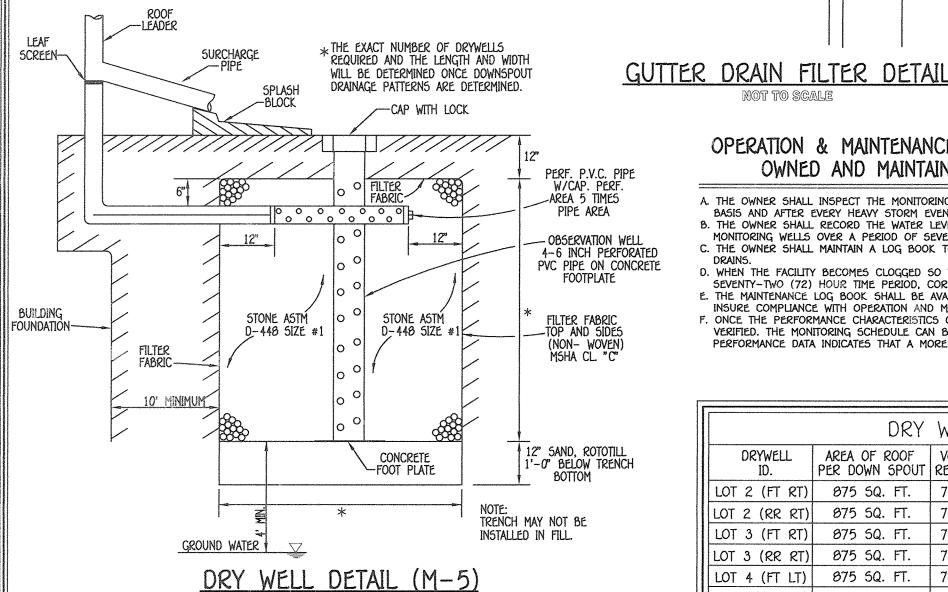
SHEET INDEX										
	SHEET NO.	DESCRIPTION								
1 SUPPLEMENTAL PLAN - TITLE SHEET										
	2	SUPPLEMENTAL PLAN - TOPOGRAPHY, SOILS, STORMWATER MANAGEMENT, LANDSCAPE & FOREST CONSERVATION								
	3	FOREST CONSERVATION & LANDSCAPE DETAILS								
	4	SEDIMENT & EROSION CONTROL NOTES & DETAILS								

	50IL5 LEGEND									
50IL	50IL NAME									
GgB	Glenelg loam, 3 to 8 percent slopes									
GmB	Glenville silt loam, 3 to 8 percent slopes	С	.43							
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes									
Soil Ma	Soil Map Number:									

	<b>STORMWA</b>	ITER MAN	IAGEMENT SUMMARY
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARK5
SITE 4,914		5,662	DRYWELL5 (M-5), MICRO-BIORETENTION (M-6), & NON-ROOFTOP DISCONNECTION (N-2)
TOTAL	4,914	5,662	

GROSS AREA = 11.98 ACRES (EXCLUDES AREA OF LOT 1 NOT WITHIN LOD) LOD = 3.19 ACRESRCN = 65.1TARGET Pe = 1.0"



## SUPPLEMENTAL PLAN - LANDSCAPE, FOREST CONSERVATION & SOILS

# RIZK PROPERTY

LOTS 1 THRU 4

TAX MAP No. 9 GRID No. 09 PARCEL NO. 75 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ADC STREET MAP: MAP28 GRID B8

VICINITY MAP

5CALE: 1" = 1200'

16' USE-IN-COMMON DRIVEWAY

ON-SITE P-1 PAVING SECTION— ENTRANCE

12' (SINGLE USER)

ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL

volume IV, standard specification and details

ON-SITE P-1 PAVING SECTION-

TYPICAL PRIVATE COMMON DRIVE CROSS SLOPE SECTION

12' DISCONNECTION AREA

B.M.#1 - HOWARD COUNTY CONTROL STATION #09DB - HORIZONTAL - NAD '83)

B.M.#2 - HOWARD COUNTY CONTROL STATION #09HA - HORIZONTAL - (NAD '83)

16' DISCONNECTION AREA

5% MAX.

ELEVATION = 609.208 - VERTICAL - (NAVD '88)

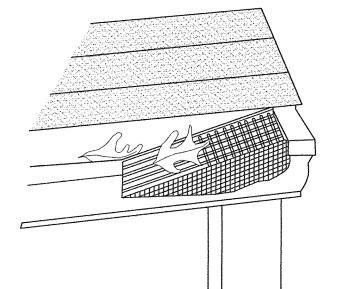
ELEVATION = 604.464 - VERTICAL - (NAVD '88)

BENCHMARK INFORMATION

N 605.072.376

E 1,316,990.470

N 608,263.522



NOT TO SCALE

STORMWATER MANAGEMENT NOTES

. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5. "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010. 2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR 3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE

4. FINAL GRADING IS SHOWN ON THIS PLAN.

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

BASIS AND AFTER EVERY HEAVY STORM EVENT. B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE. C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A

A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY

SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN. e. The maintenance log book shall be available to howard county for inspection to INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA. F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED. THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

	DRY	WELL	CHART				
DRYWELL ID.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W	D
LOT 2 (FT RT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 2 (RR RT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 3 (FT RT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 3 (RR RT)	075 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 4 (FT LT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 4 (FT RT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 4 (RR LT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'
LOT 4 (RR RT)	875 SQ. FT.	70 C.F.	288 C.F.	100%*	12' x	12'	x 5'

\* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

7.23.18

#### Table B.4. 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%		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
Pea gravel diaphragm	pea gravel: ASTM-D-440	No. 8 or No. 9 (1/8" to 3/8")	
Curțain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Grāvel (underdrāins ānd infilfrāțion berms)	AASHTO M-43	No. 57 or No. Aggregate (3/8° to 3/4°)	
Underdrāin piping	F 750, Type PS 20 or AASHTO M-270	4" †o 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" pert. © 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)	M5HA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet A5TM-615-60	n.ā	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved 5tate or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the 5tate 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* †o 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.

FISHER, COLLINS & CARTER, INC.

ELLICOTT CITY, MARYLAND 21042

(410) 461 - 2855

ENGINEERING CONSULTANTS & LAND SURVEYORS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

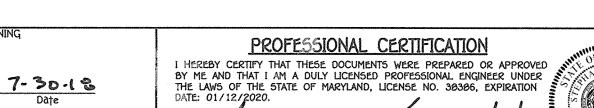
#### OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED. DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

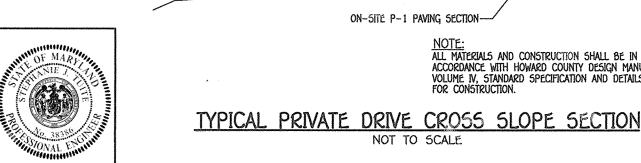
MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

#### OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- A. 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 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. D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A

MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.







- TOTAL AREA OF THIS SUBMISSION = 18.20 AC± (STORMWATER MANAGEMENT IS BASED ON 11.90 AC+ WHICH EXCLUDES THE AREA OF LOT 1 NOT WITHIN THE 100)
- LIMIT OF DISTURBED AREA = 3.19 AC± PRESENT ZONING DESIGNATION = RC-DEO
- (PER 10/06/2013 COMPREHENSIVE ZONING PLAN) PROPOSED USE: RESIDENTIAL PREVIOUS HOWARD COUNTY FILES: HA E CP-17-058, WP-18-114
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 3.72 AC± TOTAL AREA OF STEEP SLOPES: MODERATED STEEP SLOPES: 15%-24.9% = 0.00 AC
- STEEP SLOPES: 25% OR GREATER = 0.00 AC TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 3.57 AC+ (2.29 AC+ WETLANDS) TOTAL AREA OF STREAM (INCLUDING BUFFER) = 1.87 AC
- TOTAL AREA OF EXISTING FOREST = 12.30 AC± (OUTSIDE OF FLOODPLAIN) TOTAL AREA OF FOREST TO BE RETAINED = 6.04 AC (5.36 AC IN EASEMENT)
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 17.75 AC±
- TOTAL GREEN OPEN AREA = 17.28 AC± TOTAL IMPERVIOUS AREA = 0.92 AC+
- TOTAL AREA OF ERODIBLE SOILS = 8.00 AC. ± TOTAL AREA OF ROAD DEDICATION = 0.45 AC. ±

EXISTING 2' CONTOURS -482 PROPOSED CONTOUR EXISTING 10' CONTOURS + 362.5 SPOT ELEVATION SOILS LINES AND TYPE LIMITS OF DISTURBANCE EXISTING TREELINE DRAINAGE AREA DIVIDE ---- SILT FENCE INDIVIDUAL TREES & SHRUBS EXISTING FENCE LINE STABILIZES CONSTRUCTION ENTRANCE EXISTING & PROPOSED PAVING

DESCRIPTION

DESCRIPTION

- SUBJECT PROPERTY ZONED RC-DEO PER 10/06/13 COMPREHENSIVE ZONING PLAN. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 09DB AND NO. 09HA.
- STA. 09DB N 605.072.403 E 1.316.990.473 STA, 09HA N 604,263,528 F 1,318,531,084 FI FV = 604.41
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER. COLLIN5 & CARTER, INC. DATED APRIL 2017. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SUVERY PERFORMED BY FISHER. COLLINS & CARTER, INC. IN APRIL 2017 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
- B.R.L. DENOTES BUILDING RESTRICTION LINE DENOTES IRON PIN SET CAPPED "F.C.C. 106" DENOTES IRON PIPE OR IRON BAR FOUND.
- O DENOTES ANGULAR CHANGE IN BEARING OF BOUNDARY OR RIGHTS-OF-WAY. DENOTES CONCRETE MONUMENT SET WITH ALUMINUM PLATE "F.C.C. 106".
- DENOTES CONCRETE MONUMENT OR STONE FOUND.
- ALL AREAS ARE MORE OR LESS (+).
- 11. DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '03 GRID 12. FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED
- TO THE JUNCTION OF FLAG OR PIPE STEM AND ROAD RIGHT-OF-WAY LINE ONLY AND NOT ONTO THE FLAG OR PIPE STEM LOT DRIVEWAY. 13. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM)
  - A). WIDTH 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
  - B). SURFACE SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING  $(1-1/2^{\circ} MINIMUM);$
- C). GEOMETRY MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS; D). STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING); E). DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT
- DEPTH OVER SURFACE: F). STRUCTURE CLEARANCE - MINIMUM 12 FEET;
- G). MAINTENANCE SUFFICIENT TO ENSURE ALL WEATHER USE. 14. PROPERTY SUBJECT TO PRIOR DEPARTMENT OF PLANNING AND ZONING FILE NO'S: ECP-17-050.
- 15. NO CEMETERIES EXIST ON THE SUBJECT PROPERTY BASED ON VISUAL OBSERVATION OR LISTED IN AVAILABLE HOWARD COUNTY CEMETERY INVENTORY MAP. 16. THERE IS AN EXISTING DWELLING ON LOT 1 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE
- EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION
- 17. SITE IS ADJACENT TO A SCENIC ROAD (UNDERWOOD ROAD).
- 10. THE FOREST CONSERVATION EASEMENT AREAS WITHIN THIS SUBDIVISION HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION ARE ALLOWED. THE FORES CONSERVATION ACT REQUIREMENTS FOR SUBDIVISION WILL BE MET THROUGH THE ON-SITE RETENTION OF (5.36
- AC. CREDITED). NO SURETY IS REQUIRED FOR ON-SITE RETENTION. 19. STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II,
- REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED. THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL
- IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- 21. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT. 22. ALL WELLS HAVE BEEN DRILLED PRIOR TO FINAL PLAT RECORDATION.
- 23. ALL WELLS AND SEPTIC SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH OFFICER SIGNATURE OF THE FINAL PLAT. 24. FOREST STAND DELINEATION AND WETLAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC.
- 25. LANDSCAPING FOR LOT 4 IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN ON FILE WITH THE PLAT. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, FINANCIAL SURETY FOR THE REQUIRED PERIMETER
- LANDSCAPING WILL BE POSTED AS PART OF THE BUILDERS GRADING PERMITS FOR LOTS ANTHE AMOUNT \$9,300.00 BASED ON 22,5HADE TREES \$ \$300.00 EACH AND 18 EVERGREENS \$ \$150.00 EACH.
  LOT 1 IS EXEMPT FROM THE PERIMETER LANDSCAPE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD
- COUNTY CODE AND THE LANDSCAPE MANUAL BECAUSE IT CONTAINS AN EXISTING DWELLING TO REMAIN. 27. OPEN SPACE REQUIREMENTS ARE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$4,500.00. 26. A COMMUNITY MEETING WAS CONDUCTED JANUARY 12, 2017 FOR THE PURPOSE OF THE DEVELOPER TO PROVIDE INFORMATION TO THE COMMUNITY REGARDING THE PROPOSED RESIDENTIAL DEVELOPMENT AND TO
- ALLOW THE COMMUNITY TO ASK QUESTIONS AND TO MAKE COMMENTS, PER SECTION 16.120(D) OF THE SUBDIVISION REGULATIONS. 29. A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT. 30. SUBDIVISION IS SUBJECT TO SECTION 104.0.F. OF THE ZONING REGULATIONS. AT LEAST 10% OF THE DWELLING
- UNITS SHALL BE MODERATE INCOME HOUSING UNITS (M.I.H.U.) OR AN ALTERNATIVE COMPLIANCE WILL BE PROVIDED. THE DEVELOPER SHALL EXECUTE A M.I.H.U. AGREEMENT WITH THE DEPARTMENT OF HOUSING TO INDICATE HOW THE M.I.H.U. REQUIREMENT WILL BE MET. THE M.I.H.U. AGREEMENT AND COVENANTS WILL BE RECORDED SIMULTANEOUSLY WITH THIS PLAT IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MARYLAND. THIS DEVELOPMENT WILL MEET M.I.H.U. ALTERNATIVE COMPLIANCE BY A PAYMENT OF A FEE-IN-LIEU TO THE DEPARTMENT OF HOUSING FOR EACH REQUIRED UNIT.
- MODERATE INCOME HOUSING UNIT (M.I.H.U.) TABULATION: A. M.I.H.U. REQUIRED = (3 LOT5 X 10%) = 0.3 M.I.H.U.B. M.I.H.U. PROPOSED = DEVELOPER WILL PURSUE ALTERNATIVE COMPLIANCE BY PAYING A FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR THE UNITS REQUIRED BY THE DEVELOPMENT. C. AN EXECUTED M.I.H.U. AGREEMENT WITH THE HOWARD COUNTY HOUSING DEPARTMENT. HAS BEEN
- COMPLETED AND RECORDED SIMULTANEOUSLY WITH THIS PLAT. 31. THE PRIVATE USE-IN-COMMON, ACCESS, DRAINAGE & UTILITY EASEMENT FOR THE USE AND BENEFIT OF LOTS 1 THRU 4 AND MAINTENANCE AGREEMENT IS RECORDED SIMULTANEOUSLY WITH THE PLAT.
- 32. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- 33. NO NOISE STUDY IS REQUIRED BECAUSE THE PROJECT DOES NOT FALL WITHIN THE GUIDELINES OF DESIGN
- MANUAL, VOLUME III, ROADS, BRIDGES, SECTION 5.2.F.2. 34. AN M.I.H.U. AGREEMENT AND DECLARATION OF COVENANTS ARE RECORDED SIMULTANEOUSLY WITH THE PLAT. 35. NO HISTORIC STRUCTURES EXIST WITHIN THE LIMITS OF THIS PLAT SUBMISSION.
- 36. THE PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE 10/06/13 COMPREHENSIVE ZONING PLAN. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE
- TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN. WAIVER PETITION APPLICATION, OR BUILDING/GRADING 37. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED
- WITHIN THE LIMITS OF WETLANDS, STREAM(5), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS. 36. THIS PLAT IS SUBJECT TO WP-10-114 WHICH ON JUNE 13, 2010 THE PLANNING DIRECTOR APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.1205(A)(7) TO ALLOW REMOVAL OF THE SEVEN
- (7) TREES 30" IN DIAMETER OR LARGER, AND SECTION 16.120(B)(4)(III)(B) TO ALLOW FLOODPLAINS, WETLANDS, STREAMS, THEIR BUFFERS, AND FOREST CONSERVATION EASEMENTS FOR AFFORESTATION, REFORESTATION, OR RETENTION BE PERMITTED ON LOTS LESS THAN 10 ACRES IN SIZE. APPROVAL IS SUBJECT TO THE FOLLOWING 1. REMOVAL OF THE SEVEN (7) SPECIMEN TREES WILL REQUIRE REPLACEMENT MITIGATION AT A RATIO OF TWO
- (2) LARGER CALIPER NATIVE TREE SPECIES (AT LEAST THREE (3) INCHES DBH) FOR EACH SPECIMEN TREE REMOVED (14 TREES TOTAL). THE MITIGATION PLANTING CAN BE PROVIDED AS PART OF THE REQUIRED PERIMETER LANDSCAPING FOR THIS PROJECT. YOU MUST SUBMIT A SUPPLEMENTAL PLAN WITH YOUR FINAL SUBDIVISION PLAN FOR THIS PROPERTY THAT SHOWS HOW YOU PLAN TO ADDRESS THIS ALTERNATIVE FOREST CONSERVATION/LANDSCAPE MITIGATION.
- 2. SPECIMEN TREES 4, 5, 0, 9, 11 AND 30 MUST BE PROTECTED DURING CONSTRUCTION. A REGISTERED ARBORIST MUST INSPECT THE TREES AND IMPLEMENT RECOMMENDATIONS FOR PROFESSIONAL PRUNING OF ROOTS AND FOLIAGE. ALL PRUNING MUST BE PERFORMED BY A MARYLAND LICENSED TREE EXPERT. TREE PROTECTION FENCING MUST BE INSTALLED AROUND THE ENTIRE PERIMETER OF EACH SPECIMEN TREE TO THE GREATEST EXTENT POSSIBLE TO PREVENT ROOT AND FOLIAGE DAMAGE DURING CONSTRUCTION. ALTERNATIVE
- 3. THE PROPOSED DRIVEWAY TO SERVE NEW LOTS 2 THROUGH 4 SHALL COMPLY WITH SECTION 16.120(B)(6)(VI) OF THE HOWARD COUNTY SUBDIVISION REGULATIONS. PER SECTION 16.120(B)(6)(VI), "THE DRIVEWAYS FOR PIPESTEM LOTS SHALL BE LOCATED AT LEAST TEN FEET FROM THE PROJECT BOUNDARY TO PROVIDE SPACE FOR REQUIRED PERIMETER LANDSCAPING TO BUFFER THE ADJACENT PROPERTY. WHERE A TEN-FOOT BUFFER IS NOT POSSIBLE DUE TO THE EXISTING PARCEL'S CONFIGURATION, DRAINAGE, OR EASEMENT CONSTRAINTS, OR IS UNDESIRABLE BECAUSE FUTURE SUBDIVISION OF THE ADJOINING PARCEL MAY REQUIRE SHARING THE USE-IN-COMMON DRIVEWAY UNDER SUBSECTION (C)(2)(IV) OF THIS SECTION, THE DEPARTMENT OF PLANNING

DESIGNS OF THE SITE MUST BE CONDUCTED BY THE CONSULTANT IN ORDER TO MINIMIZE ROOT DAMAGE.

- AND ZONING MAY APPROVE A FIVE-FOOT DRIVEWAY BUFFER. IN SUCH INSTANCES, A HEDGE, SOLID FENCE, WALL, OR TYPE D LANDSCAPE EDGE IS REQUIRED, EXCEPT IN THE FRONT SETBACK FROM A PUBLIC ROAD, WHERE A SOLID SCREEN WOULD BLOCK SIGHT DISTANCE. 4. THERE SHALL BE NO DISTURBANCE WITHIN ANY FLOODPLAINS, WETLANDS, STREAMS, THEIR BUFFERS, AND FOREST CONSERVATION EASEMENTS FOR AFFORESTATION, REFORESTATION, OR RETENTION.
- 5. THE FUTURE HOUSES ON LOTS 2, 3 AND 4 SHALL MAINTAIN A 100-FOOT DISTANCE FROM THE FOREST CONSERVATION EASEMENTS TO AVOID ENCROACHMENTS AND TO ALLOW A USEABLE YARD.

TITLE SHEET

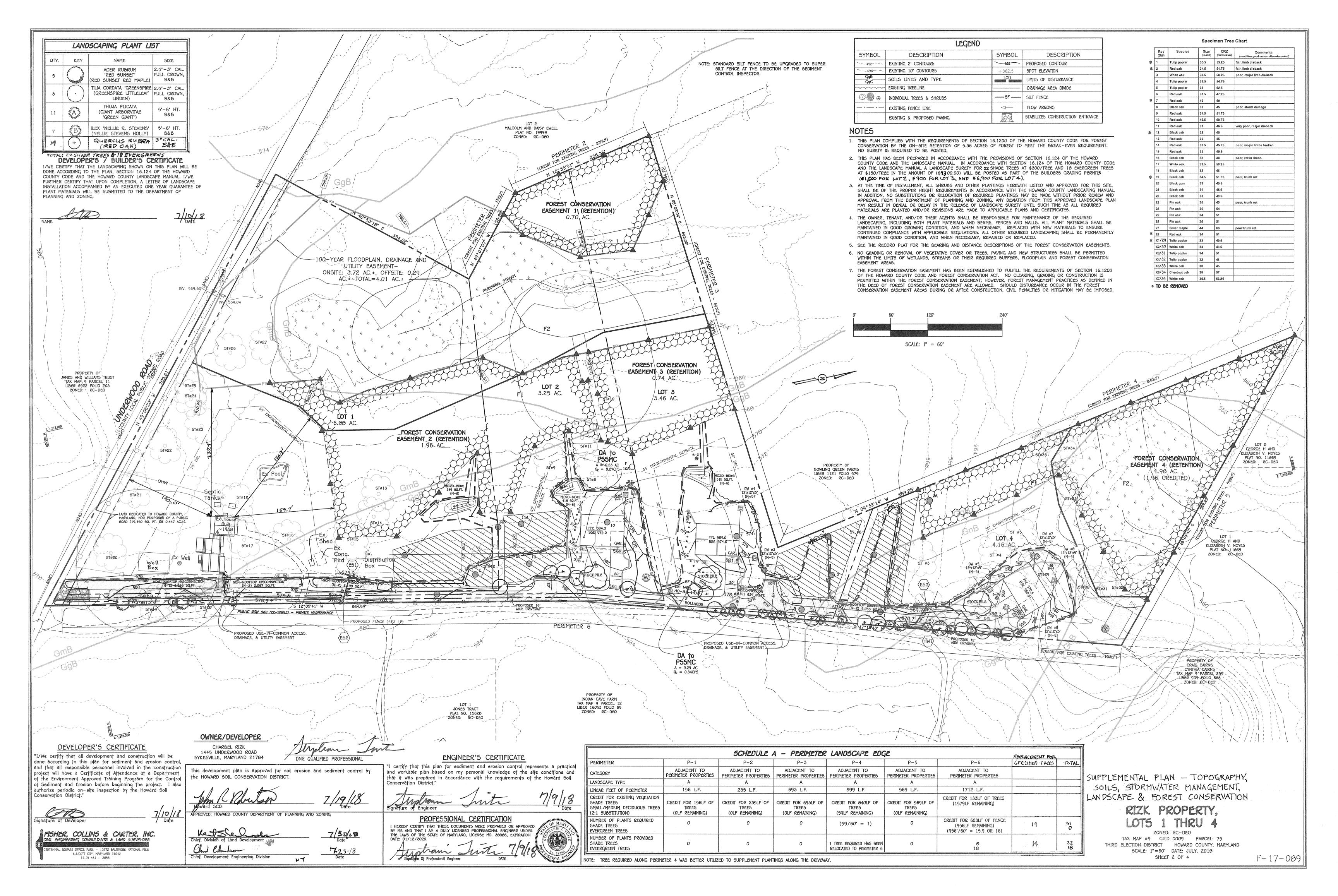
## RIZK PROPERTY.

TAX MAP #9 GRID 0009 PARCEL: 75 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: 1"=40' DATE: JULY, 2018

SHEET 1 OF 4 F - 17 - 089

OWNER/DEVELOPER CHARBEL RIZK

ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION. 1445 UNDERWOOD ROAD SYKESVILLE, MARYLAND 21784



#### PLANTING / SOIL SPECIFICATIONS

- 1. Planting Of Nursery Stock Shall Take Place Between March 15th And April 30th Or September 15th And November 15th.
- 2. A Twelve (12) Inch Layer Of Topsoil Shall Be Spread Over All Reforestation Areas Impacted By Site Grading To Assure A Suitable Planting Area, If Applicable. Disturbed Areas Shall Be Seeded And Stabilized In Accordance With The Sediment & Erosion Control Plan For This Project. Planting Areas Not Impacted By Site Grading Shall Have No Additional Topsoil Installed.
- 3. All Bare Rood Planting Stock Shall Have Their Root System Dipped Into An Anti-Desiccant Gel Prior To Planting.
- 4. Plants Shall Be installed So That The Top Of The Root Mass is Level With The Top Of Existing Grade. BackFill In The Planting Pits Shall Consist of 3 Parts Existing Soil to 1 Part Pine Fines Or Equivalent.
- 5. Fertilizer Shall Consist Of Agriform 22—8—2, Or Equivalent, Applied As Per Manufacturer's Specifications.
- 6. A Two (2) Inch Layer Of Hardwood Mulch Shall Be Placed Over The Root Area Of All Plantings. See Planting Detail.
- 7. Plant Material Shall Be Transported To The Site In A Tarped Or Covered Truck. Plants Shall Be Kept Moist Prior To Planting.
- 8. All Non-Organic Debris Associated With The Planting Operation Shall Be Removed From The Site By The Contractor.

#### MAINTENANCE OF PLANTINGS

- 1. Maintenance Of Plantings Shall Last For A Period Of 26 Months.
- 2. All Plant Material Shall Be Generally Watered Twice A Month During The 1st Growing Season. Watering May Be More Or Less Frequent Depending On Weather Conditions.
- 3. During The 2nd Growing Season, Plant Material Shall Be Watered Once A Month From May To September, As Needed.
- 4. Invasive Exotics And Noxious Weeds Shall Be Removed From The Reforestation Area(s). Old Field Successional Species Shall Be
- 5. Plants Shall Be Examined A Minimum Of Two (2) Times During The Growing Season For Serious Plant Pests And Diseases With The Appropriate Agent.
- 6. Dead Branched Shall Be Pruned From The Plantings.

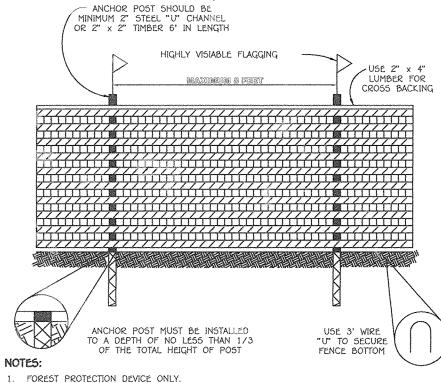
#### GUARANTEE REQUIREMENTS

A 75% Survival Rate For The Reforestation Plantings Is Required At The End Of The 24 Month Maintenance Period. All Plant Material Below The 75% Threshold Is Required To Be Replaced At The Beginning Of The Next Growing Season.

#### MULTIFLORA ROSE CONTROL NOTE:

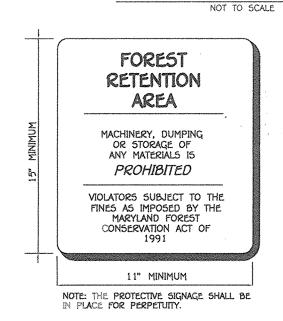
PRIOR TO PLANTING ALL MULTIFLORA ROSE WITHIN PLANTING AREAS SHALL BE REMOVED. Removal Of The Multiflora Rose May Be Performed With Mowing And Herbicide Treatments. Physical Removal Of All Top Growth Followed By A Periodic Herbicide Treatment Of Stump Sprouts Is Recommended. Native Tree And Shrub Species Occurring Within The Rose Thickets Should Be Retained Wherever Possible. Herbicide Treatments Shall Occur On Two (2) Month Intervals During The First Growing Seaseon And Once In The Spring And Once in the Fall For Subsequent Years. Herbicide Used Shall Be Made Specifically To Address Woody Plant Material And Shall Be Applied As Per Manufacturers Specifications. Care Should Be Taken Not To Spray Planted Trees Or Naturally Occurring Native Tree And Shrub Seedlings. It is Recommended That Initiation Of Rose Removal Begin At Least Six Months Prior To Planting 50 That New Growth OF Roses Is Able To Be More Successfully Managed.

### BLAZE ORANGE PLASTIC MESH



RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. PROTECTIVE SIGNAGE MAY ALSO BE USED . DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

#### TREE PROTECTION DETAIL



FOREST CONSERVATION SIGN DETAIL

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS ARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042

(410) 461 - 2855

## APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 7/30/18 Date 17.23.18

### PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30306, EXPIRATION

#### FOREST PROTECTION GENERAL NOTES

- 1. ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING, AS NECESSARY, AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- 2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES, UNLESS ROOT PRUNING IS PROPOSED.
- 3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- 4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- 5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- 6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- 7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE
- 8. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
- 9. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

#### PRE-CONSTRUCTION MEETING

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
- A. TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS; B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
- . MAKE ALL NECESSARY ADJUSTMENTS; D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

#### CONSTRUCTION MONITORING

- 1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB
- INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. 2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
- 3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

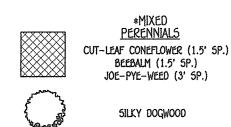
#### FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	18.20
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	3.72
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	14.48
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	1
E. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 20%)	2.90
F. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 25%)	3.62
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	12.30
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	9.4
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	Ø.6s
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	5.36
Breakeven point	5.36
K. Clearing Permitted without mitigation	6.94
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE RETAINED	5.36
M. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	6.94
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	1.74
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	1.74
R. TOTAL REFORESTATION REQUIRED	0
5. TOTAL AFFORESTATION REQUIRED	0
T. TOTAL PLANTING REQUIREMENT	0

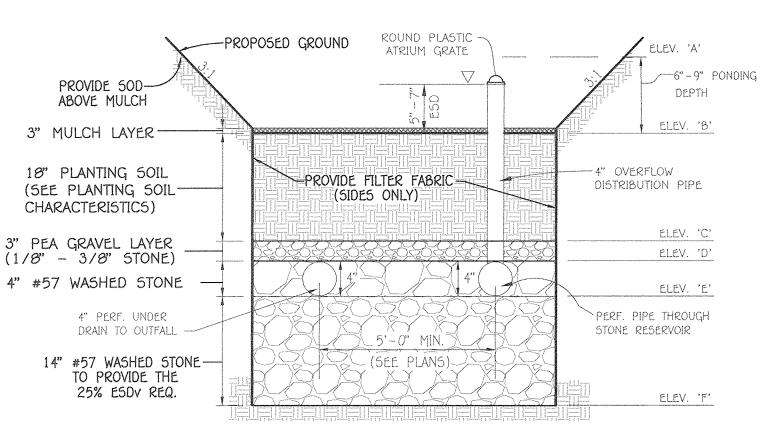
	RETENTION INSIDE	TOTAL				
EASEMENT	NO. AREA (	RETENTION CREDITED)	TOTAL RETENTION AREA (NON-CREDITED)	RETENTION OUTSIDE FLOODPLAIN	FLOODPLAIN	EASEMENT
1		O AC.	0.00 AC.	0.70 AC.	0.00 AC.	0.70 AC.
2	1.9	6 AC.	0.00 AC.	1.96 AC.	0.00 AC.	1.96 AC.
3	0.7	4 AC.	0.00 AC.	0.74 AC.	0.00 AC.	0.74 AC.
4	1.90	5 AC.	0.02 AC.	1.98 AC.	0.00 AC.	1.98 AC.
TOTAL	5.3	6 AC.	0.02 AC.	5.38 AC.	0.00 AC.	5.30 AC.

MICRO-BIORETENTION PLANT MATERIAL MICRO-BIO 2 | MICRO-BIO 3 MICRO-BIO 1 NAME QUANTITY QUANTITY QUANTITY SPACING (FT.) MIXED PERENNIALS 1.5 TO 3.0 FT. 5ILKY DOGWOOD

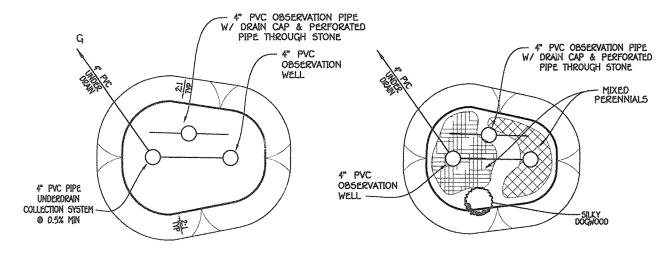
MICRO-BIORETENTION									
BIO-RETENTION FILTER	Α	В	С	D	E	F	G		
#1	573.50	573.00	571.50	571.25	570.92	569.75	570.00		
#2	572.00	571.25	569.75	569.42	569.09	567.92	568.50		
#3	571.75	571.00	569.50	569.25	568.92	567.75	568.40		



\* SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION



#### MICRO BIO-RETENTION SECTION WITH 6" OVERFLOW DISTRIBUTION PIPE



MICRO BIO-RETENTION PLANTING DETAIL NOT TO SCALE

#### (E51 (E53) (HW1 (E52) 580 10YR W5EL 578.13 -- 100YR 10YR W5EL W5EL 577.07 577.03 *570* @ 2.0% @ 1.51% 575 $Q_{10} = 5.63$ CFS $Q_{10} = 6.31$ CF5 $V_{10} = 5.40$ FPS ₹ Q<sub>100</sub>=8.53 CFS Q<sub>100</sub>=9.57 CFS 2 V<sub>100</sub>=6.37 FP5 2 9 565 565 CULVERT 1 PROFILE

-WIRE TIE

-TURNBUCKLE

RUBBER HOSE

-WRAPPING

-BERM

-MULCH

TWICE BALL

NOTE: REMOVE BURLAP FROM

TOP 1/3 OF BALL

TREE PLANTING

2 x 4 STAKE

(E5-1 to E5-2)SCALE HORZ. 1" = 30"VERT. 1" = 3"

TURNBUCKLE

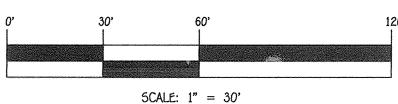
1'-0" HIGH 2-1/2" CALIPER-

STAKING DETAIL

GRADING FOR PLANTING

ON SLOPES

CULVERT 2 PROFILE (E5-3 to HW-1)SCALE HORZ. 1" = 30"VERT. 1" = 3"



FOREST CONSERVATION & LANDSCAPE DETAILS

RIZK PROPERTY

OWNER/DEVELOPER

CHARBEL RIZK

1445 UNDERWOOD ROAD

SYKESVILLE, MARYLAND 21784

ZONED: RC-DEO TAX MAP #9 GRID 0009 PARCEL: 75 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: JULY, 2018 SHEET 3 OF 4

F-17-089

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

#### 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:

Soil pH between 6.0 and 7.0. Soluble salts less than 500 parts per million (ppm).

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent sitt 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 condițions will not permit normal seedbed preparațion. Track slopes 3:1 or flațter 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.

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS

3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or turnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.

4. Areas having slopes steeper than 2:1 require special consideration and design.

5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may b used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter. b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 0 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)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses. 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by

appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all he 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 90 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means. 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

#### B-4-3 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 grading.

A. Seeding
1. Specifications

a. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of

seed and seeding rate. b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws. c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as

cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less

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.

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with weighted roller to provide good seed to soil contact. b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P 0 (phosphorus), 200 pounds per acre; K 0 (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 hydroted lime when hydroseeding. iii. Mix seed and fertilizer on site and seed immediately and without interruption.

iv. When hydroseeding do not incorporate seed into the soil. B. Mulching Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty.

Note: Use only sterile straw mulch in areas where one species of grass is desired. b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physica . WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate risual inspection of the uniformly spread slurry.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors. iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter—like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the

iv. WCFM material must not contain elements or compounds at concentration levels that will by phyto-toxic. v. WCFM must conform to the following physical requirements; fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of

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 to a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard: i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a

minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour. ii. Wood cellulose fiber may be used for anchoring straw, Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

TEMPORARY SEEDING NOTES (B-4-4)

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.

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season. Temporary Seeding Summary

ardiness Zon eed Mixture	e (from Figure B. (from Table B.1):	3): <u>6b</u>		Fertilizer Rate (10-20-20)	Lime Rațe
5pecies	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
BARLEY	96	3/1 • 5/15.	₫"	436 lb/ac	2 tons/a
oats	72	8/15 - 10/15	₹j a	(10 lb/ 1000 sf)	(90 lb/ 1000 sf)
RYE	112		<b>1</b> "		

#### PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures 1. General Use

Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan. b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bjuegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended. iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For

establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a. 7b)

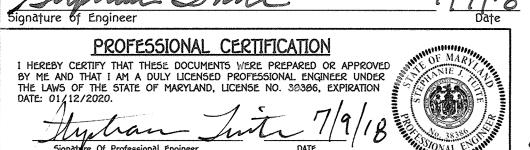
d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter The resulting seedbed must be in such condition that future moving of grasses will pose no difficulty. 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.

Permanent Seeding Summary

Hard Seed	iness Zone Mixture (	e (from Figure B. (from Table B.3):	3): <u>6b</u>	Fertiliz	Lime Rate			
No.	Species	Application Rate (lb/ac)	Seeding Dațes	Seeding Depths	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> 0	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. per dcre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 †ons/ac (90 lb/ 1000 sf)
					,			

#### ENGINEER'S CERTIFICATE

certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."



DEVELOPER'S CERTIFICATE 7/9/18 "I/We certify that all development and construction will be done according to this plan for sediment and erosion control done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

a. Class of turgrass 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 to 4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement for thickness must exclude top

growth and thatch. Broken pads and torn or uneven ends will not be acceptable. .. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

Sod must not be harvested or transplanted when moisture content (excessively dry of 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.

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. 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

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.

#### B-4-0 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and

Conditions Where Practice Applies Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

changes to drainage patterns.

material must be covered with impermeable sheeting.

inches. Water sod during the heat of the day to prevent wilting.

Criteria . The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan. 2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading. 3. Runoff from the stockpile area must drain to a suitable sediment control practice.

4. Access the stockpile area from the upgrade side. 5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner. 6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge 7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard 8-4-1 Incremental Stabilization and Standard 8-4-4 8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated

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.

### HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTIROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 40 hour notice to CID must be given at the following stages:

b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
c. Prior to the start of another phase of construction or opening of another grading unit.

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 thereto. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter

controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-0) in excess of 20 ft. must be benched with stable outlet. All

concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6). 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

6. Site Analysis: Total Area of Site: Area Disturbed: \_ 3.19 Area to be roofed or paved: Area to be vegetatively stabilized:

Offsite waste/borrow area location: N/A Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance. 8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

Inspection date Inspection type (routine, pre-storm event, during rain event) Name and title of inspector

Weather information (current conditions as well as time and amount of last recorded precipitation) Brief description of project's status (e.g., percent complete) and/or current activities Evidence of sediment discharges

Identification of sediment controls that require maintenance dentification of missing or improperly installed sediment controls Compliance status regarding the sequence of construction and stabilization requirements

Identification of plan deficiencies

Photographs Monitoring/sampling Maintenance and/or corrective action performed Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE). 9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday,

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of H5CD-approved field changes.

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

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade. . All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation. 15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

Use I and IP March 1 - June 15 Use IV March 1 - May 31 16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and

SEQUENCE OF CONSTRUCTION OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. (2

NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777.

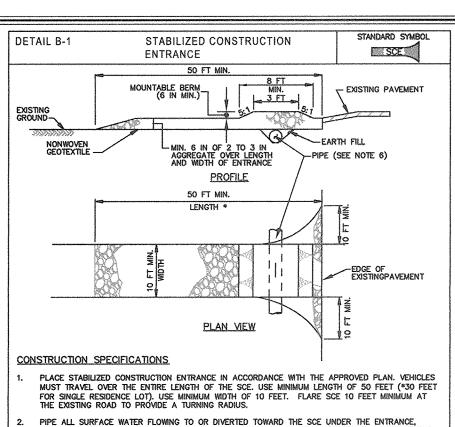
NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/ INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND SUPER SILT FENCE. (1 DAY) REMOVE NECESSARY TREES AND INSTALL TWO CULVERT PIPES WITH ASSOCIATED END SECTIONS AND HEADWALL WITH ASSOCIATED GRADING AND SOD AT INLET AREA TO HW1 PRIOR TO ROUGH GRADING THE SITE, SO THEY CAN DIVERT OFF-SITE CLEANWATER AWAY FROM CONSTRUCTION. UPON COMPLETION OF CULVERT INSTALLATION, ROUGH GRADE COMMON DRIVEWAY ALONG WITH SWALES ALONG DRIVEWAY AND

TEMPORARY AND/OR PERMANENTLY SEED WHERE NECESSARY. (1 WEEK) ROUGH GRADE LOTS AND INSTALL INDIVIDUAL DRIVEWAYS, (3 DAYS PER LOT) INSTALL TEMPORARY SEEDING AND PERMANENT SOIL STABILIZATION MATTING WHERE NECESSARY. (1 DAY CONSTRUCT HOUSES, CONSTRUCT DRIVEWAYS, AND INSTALL SEPTIC SYSTEMS. (6 MONTHS PER LOT)

INSTALL ROOF LEADERS & DRYWELLS UPON CONSTRUCTION OF HOUSES. FINE GRADE SITE. (1 WEEK INSTALL PERMANENT SEEDING WITH CONSTRUCTION ON EACH LOT. (1 DAY PER LOT) UPON COMPLETION OF GRADING, INSTALL MICRO-BIORETENTION ON LOTS 1, 2, & 3. (1 WEEK PER LOT) ALL FINAL GRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS.

THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES MAY BE NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE EACH RAINFALL AND ON A

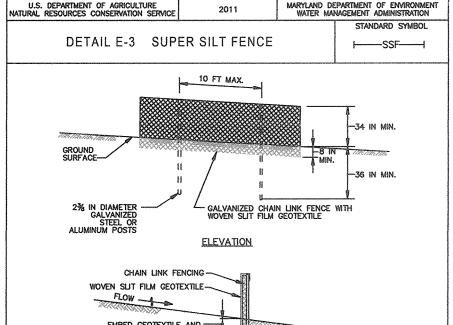
WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH



PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE. AS SPECIFIED IN SECTION H-1 MATERIALS PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL



CONSTRUCTION SPECIFICATIONS INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOC LENGTH 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. . FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

CROSS SECTION

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. 5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

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 GEOTEXTILE.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

OWNER/DEVELOPER

CHARBEL RIZK

1445 UNDERWOOD ROAD

SYKESVILLE, MARYLAND 21784

- <sup>L</sup>8 in Min. Depth Into Ground ELEVATION WOVEN SLIT FILM-CROSS SECTION STEP 1 STAPLE-TWIST POSTS TOGETHER STAPLE-STAPLE -------STAPLE STEP 3 FINAL CONFIGURATION W STAPLE-JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW) CONSTRUCTION SPECIFICATIONS USE WOOD POSTS  $1\frac{1}{4}$  X  $1\frac{1}{4}$   $\pm$   $\frac{1}{4}$ 6 Inch (Minimum) square cut of sound quality hardwood. As an alternative to wooden post use standard "t" or "u" section steel posts weighing not less NATIVE TO WOODEN POST US I POUND PER LINEAR FOOT. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION

SILT FENCE

6 FT MAX. CENTER TO CENTER

DETAIL E-1

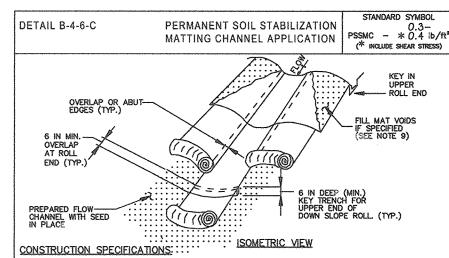
STANDARD SYMBOL

-----SF------

\_\_36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011



USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN, IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 222 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.

PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.

KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.

ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE
JATURAL RESOURCES CONSERVATION SERVICE
2011 MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

SHEAR STRESS FOR PSSMC (LOT 2) = 62.4 LBS/FT $^3$  x 0.1 FT x 0.06 = 0.4 LBS/FT $^2$  SHEAR STRESS FOR PSSMC (LOT 3) = 62.4 LBS/FT $^3$  x 0.1 FT x 0.05 = 0.3 LBS/FT $^2$ 

ONLY THE OWNERS SHOWN HEREON MAY USE THESE PLANS TO OBTAIN BUILDING AND GRADING PERMITS.

SEDIMENT & EROSION CONTROL NOTES & DETAILS

RIZK PROPERTY.

ZONED: RC-DEO TAX MAP #9 GRID 0009 PARCEL: 75 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: NOT TO SCALE DATE: JULY, 2018

SHEET 4 OF 4

F - 17 - 089

FISHER. COLLINS & CARTER. INC. IL ENGINEERING CONSULTANTS & LAND SURVEYORS DUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIK ELLICOTT CITY, MARYLAND 21042

(410) 461 - 2855

the HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

7/30/18 7.23.18

This development plan is approved for soil erosion and sediment control by

of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."