

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SUPPLEMENTAL SWM, LANDSCAPE, FOREST CONSERVATION, & ROAD IMPROVEMENT PLAN
3	SUPPLEMENTAL FOREST CONSERVATION, & ROAD IMPROVEMENT PLAN
4	STORMWATER MANAGEMENT DETAILS & NOTES
5	SEDIMENT/EROSION CONTROL NOTES & DETAILS

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
BrD	Brinklow channery loam, 15 to 25 percent slopes	B	0.20
GgA	Glenelig loam, 0 to 3 percent slopes	B	0.20
GgB	Glenelig loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelig loam, 8 to 15 percent slopes	B	0.20
Gmb	Glenville silt loam, 3 to 8 percent slopes	C	0.37
OcC	Ocoquan loam, 8 to 15 percent slopes	B	0.20

NOTES:
 • Hydric soils and/or contains hydric inclusions
 ** May contain hydric inclusions
 † Generally only within 100-year floodplain areas

DESIGN NARRATIVE

Introduction:
 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.

General Site Conditions:
 Layton Knoll is zoned RC-DEO and is 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 improved 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" Glenelig loam, "Gmb" Glenville-Silt loam, and "OcC" Ocoquan 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'.

I. Natural Resource Protection:
 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 located on this site, all buffers will be honored since they exist only on 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 improvements.

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.

SPECIMEN TREE TABLE			
KEY	SPECIES, SIZE (DBH)	CONDITION	STATUS
A	WHITE OAK, 31.5"	GOOD CONDITION	TO REMAIN
B	WHITE OAK, 32.5"	GOOD CONDITION	TO REMAIN
C	WHITE OAK, 40"	GOOD CONDITION	TO REMAIN
D	BLACK CHERRY, 34"	FAIR CONDITION	TO REMAIN
E	WHITE OAK, 40"	OFF-SITE	-
F	TULIP POPLAR, 30.5"	OFF-SITE	-
G	BLACK LOCUST, 34.5"	ALONG ROAD SHOULDER, FAIR CONDITION, SOME DIEBACK AND PHONE LINES WITHIN CANOPY	TO REMAIN

NOTE: Critical roof zone shall be 1.5:1" dbh

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: 01/12/2016.

Sydney L. Smith 3/20/14
 Signature of Professional Engineer DATE



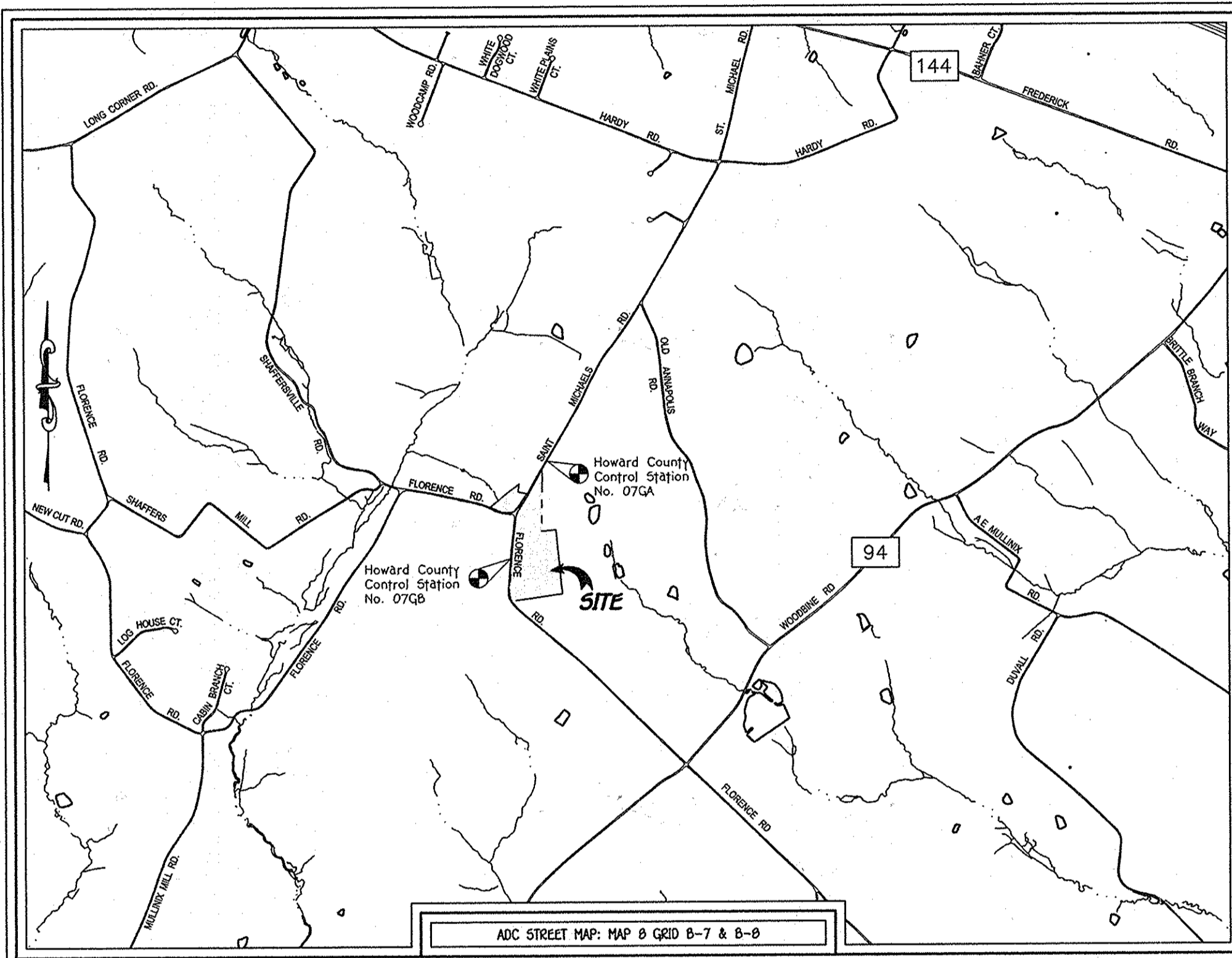
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-28-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3-28-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SERVICE OFFICE: PAVE - 10272 BALTIMORE NATIONAL PIKE
 ELKTON CITY, MARYLAND 21942
 (410) 811-2925

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



VICINITY MAP

SCALE: 1" = 200'

LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	EXISTING CONCRETE 2" INTERNAL
[Symbol]	PROPOSED CONCRETE 2" INTERNAL
[Symbol]	SELF FENCE
[Symbol]	SUPER SELF FENCE
[Symbol]	LOD
[Symbol]	LINE OF DISTURBANCE
[Symbol]	EXISTING FENCE LINE
[Symbol]	EX. LIMIT OF TREES AND FOREST
[Symbol]	PROPOSED LANDSCAPING
[Symbol]	EXISTING TREES
[Symbol]	SPECIMEN TREES
[Symbol]	PROPOSED GRAVEL / GWS
[Symbol]	PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 1 THRU 6 25% OR GREATER SLOPES (STEEP SLOPES)
[Symbol]	15% TO 25% SLOPES
[Symbol]	PROPOSED PUBLIC FOREST CONSERVATION EASEMENT
[Symbol]	EXISTING WETLANDS
[Symbol]	WETLAND BUFFER
[Symbol]	EXISTING LIMIT OF WETLANDS
[Symbol]	EXISTING STREAM BANKS
[Symbol]	EXISTING STREAM BANK BUFFER
[Symbol]	EXISTING POWER POLE

BENCHMARK INFORMATION	
B.M.#1	- HOWARD COUNTY CONTROL STATION #07GA - HORIZONTAL - NAD '83 (LOCATED 34.7' SOUTH OF PEPCO #67950, 32.3' NORTHEAST OF C&P #36, AND 1.8' EAST OF EDGE OF SAINT MICHAELS ROAD. N 603,796.629 E 1,279,230.677 ELEVATION = 749.480 - VERTICAL - (NAVD '86)
B.M.#2	- HOWARD COUNTY CONTROL STATION #07GB - HORIZONTAL - (NAD '83) (LOCATED 34.5' SOUTH OF THE CENTERLINE OF THE DRIVEWAY TO 2770 FLORENCE ROAD, 11.8' WEST OF THE CENTERLINE OF FLORENCE ROAD, AND 39.6' SOUTHWEST OF C&P POLE #43. N 602,154.839 E 1,278,602.539 ELEVATION = 743.399 - VERTICAL - (NAVD '86)

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 07/28/06)
- D. PROPOSED USE: RESIDENTIAL
- E. PREVIOUS HOWARD COUNTY FILES: MHT #103, ECP-13-068, 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% = 0.08 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)
- I. TOTAL AREA OF EXISTING FOREST = 1.81 AC.± (ON NON-BUILDABLE PRES. PARCEL B)
- J. TOTAL GREEN OPEN AREA = 9.07 AC.±
- K. TOTAL IMPERVIOUS AREA = 0.96 AC.±
- L. 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 1.81 ACRES OF EXISTING FOREST)
- O. AREA OF ROAD DEDICATION = 2.02 AC.±

STORMWATER MANAGEMENT PRACTICES			
LOT NO.	ADDRESS	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N
1	2771 FLORENCE ROAD	YES, EIGHT (8)	YES
2	2775 FLORENCE ROAD	YES, EIGHT (8)	YES
3	2779 FLORENCE ROAD	YES, EIGHT (8)	YES
4	2783 FLORENCE ROAD	YES, EIGHT (8)	YES
5	2787 FLORENCE ROAD	YES, EIGHT (8)	YES
6	2791 FLORENCE ROAD	YES, EIGHT (8)	YES

Minimum Lot Size Tabulation			
Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
1	59,577 Sq. Ft.±	86 Sq. Ft.±	59,231 Sq. Ft.±
2	60,249 Sq. Ft.±	806 Sq. Ft.±	59,799 Sq. Ft.±
3	61,326 Sq. Ft.±	1,454 Sq. Ft.±	59,872 Sq. Ft.±
4	61,373 Sq. Ft.±	2,070 Sq. Ft.±	59,303 Sq. Ft.±
5	61,663 Sq. Ft.±	1,755 Sq. Ft.±	59,517 Sq. Ft.±
6	59,573 Sq. Ft.±	653 Sq. Ft.±	58,320 Sq. Ft.±

General Notes:

1. Subject Property Zoned RC-DEO As Per October 6, 2013 Comprehensive Zoning Plan.
2. Coordinates Based On NAD '83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 07GA And No. 07GB.
3. S/A, H.C.M. 07GA North 603796.629 East 1279230.677
4. S/A, H.C.M. 07GB North 602154.839 East 1278602.539
5. 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.
6. B.C.L. Denotes Building Restriction.
7. ● Denotes Iron Pin Set Capped "F.C.C. 106".
8. ● Denotes Iron Pipe Or Iron Bar Found.
9. ○ Denotes Angular Change In Bearing Of Boundary Or Rights-Of-Way.
10. ■ Denotes Concrete Monument Set With Aluminum Plate "F.C.C. 106".
11. ■ Denotes Concrete Monument Or Stone Found.
12. All Areas Are More Or Less Lach.
13. Distances Shown Are Based On Surface Measurement And Not Reduced To NAD '83 Grid Measurement.
14. For Flag Or Pipestem Lots, Refuse Collection, Snow Removal And Road Maintenance Are Provided To The Junction Of The Flag Or Pipestem And Road Right-Of-Way Line And Not Onto The Pipestem Lot Driveway.
15. Distances 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 (WEQ-Loading);
 e) Drainage Elements - Capable Of Safely Passing 100 Year Flood With No More Than 1 Foot Depth Over Surface;
 f) Structure Clearances - Minimum 12 Feet;
 g) Maintenance - Sufficient To Ensure All Weather Use.
16. No Grading, Removal Of Vegetation 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.
17. Property Subject To Prior Department Of Planning And Zoning File Nos: ECP-13-068, WP-13-061 And WP-14-029.
18. No Cemeteries Exist On This Site Based On A Visual Site Visit And Based On An Examination Of The Howard County Cemetery Inventory Map.
19. Wetlands Delineation And Forest Stand Delineation Was Prepared By Eco-Science Professionals, Inc. Dated April 5, 2013. 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 Existing Dwellings(A) Are To Be Constructed At A Distance Less Than The Zoning Regulation Requirements.
20. The Lots Shown Hereon Comply With The Minimum Ownership Width And Lot Area As Required By The Maryland Department Of The Environment.
21. 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.
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.
24. Steep Slopes, Wetlands, Stream(s), And Their Required Buffers Exist On Non-Buildable Preservation Parcel 'B'.
25. 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 Plan. 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 Imposed.
27. The Forest Conservation 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 \$20,000.00 Based On 0,960 Ac. x \$20,500 Sq. Ft./Acre x \$2,500/Sq. Ft. And \$10,000 For 1,000 Lf Of Permanent Fencing. A Total Surety Amount is \$31,000.00. 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 Street Labeled "Collector" On The Subdivision Map, There is No Surety Required For On-Site Retention. 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 For The Proposed Six New Residential Lots Of This Subdivision.
29. Plan Subject To WP-14-029 Which The Planning Director On October 9, 2013 Denied A Request To Waive Section 16.132(c)(1)(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 Plan is Provided In Accordance With A Certified Landscape Plan. In Accordance With Section 16.124 Of The Howard County Code And The Landscape Manual A Landscape Surety For (38) Shade 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 Private.
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 This Plan.
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 104.04.1.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 Conditions:
 1. The Property Must Be Used 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.
 3. Water And Sewer Are Private And Provided By Well And Septic Systems.
 4. Community Meeting Provided On January 17, 2013 in Accordance With Section 16.127 Of The Howard County Subdivision And Land Development Regulations.
 5. No 100 Year Floodplain Exists Within This Property Boundary.
 6. Historic District Commission On February 7, 2013 Case No. HD-103 Has No Objection To The Proposed Subdivision.
 7. The Historic District Commission Is A Scenic Road. The Western Part Of Florence Road From The Intersection With Florence Road And Saint Michaels Road is A Scenic Road.
 8. A Noise Study is Not Required For This Project.
 9. This Major Subdivision Plan is Located In The Designated Tier III & IV Growth Area Of Howard County. Per The Plan Howard 2030 Tier Map And Would Be Subject To State Bill SB-236; However, If It Considered To Be Grandfathered To SB-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 (see G.M.# 30)
 Easement Holder: Howard County Maryland And Layton Knolls Homeowners Association, Inc.
 Use: Residential Home With Agricultural Farming
 b. Non-Buildable Preservation Parcel 'B'
 Owned: Privately
 Easement Holder: Howard County, Maryland And Layton Knolls Homeowners Association, Inc.
 Use: Environmental with Agricultural Farming
45. Density Tabulation:
 a. Allowed Development Units (D.U.) By Matter Of Right = 7 D.U. (31,950 Acres x 1 D.U./425 Acres) = 74.9 D.U.
 b. Proposed Development Units (D.U.) = 7 D.U.
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 410-313-1580 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, Tube Sleeve (12 Gauge) - 3' Long. A Galvanized Steel Pole Cap Shall Be Mounted On Top Of Each Post.
51. A Private Stamp 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 Final Plan Stage.
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

OWNER
 JAN E. GORDON
 1775 SAINT MICHAELS ROAD
 WOODBINE, MARYLAND 21797
 CONTACT: CHUCK ZEPF
 410-984-4951

F-14-009

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.

[Signature] 3/25/14
 SIGNATURE OF DEVELOPER DATE

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 PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 3/7/14
 SIGNATURE OF ENGINEER DATE

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. 38866, EXPIRATION DATE: 01/12/2016.

[Signature] 3/7/14
 SIGNATURE OF PROFESSIONAL ENGINEER DATE



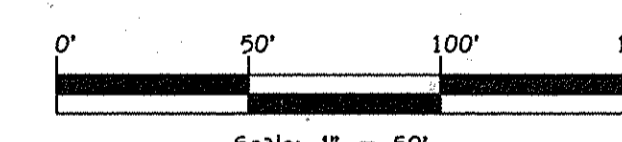
SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BrD	Brinklow channery loam, 15 to 25 percent slopes	B	0.20
GgA	Glenely loam, 0 to 3 percent slopes	B	0.20
GgB	Glenely loam, 3 to 8 percent slopes	B	0.20
GgC	Glenely loam, 8 to 15 percent slopes	B	0.20
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.37
OcC	Occoquan loam, 8 to 15 percent slopes	B	0.20

NOTES:

- Hydric soils and/or contains hydric inclusions
- May contain hydric inclusions
- † Generally only within 100-year floodplain areas

- NOTE: 1. DRIVEWAY ENTRANCE ONTO FLORENCE ROAD TO BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06.
 2. HOUSES SHALL NOT BE CONSTRUCTED USING THIS PLAN.
 3. SUPER SILT FENCE IS TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 4. PERMANENT AND/OR TEMPORARY SEEDING AND STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE MINIMUM INTERVALS REQUIRED BY THE 2011 STANDARDS AND SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.



PLAN VIEW
 SCALE: 1" = 50'

SUPPLEMENTAL, SWM, LANDSCAPE, FOREST CONSERVATION, & ROAD IMPROVEMENT PLAN
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 2 OF 5

OWNER

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

PROPERTY OF
 BARBARA SPENCE
 JOYCE A KROELLER
 TAX MAP 7 PARCEL 258
 1711/386
 ZONED RC-DEO

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENAL SQUARE OFFICE PARK - 10275 BALDORNE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2995

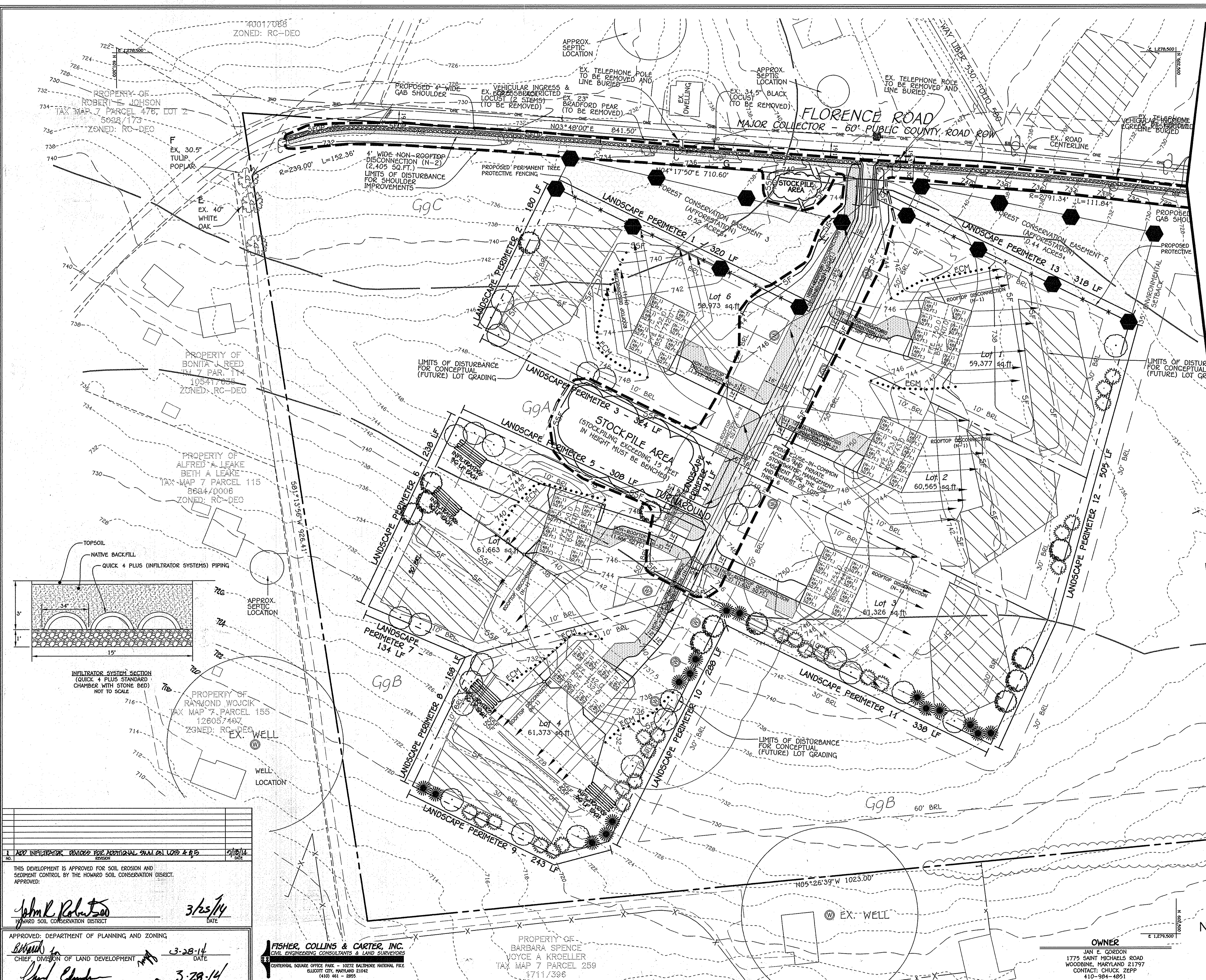
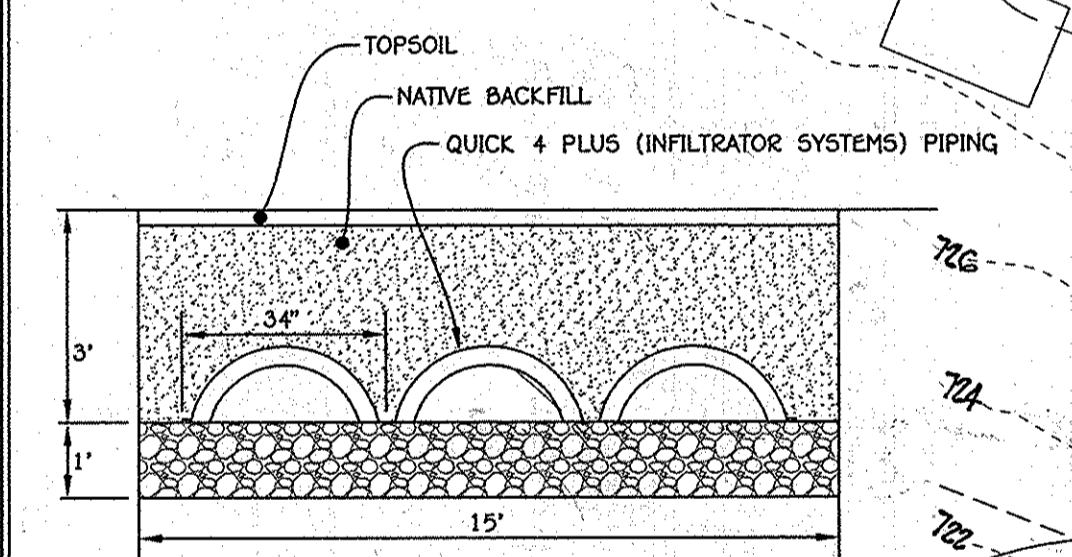
APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 3-28-14 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 3-28-14 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *[Signature]* 3/25/14 DATE
 HOWARD SOIL CONSERVATION DISTRICT

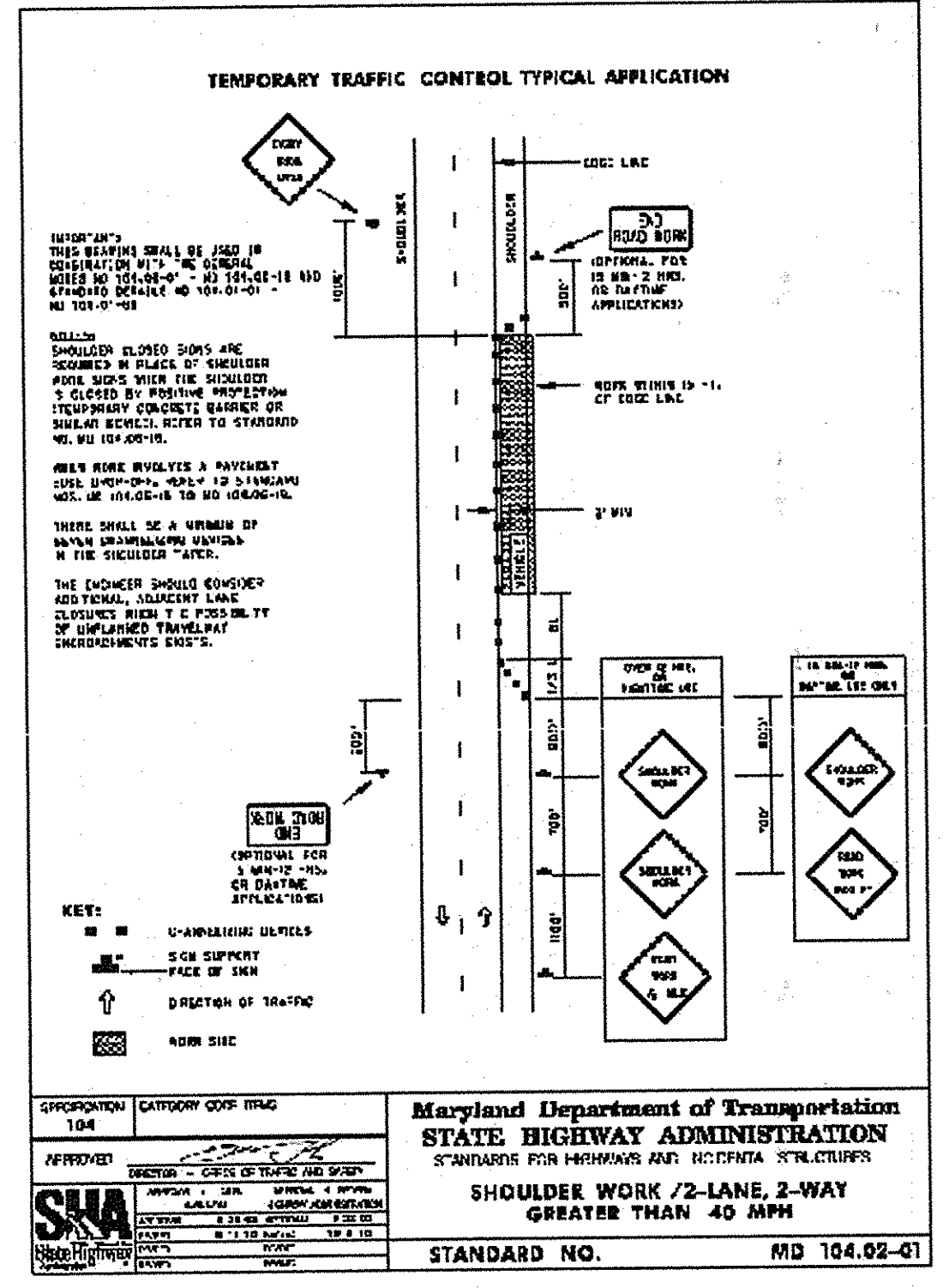
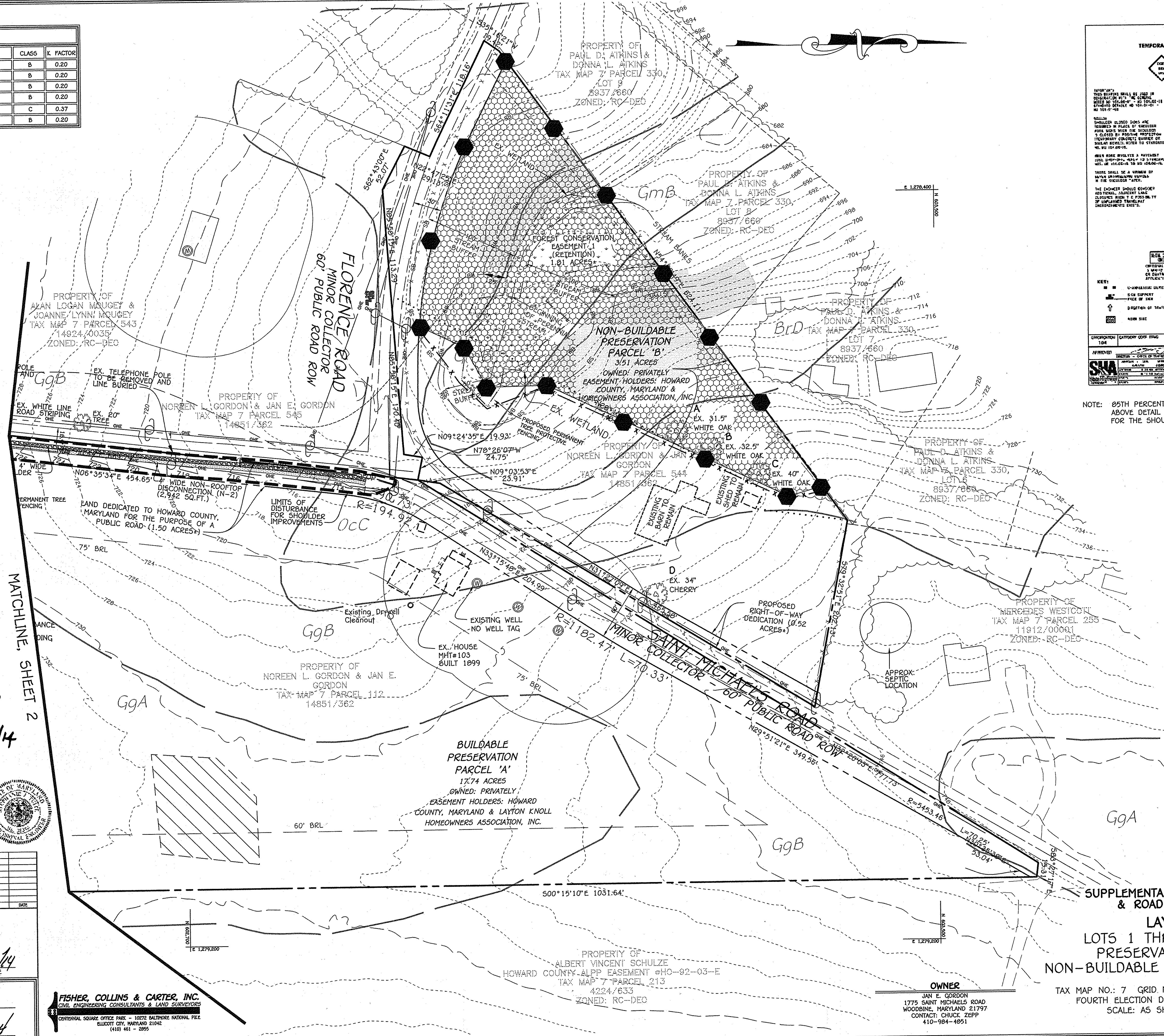
NO. 1002 INFILTRATOR CHAMBERS FOR ADDITIONAL SWM ON LOTS 2 & 5 3/15/14 DATE



K:\935KPROJ\60787.DWG\60787-5 Layton Knoll\F-14-009\60787-5 Supplemental Plan.dwg, Supp Sheet 2, 2/25/2014, 1:25:35 PM, 1:1

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
BrD	Brinklow channery loam, 15 to 25 percent slopes	B	0.20
GgA	Glenelg loam, 0 to 3 percent slopes	B	0.20
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.20
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.37
OcC	Ocoquan loam, 8 to 15 percent slopes	B	0.20

NOTES:
 * Hydric soils and/or contains hydric inclusions
 ** May contain hydric inclusions
 † Generally only within 100-year floodplain areas



NOTE: 85TH PERCENTILE SPEED WAS 40 TO 41 MPH, THEREFORE THE ABOVE DETAIL SHALL BE USED FOR TEMPORARY TRAFFIC CONTROL FOR THE SHOULDER IMPROVEMENTS ALONG FLORENCE ROAD.

BUILDER/DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SOIL EROSION AND SEDIMENT 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 SOIL EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: *Ch. P. J.* DATE: 2/25/2014

ENGINEER'S CERTIFICATE

"I/WE CERTIFY THAT THIS PLAN FOR SOIL EROSION AND SEDIMENT 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."

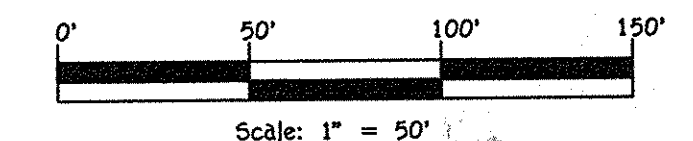
Signature: *Stephanie Tate* DATE: 3/7/14

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: 01/12/2016."

Signature: *Stephanie Tate* DATE: 3/7/14

MATCHLINE, SHEET 2



PLAN VIEW
SCALE: 1" = 50'

SUPPLEMENTAL, FOREST CONSERVATION, & ROAD IMPROVEMENT PLAN

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 3 OF 5

NO. _____ DATE _____

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

APPROVED: _____ DATE: 3/28/14

CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: _____ DATE: 3-28-14

CHIEF, DEVELOPMENT ENGINEERING DIVISION

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 4222 WOODBINE ROAD, SUITE 100
 ELKLOTT CITY, MARYLAND 21042
 (410) 461-2995

OWNER
 JAN E. GORDON
 1775 SAINT MICHAELS ROAD
 WOODBINE, MARYLAND 21797
 CONTACT: CHUCK ZEPF
 410-984-4951

PLANTING / SOIL SPECIFICATIONS

- 1. Planting of Nursery Stock shall Take Place Between March 15th and April 30th or September 15th and November 15th.
2. A Twelve (12) Inch Layer of Topsoil shall be Spread Over All Restoration Areas...

SEQUENCE OF CONSTRUCTION - AFFORESTATION PLANTINGS

- 1. Sediment Controls and Tree Protective Devices shall be Installed in Accordance with Sediment & Erosion Control Plans for This Site, if Applicable.
2. Proposed Restoration Areas Impacted by the Site Grading shall be Topsoiled and Stabilized as Per Note 2 of the "Planting / Soil Specifications".

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.
3. During the 2nd Growing Season, Plant Material shall be Watered Once a Month from May to September, as Needed.

GUARANTEE REQUIREMENTS

A 75% Survival Rate for the Restoration 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.

REFORESTATION PLANTING NOTES

- 1. Plants, Related Material, and Operations shall Meet the Detailed Description as Given on the Plans and as Described Herein.
2. Plant Material, Unless Otherwise Specified, shall be Nursery Grown, Uniformly Branched and Have a Vigorous Root System.
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.

FOREST CONSERVATION WORKSHEET VERSION 1.0

Table with columns for Basic Site Data, Information for Calculations, Existing Forest Cover, and Planting Requirements. Includes values for total tract area, acreage, and various thresholds.

PLANTING SCHEDULE

Table with columns for Qty, Species, Alternate Size, and Alternate Spacing. Lists various tree species and their planting quantities and sizes.

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.
2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED ALONG 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.

PRE-CONSTRUCTION MEETING

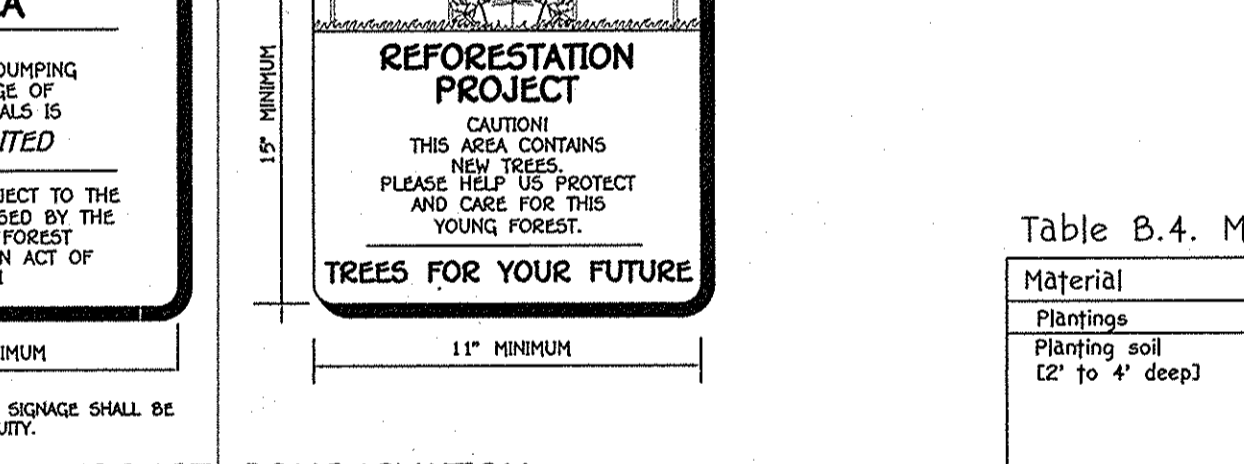
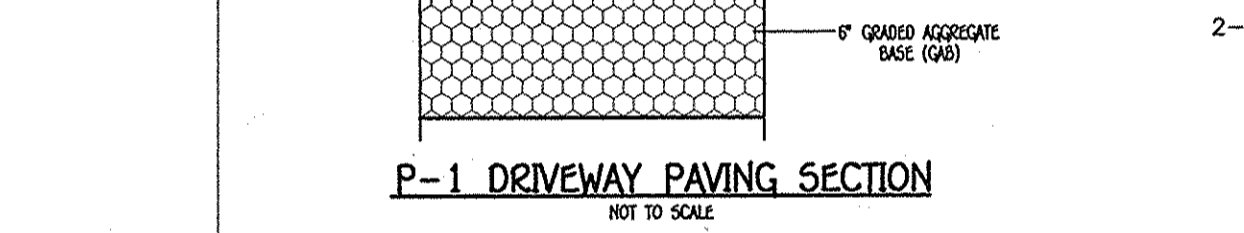
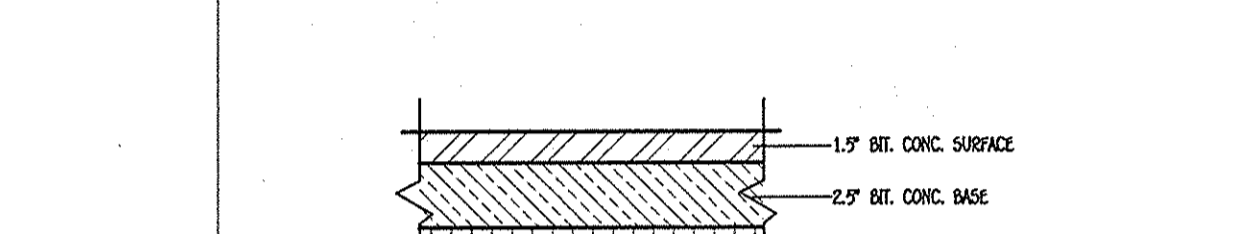
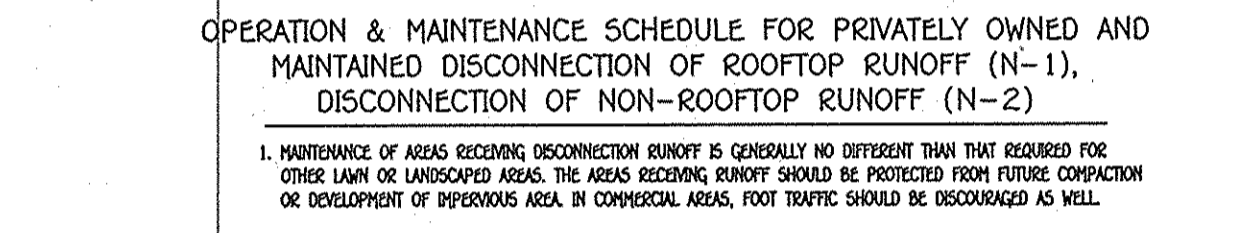
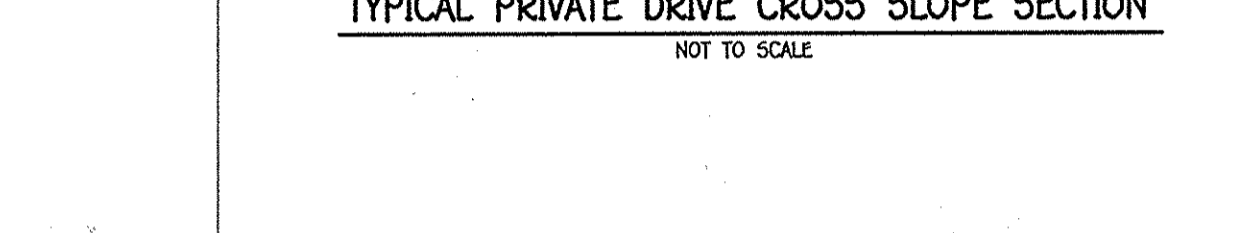
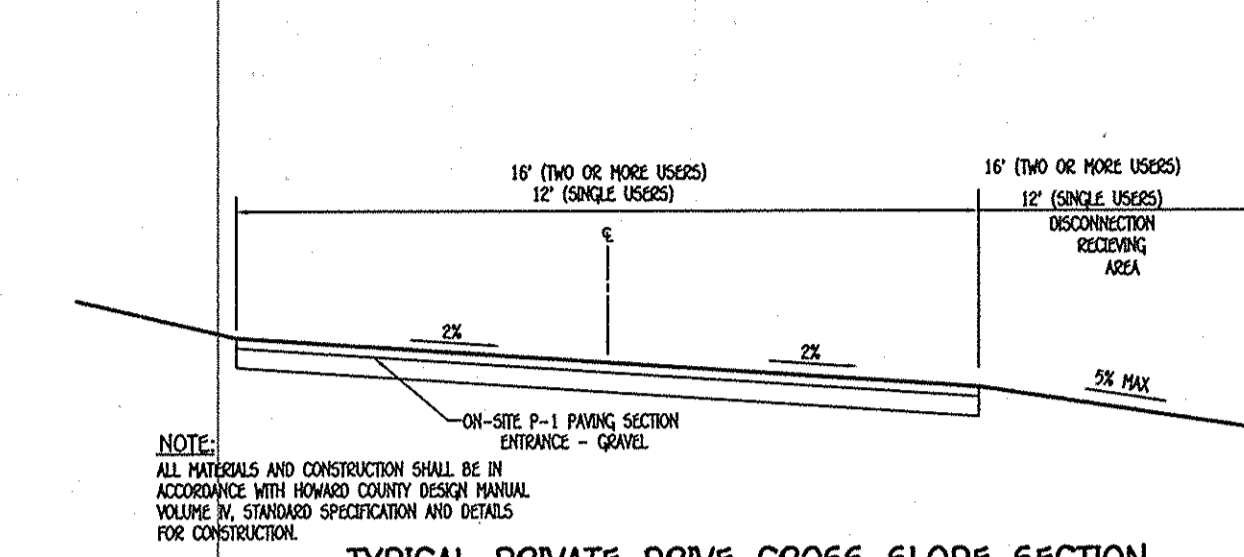
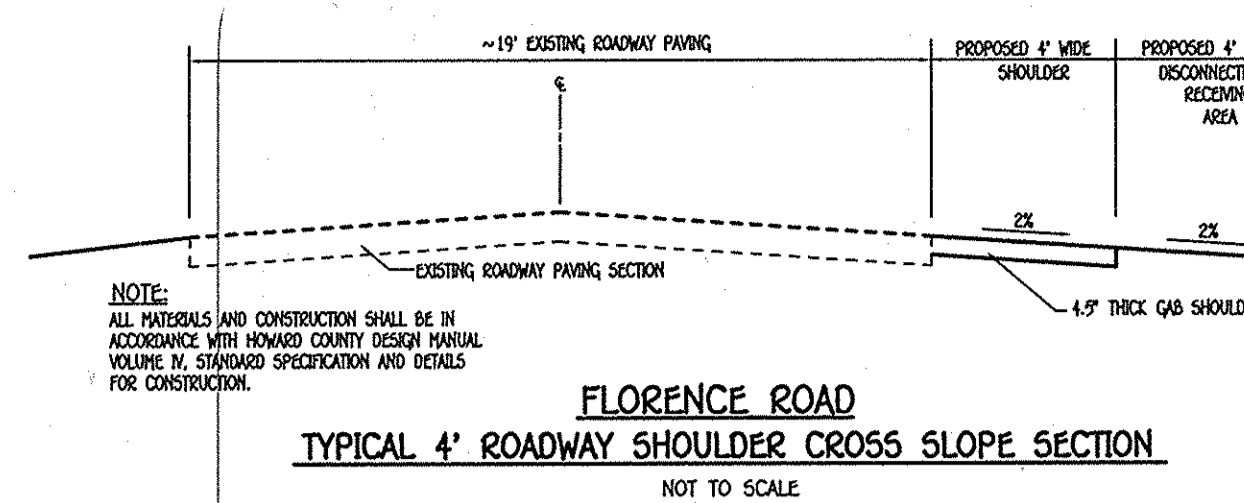
- 1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.

CONSTRUCTION MONITORING

- 1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES.
2. INSPECT ALL PLACED BOUNDARIES AND PROTECTION DEVICES;
3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS.

PLANTING SCHEDULE

Table with columns for Qty, Species, Alternate Size, and Alternate Spacing. Lists various tree species and their planting quantities and sizes.



NOTES

- 1. THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT.
2. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
3. AT THE TIME OF INSTALLATION, 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.

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.

Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

Table with columns for Material, Specification, Size, and Notes. Lists materials like planting soil, organic content, mulch, curtain drain, geotextile, gravel, underdrains, underdrain piping, poured in place concrete, and 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

SCHEDULE A - PERIMETER LANDSCAPE EDGE table with columns for perimeter categories (1-13) and total counts for landscape type, number of plants required, credit for existing vegetation, and number of plants provided.

NOTE: UNDER ALTERNATIVE COMPLIANCE (CHAPTER IV OF THE LANDSCAPE MANUAL), 5 SHADE TREES REQUIRED ALONG PERIMETER 1, 2 SHADE TREES REQUIRED ALONG PERIMETER 3, 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
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. 38366, EXPIRATION DATE: 01/12/2016.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2899

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.

LANDSCAPING PLANT LIST table with columns for Qty, Key, Name, and Size. Lists plants like Acer rubrum, Thuja occidentalis, and Ilex.

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

A. Soil Preparation

- Temporary Stabilization
 - Seeded 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 ripers mounted on construction equipment. After the soil is loosened, it must 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.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
- Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - 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 lowgrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - 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.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - 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 seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

- 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.
- 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.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - 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, rocks, trash, or other materials larger than 1 1/2 inches in diameter.
 - 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.
 - 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.
 - Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 10 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 that 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.
 - 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 seeded 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."

[Signature] *[Date]*
SIGNATURE OF DEVELOPER DATE

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 PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

[Signature] *[Date]*
SIGNATURE OF ENGINEER DATE

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. 30366, EXPIRATION DATE: 01/12/2016.

[Signature] *[Date]*
Signature of Professional Engineer DATE

NO.	REVISION	DATE

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

[Signature] *[Date]*
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: *[Signature]* *[Date]*
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] *[Date]*
CHIEF, DEVELOPMENT ENGINEERING DIVISION

C. Soil Amendments (Fertilizer and Lime Specifications)

- 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.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Nutrients 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.
- Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- 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.
- 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)

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

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

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

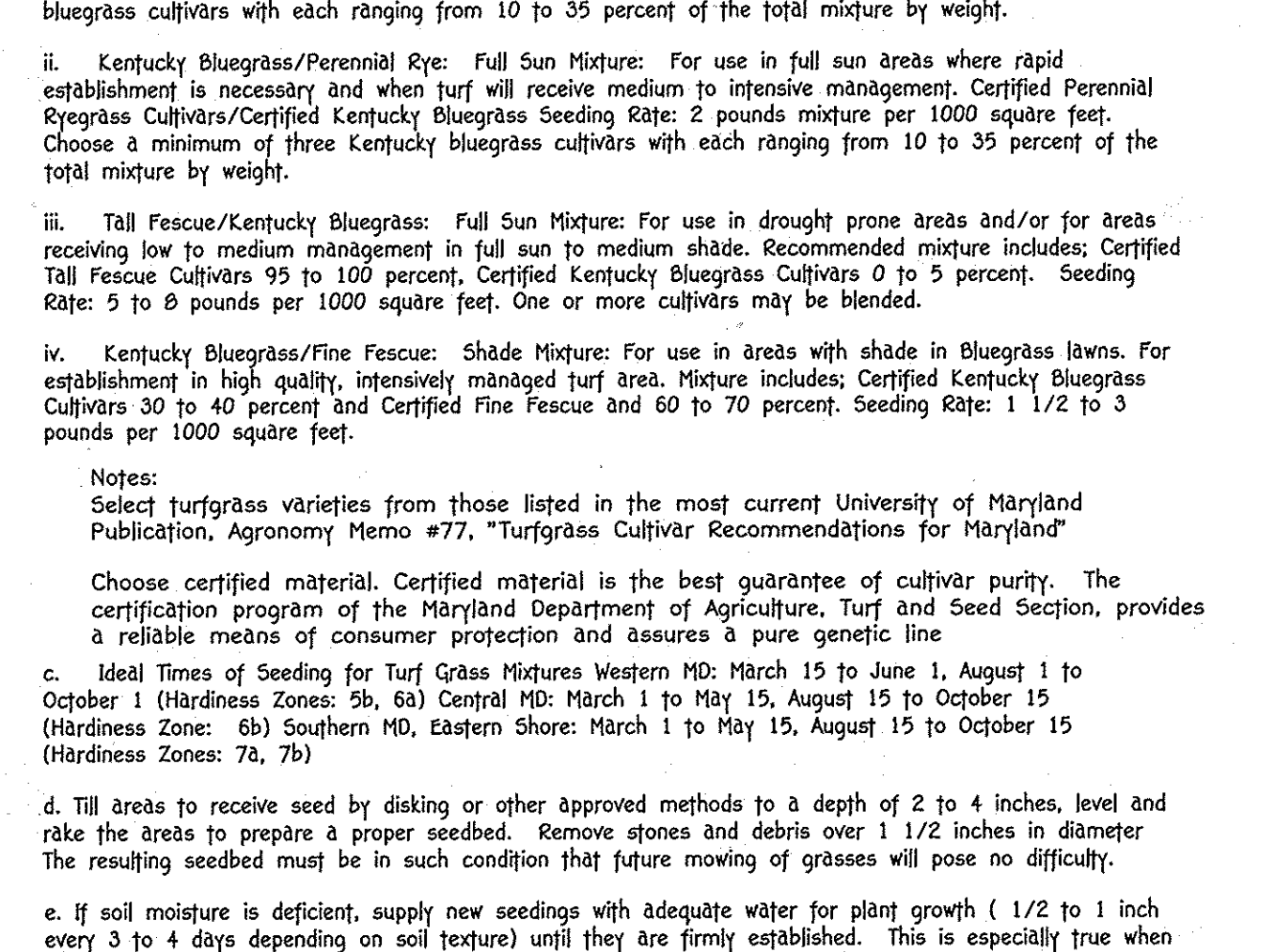
- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.B and maintain until the next seeding season.

Temporary Seeding Summary				Fertilizer Rate (10-20-20)	Lime Rate	
Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.1):	Application Rate (lb/acre)	Seeding Dates	Seeding Depths		
	BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"	436 lb/acre (10 lb/1000 sf)	2 tons/acre (500 sf)
	OATS	72				
	RYE	112				

PERMANENT SEEDING NOTES (B-4-5)

- Seed Mixtures
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. For areas receiving low maintenance, apply urea 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.
- Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.

- Notes:
 - Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"
 - Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line
 - Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardness Zones: 7a, 7b)
 - Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
 - 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							
Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.3):	Fertilizer Rate (10-20-20)	Lime Rate	N	P ₂ O ₅	K ₂ O	
6	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. per acre (1.0 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (500 sf)

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

- General Specifications
 - Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
 - Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
 - Standard size sections of sod must be spaced enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod must not be harvested or transplanted when moisture content (excessively dry wet) may adversely affect its survival.
 - 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.
- Sod Installation
 - During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
 - 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 ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 - 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 soil 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.
- Sod Maintenance
 - 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 the second week of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - 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.

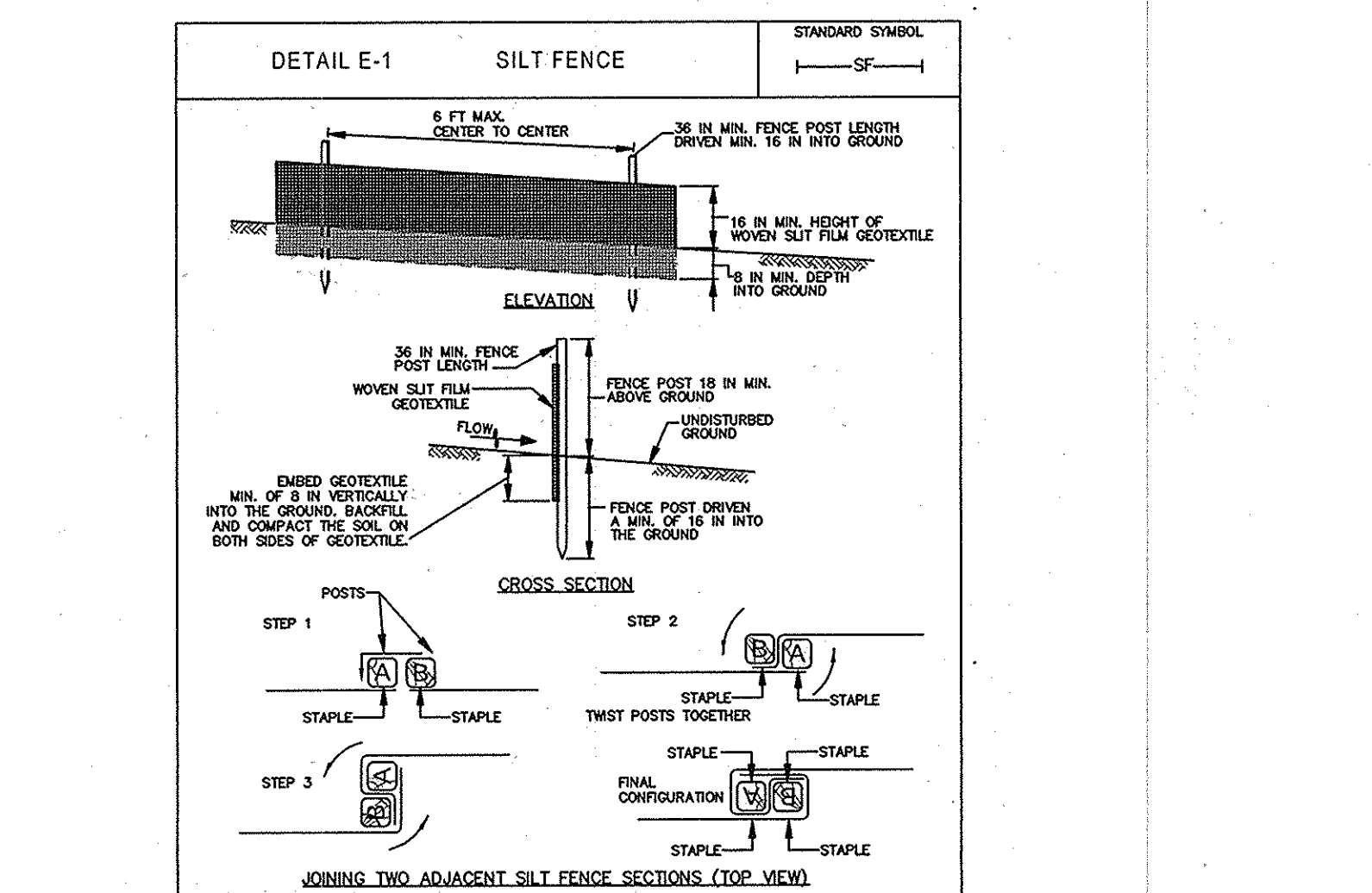
HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 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 (410-313-1059).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, 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 USED 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.
- SITE ANALYSIS:
 - TOTAL AREA OF SITE: 10.42 ACRES
 - AREA DISTURBED: 0.34 ACRES (SHOULDER IMPROVEMENTS & COMMON DRIVEWAY)
 - AREA TO BE VEGETATIVELY STABILIZED: 1.83 ACRES
 - TOTAL CUT: 700 CU.YDS.
 - TOTAL FILL: 700 CU.YDS.
 - OFFSITE WASTE/BORROW AREA LOCATION: N/A
- ANY SEDIMENT CONTROL PRACTICE THAT IS INTERRUPTED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF INTERRUPTION.
- 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 SEDIMENT CONTROL STRUCTURES, 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.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES 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 "MHS" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE 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.

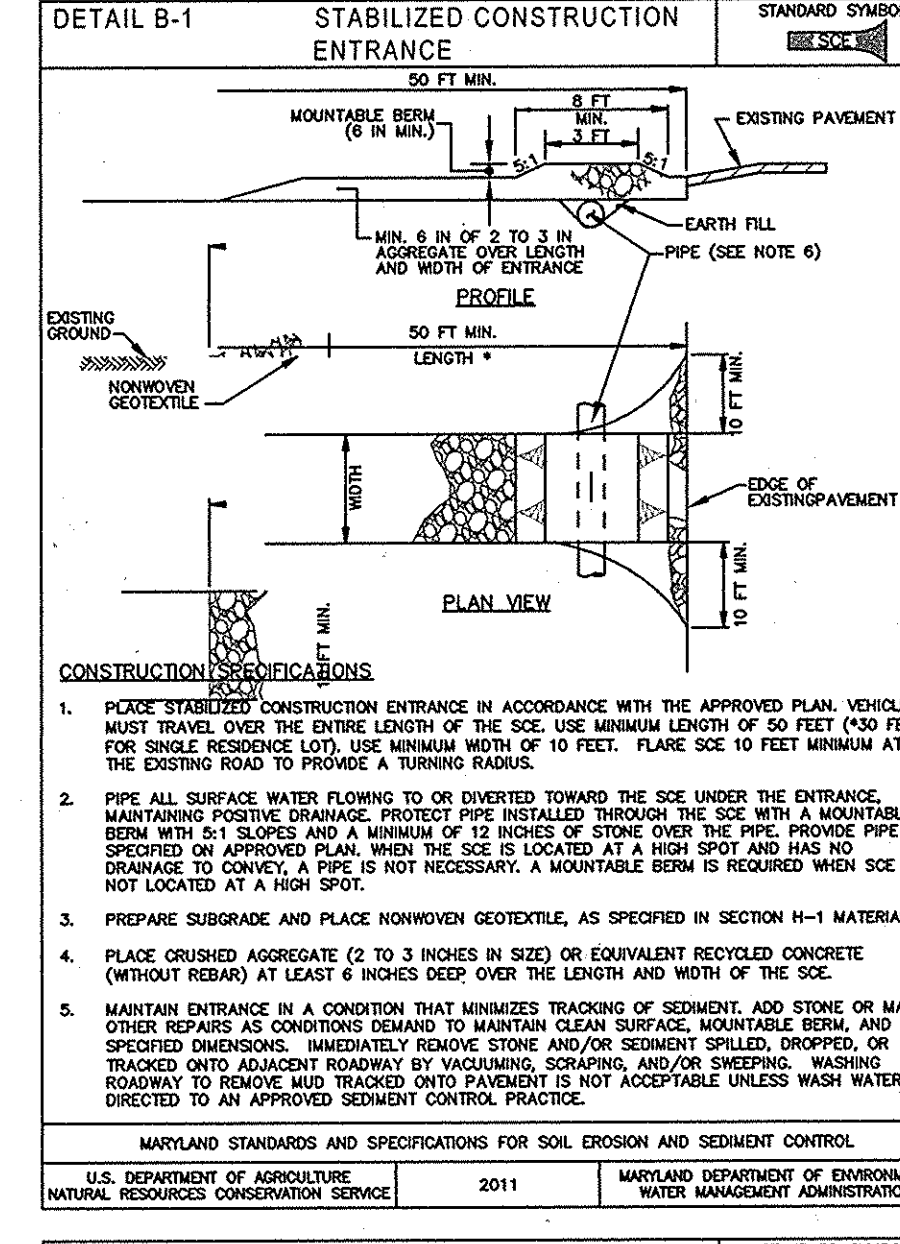


- CONSTRUCTION SPECIFICATIONS
 - USE WOOD POSTS 1 1/2 x 1 1/2 x 3/4 INCH (MINIMUM) SQUARES CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD 1 1/2 x 1 1/2 x 3/4 SECTION STEEL POSTS WEARING NOT LESS THAN 1 INCH PER LINEAR FOOT.
 - USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
 - USE WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPRIGHT SIDE OF FENCE POSTS WITH WIRE TIES OR HUG RINGS.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
 - EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
 - WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
 - EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHICH BUILDS UP ON SILT FENCE OR WHEN SEDIMENT REACHES EXCESS OF FENCE HEIGHT, REPLACE GEOTEXTILE IF TORN, UNDERMINING OCCURS, REINSTALL FENCE.

B-4-0 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

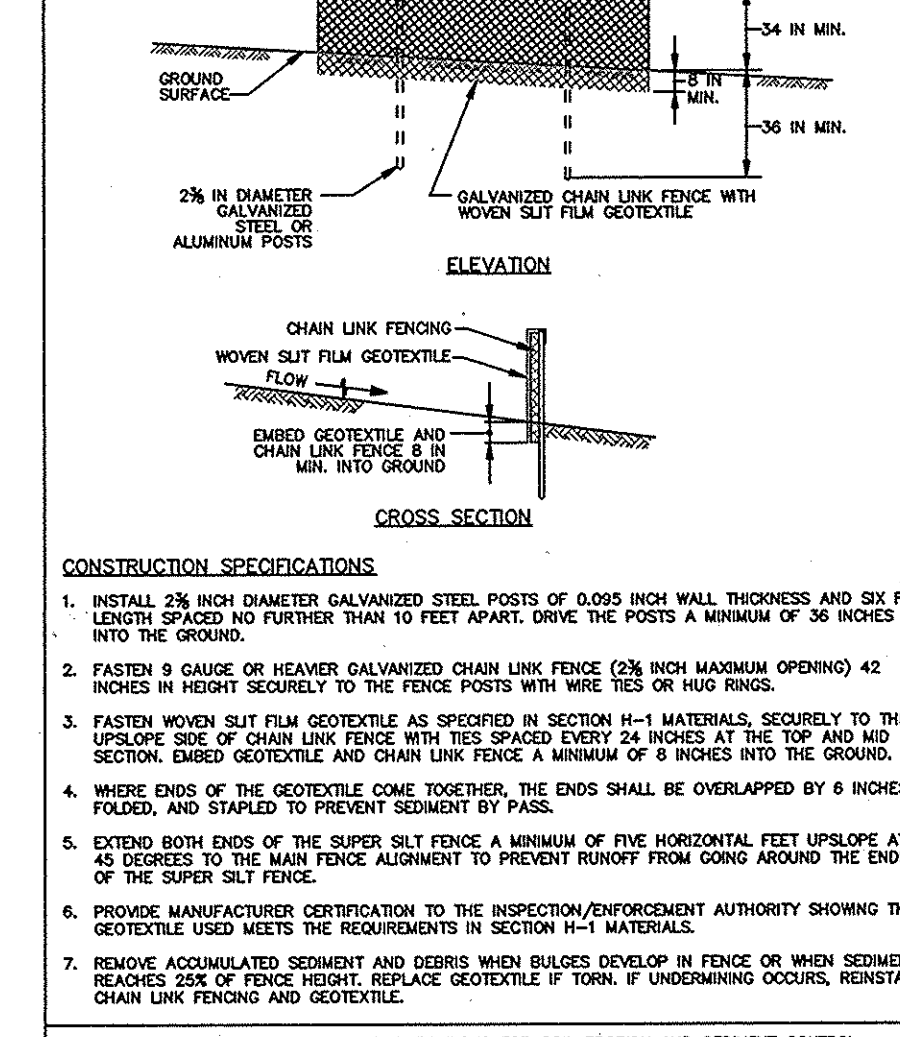
- Definition**
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
- Purpose**
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.
- Conditions Where Practice Applies**
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.
- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
 - The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
 - Runoff from the stockpile area must drain to a suitable sediment control practice.
 - Access the stockpile area from the upgrade side.
 - Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence.
 - Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
 - Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
 - If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with section B-3 Land Grading.

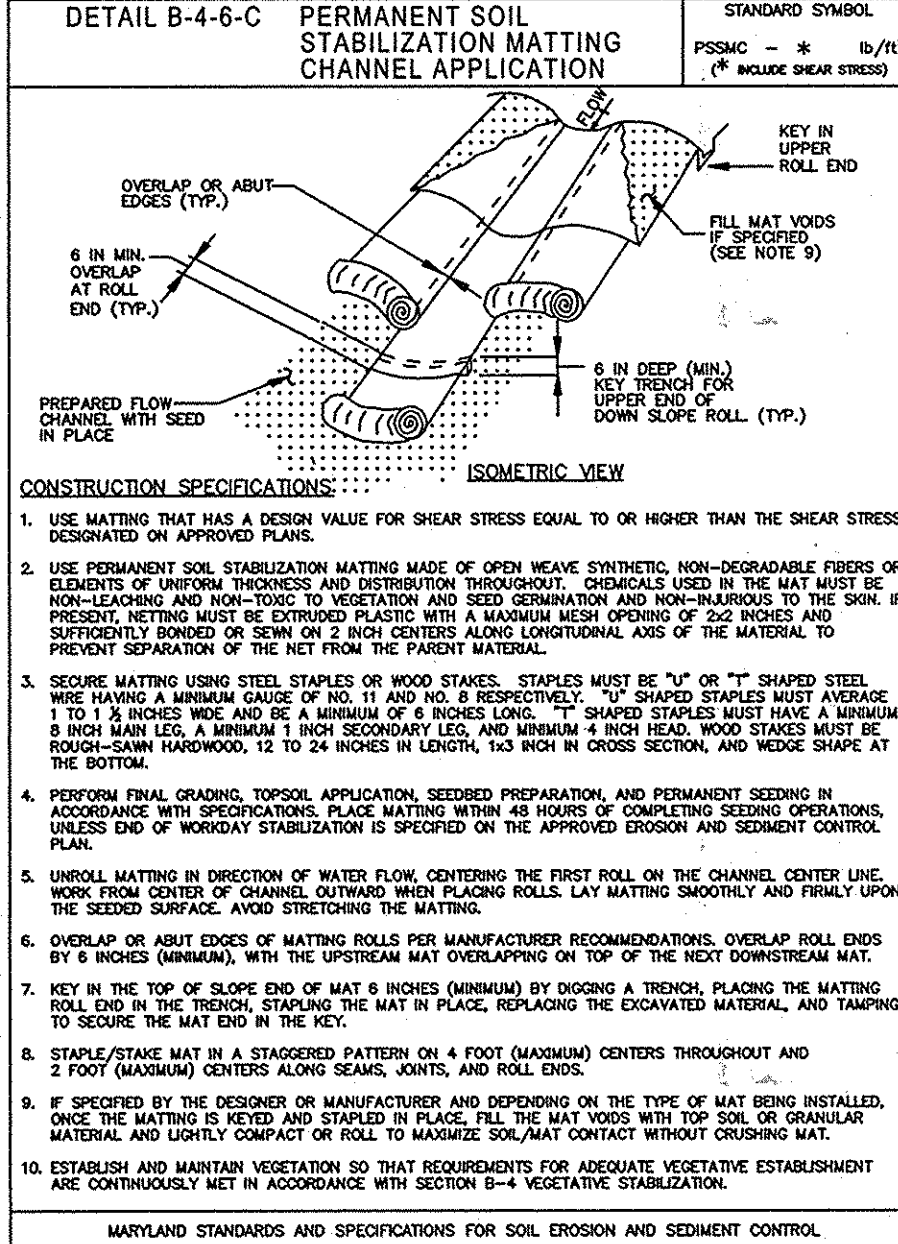


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

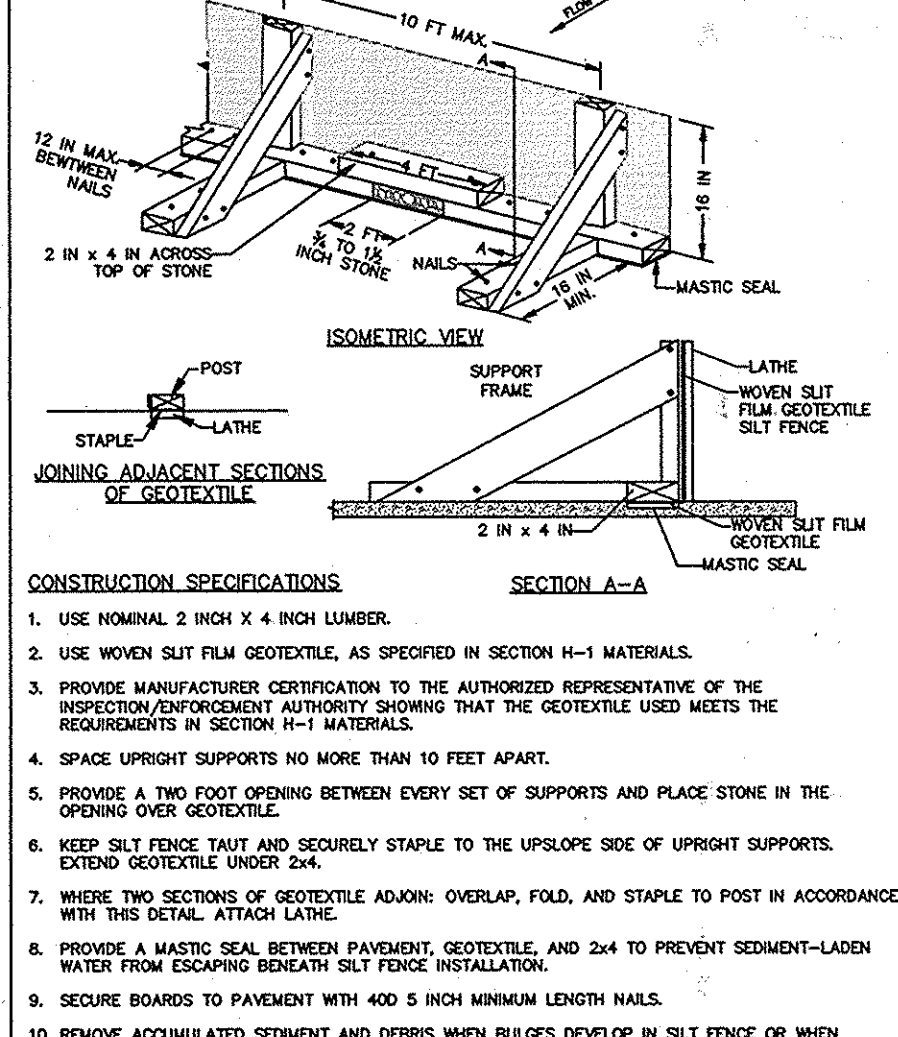


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DETAIL E-2 SILT FENCE ON PAVEMENT



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WATER MANAGEMENT ADMINISTRATION

SEDIMENT/EROSION CONTROL NOTES & DETAILS
LAYTON KNOLL,
LOTS 1 THRU 6 AND BUILDABLE
PRESERVATION PARCEL 'A' &
NON-BUILDABLE PRESERVATION PARCEL 'B'
ZONED RC-DEO
OWNER
JAN E. GORDON
1775 SAINT MICHAELS ROAD
WOODBINE, MARYLAND 21797
CONTACT: CHUCK ZEPF
410-984-4951
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