-	+201 CF

MICRO-BIORETENTION FACILITY ELEVATION CHART FACILITY TOP POND TOP MULCH INVERT UNDERDRAIN | BOTTOM PIT 221.50 220.50 217.33 216.33 221.00 220.00 216.83 215.83

REVISIONS

DETAILS



GALVANIZED CHAIN LINK FENCE WITH ELEVATION MOVEN SLIT FILM GEOTEXTILE-FLOW -CROSS SECTION INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOLENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. 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. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. 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 GEOTESTILE MARYLAND STANDARDS AND SPECIFICATIONS FOR SQIL EROSION AND SEDIMENT CONTROL

BIORETENTION AREA SOIL SPECIFICATION

A. PLANTING SOIL:

THE BIORETENTION AREA SHALL CONSIST OF A PLANTING SOIL HAVING A HOMOGENOUS MIX OF 50% CONSTRUCTION SAND, 20-30% TOPSOIL WITH AN ALLOWABLE 5% MAXIMUM CLAY CONTENT, AND 20-30% ORGANIC COMPOST OR MULCH TO PROVIDE A SOIL MEDIUM WITH HIGH HYDROLOGIC CAPACITY THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT

PARTS OF BERMUDA GRASS, QUAKE GRASS, JOHNSON GRASS, MUGWART, NUTSEDGE, POISON IVY, CANDIAN THISTILE OR OTHER AS SPECIFIED. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH

THE PLANTING SOIL SHALL BE TESTED AND MEET THE FOLLOWING CRITERIA: PH RANGE

ORGANIC MATTER 15 - 30% THE FOLLOWING TESTING FREQUENCIES SHALL APPLY TO THE ABOVE SOILS: PH ORGANIC MATTER: 1 TEST PER 90 CUBIC YARDS, BUT NOT MORE THAN 1 TEST PER BIORETENTION AREA. ONE GRAIN SIZE ANALYSIS SHALL BE PERFORMED PER 90 CUBIC YARDS OF PLANTING SOIL, BUT NO LESS THAN 1 TEST PER BIORETENTION AREA.

MULCH LAYER SPECIFICATION:

A MULCH LAYER SHALL BE PROVIDED ON TOP OF PLANTING SOIL. AN ACCEPTABLE MULCH LAYER SHALL INCLUDE SHREDDED HARDWOOD OR SHREDDED WOOD CHIPS OR OTHER SIMILAR PRODUCTS APPROVED BY THE HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL

OF THE APPROVED MULCH PRODUCTS, ALL MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIALS, INCLUDING PLANT MATERIAL. WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCK PILED OR STORED FOR AT LEAST TWELVE (12) MONTHS. C. SAND SPECIFICATION:

THE SAND SHALL BE FREE OF DELETERIOUS MATERIAL AND ROCKS GREATER THAN ONE INCH IN DIAMETER.

SOIL SHALL BE PLACED IN LIFTS LESS THAN 18 INCHES AND LIGHTLY COMPACTED.

SEQUENCE OF CONSTRUCTION

- 1. REQUEST FOR PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY, (2-WEEKS).
- 2. CLEARING AND GRUBBING AS NECESSARY FOR INSTALLATION OF PERIMETER
- CONSTRUCTION AND STABILIZATION OF PERIMETER CONTROLS, (1 DAY). REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS
- 5. DRIVEWAY GRADING, (1 DAY).
- 6. GRADING FOR THE REMAINDER OF THE SITE, (2 DAYS). 7. UTILITY INSTALLATION AND CONNECTIONS TO EXISTING STRUCTURES, (4
- 8. CONSTRUCTION OF BUILDING, ROADS, AND OTHER CONSTRUCTION, (4
- MONTHS) 9. FINAL GRADING, LANDSCAPING, AND STABILIZATION, (3 DAYS).
- 10. INSTALLATION OF STORMWATER MANAGEMENT MEASURES (4 DAYS). 11. APPROVAL OF THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO
- REMOVAL OF SEDIMENT CONTROLS, (1 WEEK). 12. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS, (2 DAYS).

NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

GENERAL PLANTING:

ROOT STOCK OF PLANT MATERIAL SHALL BE KEPT MOIST. DURING TRANSPORT FROM SOURCE TO THE JOB SITE AND UNTIL PI ANTED

__ WALLS OF PLANTING PIT SHALL BE DUG SO THAT THEY ARE VERTICAL

__ THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW 1/4 OF THE BALL TO BE ABOVE THE EXISTING GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE TAMPED BY HAND. __ THE APPROPRIATE AMOUNT OF FERTILIZER IS TO BE PLACED

__ THE PLANT SHALL BE REMOVED FROM THE CONTAINER AND PLACED AT THE BOTTOM OF THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS BALL. NEVER LIFT THE

__ SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO

PROCEDURE

AROUND THE EXPOSED SIDE OF THE BALL

_ TREE SHALL BE BRACED USING 2" X 2" WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS.

__ TREE AND SHRUB FERTILIZER SHALL BE A 21 gm. TIGHTLY TABLET WITH MINIMUM GUARANTEED ANALYSIS OF 20-10-5:

> WATER SOLUBLE ORGANIC NITROGEN - 7% SOLUBLE POTASH (K20) - 5%

__ FOR CONTAINERIZED TREES AND SHRUBS, PLACE THE SPECIFIED

__ THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH WITH ONE OF THE FOLLOWINGS: HAND TROWEL.

AND NON BIODEGRADABLE POTS SHALL BE REMOVED, ROOT SYSTEMS OF THE POTTED PLANTS SHALL BE SPLIT OR CRUMBLED.

BIORETENTION AREA PLANT SPECIFICATION

DETAIL E-3 SUPER SILT FENCE

----SSF----

MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION

__ THE DIAMETER OF PLANTING PIT MUST BE A MINIMUM OF SIX INCHES LARGER THAN THE DIAMETER OF THE ROOT BALL.

AT THE BOTTOM OF THE PIT.

PLANT BY THE BRANCHES OR TRUNK.

THE CENTER OF THAT THE BALL IS APPROXIMATELY 1/4 ABOVE THE

FINAL GRADE

___ BACKFILL PLANTING PIT WITH EXISTING SOIL. __ MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING

NEVER COVER THE TOP OF THE BALL WITH SOIL. MOUND SOIL

__ MAKE SURE MULCH DOES NOT CONTACT TREE'S TRUNK. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. THE TREE IS BRACED TO THE STAKES UTILIZING HOSE AND WIRES.

FERTILIZER:

COMPRESSED, LONG LASTING, SLOW RELEASE (2-YEAR) FERTILIZER TOTAL NITROGEN (N) - 20%

WATER IN SOLUBLE ORGANIC NITROGEN - 13% AVAILABLE PHOSPHORIC ACID (P2 05) - 10%

FERTILIZER TABLET(S) IN THE BOTTOM OF THE PLANTING PIT ACCORDING TO THE FOLLOWING RATES:

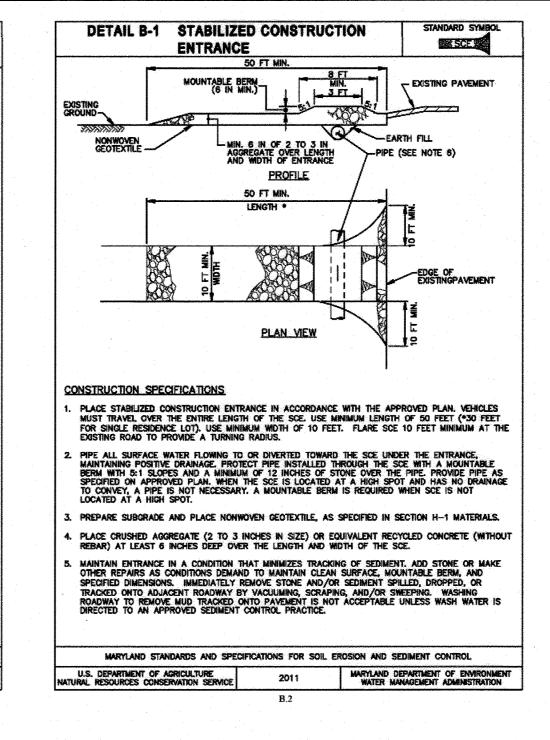
1 GAL. CONTAINER 1 ea, 21 gm. TABLETS. 3 GAL. CONTAINER 2 ea, 21 gm. TABLETS. 5 GAL. CONTAINER 3 ea, 21 gm. TABLETS. 7 GAL. CONTAINER 5 ea, 21 gm. TABLETS. PLANTING NON-GRASS GROUND COVER:

SHOVEL, BULB PLANTER, OR HOE (THIS DOES NOT APPLY TO GRASS OR LEGUMES).

BEFORE PLANTING BIODEGRADABLE POTS, THEY SHALL BE SPLIT,

_ THE GROUND COVER SHALL BE PLANTED SO THAT ROOTS ARE SURROUNDED BY THE SOIL BELLOW THE MULCH. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. THE ROOTS OF BARE-ROOT PLANTS SHALL BE COVERED TO THE CROWN. THE MULCH AND PLANTED GROUND COVER BED SHOULD BE

SHOULD BE COVERED WITH A PRE-EMERGENT HERBICIDE. __ THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED



B-4-4 STANDARDS AND SPECIFICATIONS

TEMPORARY STABILIZATION

To stabilize disturbed soils with vegetation for up to 6 months. 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.

1. Select one or more of the species or seed mixtures listed in Table B.I 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. .b and maintain until the next seeding season.

		Temporary S	seeding S	summa	ry :	
ſ	Hardiness Zone (from Figure B.3): ZONE 6b Seed Mixture (from Table B.3):					
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depth	Rate (10-20-20)	Lime Rate
1	Cool Season Annual Ryegrass or Equal	40 lb/ac	Mar. 1 to May 15. Aug. 1 to Oct. 15.	1/2 ln	436 lb/ac 10 lb/	2 tons/ac (90 lb/
2	Warm Season Foxtail Millet or Equal	30 lb/ac	May 16 to July 31.	1/2 ln	1000 sf)	1000 sf)

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 greas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 'A 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 ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in fill 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 b

A. Seed Mixtures

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

B-4-5 STANDARDS AND SPECIFICATIONS

PERMANENT STABILIZATION

To use long-lived perennial grasses and legumes to establish

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

To stabilize disturbed soils with permanent vegetation.

permanent around cover on disturbed soils.

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: 11/4 to 3 pounds per 1000

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 I to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March I to May I5, August 15 to October 15 (Hardiness Zones: 7a 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 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 (1/4 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings hot seasons, or on adverse sites.

Permanent Seeding Summary

	:			<u> </u>					
Hardiness Zone (from Figure B.3): ZONE 6b Seed Mixture (from Table B.3): 9				Fertilizer Rate (10-20-20)			Lime Rate		
ο.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depth	Ń	P ₂ O ₅	к ₂ 0	Line Rate	
	Cool Season Tall Fiscue & Kuntucky Bluegrass or equal	T.F. 60 lb/ac May 1 to May 15.	1/4-1/2 In	per acre	(2 lb/ (2	(2 lb/			
		K.B. 40 lb/ac	Aug. 15 to Oct. 15.		(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)	

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 '/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

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 t/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.

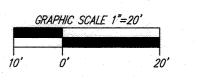
SITE DETAILS AND NOTES NORTH LAUREL PARK LOT 14

BLOCK BETHANCOURT AND GRANT RESIDENCE

9294 DECATUR PLACE PLAT BOOK 61, PLAT 470-471 TAX MAP 50, GRID 3, PARCEL 426 6th ELECTION DISTRICT ZONING: R-SC HOWARD COUNTY, MARYLAND

BOTANICAL NAME COMMOMN NAME | CONDITION | SIZE RFMARKS PLANT 3' APART SHRUB I ILEX GABRA INKBFRRY CONTAINER 12"-24" | PLANT 3' APART SHRUB HAMEMELIS VIRGINIANA WITCH HAZEL CONTAINER PLANT 15" APART, TRIANGULAR GRID PERENNIAL IRIS VERSICOLOR BLUE FLAG SEEDLINGS PLANT 15" APART, TRIANGULAR GRID GERANIUM MACULATUM CRANESBILL PERENNIAL **SEEDLINGS** PERENNIAL SOLIDAGO SPHACELATA | GOLDEN FLEECE PLANT 15" APART, TRIANGULAR GRID SEEDLINGS

PLANTING SCHEDULE - MICRO-BIORETENTION





NJR & ASSOCIATES

TEL: (240) 508-3200

Land Surveying and Planning 2770 STATE ROUTE 32 WEST FRIENDSHIP, MD 21794



HEREBY CERTIFY THAT THESE AM A DULY LICENSED

DOCUMENTS WERE PREPARED OF APPROVED BY ME, AND THAT I PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2019. 06/25/2020

DEVELOPER'S CERTIFICATE CONSERVATION DISTRICT.

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

DEVELOPER CARUSO HOMES 2120 BALDWIN AVENUE, Suite 200 CROFTON, MD 21144 (301) 261-0277 OWNER **EVELYN BETHANCOURT**

6619 23RD AVENUE HYATSVILLE, MD 20782

(301) 785-8836

DATE : JUNE 25, 2018 | SHEET : 2 OF 3 SCALE: 1" = 20'JOB NO.: 3404

SDP-20-001

