	50ILS LEGEND		
50IL	NAME	CLA55	K FACTOR
8rD	Brinklow channery loam, 15 to 25 percent slopes	В	0.20
GgA	Glenelg loam, 0 to 3 percent slopes	В	0.20
G ₉ B	Glenelg loam, 3 to 8 percent slopes	В	0.20
G ₉ C	Glenelg loam. 0 to 15 percent slopes	В	0.20
GmB	Glenville silt loam, 3 to 8 percent slopes	С	0.37
O _c C	Occoquan loam, 8 to 15 percent slopes	8	0.20

- * Hydric soils and/or contains hydric inclusions
- t Generally only within 100-year floodplain areas

DESIGN NARRATIVE

This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009) will be satisfied on this project. The goal of creating hydrology similar to that of "Woods in Good Condition" will be accomplished through the use of the practices contained within Chapter 5 of said manual. The achievement of this goal will remove the requirement of providing Channel Protection Volume.

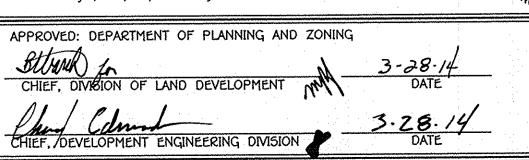
Layton Knoll is zoned RC-DEO and are located on Tax Map 7, Parcel Nos. 112, 544, & 545 of the Howard County, Maryland Tax Map Database System. The property consists of 31.597 acres of which approximately 1.81 acres is forested. Currently the property consists of five (5) parcels that is improved by one (1) existing historic house (MHT #103) as well as three (3) existing accessory structures and existing unpaved driveway. The proposed lots will be served by private well and septic systems already approved by the Health Department. The six (6) proposed lots will be served by a common driveway and the existing historic house will be served by the existing driveway on Preservation Parcel 'A'. Only four (4) specimen trees exist on-site, which are located within Non-Buildable Bulk Parcel 'B' on the west side of Saint Michaels Road. No disturbance is to take place in this area of the site so the specimen trees are planned to be retained. Per the 2004 Web Soil Survey, soils on-site consist of "BrD" Brinklow channery loam, "GgA", "GgB", "GgC" Glenelg loam, "GmB" Glenville-Baile sitt loam, and "Occ" Occoquan loam. All of which are Type B soils, except for "GmB" which is Type C soils. Only Type B soils will be within the limits of disturbance. The Type C Soils are located on proposed Non-Buildable Bulk Parcel 'B'.

- Environmentally sensitive features such as wetlands, streams, steep slopes exist on the proposed Non-Buildable Preservation Parcel B. Floodplain does not exist on-site. To ensure the protection of natural resources the non-buildable parcel. These environmentally sensitive areas will be placed within a proposed forest conservation (retention) easement.
- II. Maintenance of Natural Flow Patterns: it is the intent of the proposed design to discharge runoff similar to the characteristics and direction of this site prior to any of the proposed
- III. Reduction of impervious areas through better site design, alternative surfaces and Nonstructural Practices A proposed common driveway will serve the proposed six (6) lots and no improvements are proposed to the existing driveway serving the existing historic house on Preservation Parcel 'A'. The design will make use of non-rooftop disconnection credit for the proposed driveways and rooftop disconnection for the proposed houses.
- IV. Integration of Erosion and Sediment Controls into Stormwater Strategy: It is anticipated that silt fence and super silt fence will be provided and that the use of sediment traps will not be necessary.
- V. Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP) ESD planning techniques will be utilized to the maximum extent practicable to satisfy the SWM requirements put forth in Chapter 5 of the Maryland Department of the Environment's SWM Design Manual. All non-structural practices are being utilized to treat stormwater runoff. The full required ESD volume is being provided.
- VI. Request for a Design Manual Waiver: No environmental waivers are expected to be required on this project

		,		1287		
		SPECIMEN .	TREE	TABLE		
KEY	SPECIES, SIZE (DBH)		CC	NOITION		STATUS
Α	WHITE OAK, 31.5"		GOOD	CONDITION		to remain
В	WHITE OAK, 32.5"		GOOD	CONDITION		to remain
С	WHITE OAK, 40°		GOOD	CONDITION		to remain
D	BLACK CHERRY, 34"		FAIR	CONDITION		TO REMAIN
E .	WHITE OAK, 40"		0	ff-5ite		
F	TULIP POPLAR, 30.5"		0	FF-SITE		****
G	BLACK LOCUST, 34.5"	ALONG ROA DIEBACK	D SHOULD	er, fair cond ne lines withi	ITION, 50ME N CANOPY	to remain

NOTE: Critical root zone shall be 1.5':1" dbh

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. 38386, EXPIRATION DATE: 01/12/2016.





POST CENTERS

3X6 PO5T = 96"

DIMENSIONS WILL VARY WITH POST

PROPOSED PERMANENT TREE PROTECTIVE FENCING -

TWO-RAIL SPLIT RAIL FENCE DETAIL

-SF-SF-SILT FENCE -SSF-SSF-SUPER SILT FENCE

X - EXISTING FENCE LINE

PROPOSED LANDSCAPING

PROPOSED GRAVEL / GAB

DESCRIPTION

PRIVATE USE-IN-COMPON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 1 thru

25% OR GREATER SLOPES (STEEP SLOPES)

15% TO 25% SLOPES

PROPOSED PUBLIC FOREST CONSERVATION
EASEMENT

EXISTING WETLANDS

EXISTING LIMIT OF WETLANDS

-58 - EXISTING STREAM BANK BUFFE

EXISTING STREAM BANKS

EXISTING POWER POLE

EXISTING CONTOUR 2' INTERVAL

LIMIT OF DISTURBANCE

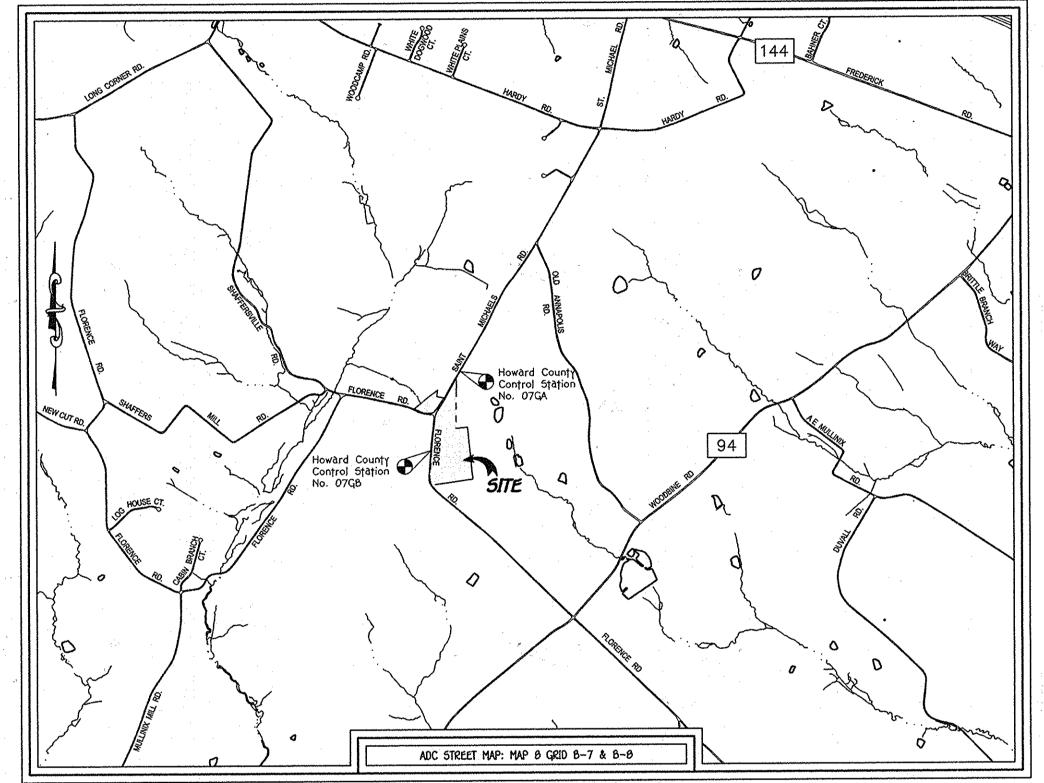
EX. LIMIT OF TREES AND FOREST

NOTE: ALL DIMENSIONS ARE APPROXIMATE.

INSTALLATION DEPTH.

SUPPLEMENTAL PLANS LAYTON KNOLL,

LOTS 1 THRU 6 AND BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCEL 'B' TAX MAP No. 7 GRID No. 19 PARCEL NOs. 112, 544, & 545 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



	BENCHMARK INFORMATION
. *.	B.M.#1 - HOWARD COUNTY CONTROL STATION #07GA - HORIZONTAL - NAD '03) (LOCATED 34.7' SOUTH OF PEPCO #67950, 32.3' NORTHEAST OF C&P #36, AND 1.0' EAST OF EDGE OF SAINT MICHAELS ROAD. N 603,796.620 E 1,279,230.677 ELEVATION = 749.400 - VERTICAL - (NAVD '00)
. 4	B.M.#2 — HOWARD COUNTY CONTROL STATION #07GB — HORIZONTAL — (NAD '93) (LOCATED 34.5' SOUTH OF THE CENTERLINE OF THE DRIVEWAY TO 2770 FLORENCE ROAD, 11.0' WEST OF THE CENTERLINE OF FLORENCE ROAD, AND 39.6' SOUTHWEST OF C&P POLE #43. N 602,154.839

ELEVATION = 743.399 - VERTICAL - (NAVD '88)

DISCONNECTION OF

YE5

YE5

YES

YE5

YE5

YE5

NON-ROOFTOP RUNOFF (N-2)

STORMWATER MANAGEMENT PRACTICES

ROOFTOP RUNOFF (N-1)

Y/N. NUMBER

YES. EIGHT (B)

YES, EIGHT (B)

YES, EIGHT (8)

YES, EIGHT (8)

YES, EIGHT (B)

YES, EIGHT (8)

ADDRESS

2771 FLORENCE ROAD

2775 FLORENCE ROAD

2779 FLORENCE ROAD

2783 FLORENCE ROAD

2787 FLORENCE ROAD

2791 FLORENCE ROAD

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 31.60 AC.+. B. LIMIT OF DISTURBED AREA = 6.77 Ac. + C. PRESENT ZONING DESIGNATION = RC-DEO (PER 02/02/04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 07/20/06) D. PROPOSED USE: RESIDENTIAL
 - E. PREVIOUS HOWARD COUNTY FILES: MHT #103. ECP-13-060. WP-13-061, WP-14-029. F. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE = 0 AC+
 - G. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.00 AC* (ON NON-BUILDABLE PRES. PARCEL B) H. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.42 AC. + (LOCATED WITHIN FORESTED AREA ON NON-BUILDABLE PRES. PARCEL B)
- . TOTAL AREA OF EXISTING FOREST = 1.81 AC+ (ON NON-BUILDABLE PRES. TOTAL GREEN OPEN AREA = 9.07 AC± TOTAL IMPERVIOUS AREA = 0.96 AC+

O. AREA OF ROAD DEDICATION = 2.02 AC.+.

AREA OF LOTS 1 THRU 6 = 8.34 AC+ M. AREA OF BUILDABLE PRESERVATION PARCEL A = 17.74 AC. ±. (CONTAINS EXISTING HOUSE & 0.96 ACRES OF REFORESTATION) N. AREA OF NON-BUILDABLE PRESERVATION PARCEL B = 3.51 AC+ (CONTAINS 1.01 ACRES OF EXISTING FOREST)

OWNER JAN E. GORDON 1775 SAINT MICHAELS ROAD WOODBINE, MARYLAND 21797 CONTACT: CHUCK ZEPP 410-984-4851

Minimum Lot Size Tabulation

General Notes:

- Subject Property Zoned RC-DEO As Per October 6, 2013 Comprehensive Zoning Plan.
 Coordinates Based On Nad '83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 5ta. H.C.M. 07GA North 603796.620 East 1279230.677
- Sta. H.C.M. 07G8 North 602154.839 East 1278602.539 This Plan Is Based On A Field Run Monumented Boundary Survey Performed On Or About July, 2012 By Fisher, Collins & Carter, Inc. Existing Topography Shown Is Based On A Field Run Survey Along Florence Road & Saint Michaels Road With Maximum Two Foot Contour Intervals Prepared By Fisher, Collins & Carter, Inc. Dated August, 2013, Supplemented With
- Howard County GIS Topography On-Site And Off-Site.

 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.
- For Flag Or Pipestem Lots, Refuse Collection, Snow Removal And Road Maintenance Are Provided To The Junction Of The
- Flag Or Pipestern And Road Right-Of-Way Line And Not Onto The Pipestern Lot Driveway.

 Driveways Shall Be Provided Prior To Residential Occupancy To Insure Safe Access For Fire And Emergency Vehicles Per The Following (Minimum) Requirements:

 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" 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): f) Structure Clearances - Minimum 12 Feet:
- a) Maintenance Sufficient To Ensure All Weather Use. 14. No Grading, Removal Of Vegetative Cover Or Trees, Paving And New Structures Shall Be Permitted Within The Limits Of Wetlands, Stream(s), Or Their Required Buffers, Floodplain And Forest Conservation Easement Areas.

 15. Property Subject To Prior Department Of Planning And Zoning File No's: ECP-13-060, WP-13-061 And WP-14-029.

 16. No Cemeteries Exist On This Site Based On A Visual Site Visit And Based On An Examination Of The Howard County
- Cemetery Inventory Map.

 17. Wetlands Delineation And Forest Stand Delineation Was Prepared By Eco-Science Professionals, Inc. Dated April 5, 2013.

 18. There Is Existing Dwelling And Garage On Buildable Preservation Parcel 'A' To Remain. There Is An Existing Barn And Shed On Non-Buildable Preservation Parcel 'B' To Remain. No New Buildings, Extensions, Or Additions To The Existing Dwelling(s) Are
- To Be Constructed At A Distance Less Than The Zoning Regulation Requirements.

 19. The Lots Shown Hereon Comply With The Minimum Ownership Width And Lot Area As Required By The Maryland Department 20. This Plan Is Subject To The Amended Fifth Edition Of The Subdivision And Land Development Regulations And The
- 10/06/2013 Comprehensive Zoning Plan. Development Or Construction On These Lots Or Parcels Must Comply With Setbacks And Buffer Regulations In Effect At The Time Of Submission Of A Building Or Grading Permit Application.
- 21. This Property is Located Outside The Metropolitan District.

 22. This Property is Located Outside The Metropolitan District.

 23. This Area Designates A Private Sewerage Easement Of A Minimum Of 10,000 Square Feet As Required By The Maryland State Department Of The Environment For Individual Sewerage 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 Sewerage Easement Shall Not Be Necessary.

 23. Steep Slopes, Wetlands, Stream(s), And Their Required Buffers Exist On Non-Buildable Preservation Parcel 'B'.
- 24. A Maintenance Agreement For The Private Use-In-Common Access Easement For The Use And Benefit Of Lots 1 Thru 6 Have Been Recorded Among The Land Records Of Howard County, Maryland Simultaneously With The Recording Of This Plat.

 The Forest Conservation Easements Shown On This Plan 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 Easement Are Allowed. 26. Should Disturbance Occur In The Forest Conservation Areas During Or After Construction. Civil Penalties Or Mitigation May Be
- 27. The Forest Conservation Requirements Of Section 16.1200 Of The Howard County Code And Forest Conservation Act For Subdivision Totals 2.769 Ac. Consisting Of 1.809 Ac. Of On-Site Referentian And 0.960 Ac. Of On-Site Referentian. Surety For On-Site Reforestation is \$20,909.00 Based On 0.960 Ac. x 43,560 Sq. Ft./Acre x \$0.50/5q. Ft. And \$10,900 For 1090 LF Of Permanent Fencing. A Total Surety Amount is \$31,809.00. There is No Surety Required For On-Site Retention. 28. Plan Subject To WP-13-061 Which The Planning Director On January 23, 2013 Approved A Request To Waive Section 16.119.(f).(1) Which Requires Where A Proposed Subdivision Involves Frontage On An Arterial Road. Or Fronts A Major Collector. The Street Layout Should Provide Vehicular Access To The Subdivision By A Lower Classification Public Road; And,
 - Approved A Request To Waive Section 16.145.(a) Which Requires The Submission Of A Preliminary Equivalent Sketch Plan For A Major Subdivision in The RC Zoning District. Approval is Subject To The Following Condition:

 1) Department Of Planning And Zoning Approves The User Of A Single Use-In-Common Driveway That Meets The Minimum Sight Distance Requirements Of The Design Manual Access Requirements For The Proposed Six New Residential
- 29. Plan Subject To WP-14-029 Which The Planning Director On October 8, 2013 Denied A Request To Waive Section
- 16.132.(a).(3).(ii) Road Construction For Major Collector Roadways Which Requires That The Owner/Developer Shall Be Required To Construct A Minimum Usable Width Along The Property Frontage. 30. Landscaping For Lots 1 Thru 6 is On File With This Plat is Provided in Accordance With A Certified Landscape Plan. In
- Trees And (40) Evergreens in The Amount Of (\$17.400.00) is To Be Posted As Part Of The DPW Developer's Agreement. 31. Stormwater Management Requirements Are Being Met By Rooftop Disconnection (N-1) and Non-Rooftop Disconnection (N-2) For Lots 1 thru 6. Ownership And Maintenance Responsibilities For The Stormwater Management ESD Practices Is To Be
- 32. APFO Traffic Report Dated April 15, 2013 Prepared By Traffic Concepts. 33. The Articles Of Incorporation For The Layton Knoll Homeowners Association, Inc. To Be Filed With The Maryland State
- Department Of Assessments And Taxation Prior To Recordation Of The Subdivision Plat. F-14-009. 34. Declaration And Covenants Have Been Recorded Simultaneously With The Plat.
- 35. Buildable Preservation Parcel 'A' And Non-Buildable Preservation Parcel 'B' Are Privately Owned And Encumbered By Two (2) Easement Holders; Howard County, Maryland And Layton Knoll Homeowners Association, Inc. 36. This Plan Is Subject To Approval Dated February 6, 2014 Permitting Private Ownership Of A Non-Buildable Preservation Parcel And Permitting the Retention Of An Existing Barn And Shed On The Non-Buildable Preservation Parcel. Per Section 104.0.G.1.d Of The Howard County Zoning Regulations, The County May Approve Such Ownership If The Parcel Is To Be Solely For Farming, Environmental Conservation, Or Private Recreation Purposes In Perpetuity. Approval Is Subject To The Following
- 1. The Property Must Be Use For Farming In Perpetuity. And May Not Be Used For Any Other Purpose.

 2. The Existing Buildings To Remain On The Property Are To Be Used Solely For Farming, And Nothing Else.
- 37. Water And Sewer Are Private And Provided By Well And Septic Systems.

 38. Community Meeting Provided On January 17, 2013 In Accordance With Section 16.127 Of The Howard County Subdivision And Land Development Regulations. 39. No 100 Year Floodplain Exists Within This Property Boundary.

 40. The Historic District Commission On February 7, 2013 Case No. HO-103 Has No Objection To The Proposed Subdivision.
- 41. Saint Michaels Road Is A Scenic Road. The Western Part Of Florence Road From The Intersection With Florence Road And Saint Michaels Road Is A Scenic Road. 42. A Noise Study Is Not Required For This Project.
- 43. This Major Subdivision Plan Is Located in The Designated Tiers III & IV Growth Area Of Howard County, Per The Plan Howard 2030 Tier Map And Would Be Subject To State Bill 58-236; However, It It Considered To Be Grandfathered To 58-236 Because The Property Owner Had Applied For A Soil Percolation Test Application and Had Submitted A Percolation Test Plan To The Howard County Health Department Prior To July 1, 2012.

 44. Preservation Parcels Provided With This Development Are As Follows:
 - a. Buildable Preservation, Parcel 'A'
 Owned: Privately (Sec 6.N.# 36) Easement Holder: Howard County Maryland And Layton Knolls Homeowners Association, Inc. Use: Residential Home With Agricultural Farming
 - Owned: Privately Easement Holder: Howard County, Maryland And Layton Knolls Homeowners Association, Inc. Use: Environmental With Agricultural Farming
 - a. Allowed Development Units (D.U.) By Matter Of Right = 7 D.U. (31.596 Acres x 1 D.U./4.25 Acres) = 7.43 D.U. b. Proposed Development Units (D.U.) = 7. D.U.

b. Non-Buildable Preservation Parcel 'B'

- (6 Cluster Lots + 1 Buildable Parcel) 46. All Construction Shall Be In Accordance With The Latest Standards And Specifications Of Howard County Plus MSHA Standards And Specifications If Applicable. 47. The Contractor Shall Notify The Department Of Public Works/Bureau Of Engineering/Construction Inspection Division At
- 410-313-1880 At Least Five (5) Working Days Prior To The Start Of Work. 48. The Contractor Shall Notify "Miss Utility" At 1-800-257-7777 At Least 48 Hours prior To Any Excavation Work Being Done.
- 49. Traffic Control Devices, Markings, And Signing Shall Be In Accordance With The Latest Edition Of The Manual Of Uniform
 Traffic Control Devices (MUTCD). All Street And Regulatory Signs Shall Be In Place Prior To The Placement Of Any Asphalt.
 50. All Sign Posts Used For Traffic Control Signs Installed In The County Right-Of-Way Shall Be Mounted On A 2" Dia.
 Galvanized Steel, Perforated, Square Tube Post (14 Gauge) Inserted Into a 2.5" Dia. Galvanized Steel, Perforated, Square
- Tube Sleeve (12 Gauge) 3' Long. A Galvanized Steel Pole Cap Shall Be Mounted On Top Of Each Post. 51. A Private Range Of Address Sign Assembly Shall Be Fabricated And Installed By Howard County Bureau Of Highways At The Developers/Owners Expense. Contact Howard County Traffic Division At 410-313-5752 For Details And Cost Estimates At The
- 52. Existing Utilities Shown Are Based On Field Location By Fisher, Collins & Carter, Inc. 53. Three (3) Existing Roadside Trees Are Proposed To Be Removed In Order To Conduct Shoulder Improvements To Florence Road. Tree Removal And Replacement Will Be Conducted Under A Roadside Tree Permit.

TITLE SHEET LAYTON KNOLL,

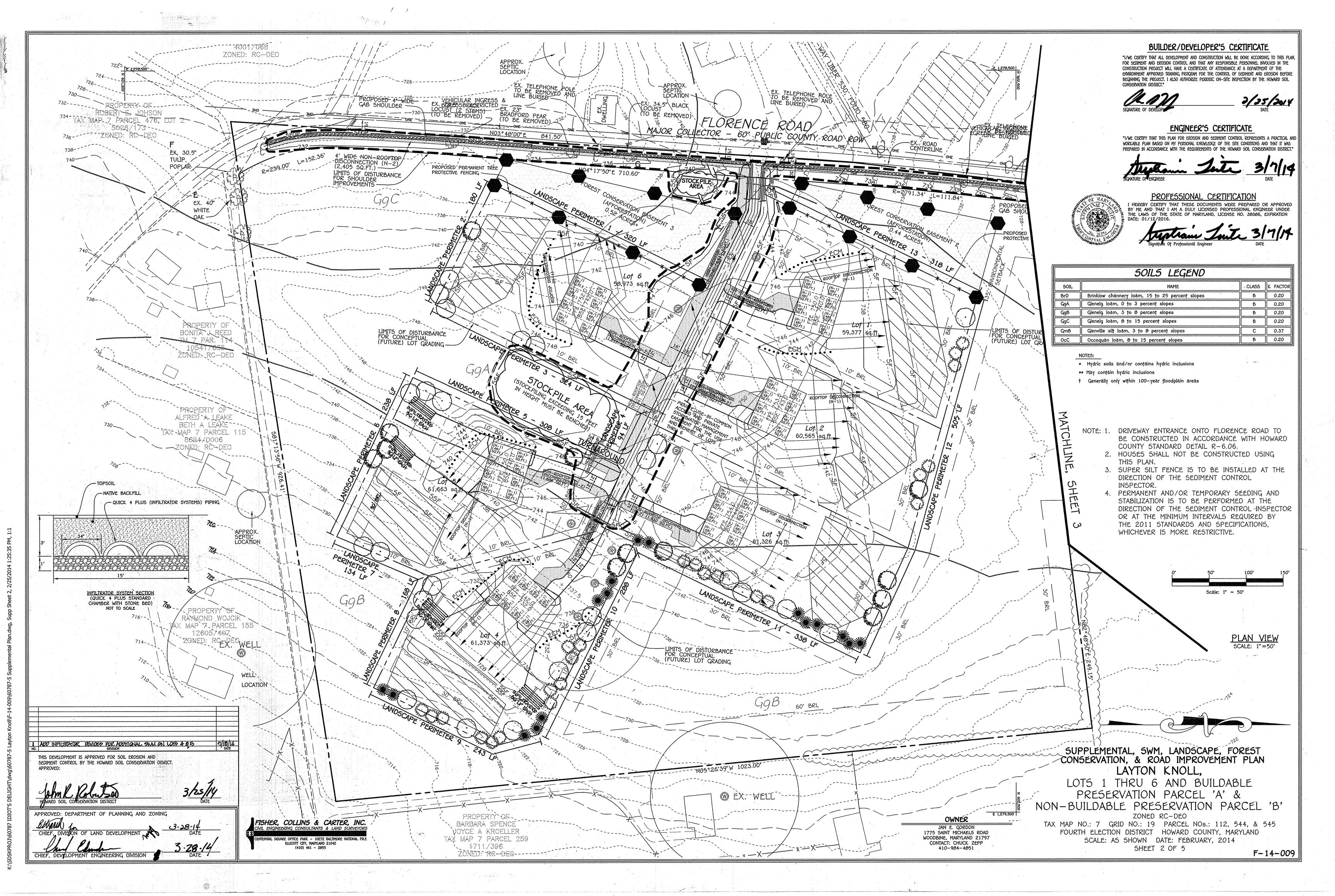
LOTS 1 THRU 6 AND BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCEL 'B'

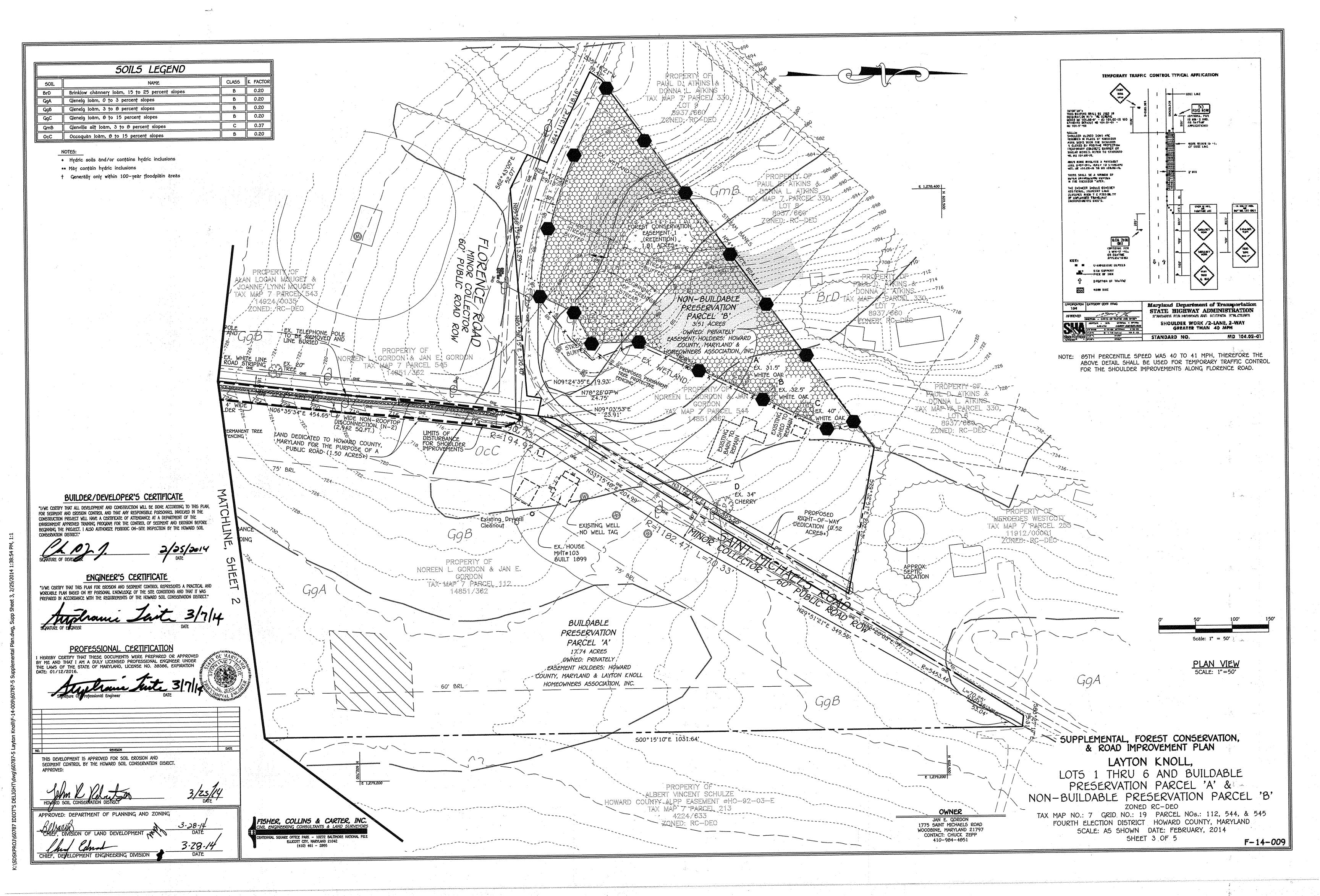
ZONED RC-DEO TAX MAP NO.: 7 GRID NO.: 19 PARCEL NOs.: 112, 544, & 545 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: FEBRUARY, 2014

SHEET 1 OF 5

F-14-009





- 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 Plantina.
- 8. All Non-Organic Debris Associated With The Planting Operation Shall Be Removed From The Site By The Contractor.

SEQUENCE OF CONSTRUCTION - AFFORESTATION PLANTINGS

- 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. Proposed Reforestation Areas Impacted by The Site Grading Shall Be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil
- 3. Plants Shall Be Installed And Maintained As Per Notes And Specifications For This Project.
- 4. Upon Completion Of The Plantings, Signage Shall Be Installed As Per The Signage Detail.
- 5. Plantings Shall Be Guaranteed and Maintained In Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project.

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 So That New Growth OF Roses Is Able To Be More Successfully Managed.

REFORESTATION PLANTING NOTES

- 1. Plants, Related Material, And Operations Shall Meet The Detailed Description As Given
- 2. 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
- 3. 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
- 4. 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
- 5. 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 Plantings" For Guidelines.
- 6. 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.
- 7. 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.
- 9. Upon Completion Of Installation, Signage Shall Be Installed As Shown.

FOREST CONSERVATION WORKSHEET

VERSION 10

VERSION 1.0	
BASIC SITE DATA: A. TOTAL TRACT AREA	31.60 Ac 0 17.74 13.86 Ac
LAND USE CATEGORY: (from table 3.2.1, page40, Manual) ARA MDR IDA HDR MPD CIA X	
INFORMATION FOR CALCULATIONS: E. AFFORESTATION THRESHOLD	3.46
G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	0
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	1.61
 L. TOTAL AREA OF FOREST TO BE CLEARED	<u>0</u> 1.81
PLANTING REQUIREMENTS: N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	= 0 0 0 0 0.96

PLANTING SCHEDULE

FCE # 2 - 0.44 acres Planting Required: 44

Qty	Species	Alternate Size (Spacing)
12	Acer rubrum - Red maple	2 cal. (20 o.c
3	Carya tomentosa - Mockernut Hickory	2"cal. (20'o.c
3	Carya glabra – Pignut Hickory	2"cal. (20'o.c
4	Cornus florida - Flowering Dogwood	2"cal. (20'o.c
3	Prunus serotina - Black cherry	2"cal. (20'o.c
7	Quercus alba - White oak	2"cal. (20'o.c
.6	Quercus prinus - Chestnut Oak	2"cdl. (20'o.c
7	Quercus rubra - Red Oak	2"cal. (20'o.c
4	Viburnum prunifolium - Blackhaw	2" cal. (20'o.c
4	Viburnum dentatum - Arrowwood Viburnum	2"cal. (20'o.c

* Note: (1) Size proposed to be utilized and planted at 100 trees per acre (100 trees/acre x 0.44 acres = 44 trees). Shrubs (Viburnums) not included in total quantity.

(1) Red Maples, Hickories, and Oaks to be placed at least 50 feet from Overhead

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.
- 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.
- 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.
- 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

PLANTING SCHEDULE

16 Acer rubrum - Red maple
4 Carya tomentosa - Mockemut Hickory

4 Carra glabra — Pignut Hickory
5 Cornus florida — Flowering Dogwood
4 Prunus serotina — Black cherry

Quercus prinus — Chestnut Oak Quercus rubra — Red Oak

Note: (1) Size proposed to be utilized and planted at 100 trees per acre (100 trees/acr

x 0.52 acres = 52 trees). Shrubs (Viburnums) not included in total quantity.

(1) Red Maples, Mickories, and Oaks to be placed at least 50 feet from Overhead

Hectric Lines. Cherry, Dogwoods and Shrubs to be planted in area of easement

FCE # 3 - 0.52 acres

Planting Required: 52

Planting Provided: 55

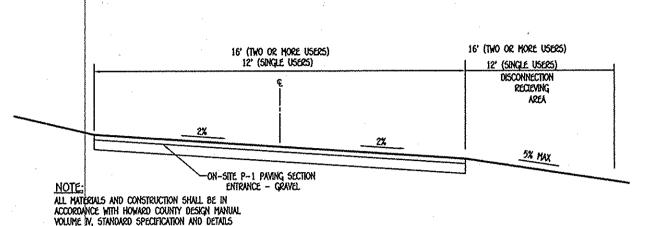
- 1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED. BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT 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

- 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.

~19' EXISTING ROADWAY PAVING PROPOSED 4" WIDE | PROPOSED 4" WIDE EXISTING ROADWAY PAVING SECTION - 4.5" THICK GAB SHOULDER ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL

volume IV, standard specification and details FLORENCE ROAD TYPICAL 4' ROADWAY SHOULDER CROSS SLOPE SECTION

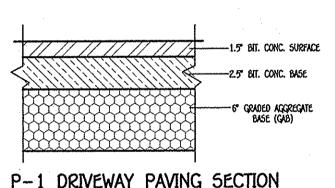


NOT TO SCALE

TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

1. 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



OWNER

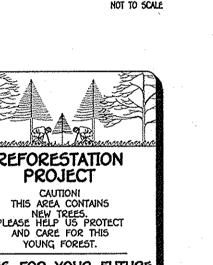
JAN E. GORDON

1775 SAINT MICHAELS ROAD

CONTACT: CHUCK ZEPP

410-984-4851

WOODBINE, MARYLAND 21797



11" MINIMUM NOTE: THE PROTECTIVE SIGNAGE SHALL BE IN PLACE FOR PERPETUTY.

FOREST

RETENTION

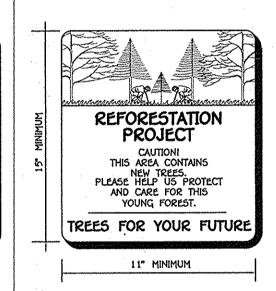
AREA

MACHINERY, DUMPING

OR STORAGE OF ANY MATERIALS IS

PROHIBITED

VIOLATORS SUBJECT TO THE FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF

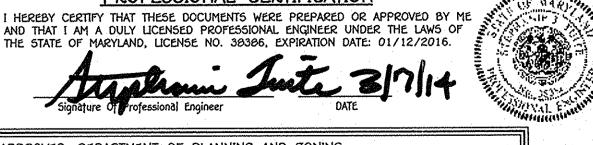


FOREST CONSERVATION SIGN DETAIL NOT TO SCALE

					5C	HEDULE A - P	ERIMETER LAND	SCAPE EDGE						
PERIMETER	1	. 2	3	4	5	6 ,	7	8	9	₄ 10	11	12	13	TOTAL
CATEGORY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	A	Α	A	A	Α	Α :	. А	Α	A	, A	A	A	A	
LINEAR FEET OF PERIMETER	320 L.F.	180 L.F.	324 L.F.	94 L.F.	300 L.F.	230 L.F.	134 L.F.	168 L.F.	243 LF.	288 L.F.	350 L.F.	505 L.F.	318 LF.	
NUMBER OF PLANTS REQUIRED	(320°/60° = 5.3 OR 5)	(180'/60' = 3)	(324 ² /60 ² = 5.4 OR 5)	(94'/60' = 1.6 OR 2)	(308°/60° = 5.1 OR 5)	(238'/60' = 4)	(134'/60' = 2.2 OR 2)	(168'/60' = 2.9 OR 3)	(243'/60' = 4.1 OR 4)	5 (280°/60° = 4.8 OR 5)	$(350^{\circ}/60^{\circ} = 5.6 \text{ OR } 6)$	(505'/60' = 8.4 OR 8)	$(318^{\circ}/60^{\circ} = 5.3 \text{ OR } 5)$	57 0
CREDIT FOR EXISTING VEGETATION SHADE TREES SMALL/MEDIUM DECIDUOUS TREES (2:1 SUBSTITUTION)	0	0	0 0	0	0	0 0	0	0	0	0 0	0	0 0	0	0
NUMBER OF PLANTS PROVIDED SHADE TREES 5MALL/MEDIUM DECIDUOUS TREES (2:1 SUBSTITUTION)	0* 0	3 0	3* 0	2 0	3* 0*	4 0	2 0	3 0	3* 9*	5* 11*	5* 14*	5 6	0* 0	38 40

NOTE: UNDER ALTERNATIVE COMPLIANCE (CHAPTER IV OF THE LANDSCAPE MANUAL), 5 SHADE TREES REQUIRED ALONG PERIMETER 1, 2 SHADE TREES REQUIRED ALONG PERIMETER 5, AND 6 SHADE TREES REQUIRED ALONG PERIMETER 13 HAVE BEEN RELOCATED TO PERIMETERS 9 THRU 11 WITH SOME EVERGREEN TREES SUBSTITUTED FOR THE REQUIRED SHADE TREES IN ORDER TO PROVIDE PARCEL 259 WITH ADDITIONAL, THICKER BUFFERING.

PROFESSIONAL CERTIFICATION

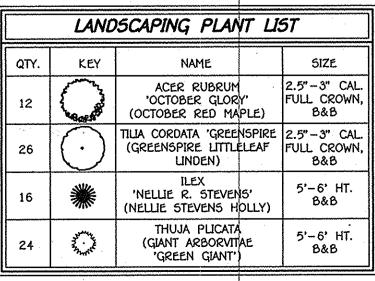


APPROVED: DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION



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.



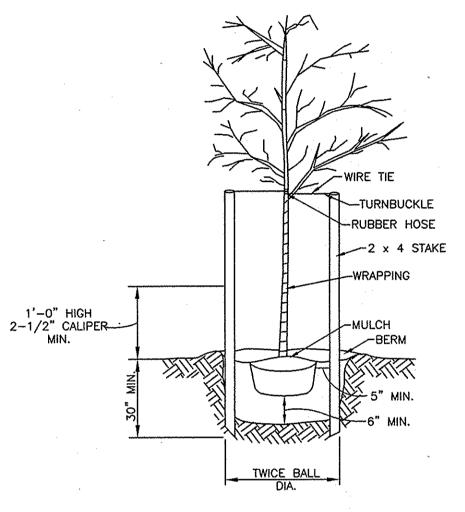
TOTAL: 30 SHADE TREES, 40 EVERGREENS

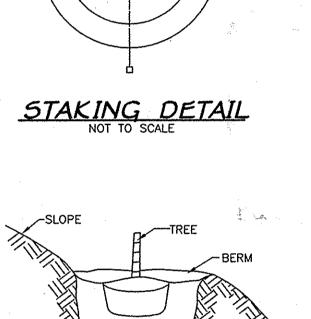


- 1. THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION TOTALS 2.769 AC. CONSISTING OF 1.809 AC. OF ON- SITE RETENTION AND 0.960 AC. OF ON-SITE REFORESTATION. SURETY FOR ON-SITE REFORESTATION IS \$20,909.00 BASED ON 0.960 AC. X 43,560 SQ. FT./ACRE X \$0.50/5Q. FT. AND \$10,900 FOR 1090 LF OF PERMANENT FENCING. A TOTAL SURETY AMOUNT IS \$31,809.00. THERE IS NO SURETY REQUIRED FOR ON-SITE RETENTION.
- 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 (30) SHADE TREES AND (40) EVERGREENS IN THE AMOUNT OF (\$17,400.00) IS TO BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT.
- 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 RÉLOCATION 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. THE FOREST CONSERVATION EASEMENTS SHOWN ON THIS PLAN 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 EASEMENT ARE ALLOWED.
- 6. SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED.
- . THE ON-SITE FOREST CONSERVATION AFFORESTATION EASEMENT PLANTINGS ARE NOT TO BE CONSIDERED LANDSCAPING AS USUALLY PRACTICED. THE AFFORESTATION 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. THEIR PRIMARY PURPOSE IS ENVIRONMENTAL AND WILL REQUIRE SPECIAL MANAGEMENT.
- 9. SEE THE RECORD PLAT FOR THE BEARING AND DISTANCE DESCRIPTIONS OF THE FOREST CONSERVATION EASEMENTS.

GUARANTEE REQUIREMENTS

A 75 PERCENT SURVIVAL RATE OF REFORESTATION PLANTINGS WILL BE REQUIRED AT THE END OF THE 24 MONTH MAINTENANCE PERIOD. ALL PLANT MATERIAL BELOW THE 75 PERCENT THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE NEXT GROWING SEASON.





-STAKE

-TURNBUCKLE

NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

GRADING FOR PLANTING ON SLOPES

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	4	aged 6 months, minimum
Pea gravel diaphragm	ped gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a .	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AA5HTO M-43	No. 57 or No. Aggregāte (3/8" to 3/4")	
Underdrain piping	F 750, Type P5 20 or AA5HTO M-270	4" to 6" rigid schedule 40 PVC or 5DR35	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
0	MCUA Mir. No. 3, 4 3500	p.a	on-site testing of poured-in-place concrete required:
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	11.4	28 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-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AA5HTO-M-6 or A5TM-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 DETAILS & NOTES LAYTON KNOLL,

LOTS 1 THRU 6 AND BUILDABLE PRESERVATION PARCEL 'A' &

NON-BUILDABLE PRESERVATION PARCEL 'B' ZONED RC-DEO

TAX MAP NO.: 7 GRID NO.: 19 PARCEL NOs.: 112, 544, & 545 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: FEBRUARY, 2014

SHEET 4 OF 5

F-14-009

A. Soil Preparation 1. Temporary Stabilization

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

- b. Apply fertilizer and lime as prescribed on the plans.
- c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
- 2. Permanent Stabilization
- a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions
- required for permanent vegetative establishment are: i. Soil pH between 6.0 and 7.0.
- ii. Soluble salts less than 500 parts per million (ppm). iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be
- planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
- iv. Soil contains 1.5 percent minimum organic matter by weight. v. Soil contains sufficient pore space to permit adequate root penetration
- b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
- c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

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

B. Topsoiling

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

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

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

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

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

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

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

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

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

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders. stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil. 6. Topsoil Application

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

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to

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.

BUILDER/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 ANY 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

CONSERVATION DISTRICT."

ENGINEER'S CERTIFICATE

"I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS

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. 30306, EXPIRATION

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

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 be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

3. Lime materials must be around limestone (hydrated or burnt lime may be substituted except when hydroseeding which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through

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.

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.

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 8.1 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 but 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 8-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

ardiness Zone eed Mixture	e (from Figure B. (from Table B.1):	Fertilizer Rate (10-20-20)	Lime Rațe		
Species	Application Rate (lb/ac)	Seeding Dațes	Seeding Depths		
BARLEY	96	- 3/1 - 5/15, 0/15 - 10/15	1"	436 lb/ac	2 tons/ac (90 lb/ 1000 sf)
OATS	72		1"	(10 lb/ 1000 sf)	
RYE	112		1"		

PERMANENT SEEDING NOTES (8-4-5) A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table 8.3 for the appropriate Plant Hardiness Zone (from Figure 8.3) and based on the site condition or purpose found on Table 8.2. Enter selected mixture(s). application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or desthetic 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 turforass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

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

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose.

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

Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight. iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas

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

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

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

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

Hardiness Zone (from Figure B.3): 65 Seed Mixture (from Table B.3): 8						er Rațe (10-	Lime Rāte	
No.	5pecies	Application Rate (lb/ac)	Seeding Dates	5eeding Depths	Z	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 lb/ac (2 lb/	90 lb/ac (2 lb/	2 †ons/ac (90 lb/ 1000 sf)
					(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 3)
,		·	·	·	,			

FISHER. COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS DUARE DEFICE PARK - 10272 BALTIMORE NATIONAL PIK

B. 5od: To provide quick cover on disturbed areas (2:1 grade or flatter)

1. General Specifications

a. Class of turforass 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 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement

for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable. c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when

suspended vertically with a firm grasp on the upper 10 percent of the section. l. 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

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

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

A MINIMUM OF 40 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES. DIKES. PERIMETER SLOPES AND ALL SLOPES

CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

GREATER THAN 3:1. b) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 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 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 DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6) SITE ANALYSIS: TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAVED

2.27 ACRES (SHOULDER IMPROVEMENTS & COMMON DRIVEWAY) 0.34 ACRES (SHOULDER IMPROVEMENTS & COMMON DRIVEWAY) AREA TO BE VEGETATIVELY STABILIZED 1.93 ACRES TOTAL CUT 700 CU.Y05 TOTAL FILL 700 CU.YD5. OFFSITE WASTE/BORROW AREA LOCATION

ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED. IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS. BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

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

12) A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRE 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 PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME

SEQUENCE OF CONSTRUCTION

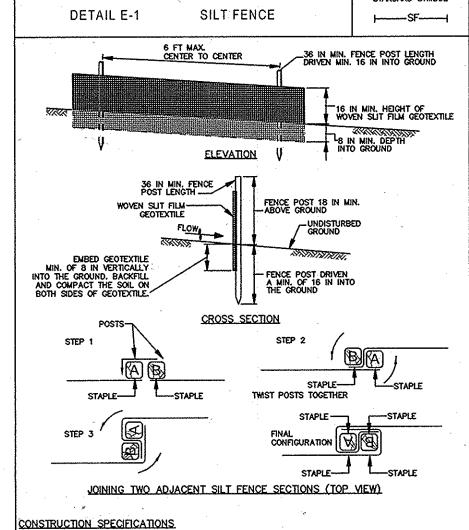
OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. (2 WEEKS) NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD

INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE ON PAVEMENT, SILT FENCE, AND SUPER-SILT FENCE. (3 DAYS)

ROUGH GRADE SITE AND REMOVE ROADSIDE TREES. (1 WEEK) INSTALL GRAVEL SHOULDER AND PAVE USE-IN-COMMON DRIVEWAY. (1 WEEK)

ALL FINAL GRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR. THE SEDIMENT CONTROL DEVICES MAY BE REMOVED. (3 DAYS)

note: the contractor shall inspect and provide necessary maintenance each rainfall and on a daily basis.



USE WOOD POSTS 1% X 1% \pm χ_6 Inch (Minimum) square cut of sound quality hardwood. As a liternative 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 APART

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENT 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

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

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

<u>Definition</u>

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

Purpose To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

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

4. Access the stockpile area from the upgrade side.

material must be covered with impermeable sheeting.

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 8-3 Land Grading. 3. Runoff from the stockpile area must drain to a suitable sediment control practice.

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. . Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard 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.

DETAIL B-4-6-C PERMANENT SOIL

CHANNEL APPLICATION

ISOMETRIC VIEW

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 VECETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "I" 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. "I" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, AD MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAIM HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT

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 UNE. 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.

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

2011

ISOMETRIC VIEW

USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

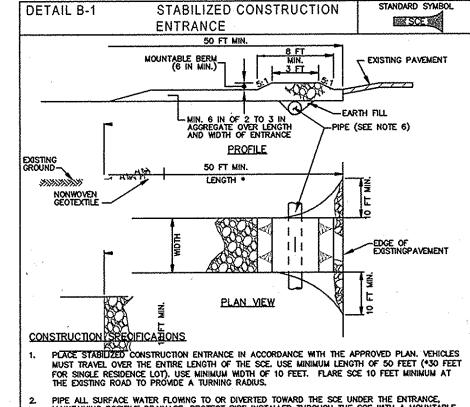
PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

DETAIL E-2 SILT FENCE ON PAVEMENT

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.

(* INCLUDE SHEAR STRESS)

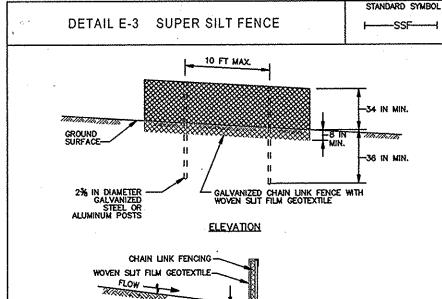


PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE, PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN, WHEN THE SCE IS LOCATED 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

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. MADY AND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE.
TURAL RESOURCES CONSERVATION SERVICE 2011



CONSTRUCTION SPECIFICATIONS . INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOO 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) 4 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.

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.

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

OWNER

JAN E. GORDO

1775 SAINT MICHAELS ROAD

CONTACT: CHUCK ZEPP

410-984-4851

WOODBINE, MARYLAND 21797

MARYLAND DEPARTMENT OF ENVIRONMEN
WATER MANAGEMENT ADMINISTRATION

, provide a two foot opening between every set of supports and place stone in the-opening over geotextile. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL ATTACH LATHE. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION. SECURE BOARDS TO PAVEMENT WITH 400 5 INCH MINIMUM LENGTH NAILS. D. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

JOINING ADJACENT SECTIONS
OF GEOTEXTILE

CONSTRUCTION SPECIFICATIONS

USE NOMINAL 2 INCH X 4 INCH LUMBER.

SEDIMENT/EROSION CONTROL NOTES & DETAILS LAYTON KNOLL

U.S. DEPARTMENT OF AGRICULTURE
URAL RESOURCES CONSERVATION SERVICE

LOTS 1 THRU 6 AND BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCEL 'B'

ZONED RC-DEO TAX MAP NO.: 7 GRID NO.: 19 PARCEL NOs.: 112, 544, & 545 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: FEBRUARY, 2014

SHEET 5 OF 5

F-14-009

WOVEN SUT FILM

-MASTIC SEAL

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SECTION A-A