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

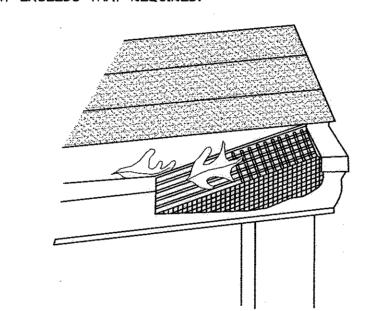
	STORMWA	ITER MAN	AGEMENT SUMMARY
AREA ID.	E5DV REQUIRED CU.FT.	E5Dv PROVIDED CU.FT.	REMARK5
SITE	3,976	3,970	DRYWELLS (M-5), MICRO-BIORETENTION (M-6), & NON-ROOFTOP DISCONNECTION (N-2)
TOTAL.	3,076	3,970	

GRO55 AREA = 17.16 ACRES SITE AREA / LOD = 4.05 ACRES RCN = 56.4TARGET Pe = 1.2"

TO ENSURE TRENCH DRAINAGE.

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	· U	RY WE	LL CHA	ARI	
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	LWD
LOT 1 (DW1)	872 5Q. FT.	83 C.F.	200 C.F.	100%*	10' x 10' x 5'
LOT 1 (DW2)	619 5Q. FT.	59 C.F.	162 C.F.	100%*	9' x 9' x 5'
LOT 1 (DW3)	619 5Q. FT.	59 C.F.	162 C.F.	100%*	9' x 9' x 5'
LOT 1 (DW4)	366 5Q. FT.	35 C.F.	120 C.F.	100%*	8' x 8' x 5'
LOT 2 (DW5)	872 5Q. FT.	93 C.F.	200 C.F.	100%*	10' x 10' x 5'
LOT 2 (DW6)	619 5Q. FT.	59 C.F.	162 C.F.	100%*	9' x 9' x 5'
LOT 2 (DW7)	619 5Q. FT.	59 C.F.	162 C.F.	100%*	9' x 9' x 5'
LOT 2 (DW8)	366 5Q. FT.	35 C.F.	128 C.F.	100%*	8' x 8' x 5'
LOT 4 (DW9)	672 5Q. FT.	83 C.F.	200 C.F.	100%*	10' x 10' x 5'
LOT 4 (DW10)	619 5Q. FT.	59 C.F.	162 C.F.	100%*	9' x 9' x 5'
LOT 4 (DW11)	985 5Q. FT.	94 C.F.	200 C.F.	100%*	10' x 10' x 5'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.



GUTTER DRAIN FILTER DETAIL NOT TO SCALE

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

C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD. CORRECTIVE E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND

*THE EXACT NUMBER OF DRYWELLS REQUIRED AND THE LENGTH AND WIDTH

WILL BE DETERMINED ONCE DOWNSPOUT DRAINAGE PATTERNS ARE DETERMINED.

4-6 INCH PERFORATED

12" SAND, ROTOTILL 1'-0" BELOW TRENCH BOTTOM

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.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY

OWNED AND MAINTAINED DRY WELLS (M-5)

DRY WELL DETAIL (M-5)

Table	B.4.	Materials	Specifications	for	Micro-Bioretention,	Rain	Gardens	&	Landscape Infilt	ration

idble b.4. Materials	specifications for M	icro-bioretention, i	kain Gardens & Landscape infiltration
Material	Specification	Size	Notes
Plantings Planting soil	see Appendix A; Table A.4 loamy sand 60-65%	n/a	plantings are site-specific USDA soil types loamy sand or sandy loam; clay content <5%
[2' to 4' deep]	compost 35-40% or sandy loam 30% coarse sand 30% compost 40%		
Organic Content	Min. 10% by dry weight (ASTM D 2974)	-	
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: A5TM-D-440	No. 0 or No. 9 (1/8 to 3/8)	
Curtain drain	ornamental stone: washed cobbles ·	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AA5HTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Type P5 20 or AA5HTO M-270	4" to 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 equired)	MSHA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n.ā	on-site testing of poured-in-place concrete required: 20 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland — design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-201; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
and	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

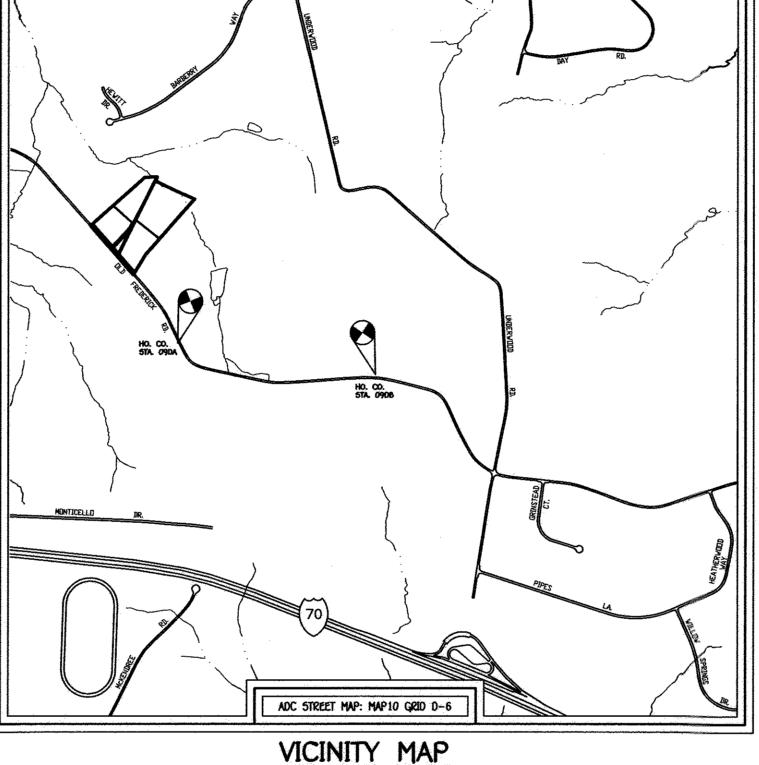
STORMWATER MANAGEMENT NOTES

- 1. 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 LESS. 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 WITH

THE DETAIL SHOWN ON THIS SHEET. 4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.



SUPPLEMENTAL PLAN - LANDSCAPE,

FOREST CONSERVATION & SOILS

TAX MAP No. 9 GRID No. 7 PARCEL Nos. 117

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FIVE HILLS FARM

LOTS 1 THRU 4

BENCHMARK INFORMATION B.M.# 09DA- HOWARD COUNTY CONTROL STATION #09AD - HORIZONTAL - NAD '83) N 605.464.885 E 1.314.516.990 ELEVATION = 570.832 - VERTICAL - (NAVD '88) B.M.# 09DB - HOWARD COUNTY CONTROL STATION #09DB - HORIZONTAL - (NAD '83) N 605,072.376 ELEVATION = 609.208 - VERTICAL - (NAVD '88)

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 17.16 AC. ±. LIMIT OF DISTURBED AREA = 4.05 Ac. * PRESENT ZONING DESIGNATION = RC-DEO
- PROPOSED USE: RESIDENTIAL PREVIOUS HOWARD COUNTY FILES: ECP-16-023; WP-16-109. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE = 0.37 AC± TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.05 AC (0.70 AC+

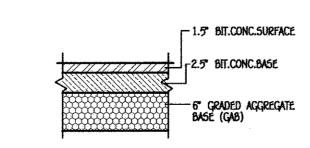
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)

- 15% TO 25%, 0.07 AC+ 25% OR GREATER) TOTAL AREA OF WETLANDS (INCLUDING BUFFER, LOCATED OUTSIDE OF THE FLOODPLAIN) = 1.00 AC. ±
- TOTAL AREA OF STREAM (INCLUDING BUFFER, LOCATED OUTSIDE OF THE FLOODPLAIN) = 1.26 AC.+
- TOTAL AREA OF EXISTING FOREST = 7.2 AC+ (EXCLUDES K. TOTAL AREA OF FOREST TO BE RETAINED = 2.69 AC+
- TOTAL GREEN OPEN AREA = 16.42 AC± TOTAL IMPERVIOUS AREA = 0.74 AC± TOTAL AREA OF ERODIBLE SOILS = 2.34 AC. ±

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. B. 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.
- C. 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 D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER

MONTH AND AFTER EACH HEAVY STORM.



P-1 DRIVEWAY PAVING SECTION

	LEGEND							
SYMBOL	DESCRIPTION	5YMBOL	DESCRIPTION					
492	EXISTING 2' CONTOURS	-462-	PROPOSED CONTOUR					
-490	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION					
GLB2 MLC2	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE					
~~~~	EXISTING TREELINE	~~~~	PROPOSED TREELINE					
	15% TO 24.9% STEEP SLOPES (ERODIBLE SOILS)		EXISTING & PROPOSED PAVING					
	25% AND GREATER STEEP SLOPES (ERODIBLE SOILS)	O5033	BORING (PERC) TEST HOLE					
	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	5F	SILT FENCE					
* * *	WETLAND AREA	ECM	EROSION CONTROL MATTING					
WB	25' WETLAND BUFFER	S5F	SUPER SILT FENCE					
— SB ——	STREAM BANK BUFFER	風	STABILIZES CONSTRUCTION ENTRANCE					
	100 YEAR FLOODPLAIN LINE		DRAINAGE AREA DIVIDE					
	LIMIT OF EXISTING WETLANDS	—-тР ——	TREE PROTECTION					
	existing centerline of stream	€5T1	SPECIMEN TREE					
HH	FOREST CONSERVATION EASEMENT (RETENTION)	+ + +	FOREST CONSERVATION EASEMENT (REFORESTATION					
/////	NON-CREDITED FOREST CONSERVATION EASEMENT (RETENTION)		FOREST CONSERVATION SIGNAGE					

- 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 57A 090A N 605,464,805, E 1,314,516.940,
  57A 090B N 605,072,376, E 1,316,990,470, ELEV.= 570.832 ELEV.= 609.208
- THIS PLAT IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT AUGUST, 2015 BY COLLINS AND CARTER, INC.
- . 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".
- P DENOTES CONCRETE MONUMENT OR STONE FOUND.
- DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '83 GRID MEASUREMENT 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.
- driveways shall be provided prior to issuance of a use and occupancy permit for any new dwellings to ensure safe ICCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS A). WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
  - . SURFACE 5IX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1 ~1/2" MINIMUM), C). GEOMETRY — MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45—FOOT TURNING RADIUS; 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.

  Property subject to prior department of Planning and Zoning file no's: ecp—16—023, wp—16—109.
- 14. NO CEMETERIES OR GRAVE SITES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND BASED ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
- MODERATE INCOME HOUSING UNITS REQUIRED FOR LOTS 2, 3 AND 4 = 3 UNITS (3 UNITS X 10% = 0.3 M.I.H.U.) PROPOSED TO BE PAID IN A FEE-IN-LIEU.
- NO HISTORIC STRUCTURES EXIST ON THIS SITE. WETLAND, FOREST STAND DELINEATION & PRELIMINARY FOREST CONSERVATION REPORT DATED OCTOBER, 2015 WAS PREPARED BY
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON JULY 22, 2015.

  VIVIVIX THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE PARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS ARE 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 SEWERAGE EASEMENT SHALL NOT BE NECESSARY.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE I PARTMENT OF THE ENVIRONMENT. STORM WATER 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. THE DEVELOPER WILL BE REQUIRED TO EXECUTE THE DECLARATION OF COVENANT AND/OR A DEVELOPERS AGREEMENT FOR THE CONSTRUCTION OF THE STORMWATER MANAGEMENT. PRACTICES AND A MAINTENANCE AGREEMENT. DRYWELLS (M-5), NON-ROOFTOP DISCONNECTION (N-2), AND A MICRO-BIORETENTION
- (M-6) HAVE BEEN PROVIDED TO TREAT STORMWATER MANAGEMENT REQUIREMENTS. THESE DEVICES WILL BE PRIVATELY OWNED AND 23. A FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED AUGUST, 2015 AND APPROV
- 24. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF
- 25. THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. PRIVATE WELL AND SEPTIC WILL BE UTILIZED FOR THIS PROJECT. 26. LOT 2 IS SUBJECT TO A DECLARATION OF INTENT FOR AGRICULTURAL ACTIVITIES AND HAS BEEN EXCLUDED FROM FOREST CONSERVATION CALCULATIONS. FOREST CONSERVATION REQUIREMENTS FOR LOT 2 SHALL BE ADDRESSED PRIOR TO GRADING PERMIT ISSUANCE. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE
- FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIMISION WILL BE FULFILLED BY ON-SITE RETENTION OF 2.69 ACRES OF FOREST, OFF-SITE RETENTION OF 0.30 ACRES OF FOREST ON LOT 2, AND OFF-SITE REFORESTATION PLANTING ON LOT 2 OF 0.60 ACRES (29,620.0 50.FT.) OF FOREST. SURETY IN THE AMOUNT OF \$14,010.00 (29,620.0 50.FT. x \$0.50) WILL BE POSTED AS PART OF DPW DEVELOPERS AGREEMENT. SOILS SHOWN HEREON ARE BASED ON NRCS WEBSOIL SURVEY. SITE IS LOCATED ON HOWARD COUNTY SOILS MAP #4.
- DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '83 GRID MEASUREMENT. APFO TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT SINCE IT IS A MINOR SUBDIVISION.
- NO NOISE STUDY IS REQUIRED FOR THIS PROJECT. NO CLEARING, GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF STREAM, STREAM BUFFERS, WETLANDS, WETLAND BUFFERS, AND FOREST CONSERVATION EASEMENT AREAS. 32. 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 PERMIT FOR LOT 2 IN THE AMOUNT OF \$2,700.00 (9 SHADE TREES, BASED ON THE TOTAL NUMBER OF REQUIRED TREES, @ 33. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA
- STANDARDS AND SPECIFICATIONS, IF APPLICABLE. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIMSION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING 36. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS TOPOGRAPHY AND SUPPLEMENTED WITH FIELD RUN
- LOCATION OF EXISTING DRIVEWAY, ON-SITE STRUCTURES, WETLANDS, AND STREAMS TAKEN FROM A FIELD RUN SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. DATED JUNE 2015. 37. EXISTING UTILITIES SHOWN BASED ON AVAILABLE COUNTY INFORMATION AND FIELD LOCATIONS BY SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. DATED JUNE 2015.
- DRIVEWAY ENTRANCE TO BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY DETAIL R-6.06. WELLS ON LOTS 2 THRU 4 MUST BE DRILLED PRIOR TO HOWARD COUNTY HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT.

  SECTION 16.121 OF THE SUBDIVISION REGULATIONS REQUIRE A \$4,500.00 PAYMENT FOR FEE-IN-LIEU OF PROVIDING OPEN SPACE FOR NON-CLUSTER SUBDIVISIONS IN THE RC ZONING DISTRICT. THE DEVELOPER WILL PAY THE FEE-IN-LIEU AT THE TIME OF SUBMISSION
- 41. THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REQULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003, 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, WAYER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.

  42. THE SUBJECT PROPERTY IS A 4 LOT MINOR SUBDIVISION AND IS LOCATED IN THE COUNTY'S DESIGNATED GROWTH TIER AREA IV IN ACCORDANCE WITH PLAN HOWARD 2030 AND IS SUBJECT TO STATE LAW, 58-236 "THE SUSTAINABLE GROWTH AND AGRICULTURAL PRESERVATION ACT OF 2012". THEREFORE, NONE OF THE 4 LOTS WITHIN THIS RESIDENTIAL MINOR SUBDIVISION MAY BE RESUBDIVIDED OR FURTHER SUBDIVIDED IN ACCORDANCE WITH 58-236. NO FURTHER SUBDIVISION OR RESUBDIVISION IS PERMITTED FROM THIS
- 43. WP-16-109 WAS APPROVED ON APRIL 11, 2016 WAIVING SECTION 16.120(B)(4)(iii)(b) WHICH STATES THAT A LOT OR BUILDABLE PRESERVATION PARCEL MUST BE 10 ACRES OR GREATER IN SIZE IN ORDER TO ALLOW FLOODPLAINS, WETLANDS, STREAMS, THEIR BUFFERS, AND FOREST CONSERVATION EASEMENTS TO BE LOCATED ON THE LOT OR PARCEL. APPROVAL IS SUBJECT TO THE (1) NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING, AND NEW STRUCTURES ARE PERMITTED WITHIN THE 100 YEAR
- FLOODPLAIN, WETLANDS, STREAMS, OR THEIR BUFFERS, IN ACCORDANCE WITH SECTION 16.116 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE BUILDING RESTRICTION LINES MUST BE ESTABLISHED AS 35 FEET FROM THE EDGE OF ANY ENVIRONMENTAL BUFFER OR FEATURE LOCATED WITHIN THE LOT
- (2) FOREST CONSERVATION EASEMENTS WILL NOT BE PERMITTED WITHIN 100 FEET OF THE PROPOSED HOUSES TO AVOID FUTURE ENCROACHMENTS AND TO ALLOW FOR USABLE YARDS. (3) THE PROPOSED REFORESTATION EASEMENTS SHALL BE LOCATED ADJACENT TO THE ENVIRONMENTAL FEATURES IN THE REAR OF THE PROPERTY. NO EASEMENTS FOR FOR REFORESTATION OR AFFORESTATION WILL BE PERMITTED IN THE AREAS OF THE PROPERTY WHERE DEVELOPMENT IS PROPOSED. RELOCATE THE PROPOSED REFORESTATION EASEMENTS TO ENCOMPASS THE STREAM AND

WETLAND BUFFERS AND TO PROVIDE A CONTIGUOUS FORESTED RIPARIAN BUFFER ALONG THE REAR OF THE PROPERTY

44. THE PROPOSED BARN ON LOT 1 MUST COMPLY WITH SECTION 104.0.E OF THE ZONING REGULATIONS.

OWNER / DEVELOPER

Joe & Jennifer Hill

Woodbine, MD 21797

410-339-7503

P.O.Box 189

# TITLE SHEET

FIVE HILLS FARM LOTS 1 THRU 4

ZONED RC-DEO

TAX MAP No. 9 GRID No. 7 PARCEL No. 117 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2016

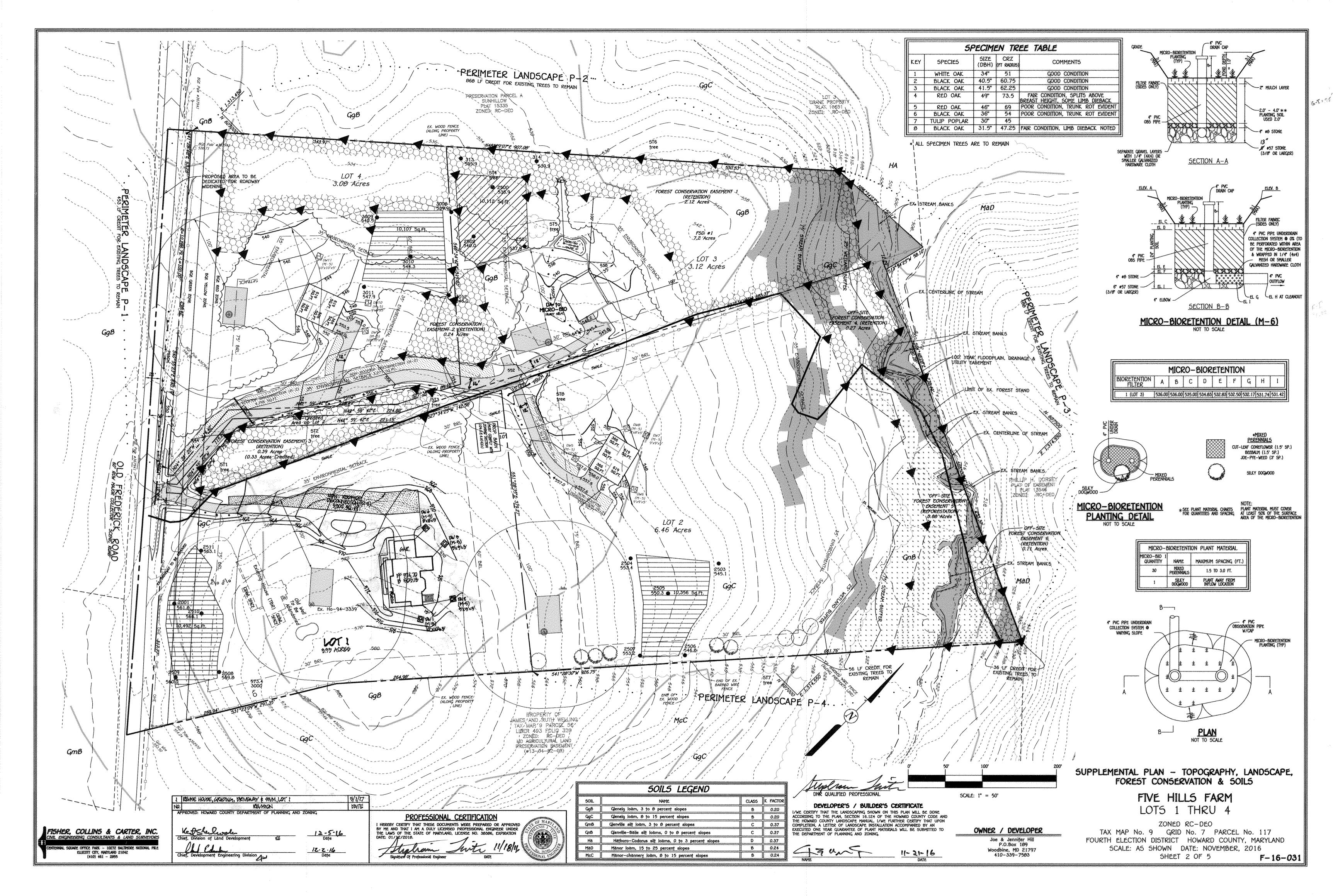
SHEET 1 OF 5 F-16-031

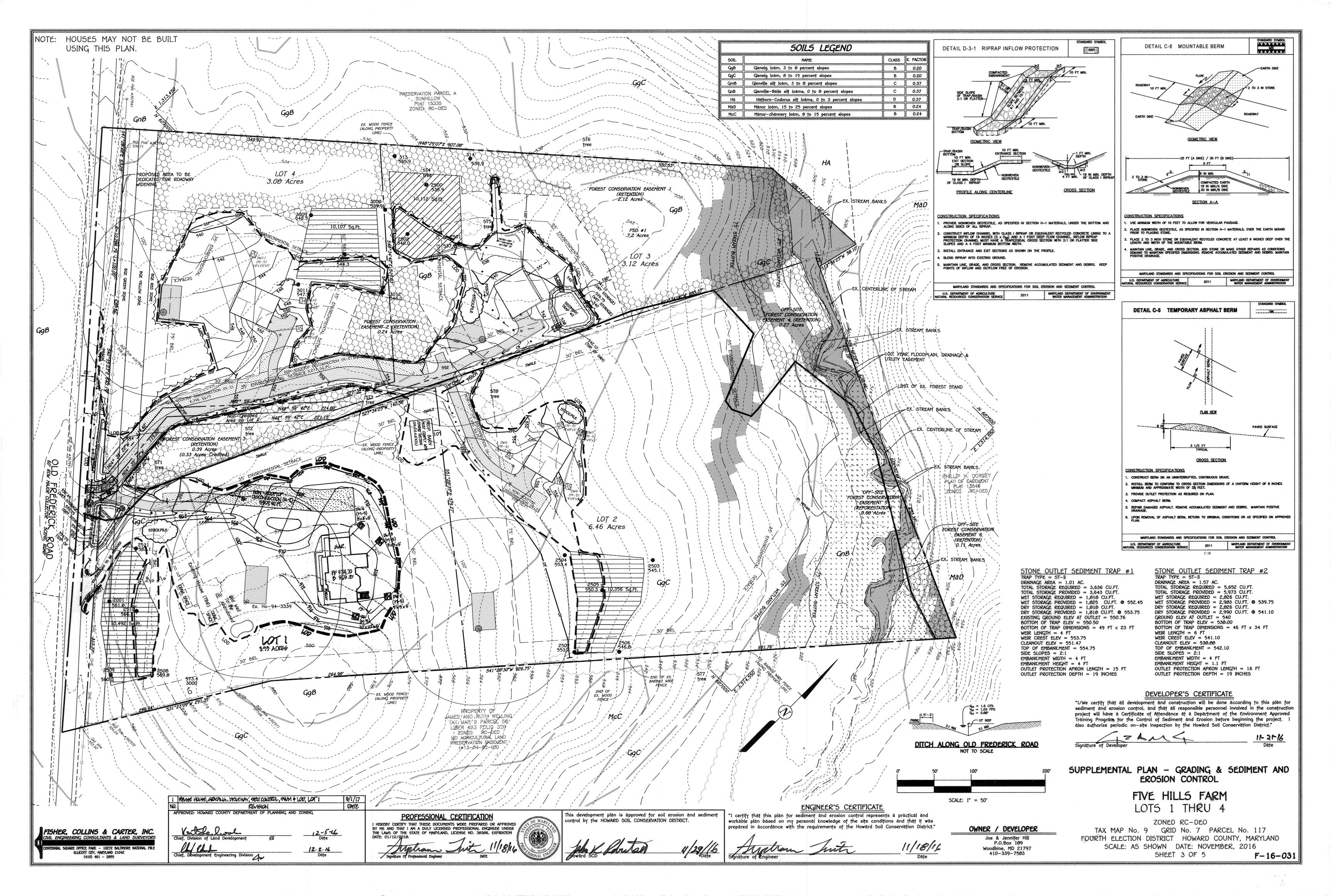
FISHER, COLLINS & CARTER, INC. uare office park - 10272 Baltimore National Pike ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2018.

STORMWATER MANAGEMENT PRACTICES ROOFTOP NON-ROOFTOP DISCONNECTION ADDRESS M-6 (NUMBER) N-1 (NUMBER) (NUMBER) 3880 OLD FREDERICK ROAL 13890 OLD FREDERICK ROAD 13900 OLD FREDERICK ROAD 13910 OLD FREDERICK ROAD (USE-IN-COMMON)





### PLANTING / SOIL SPECIFICATIONS

- . 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
- 3. All Bare Rood Planting Stock Shall Have Their Root System Dipped Into An Anti-Desiccant Gel Prior To Planting.
- 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.

### SEQUENCE OF CONSTRUCTION FOR REFORESTATION AREAS

- 1. Sediment Controls And Tree Protective Devices Shall Be Installed In Accordance With Sediment & Erosion Control Plans For This Site, If Applicable. Site Shall Be Graded In Accordance With The Plans. (2 Days)
- 2. Proposed Reforestation Areas Impacted By The Site Grading Shall Be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil Specifications". (1 Day)
- 3. Plants Shall Be Installed And Maintained As Per Notes And Specifications For This Project. (1 Week)
- 4. Upon Completion Of The Plantings, Signage Shall Be Installed As Per The Signage Detail. (1 Week)
- 5. Plantings Shall Be Guaranteed and Maintained In Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project. (2 Years)

### 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
- 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 B 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 5ix Months Prior To Planting 50 That New Growth OF Roses Is Able To Be More Successfully Managed.

# REFORESTATION PLANTING NOTES

- Plants, Related Material, And Operations Shall Meet The Detailed Description As Given On The Plans And As Described Herein.
- Plant Material, Unless Otherwise Specified, Shall Be Nursery Grown, Uniformly Branched And Have A Vigorous Root System. Plant Material Shall Be Healthy, Vigorous Plants Free From Defects, Decay, Disfiguring Roots, Sunscald Injuries Abrasions Of The Bark, Plant Disease, Insect Pest Eggs, Boxers, Infestations Or Objectionable Disfigurements. Plant Material That Is Weak Or Which Has Been Cut Back From Larger Grades To Meet Specified Requirements Will Be Rejected. Trees With Forked Leaders Will Not Be Accepted. Plants Shall Be Freshly Dug; No Heeled—in Plants Or Plants From Cold Storage Will Be Accepted.
- Unless Otherwise Specified, Plant Material Shall Conform To "American Standard For Nursery Stock" ANSI Z60.1-1990, Published By The American Association Of Nurserymen, Including All Addenda
- Contractor Will Be Required to Guarantee Plant Material For A Period of Two (2) Years After The Date Of Acceptance And Maintain A 75% Survivability At The End of The Two (2) Years. To Lessen The Chance Of Loss, The Plantings Should Be Checked From Time To
- Time To Insure That They Are Receiving Sufficient Water. See "Maintenance Of The Location And Orientation Of All Plant Material Shall Be Randomly Planted In
- Designated Reforestation Areas By the Contractor. Contractor Shall Be Responsible For Moving Any Plant Material Installed Without Approval. Mowing And Applying Herbicides To The Reforestation Area Is Prohibited At Any An

All Stages Of The Planting Process In Order To Encourage The Existing Saplings To

- 8. Contractor Is Responsible For Installing And Pruning Plant Material In The Proper
- Planting Season For Each Plant Type, See Tree Planting & Maintenance Calendar. Upon Completion Of Installation, Signage Shall Be Installed As Shown.

# FOREST PROTECTION GENERAL NOTES

- 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 PROHIBITED.
- 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; C. MAKE ALL NECESSARY ADJUSTMENTS:
- D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

### CONSTRUCTION MONITORING

- 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.
- 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 VERSION 1.0

NET TRACT AREA	ACRE
A. TOTAL TRACT AREA	17.1
8. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0.3
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	6.46
D. NET TRACT AREA	10.3
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 20%)	2.0
F. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 25%)	2.5
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	6.60
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	4.53
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	4.02
BREAKEVEN POINT	3.3
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	3.2
K. CLEARING PERMITTED WITHOUT MITIGATION	3.2
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE RETAINED	2.69
M. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	3.9
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0.96
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0.1
R. TOTAL REFORESTATION REQUIRED	0.8
5. TOTAL AFFORESTATION REQUIRED	0
T. TOTAL PLANTING REQUIREMENT	0.67

EXCLUDED FROM FOREST CONSERVATION CALCULATIONS. FOREST CONSERVATION SHALL BE

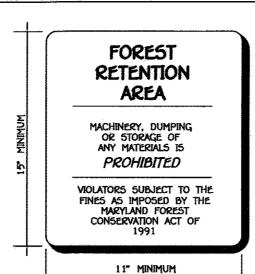
FCE # 5 (REFORESTATION) - 0.60 acres

ADDRESSED FOR LOT 2 PRIOR TO GRADING PERMIT ISSUANCE.

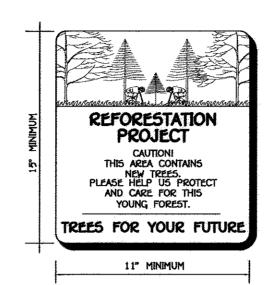
OFF-SITE RETENTION OF 0.30 ACRES OF FOREST ON LOT 2 AND OFF-SITE REFORESTATION PLANTING ON LOT 2 OF 0.60 ACRES OF FOREST.

# PLANTING REQUIRED: 238 PLANTING PROVIDED: 245 45 Acer rubrum - Red maple 25 Betula nigra - River Birch Carya tomentosa - Mockernut Hickory

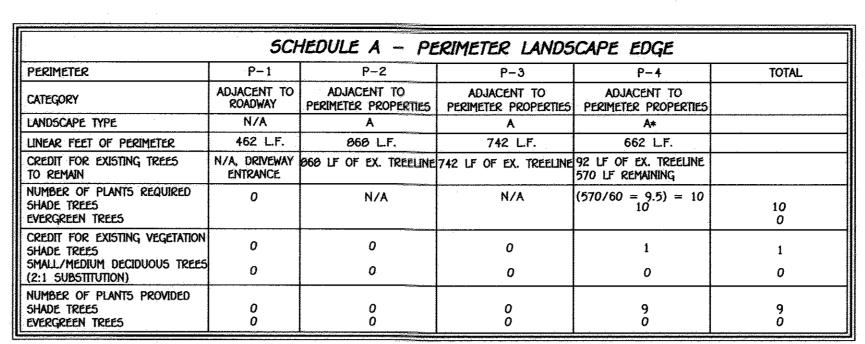
* Note: (1) SIZE PROPOSED TO BE UTBLIZED AND PLANTED AT 550 TREES PER ACRE (350



NOTE: THE PROTECTIVE SIGNAGE SHALL BI IN PLACE FOR PERPETUITY.



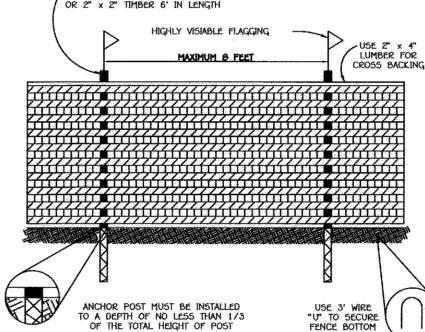
FOREST CONSERVATION SIGN DETAIL NOT TO SCALE



NOTE: LOT 1 CONTAINS THE EXISTING HOUSE WHICH IS TO BE REPLACED AND HAS BEEN EXCLUDED FROM THE LANDSCAPE OBLIGATIONS DUE TO THE FACT THAT IT CONTAINS THE CURRENTLY DEVELOPED PORTION OF THE PROPERTY. CREDIT IS BEING TAKEN FOR AN EXISTING 30" TULIP POPLAR ALONG PERIMETER 4.

	LANI	DSCAPING PLANT	LIST
QTY.	KEY	NAME	SIZE
4	$\odot$	ACER RUBRUM 'RED SUNSET' (RED SUNSET RED MAPLE)	2 1/2" - 3' CALIPER FULL CROWN, B&
5		QUERCUS PALUSTRIS (PIN OAK)	2 1/2" - 3" CALIPER FULL CROWN, B&

# BLAZE ORANGE PLASTIC MESH



0.24 AC.

0.33 AC.

0.27 AC.

0.00 AC.

0.11 AC.

3.07 AC.

4

5

6

TOTAL

. FOREST PROTECTION DEVICE ONLY. 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 DATA

FLOODPLAIN

0.27 AC.

0.11 AC.

3.07 AC.

FLOODPLAIN

0.00 AC.

0.00 AC.

0.00 AC. | 0.00 AC. | 2.12 AC.

0.00 AC.

0.00 AC. | 0.68 AC. | 0.68 AC.

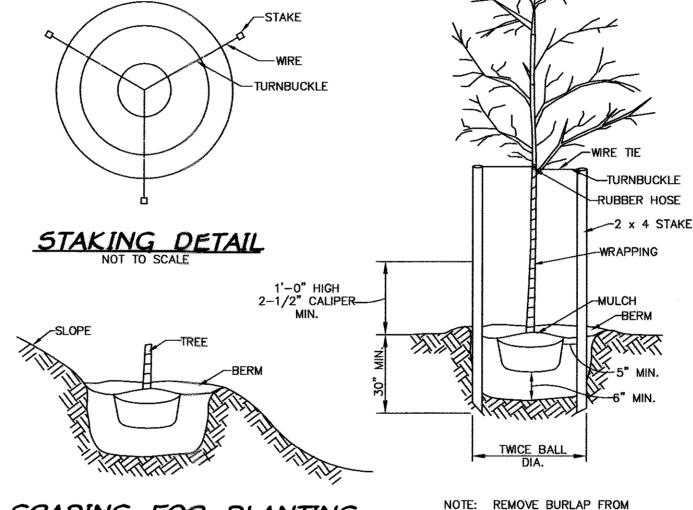
0.00 AC. 0.00 AC. 0.11 AC.

0.00 AC. 0.60 AC. 3.75 AC.

0.00 AC. 0.24 AC.

0.00 AC. | 0.27 AC.

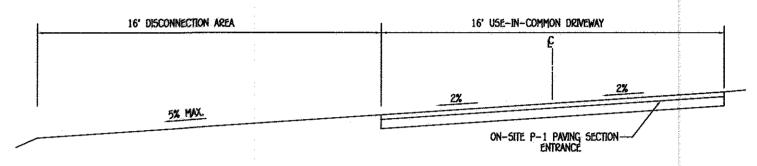
0.33 AC.



GRADING FOR PLANTING ON SLOPES

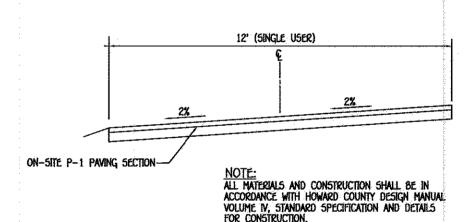
TOP 1/3 OF BALL TREE PLANTING

- 1. THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE ON-SITE RETENTION OF 2.69 ACRES OF FOREST, OFF-SITE RETENTION OF 0.30 ACRES OF FOREST ON LOT 2. AND OFF-SITE REFORESTATION PLANTING ON LOT 2 OF 0.60 ACRES (29,620.0 SQ.FT.) OF FOREST. SURETY IN THE AMOUNT OF \$14,010.00 (29,620.0 SQ.FT. x \$0.50) WILL BE POSTED AS PART OF DPW DEVELOPERS AGREEMENT. LOT 2 IS SUBJECT TO A DECLARATION OF INTENT FOR AGRICULTURAL ACTIVITIES AND HAS BEEN EXCLUDED FROM FOREST CONSERVATION
- 2. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL A LANDSCAPE SURETY FOR 9 SHADE TREES IN THE AMOUNT OF (\$2,700.00) WILL BE POSTED AS PART OF THE BUILDERS GRADING PERMIT FOR LOT 2
- 3. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL, IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- 4. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING. INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS, ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- 5. SEE THE RECORD PLAT FOR THE BEARING AND DISTANCE DESCRIPTIONS OF THE FOREST CONSERVATION EASEMENTS.
- 6. NO GRADING OR REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- 7. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND 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 EASEMENT ARE ALLOWED. SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED.
- B. THE FOREST CONSERVATION REFORESTATION EASEMENT PLANTINGS ARE NOT TO BE CONSIDERED LANDSCAPING, AS IT IS USUALLY PRACTICED. THE REFORESTATION PLANTINGS ARE TO CREATE NEW FOREST COMMUNITIES THAT WILL REPLACE TO SOME DEGREE THE FOREST RESOURCES THAT HAVE BEEN LOST DURING RECENT DECADES OF FARMING AND LAND DEVELOPMENT, THEIR PRIMARY PURPOSE IS ENVIRONMENTAL AND NOT AESTHETIC. THESE REFORESTATION STANDS WILL REQUIRE SPECIAL MANAGEMENT AND INITIALLY MAY NOT LOOK ATTRACTIVE.



1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION. 2. SWALES ARE FOR CONVEYANCE OF RUNOFF AND NOT UTILIZED FOR TREATMENT CREDIT.

# 16' USE-IN-COMMON DRIVEWAY CROSS SLOPE SECTION



TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED. DISCONNECTION OF ROOFTOP RUNOFF (N-1) DISCONNECTION OF NONROOFTOP 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

FOREST CONSERVATION & LANDSCAPE DETAILS

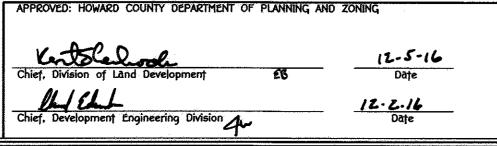
FIVE HILLS FARM LOTS 1 THRU 4

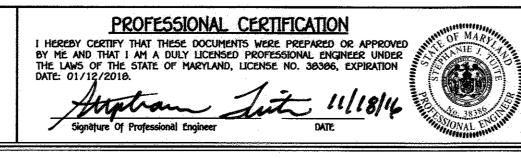
ZONED RC-DEO TAX MAP No. 9 GRID No. 7 PARCEL No. 117 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2016

SHEET 4 OF 5

F-16-031

FISHER, COLLINS & CARTER, INC. ENGINEERING CONSULTANTS & LAND SURVEYORS square office park — 10272 baltimore national pike ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2255





DEVELOPER'S / BUILDER'S CERTIFICATE I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Joe & Jennifer Hill P.O.Box 189 Woodbine, MD 21797 410-339-7583

OWNER / DEVELOPER

### 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. a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions

## i. Soil pH between 6.0 and 7.0.

ii. Soluble salts less than 500 parts per million (ppm) iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.

### iv. Soil contains 1.5 percent minimum organic matter by weight. v. Soil contains sufficient pore space to permit adequate roof penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions. c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test. e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leavin 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.

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

c. The original soil to be vegetated contains material toxic to plant growth

d. The soil is so acidic that treatment with limestone is not feasible.

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

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

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders. stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter. b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nul 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 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

## C. Soil Amendments (Fertilizer and Lime Specifications)

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 appropriat 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

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking of

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 cove

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.

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

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

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

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 and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed and the seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recognized seed must be subject to re-testing by a recogn laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any

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 around 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.

i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site—specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with

weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P 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 hydrated lime when hydroseeding.
 iii. Mix seed and fertilizer on site and seed immediately and without interruption.

# v. When hydroseeding do not incorporate seed into the soil.

1. Mulch Materials (in order of preference) a. Straw consisting of thoroughly threshed wheat, rye, out, 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 physic

i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors.

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a hornogeneous 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 1 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.

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

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.

To use fast growing vegetation that provides cover on disturbed soils.

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 8.3), 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.

		temborary peedin	g Summary		
Hardiness Zon Seed Mixture	e (from Figure B. (from Table B.1):	Fertilizer Rațe (10-20-20)	Lime Rate		
5pecies	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	naeve manaman	
BARLEY	96	3/1 - 5/15.	1*	436 lb/ac (10 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
OAT5	72	8/15 - 10/15	1"		
RYE	112		1*		

# PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures

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 desthetic treatment may be found in USDA-NRCS Technical Field Office

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 .

receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan. i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation

required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight. ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid

establishment is necessary and when turf will receive medium to intensive management. Certified Perennia 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 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

Select turforass 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 Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1. August October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15

d. Till dreas 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.

(Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15

Permanent Seeding Summary

	ardiness Zone (from Figure B.3): 6b eed Mixture (from Table B.3): 9			Fertiliz	Lime Rate			
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ 0	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	per acre	90  b/ac (2  b/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/dc (90 lb/ 1000 sf)
					(1.0 lb/ 1000 sf)	1000 5,7	1000 5,7	1000 0,,
			l					

# 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."

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION

DEVELOPER'S CERTIFICATE "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 construction 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

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

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 to % inch, plus or minus % 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

d. 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

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

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. 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 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 % 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-4-8 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 Applie Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.

2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.

3. Runoff from the stockpile area must drain to a suitable sediment control practice.

4. Access the stockpile area from the upgrade side.

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

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section 8-4 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 CONTROL NOTES 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: a. Prior to the start of earth disturbance,

b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,

c. Prior to the start of another phase of construction or opening of another grading unit,

d. Prior to the removal or modification of sediment control practices.

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

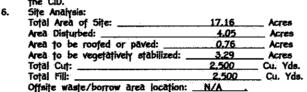
permits shall be referenced, to ensure coordination and to avoid conflicts with rims plan.

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

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

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL.

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



SEQUENCE OF CONSTRUCTION

OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING

NOTIFY "MISS UTILITY" AT LEAST 40 HOURS BEFORE BEGINNING ANY

BEFORE STARTING WORK.
INSTALL 12" CMP AT OLD FREDERICK ROAD ALONG WITH SUPPORTING

UPON STABILIZATION OF GRADING OF ROADSIDE DITCH, INSTALL

SEDIMENT TRAPS. (2 DAYS)
REMOVE NECESSARY TREES AND ROUGH GRADE COMMON DRIVEWAY.

ROUGH GRADE LOTS. INSTALL MOUNTABLE BERM ON LOT 1 DRIVEWAY.

CONSTRUCTION/ INSPECTION AT 410-313-1330 AT LEAST 24 HOURS

GRADING, INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, DIVERSION FENCE, INSTALL SOD IN GRADED DITCH ALONG OLD FREDERICK ROAD, AND PROVIDE PERMANENT SEEDING

WITH COUNTY INSPECTOR. (2 WEEKS)

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

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

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

Evidence of sediment discharges
Identification of plan deficiencies
Identification of sediment controls that require maintenance
Identification of missing or improperly installed sediment controls

Compliance status regarding the sequence of construction and stabilization requirements 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, 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.

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

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

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

14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25 minimum intervals, with lower ends curled uphill by 2 in elevation. 15. Stream channels must not be disturbed during the following restricted time periods (inclusive): Use 1 and IP March 1 - June 15

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

# DETAIL C-9 **DIVERSION FENCE** MAXIMUM DRAINAGE AREA = 2 ACR 10 FT MAX. ELEVATION OR PROVIDE SOIL STABILIZATION MATTING 4 FT MIN. ALONG PLOW SURFACE

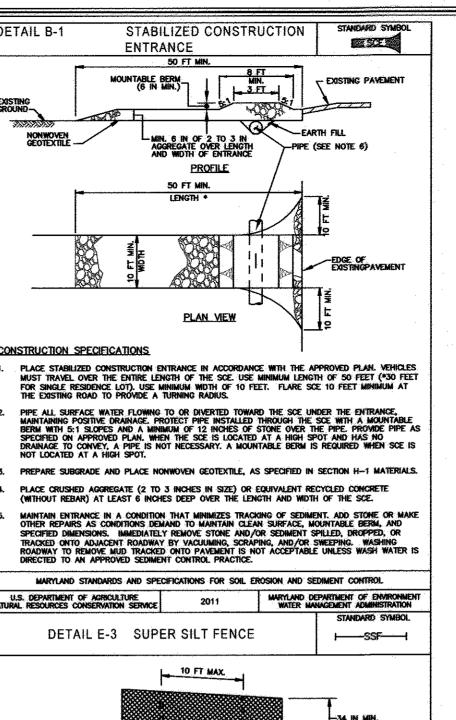
USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING).

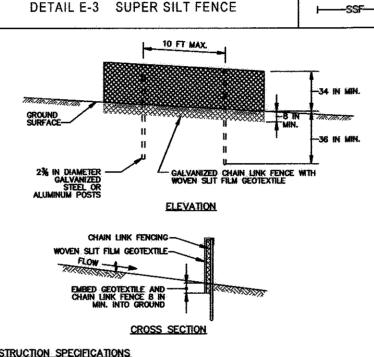
SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND, SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.

WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDBIENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE 2011

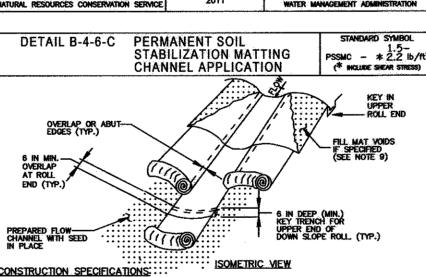




INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FI LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.

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. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE TURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION



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 UNFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOUGHOUT TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRIDED PLASTIC WITH A MAXIMUM MESH OPENING OF 242 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.

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 . 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.

7. 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 TAMPIN 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 GRANLLAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT. D. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION 8—4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
2011 SHEAR STRESS FOR PSSMC (COMMON DRIVE) = 62.4 LBS/FT x 0.6 FT x 0.04 = 1.5 LBS/FT SHEAR STRESS FOR PSSMC (LOT 1 DRIVE) = 62.4 LB5/FT 6  x 0.6 FT x 0.06 = 2.2 LB5/FT 6  SHEAR STRESS FOR PSSMC (LOT 3) = 62.4 LB5/FT 6  x 0.3 FT x 0.08 = 1.5 LB5/FT 6 

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

OWNER / DEVELOPER

Joe & Jennifer Hill P.O.Box 189

Woodbine, MD 21797

410-339-7583

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 DETAIL G-1-2 STONE/RIPRAP OUTLET ST-II SEDIMENT TRAP ST-II MAXIMUM DRAINAGE AREA = 10 ACRES _4 FT MIN. WIDTH OF %, TO 1% 19 IN MIN. THICKNESS OF CLASS 1 RIPRAP OUTLET ELEVATION-EXISTING-NONWOVEN GEOTEXTILE APRON 10 FT MIN. EXCAVATE FOR REQUIRED WET STORAGE SECTION A-A EXISTING CROUND SECTION B-B CONSTRUCTION SPECIFICATIONS CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WER CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. . MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER. . PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP, OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP, EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL. . USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE. PLACE 1 FOOT OF CLEAN % TO 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR. . CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR. D. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN. 11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH), DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODLY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION. 2. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL 3. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

DETAIL E-1

CONSTRUCTION SPECIFICATIONS

SILT FENCE

ELEVATION

CROSS SECTION

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

USE WOOD POSTS 1% X 1%  $\pm$  % Inch (minimum) square cut of sound quality hardwood. As an alternative to wooden post use standard "t" or "u" section steel posts weighing not less than 1 pound per linear foot.

USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APAR

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.

STAPLE ----

FINAL CONFIGURATION

CENTER TO CENTER

NAME OF THE PARTY.

_____SF____

__36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND

SEDIMENT & EROSION CONTROL NOTES & DETAILS FIVE HILLS FARM

> LOTS 1 THRU ZONED RC-DEO

TAX MAP No. 9 GRID No. 7 PARCEL No. 117 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2016 SHEET 5 OF 5 F-16-031

FISHER, COLLINS & CARTER. INC. VIL ENGINEERING CONSULTANTS & LAND SURVEYORS l square office park — 10272 Baltimore national pike FLUCOTT CITY, MARYLAND 21042 (410) 461 - 2055

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

the HOWARD SOIL CONSERVATION DISTRICT.

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

12-5-16

12.2.16

Conservation District."

