Regulations Effective 7/28/06.
Coordinates Based On Nad '83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 31A3 And No. 31D4. Station No. 31A3 North 573,217.9149 East 1,360,237.7247

Station No. 3104 North 571,700.7034 East 1,369,606.3509 This Plat Is Based On Field Run Monumented Boundary Survey Performed On Or About January. 2012. By Fisher, Collins & Carter, Inc.

B.R.L. Denotes Building Restriction Line.

• Denotes Iron Pin Set With Cap "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 Cap "F.C.C. 106".

Denotes Concrete Monument Or Stone Found. O. For Flag Or Pipestern 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

Driveways Shall Be Provided Prior To Issuance Of A Use And Occupancy Permit For Any New Owellings To Ensure Safe Access For Fire And Emergency Vehicles Per The Following (Minimum)

a) Width - 12 Feet (16 Feet Serving More Than One Residence); b) Surface - Six (6") Inches Of Compacted Crusher Run Base With Tar And Chip Coating c) Geometry - Maximum 15% Grade, Maximum 10% Grade Change And 45-Foot Turning

d) Structures (Culverts/Bridges) - Capable Of Supporting 25 Gross Tons (H25-Loading) e) Drainage Elements - Capable Of Safely Passing 100 Year Flood With No More Than 1 Foo Depth Over Surface;

f) Maintenance - Sufficient To Ensure All Weather Use. All Lot Areas Are More Or Less (+). Distances Shown Are Based On Surface Measurement And Not Reduced To Nad '83 Grid

4. Stormwäter management requirements for Lots 1 thru 5 will be met using environmental site design to the maximum extent possible in accordance with the Maryland stormwater design Manual, Volumes I & II, effective in May of 2010. The proposed practices will be located on the individual lots

Micro-bioretention (M-6) and drywells (M-5) for the proposed house and a bio-swale (M-B) for the proposed driveway.

Non-rooftop disconnection (N-2) for the proposed driveway. The existing house will remain for which swm is not required.

Drywells (M-5) for the proposed house and non-rooftop disconnection (N-2) for the proposed driveway.

Rooftop disconnection (N-1) and drywells (M-5) for the proposed house and non-rooftop disconnection (N-2) for the proposed driveway. Rooftop disconnection (N-1) and drywells (M-5) for the proposed house

and non-rooftopdisconnection (N-2) for the proposed driveway. These practices shall be privately owned and maintained in accordance with individual

declarations of covenants. 15. The Traffic Study for this project was Prepared By Mars Group, Dated September, 2012 and approved October 31th, 2012.

16. No Cemeteries Exists On This Site Based On A By Visual Site Visit And Based On A Examination C The Howard County Cemetery Inventory Map And No Historic Structures Sites Or Features Exist. The Forest Conservation Requirements Of Section 16.1200 Of The Howard County Code And Forest Conservation Act For This Subdivision Will Be Fulfilled By Providing A Fee-In-Lieu Payment Of

\$19,602.00 Based On 0.60 Acres x 43,560 5q. Ft./Acre x \$0.75/5q. Ft. Landscaping For Lots 1, 3, 4 And 5 On File With This Plat 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 in the amount of \$14,250.00 Is Bonded With The Water &

Sewer Developer's Agreement.

Lot 1: Surety (4 Shade Tree @ \$300/Shade Tree) & (17 Ever Greens @ \$150/Ever Green Tree) = \$3,750.00

Lot 2: Surety (5 Shade Tree @ \$300/Shade Tree) = \$1,500.00 Lot 3: Surety (7 Shade Tree @ \$300/Shade Tree) = \$2,100.00

Lot 4: Surety (2 Shade Tree @ \$300/Shade Tree) & (6 Ever Greens @ \$150/Ever Green Tree) = \$1,500.00 Lot 5: Surety (15 Shade Tree @ \$300/Shade Tree) &

(6 Ever Greens @ \$150/Ever Green Tree) = \$5,4000.00 Water And Sewer Service To These Lots Will Be Granted Under The Provisions Of Section 10.1228 Of The Howard County Code,

20. Public Water And Sewage Allocations Will Be Granted At Time Of Issuance Of The Building Permit It Capacity is Available At That Time. 21. Approval Of A Site Development Plan Is Required For The Development Of All Residential Lots Within

This Subdivision Prior To issuance Of Any Grading Or Building Permits For New House Construction In Accordance With Section 16.155 Of The Subdivision And Land Development Regulations.

22. Property Subject To Department Of Planning And Zoning File Nos. ECP-12-052 And WP-12-156
23. This Property is Located Within The Metropolitan District And Will Be Served By Public Water And Sewer under contract 14-4745-D.

24. There is An Existing Owelling/Structure(s) Located On Lot 2 To Remain. No New Buildings, Extensions Or Additions To The Existing Owelling(s) Are To be Constructed At A Distance Less Than The Zoning

25. A Letter Of Findings Dated March 20, 2012 For The Forest Stand Delineation And Wetland Delineation For This Project Was Prepared By Eco-Science Professionals. 26. This Plat Is In Compliance With The Amended Fifth Edition Of The Subdivision And Land Development

Regulations Per Council Bill 45-2003 And The Zoning Regulations As Amended By Council Bill 75-2003. Development Or Construction On These Lots Must Comply With Setback And Buffer Regulations in Effect A The Time Of Submission Of The Site Development Plan, Waiver Petition Application, Or Building/Grading Permit

And Per The Comp-Life Zoning Regulations Dated July 28, 2006.

27. Plat Subject To WP-12-156 Which The Planning Director On June 27, 2012 Approved A Waiver From Section 16.1205(a)(7) To Allow Removal Of The Three (3) Trees 30" In Diameter Or Larger. The Planning Director Also Approved A Request To Waive Section 16.120(b)(6)(v)(c) To Allow Pipestern Lots To Be Created On Both Sides Of A Frontage Lot in The Same Subdivision. Finally, The Planning Director Approved A Request To Waive Section 16.145 To Allow Submission Of A Final Subdivision Plan Without First Submitting A Sketch Plan Or Preliminary Equivalent Sketch Plan, Subject To The Following Conditions:

1) Removal Of The Three (3) Specimen Trees Will Require Replacement Mitigation At A Ratio Of Two (2) Larger Caliper Trees (At Least Four (4) Inches dbh) For Each Specimen Tree Removed. The Mitigation Planting Can Be Provided As Part Of The Required Perimeter Landscaping For This Project, You Must Submit A Supplemental Plan With Your Final Subdivision Plan For This Property That Shows How You Plan To Address This Alternative Landscape Mitigation.

2) Submission Of A Final Plan Application, Including A Final Subdivision Plat And A Supplemental Plan. 3) The Proposed Driveway To Serve New Lot 1 Shall Comply With Section 16.120(b)(vi) Of The Howard County Subdivision Regulations And Can Be Located At Least 10 Feet From The Project Boundary At All Points To Provide Adequate Room For Perimeter Landscaping. The Applicant Must Provide A Landscaping Buffer Along The Entire Project Boundary Line Between The Driveway And The Adjoining Sating Property, Parcel 351, Lot 35, With A Single Row Of Leyland Cypress Trees, Or An Equivalent Species, At A Spacing Of 15 Feet On Center (Total Of 15 Trees).

20. The 36' Private Use-In-Common Driveway Maintenance Agreements For Lot 1 thru 5. The 36' Private Use-in-Common Driveway Maintenace Agreements For Lots 2 Thru 5 & The 20' Private Use-In-Common Oriveway Maintenance Agreement For Lot 1 Have Been Recorded In The Howard County Land Records Office Simultaneously With The Recording Of This Subdivision Plat.

Open Space Requirements Are Provided By A Fee-In-Lieu Payment Of \$6,000.00.

30. This Development is Designed To Be in Accordance With Section 16.127-Residential Infill Development -Of Subdivision And Land Development Regulations. The Developer Of This Project Shall Create Compatibility With The Existing Neighborhood Through The Use Of Enhanced Perimeter Landscaping, Berms, Fences, Similar Housing Unit Types And The Directional Orientation Of The Proposed Houses.

Noise Study is Not Required For This Project Per Howard County Design Manual, Volume III, Section 5.2.(F). 32. A Community Meeting Was Conducted On January 4, 2012 For The Purpose Of The Developer To Provide information To The Community Regarding The Proposed Residential Development and To Allow The Community To Ask Questions And To Make Comments, Per Section 16.128(d). Of The Subdivision Regulations. is. All construction shall be in accordance with the latest standards and specifications of Howard County.

35. 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.

36. The contractor shall notify "miss utility" at 1-800-257-7777 at least 48 hours prior to any excavation work

37. Traffic control devices, markings and signing shall be in accordance with the latest edition of the manual of traffic control devices (mutcd). All street and regulatory signs shall be in place prior to the placement of 38. The existing topography is taken from field run survey with contour ntervals prepared by Fisher. Collins and

Carter, Inc. Dated Feb. 15, 2012 and supplemented with Howard County GIS information. Existing utilities shown are based on available construction drawings. 40. A private range of address sign shall be fabricated and installed by Howard County Bureau of Highways at the developers/owners expense. Confact Howard County Traffic Division at 410-313-2430-for details and cos

All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 guage) - 3' long. A galvanized steel pole cap shall be mounted on top of each post. 42. There is no Floodplain on this site.

43. There are no Wetlands on this site. 44. There are no disturbances to environmental features as there are no environmental features located on this 45. Street light placement and type of fixtures and poles shall be in accordance with the Howard County Design Manual, Volume III, Section 5.5.A. A minimum of 20 feet shall be maintained between any street light and

APPROVED: DEPARTMENT OF PLANNING AND ZONING

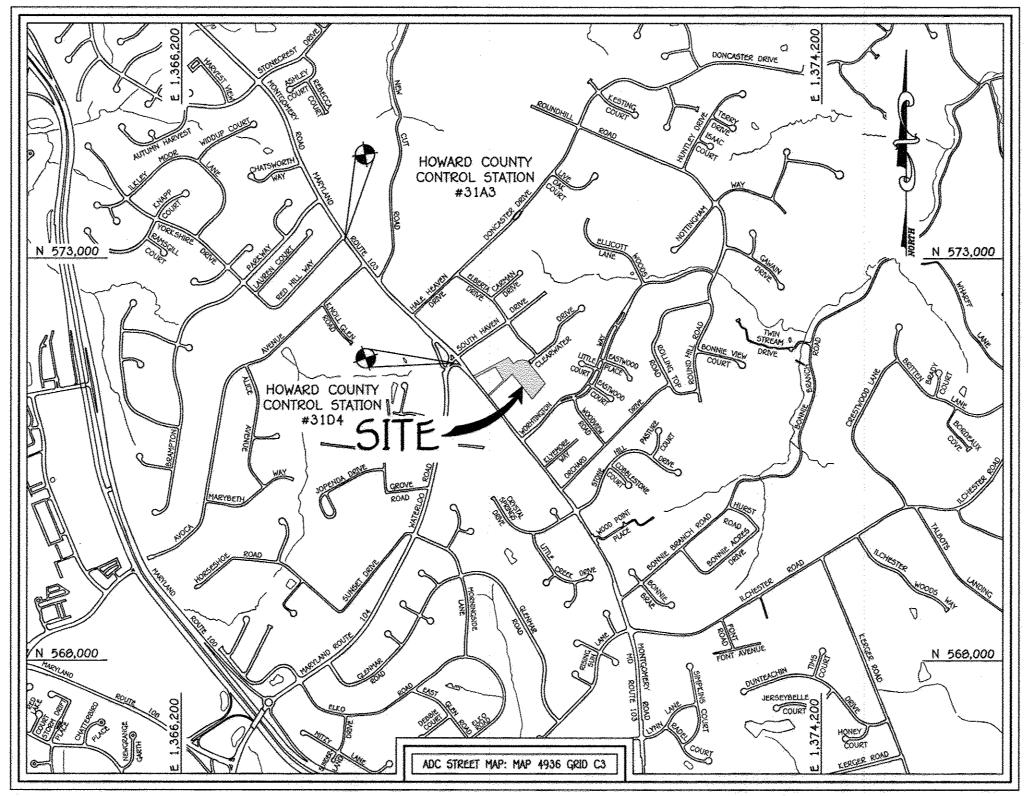




SUPPLEMENTAL PLAN CLEARWATER CROSSING LOTS 1 THRU 5 & NON-BUILDABLE PARCELS 'A' & 'B'

4925 MONTGOMERY ROAD

TAX MAP No. 0031 GRID No. 0008 PARCEL NO. 0593 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP

BENCHMARK INFORMATION B.M.#1 - HOWARD COUNTY CONTROL STATION #31D4 - HORIZONTAL - NAO '03) (LOCATED IN THE ISLAND AT THE INTERSECTION OF ROUTE 103; MONTGOMERY ROAD AND ROUTE 104, APPROX. 16.5' FROM THE EDGE OF CURB) N 571,700,7034 E. 1,369,606,3509 ELEVATION = 494.406 - VERTICAL - (NAVD '88) B.M.#2 - HOWARD COUNTY CONTROL STATION #31A3 - HORIZONTAL - (NAD '83)
(LOCATED ALONG ROUTE 103; MONTGOMERY ROAD, SOUTH EAST FROM RED HILL WAY. APPROX. 15.2' BEHIND THE EDGE OF PAVING) N 573,217.9149 E 1,360,237.7247 ELEVATION = 486.869 - VERTICAL - (NAVD '88)

SHEET INDEX							
SHEET NO.							
1	TITLE SHEET						
2	SUPPLEMENTAL PLAN						
3	STORMWATER MANAGEMENT PROFILES, NOTES & DETAILS						
4	SEDIMENT & EROSION CONTROL PLAN						
5	SEDIMENT & EROSION CONTROL NOTES & DETAILS						
6	LANOSCAPING PLAN						
7	LANDSCAPING NOTES, DETAILS & CHARTS						
Ð	DRAINAGE AREA MAP						

	ADDRESS CHART	
PARCEL NUMBER	STREET ADDRESS	
0593	* 4925 MONTGOMERY ROAD	

* EXISTING HOUSE TO REMAIN; SEE CHART BELOW FOR NEW ADDRESS

	STRE	ET LIGHT CH.	ART
STREET NAME	NORTHING	EASTING	FIXTURE/POLE TYPE
CLEARWATER DRIVE	571,690.19	1,370,550.37	100-WATT H.P.S. COLONIAL POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE

LOT NUMBER	ADDRESS	DISCONNECTION OF ROOFTOP RUN-OFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUN-OFF N-2 (Y/N)	DRY WELLS M-5 (NUMBER)	MICRO— BIO—RETENTION M—6 (NUMBER)	SWALES M-8 (NUMBER)
1	4953 CLEARWATER DRIVE	N/A	N/A	2	1	1
2*	4957 CLEARWATER DRIVE	N/A	Y	N/A	N/A	N/A
3	4954 CLEARWATER DRIVE	N/A	Y	6	N/A	N/A
4	4958 CLEARWATER DRIVE	4	Y	4	N/A	N/A
5	4962 CLEARWATER DRIVE	4.	Y	4	N/A	N/A

* EXISTING HOUSE TO REMAIN

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 3.765540 AC. ±. B. LIMIT OF DISTURBED AREA =

L.O.D. ASSOCIATED WITH THE BUILDING SITE: 107,362 SqFt. or 2.46 Ac* LO.D. ASSOCIATED WITH THE REMOVAL OF EXISTING DRIVEWAY: 6,557 SQFT. or 0.15 Ac+ TOTAL L.O.D. = 113,919 or 2.61 Ac* C. PRESENT ZONING DESIGNATION = R-20

5 DAYS

(PER 2/04/2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/2006) D. PROPOSED USE: RESIDENTIAL K. BUILDING COVERAGE OF SITE: 14.15%

PREVIOUS HOWARD COUNTY FILES: ECP-12-052 & WP-12-156 M. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.00 AC+ TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC+ O. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.00 AC*

P. NET TRACT AREA = 3.765540 AC. ±. (TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA) O. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = O AC. * . TOTAL AREA OF FOREST = $0 \text{ AC} \pm$ TOTAL GREEN OPEN AREA = 3.09 AC+

SEQUENCE OF CONSTRUCTION

U. TOTAL AREA OF SEVERELY ERODIBLE SOILS = 0.014 AC. ±

. TOTAL IMPERVIOUS AREA = 0.68 AC+

1. OBTAIN GRADING PERMIT 2. INSTALL SEDIMENT EROSION CONTROL DEVICES AS SHOWN ON PLAN, WHICH INCLUDE SUPER SILT FENCE AND TREE PROTECTION, AS WELL A STONE CONSTRUCTION ENTRANCE

3. CLEAR AND GRUB TO LIMITS OF DISTURBANCE 4. CONSTRUCT BUILDING AND DRIVEWAY 6. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR.

-55F-55F- SUPER SILT FENCE LIMIT OF DISTURBANCE EXISTING FENCE LINE EX LIMIT OF TREES AND FOREST EXISTING GRAVEL AREA TO BE REMOVED PROPOSED PEA GRAVEL EXISTING GRAVEL EXISTING CONCRETE WALK PROPOSED CONCRETE WALK EXISTING DRIVEWAY TO BE REMOVED DISCONNECTION IMPERATOUS AREA DISCONNECTION RECEIVING AREA DRAINAGE AREA

DESCRIPTION

EXISTING CONTOUR 2' INTERVAL

PROPOSED CONTOUR 2' INTERVAL

SUPPLEMENTAL PLAN

(TITLE SHEET)

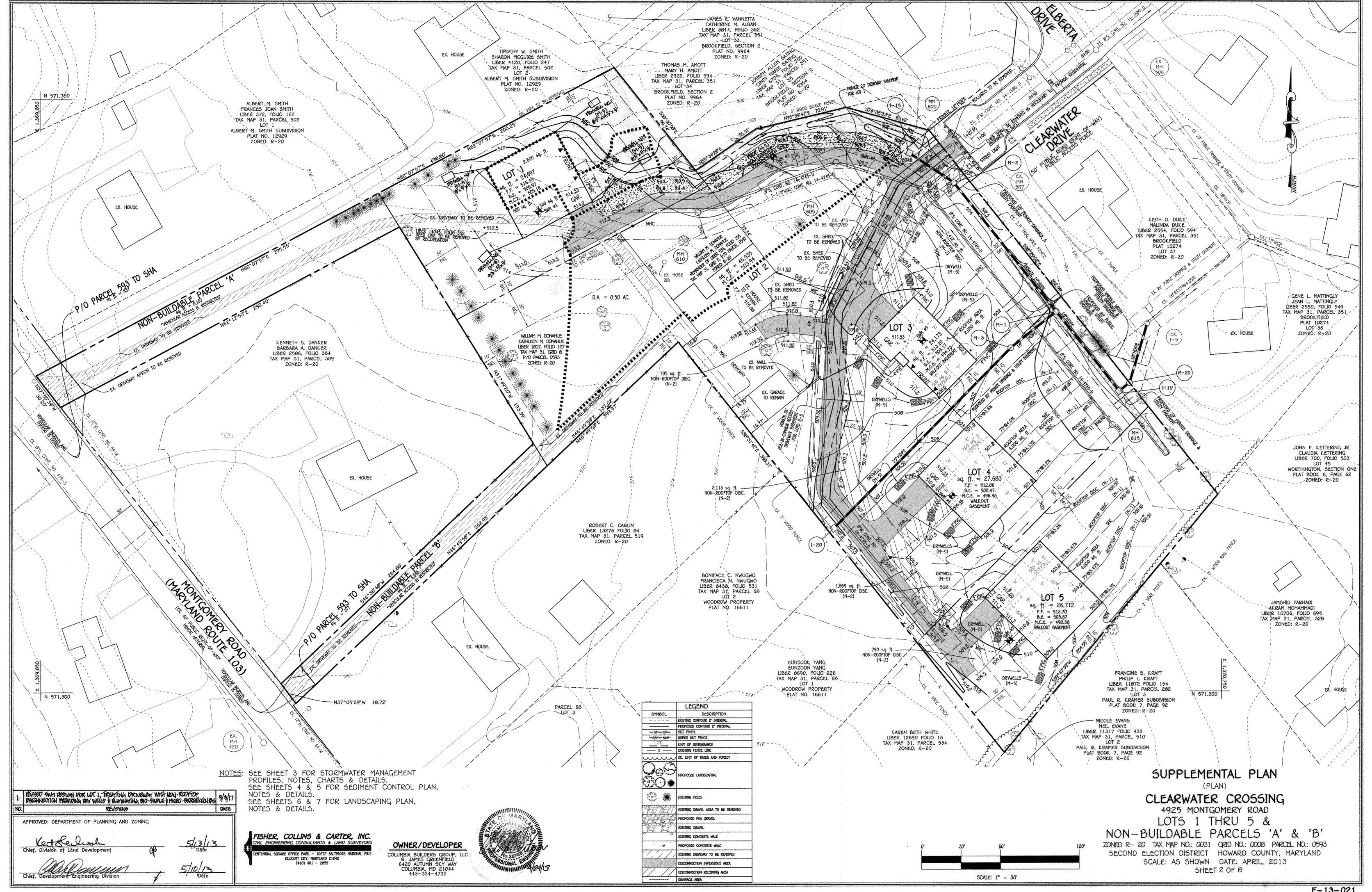
CLEARWATER CROSSING 4925 MONTGOMERY ROAD

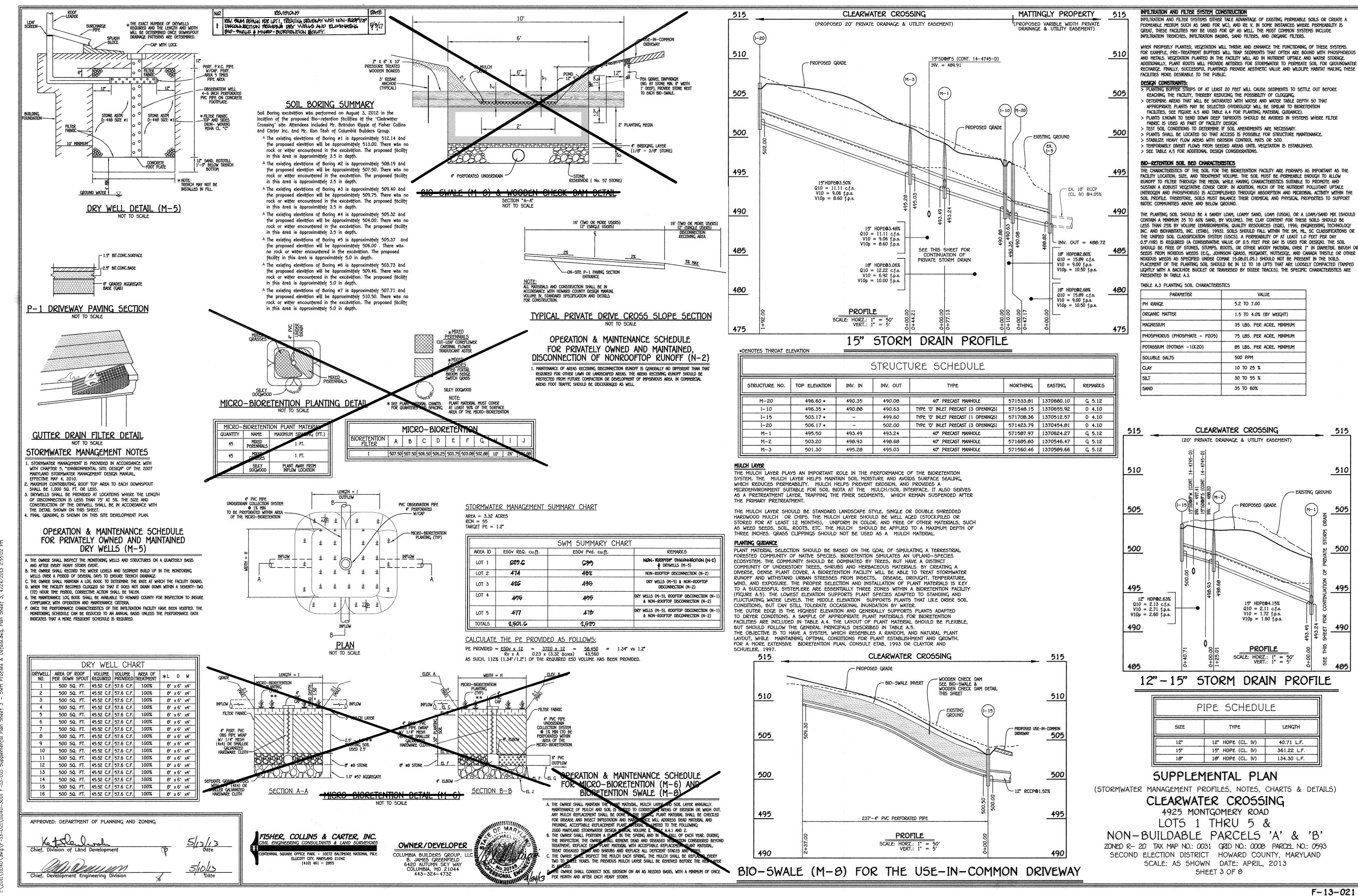
LOTS 1 THRU 5 &

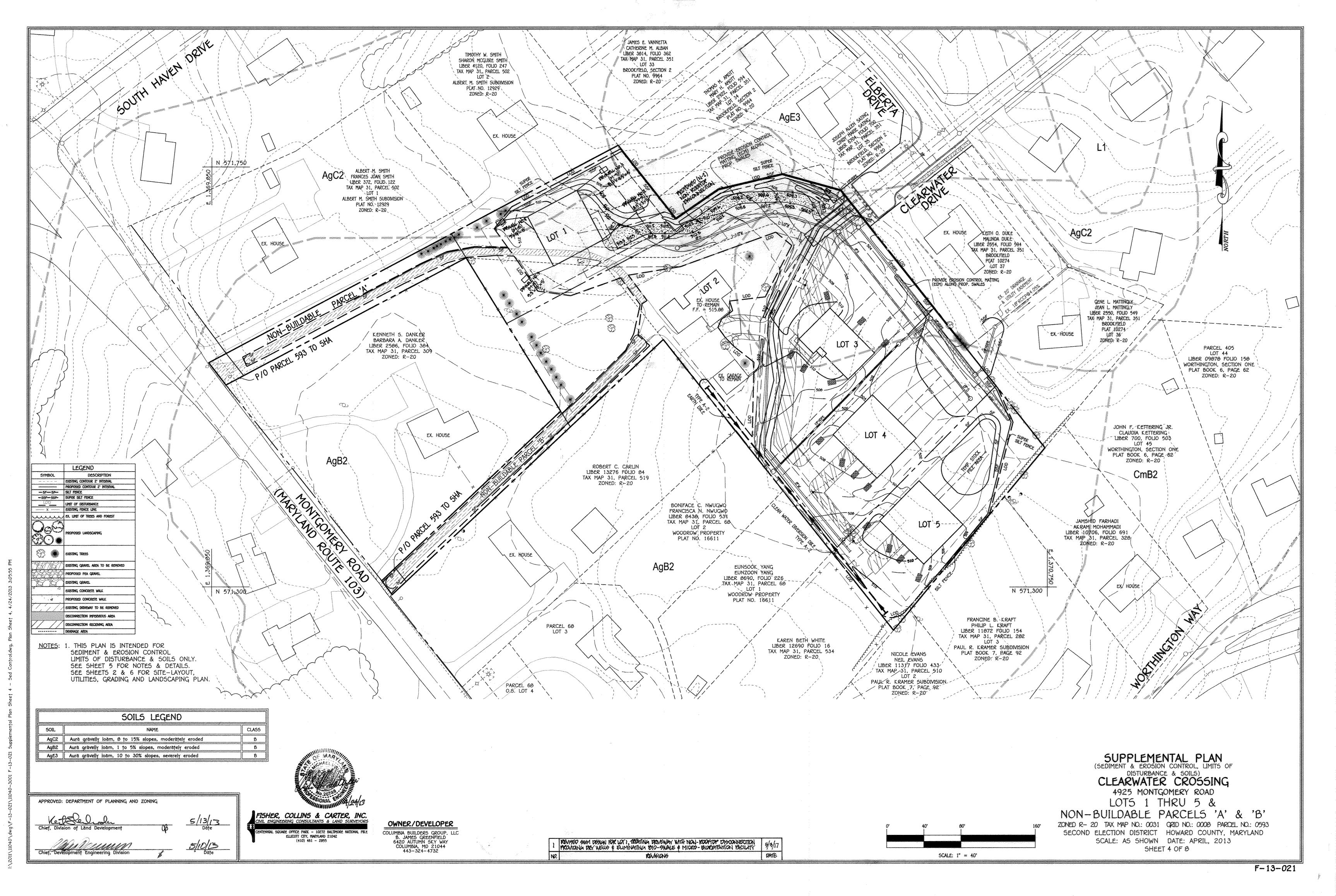
NON-BUILDABLE PARCELS 'A' & 'B' ZONED R- 20 TAX MAP NO.: 0031 GRID NO.: 0008 PARCEL NO.: 0593

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: APRIL, 2013 5HEET 1 OF 8

F-13-021







VEGETATIVE STABILIZATION SPECIFICATIONS ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUN-OFF TO DOWNSTREAM AREAS, AND IMPROVING WILDLIFE HABITAT AND VISUAL RESOURCES.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE SHALL BE USED ON DENUDED AREAS AS SPECIFIED ON THE PLANS AND MAY BE USED ON HIGHLY ERODIBLE OR CRITICALLY ERODING AREAS. THIS SPECIFICATION IS DIMOED INTO TEMPORARY SEEDING, TO QUICKLY ESTABLISH VEGETATIVE COVER FOR SHORT DURATION (UP TO ONE YEAR), AND PERMANENT SEEDING, FOR LONG TERM VEGETATIVE COVER. EXAMPLES OF APPLICABLE AREAS FOR TEMPORARY SEEDING ARE TEMPORARY SOIL STOCKPILES, CLEARED AREAS BEING LEFT IDLE BETWEEN CONSTRUCTION PHASES, EARTH DIKES, ETC. AND FOR PERMANENT SEEDING ARE LAWNS, DAMS, CUT AND FILL SLOPES AND OTHER AREAS AT FINAL GRADE, FORMER STOCKPILE AND STACING AREAS, ETC.

EFFECTS ON WATER QUALITY AND QUANTITY

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. VEGETATION, OVER TIME WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH, VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITH THE ROOT ZONE. SEDIMENT CONTROL DEVICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE ESTABLISHMENT TO PREVENT LARGE QUANTITIES OF SEDIMENT AND ASSOCIATED CHEMICALS AND NUTRIENTS FROM WASHING INTO SURFACE WATERS.

SECTION 1 - VECETATIVE STABILIZATION METHODS AND MATERIALS

A SITE PREPARATION INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OF PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING

SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENOMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.

B. SOIL AMENOMENTS (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 OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADEMARK AND WARRANTEE

III. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MACNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A *100 MESH SIEVE AND 98-100% WILL PASS THROUGH A *20 MESH SIEVE IV. INCORPORATE LINE AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS. C. SEEDBED PREPARATION

a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3' TO 5' 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 SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE b. APPLY FERTILIZER AND LIME AS PRESORIBED ON THE PLANS.

c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS. II PERMANENT SEEDING

a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT: SOIL OH SHALL BE BETWEEN 6.0 AND 7.0.

SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM). THE SOIL SHALL CONTAIN LESS THAN 40CLAY, BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZAS IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE **ACCEPTABLE**

SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL

TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING APPLY SOIL AMENOMENTS AS PER SOIL TESTS OR AS INCLUDED ON THE PLANS MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS

SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED AND APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED. PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3' OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED. INOCULATION - THE INOCULANT FOR TREATING LEGIME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF ntrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75°-80° F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHODS OF SEEDING HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). BROADCAST OR DROP SEEDED, OR A CUITIPACKER SEDER a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED

THE FOLLOWING: NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS); 200 LBG/AC; K20 (POTASSIUM): 200 LBG/AC. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSFEDING).

NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING. c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT

DRY SEEDING. THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS

a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 265 OR 266. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF

HE SEEDING RATE IN EACH DIRECTION.

DRILL OR CULTIPACKER SEEDING MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH

OF SOIL COVERING, SEEDBED MUST BE FIRM AFTER PLANTING. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)

STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLE BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.

WOOD CELLULOSE FIBER MULCH (WCFM) a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS

WOFM SHALL BE DYED GREEN OR CONTAIN A GREEN DIVE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

e. WOFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM.

DIAMETER APPROXIMATELY 1 MM., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

II. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE

III. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS, PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 CALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:

i. A MULCH ANCHORING TOOL IS AS TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MUTCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.

ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ADRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 CALLONS OF WATER. iii. APPLICATION OF LIQUID BINDERS SHOULD BE HEAMER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND CREST OF BANKS. THE REMAINDER OF AREA SHOULD BE APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC

EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH. LICHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4' TO 15' FEET WIDE AND 300 TO 3,000 FEET LONG. 1. INOREMENTAL STABILIZATION - CUT SLOPES

BINDERS-SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70 PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15. ii. CONSTRUCTION SEQUENCE (REFER TO FIGURE 3 BELOW):

a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY RUNOFF FROM THE EXCAVATION.

PERFORM PHASE 1 EXCAVATION, DRESS, AND STABILIZE PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY. PERFORM FINAL PHASE EXCAVATION, DRESS, AND STABILIZE, OVERSEED PREVIOUSLY SEEDED AREAS NECESSARY. NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND

PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OF COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY **STABILIZATION** J. INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESORIBED ON THE PLANS.

SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15". OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS. iii. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER

TO A SEDIMENT TRAPPING DEVICE. iv. CONSTRUCTION SEQUENCE: REFER TO FIGURE 4 (BELOW): a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5. UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA

b. PLACE PHASE I EMBANKMENT, DRESS, AND STABILIZE. . PLACE PHASE 2 EMBANKMENT, DRESS, AND STABILIZE

d. PLACE FINAL PHASE EMBANKMENT, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECCESSARY. NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF AND PLACEMENT OF TOPSOIL (IF REQUIRED) GRADING AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION UOT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

SEDIMENT CONTROL NOTES

) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL

DIMISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855). 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 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: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER

DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASING SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50). AND MULCHING (SEC. 52), 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 7) SITE ANALYSIS:

AREA DISTURBED 2.5992 ADRES AREA TO BE VEGETATIVELY STABILIZED 1.9301 ACRES TOTAL CUT > N/A

OFFSITE WASTE/BORROW AREA LOCATION N/A CU. Y05. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR CONSTRUCTION OF THE WASTEWATER PUMPING STATION, ACCESS DRIVEWAY &

UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ADRES, 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 INTIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11) TRENOHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THE THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER

SECTION 21: <u>STANDARD AND SPECIFICATIONS FOR TOPSOI</u> 1. DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

2. PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. 3. SPECIFICATIONS: A TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY

LOAM, OR LOAMY SAND. TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS. . TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, GRAVEL, STICKS, roots, trash, or other materials larger than 1.5" in diameter.

4. APPLICATION A TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"- 8" LAYER AND LIGHT COMPACTED TO A MINIMUM THICKNESS OF 4"; AVOID SURFACE IRREGULARITIES.

8. PLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION" C. TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS

SEQUENCE OF CONSTRUCTION

OBTAIN THE REQUIRED GRADING PERMIT. NOTIFY MISS UTILITY 48 HOURS BEFORE ANY WORK (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIMISION 24 HOURS BEFORE STARTING ANY WORK ((410)313-1870).

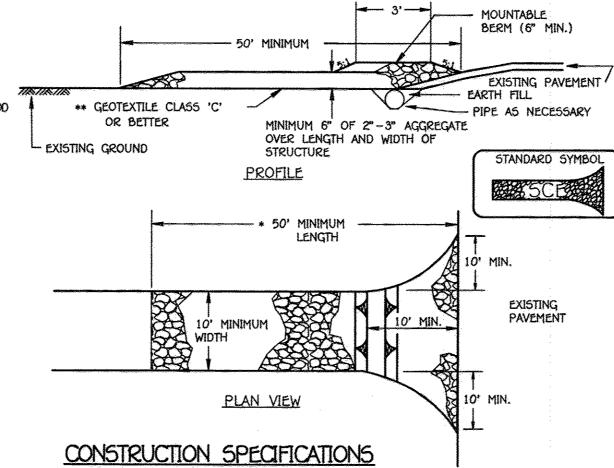
INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET 6. 4. CLEAR AND CRUB AS NECESSARY, ONLY AS REQUIRED FOR CONSTRUCTION

OF THE WATER & SEWER MAINS. NOTE THE LENGTH OF OPEN UTILITY TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE

BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS

CONSTRUCT THE WATER & SEWER MAINS. STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET.

FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS. AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEMCES.



1. LENGTH - MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).

2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING

3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE

4. STONE - CRUSHED ACCRECATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE FOLIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE. 5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6' MINIMUM WILL BE

6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE, VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE

ENGINEER'S CERTIFICATION

I HEREBY 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.

DEVELOPER'S CERTIFICATION I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE

DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING. THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

SIGNATURE OF DEVELOPES

TEMPORARY SEEDING NOTES APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED. SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREMOUSLY LOOSENED SOIL AMENDMENTS; APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.). <u>SEEDING : FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, </u> SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVE GRASS (0.07 LBS. PER 1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO. MULCHING : APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL PER ACRE (8 GAL PER 1000 SQ.FT.) FOR ANCHORING, REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

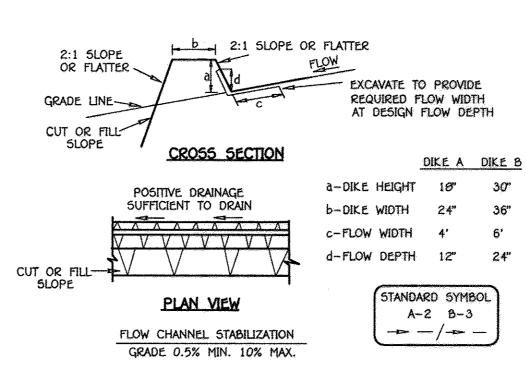
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED. SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING. XISOING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED. SOIL AMENOMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF

THE FOLLOWING SCHEDULES 1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1000 SQ.FT.) 2. ACCEPTABLE - APPLY 2 TON'S PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1000 SQ.FT.) BEFORE SEEDING, HARROW OR DISC INTO UPPER THREE INCHES OF SOIL

SEEDING: FOR THE PERIOD MARCH 1 THRU APRIL 30 AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LB6. PER ACRE (1.4 LB6. PER 1000 SQ.FT.) OF KENTUCKY 31 TALL FESQUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.05 LBS. PER 1000 5Q.FT.) OF WEEPING LOVE GRASS. DURING THE PERIOD OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY ONE OF THE FOLLOWING OPTIONS: 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.

USE 500. 3. SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE WELL ANCHORED STRAW. MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 50.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL PER ADRE (8 GAL PER 1000 SQ.FT.) FOR ANCHORING, MAINTENANCE : INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS. REPLACEMENTS AND RESEEDINGS.



1. Seed and cover with straw mulch. 2. Seed and cover with Erosion Control Matting or line with sod. 3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications 1. All temporary earth dikes shall have uninterrupted positive grade to

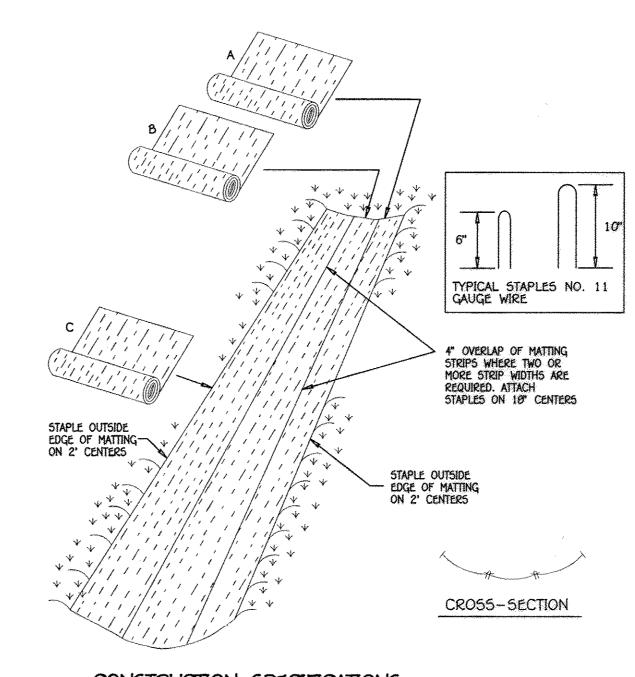
an outlet. Spot elevations may be necessary for grades less than 1 2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity. 4. All trees, brush, stumps, obstructions, and other objectionable

material shall be removed and disposed of so as not to interfere with the proper functioning of the dike. 5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be

free of bank projections or other irregularities which will impede 6. Fill shall be compacted by earth moving equipment. 7. All earth removed and not needed for construction shall be placed

so that it will not interfere with the functioning of the dike. 8. Inspection and maintenance must be provided periodically and after each rain event.



CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION, SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".

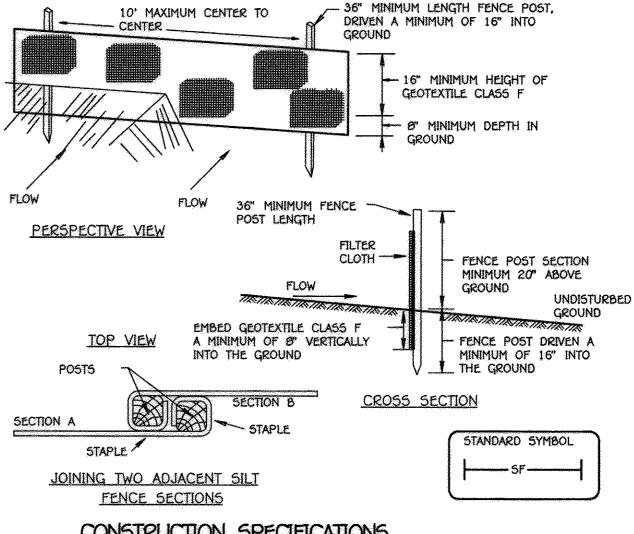
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES. 3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL

4. STAPLES SHALL BE PLACED 2" APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER. 5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION, REINFORCE THE OVERLAP

6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.

EROSION CONTROL MATTING



CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD 'T' OR 'U' SECTION WEIGHTING NOT

LESS THAN 1.00 POUND PER LINEAR FOOT. 2. GEOTEXTILE SHALL FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLE AT TOP OR MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS 'F': TENSILE STRENGTH 50 LB5/IN (MIN.) TEST: MSMT 509

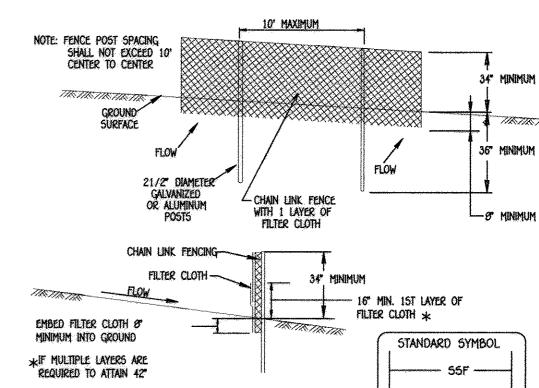
TENSILE MODULUS 20 L85/IN (MIN.) TEST: MEMT 509 FLOW RATE 0.3 GAL FT. / MINUTE (MAX.) TEST: MSMT 322 FILTERING EFFICIENCY 75% (MIN) TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS. 4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

SILT FENCE DESIGN CRITERIA (MAXIMUM) SLOPE STEEPNESS FLATTER THAN 50:1 SLOPE LENGTH SILT FENCE LENGTH UNLIMITED 125 FEET 1,000 FEET 5:1 TO 3:1 60 FEET 500 FEET 3:1 TO 2:1 40 FEET 2:1 AND STEEPER 20 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION System, soil class a) maximum slope length and silt fence length will be unlimited. In these areas a silt pence may be the only perimeter control

SILT FENCE



CONSTRUCTION SPECIFICATIONS

TENSILE MODULUS

. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42' FABRIC AND 6' LENGTH POSTS. 2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS ROOS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.

3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION. 4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND. 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6' AND FOLDED.

6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT. 7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F: TENSILE STRENGTH 50 LBS/IN (MIN.) Test: MSMT 509

20 LB5/IN (MIN.)

TEST: MSMT 509

0.3 GAL/FT²/MINUTE (MAX.) TEST: MSMT 322 FILTERING EFFICIENCY 75% (MIN.) TEST: MSMT 322 DESIGN CRITERIA SLOPE LENGTH SILT FENCE LENGTH (MAXIMUM) 0 - 10%0 - 10:1UNLIMITED UNLIMITED 10 - 20% 10:1 - 5:1 200 FEET 1.500 FEET 20 - 33% 5:1 - 3:1 100 FEET 1.000 FEET 100 FEET 500 FEET 33 - 50% 3:1 - 2:1 50 FEET 50% + 2:1 + 250 FEET

SUPER SILT FENCE

SUPPLEMENTAL PLAN

(SEDIMENT & EROSION CONTROL NOTES & DETAILS)

CLEARWATER CROSSING 4925 MONTGOMERY ROAD

LOTS 1 THRU 5 & NON-BUILDABLE PARCELS 'A' & 'B' ZONED R- 20 TAX MAP NO.: 0031 GRID NO.: 0008 PARCEL NO.: 0593

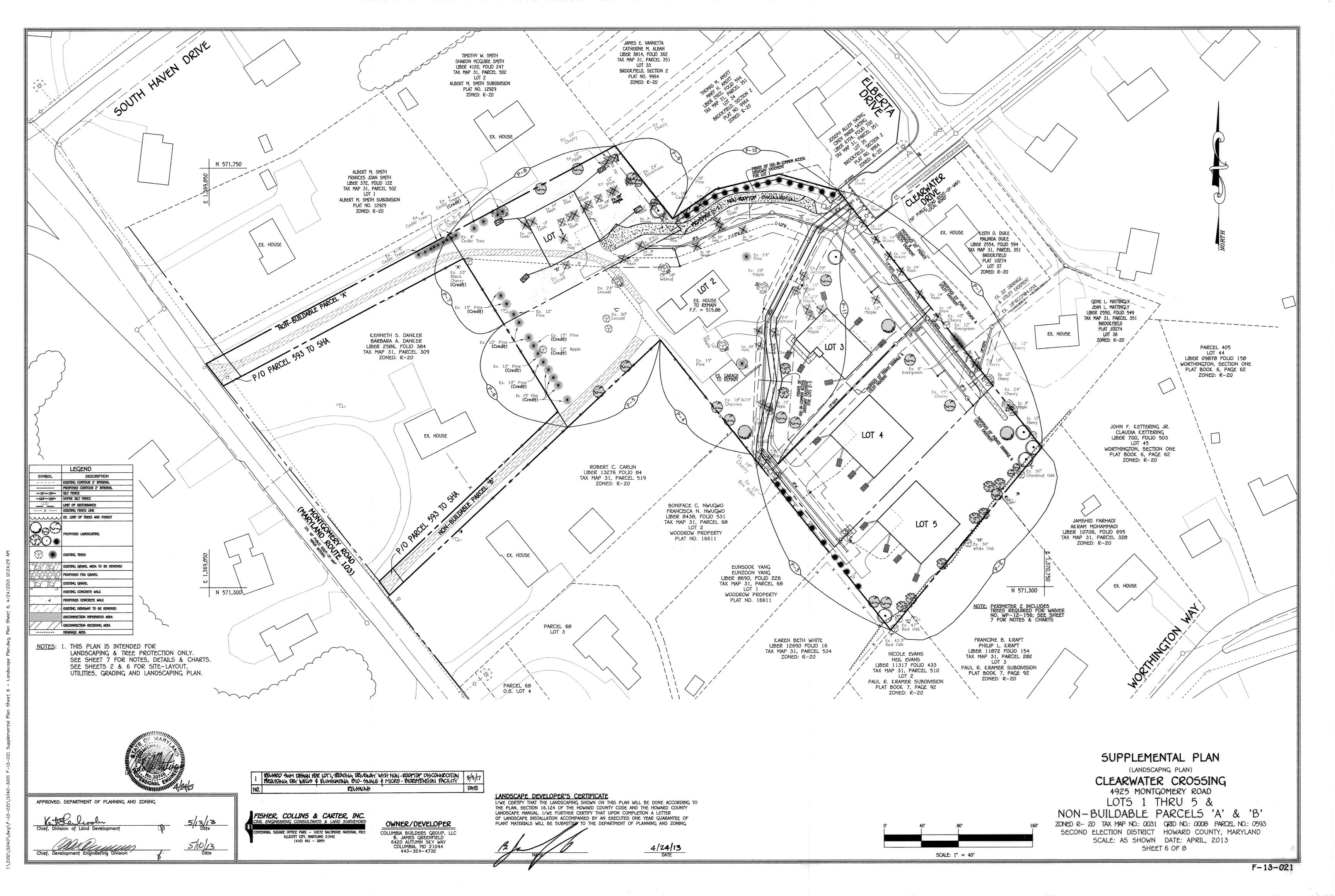
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND 5CALE: AS SHOWN DATE: APRIL, 2013 SHEET 5 OF 8

APPROVED: DEPARTMENT OF PLANNING AND ZONING

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

OWNER/DEVELOPER COLUMBIA BUILDERS GROUP, LLC B. JAMES GREENFIELD 6420 AUTUMN SKY WAY COLUMBIA, MD 21044 443-324-4732





ALTERNATIVE LANDSCAPING HAS BEEN PROVIDED ALONG PERIMETER NO.3 TO ESTABLISHED AN ADDITIONAL SCREEN FOR THE PROPOSED RESIDENTIAL UNITS.

PLANTING SPECIFICATIONS

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE WATER & SEWER DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$14,250.00 (33 SHADE TREES @ 300.00/TREE) AND (29 EVERGREEN TREES @ 150.00/TREE).

AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF THE AND COUNTY AND REVIEW AND APPROVALE. PLANNING AND ZONING. ANY DEVIATION FROM THE 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 THE APPLICABLE PLANS.

D. 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

			SCHEDULE A - PERIMETER	LANDSCAPE EDGE							
PERIMETER	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9	P-10	P-11
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
LANDSCAPE TYPE	A	A	В	A :	A	A	A	A	В	A	Α
LINEAR FEET OF PERIMETER	352.99 L.F.	254.55 LF.	233.54 LF.	164.77 LF.	137.02 LF.	110.57 L.F.	113.05 L.F.	203.25 LF.	99.74 LF.	191.84 L.F.	306.60 LF.
NUMBER OF PLANTS REQUIRED	(352.99' /60' = 5.00) = 6	(254.55' /60' = 4.24) = 5	(233.54' /50' = 4.67) = 5 (233.54' /40' = 5.84) = 6	(233.54' /60' = 2.75) = 3	(137.02' /60' = 2.20) = 2	(233.54' /50' = 4.67) = 5	(113.05' /60' = 1.00) = 2	(203.25' /60' = 3.28) = 4	(99.74' /50' = 1.99) = 2 (99.74' /40' = 2.49) = 2	(191.84' /60' = 3.20) = 4	$(306.68^{\circ} / 60^{\circ} = 5.11) = 5$
SHADE TREES EVERGREEN TREES	6 0	5 0	5 6	3 0	2 0	2 0	2 0	4 0	2 2	4 0	5 0
CREDIT FOR WALL, FENCE OR BERM	0	0	0	0 :	0	0	0	0	0	0	0
CREDIT FOR EXISTING VEGETATION SHADE TREES EVERGREEN TREES	0 0 0	0 0 0	0 0 0	0 0	0 0 0	10 1 9	3 1 2	0 2 0	0 0 0	0 0 0	0 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES REPLACEMENT SPECIMEN TREES ENHANCED PERIMETER TOTAL NUMBER OF TREES PROVIDED	(6 REQUIRED - 0 CREDIT) = 6 6 0 0 0 6	(5 REQUIRED - 0 CREDIT) = 5 4 2 6 0 12	(11 REQUIRED - 0 CREDIT) = 11 3 10 0 0 13	(3 REQUIRED - 0 CREDIT) = 3 3 0 0 0 0 3	(2 REQUIRED - 0 CREDIT) = 2 2 0 0 0 0 2	(2 REQUIRED - 10 CREDIT) = 0 0 0 0 0 0	(2 REQUIRED - 2 CREDIT) = 0 0 0 0 0 0 0	(4 REQUIRED - 2 CREDIT) = 2 2 0 0 0 0 2	(4 REQUIRED - 0 CREDIT) = 4 2 2 0 0 4	(4 REQUIRED - 0 CREDIT) = 4 0 0 0 0 15 15	(5 REQUIRED - 0 CREDIT) = 9 0 0 0 5 5

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT 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. ALL PLANTS SHALL BE FRESHLY DUG; NO HEALED—IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA. CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "MISS UTILITY" A MINIMUM OF 40 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE PROVIDED IN ACCORDANCE WITH THE APPROVED FOREST CONSERVATION PLAN. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE. ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS. POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS (2 PERCENT SLOPE). PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.

		SPECIMEN TREE CHART	
CEY	SPECIES, SIZE (Inches dbh)	COMMENTS	COMMENTS
A	prunus serotina, 33"	FAIR CONDITION, SOME LIMB DIEBACK	to remain
В	Robinia Pseudo-Acacia, 30"	FAIR CONDITION, LIMB DIEBACK NOTED	to be removed
Ç	ROBINIA PSEUDO-ACACIA, 30°	FAIR CONDITION, LIMB DIEBACK OBSERVED	to remain
D	CHINESE CHESTNUT	not native species	TO BE REMOVED
£	ACER PLATANOIDES, 36.5"	not native species	TO BE REMOVED
F	QUERCUS RUBRA, 43.5"	FAIR CONDITION, SOME IMPACT BY POWER LINE TRIMMING	to remain
G	QUERCUS RUBRA, 47"	GOOD CONDITION	to remain
Н	QUERCUS ALBA, 30+"	FENCE DID NOT ALLOW ACCURATE MEASUREMENT OF dbh	to remain
1	QUERCUS PRINUS, 30°	GOOD CONDITION	to remain

FOR TO REMAIN TO BE REMOVED

	LANDSCAPING PLANT LIST						
QTY.	KEY	NAME	SIZE				
15		ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE	2-1/2" - 3" CAL				
4	0	CORNUS FLORIDA / WHITE FLOWERING DOGWOOD	1-1/2" - 2" CAL				
3	Capt	QUERCUS PHELLOS / WILLOW OAK	2-1/2" - 3" CAL				
6	\odot	ULMUS AMERICANA 'PRINCETON' / PRINCETON AMERICAN ELM	2-1/2" - 3" CAL				
25	**	CUPPRESSOCYPARIS LEYLANDI / LEYLAND CYPRESS	5' - 6' HGT				
3		QUERCUS PALUSTRIS / PIN OAK	2-1/2" - 3" CAL				
6		QUERCUS PALUSTRIS / PIN OAK	f CAL				

TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE IN NURSERY.

REMOVE DEAD AND DAMAGED BRANCHES BY PRUNING ACCORDING TO RECOGNIZED

TWISTED UNTIL TAUT. STAKES & WIRE TO BE REMOVED AFTER SIX (6) MONTHS

— 3" MIN. SOIL RIM, 4' DIA. REMOVE AFTER ONE YEAR. FLOOD TWICE DURING FIRST 24 HOURS.

- SOIL MIX - SEE SOIL SPECIFICATIONS.

REMOVE ROTTABLE BURLAP FROM UPPER

EXISTING UNDISTURBED SUBSOIL. IF SUBSOIL

IS FILL, SET TREE 4" ABOVE FINISH GRADE TO ALLOW FOR SETTLEMENT.

____ 3" SHREDDED BARK MULCH

1/3 OF ROOT BALL

TO FINISHED GRADE AS IT BORE IN

UNTIL HOLE IS HALF FILLED AND WATER.

NOTES: 1. PLANT SHALL BEAR SAME RELATION

2. BACKFILL AND COMPACT SOIL MIX

COMPLETE BACKFILLING AND COMPENSATE FOR SETTLING.

TREE PLANTING DETAIL

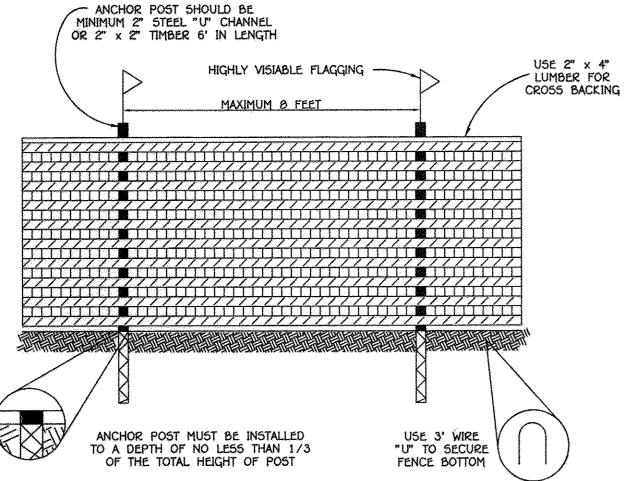
NO SCALE

THE NURSERY.

REINFORCED BLACK RUBBER HOSE 1/2" DIA. DOUBLE #10 GAGE NON-CORRODABLE WIRE

- 2" X 2" HARDWOOD STAKES, 8' LONG. 2 PER TREE

BLAZE ORANGE PLASTIC MESH



NOTES:

FOREST PROTECTION DEVICE ONLY. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS. 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.

5. PROTECTIVE SIGNAGE MAY ALSO BE USED. 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

ROOT DAMAGE SHOULD BE AVOIDED.

TREE PROTECTION DETAIL

NOT TO SCALE APPROVED: DEPARTMENT OF PLANNING AND ZONING 5/13/13

FISHER, COLLINS & CARTER, INC.

IL ENGINEERING CONSULTANTS & LAND SURVEYORS OWNER/DEVELOPER SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE COLUMBIA BUILDERS GROUP, LLC B. JAMES GREENFIELD 6420 AUTUMN SKY WAY ELLICOTT CITY, MARYLAND 21042 COLUMBIA, MD 21044 443-324-4732

LANDSCAPE DEVELOPER'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.

4/24/13

1. THE FIFTEEN (15) EVERGREEN TREES ALONG PERIMETER 8 ARE REQUIRED BASED ON CONDITIONAL APPROVAL OF WP-12-156 TO BUFFER THE PROPOSED

2. AS PER REMOVAL OF THE THREE (3) EXISTING SPECIMEN TREES; SIX (6) NEW SHADE TRESS HAVE BEEN PROVIDED WITHIN LANDSCAPE PERIMETER 2.

LOT 1 DRIVEWAY FROM THE ADJOINING SATAN PROPERTY.

FOREST CONSERVATION WORKSHEET Version 1.0

Project: Donahue Property

NET TRACT AREA	Acres				
A. Total tract area					
B. Area within 100 Year Floodplain	3,8				
C. Area to remain in agricultural production					
D. Net Tract Area					
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR MPD CIA R-20 E. Afforestation Threshold (percentage) 0.15 F. Conservation Threshold (percentage) 0.2	0.6 0.8				
EXISTING FOREST COVER: G. Existing forest cover (excluding floodplain)	0				
Area of forest above afforestation threshold Area of forest above conservation threshold	0				
1. Vica or forest apocks opplied Action (1) position	. X				
BREAK EVEN POINT:	altelyn di'n alsed deur serliton over dynneydyr				
BREAK EVEN POINT: J. Forest retention above threshold with no mitigation	NA				
	NA NA				
J. Forest retention above threshold with no mitigation					
J. Forest retention above threshold with no mitigation Break-Even Point	NA				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE	NA NA O				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING	NA NA				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS	NA NA O				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS N. Reforestation for clearing above Conservation Threshold	NA NA O O				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS N. Reforestation for clearing above Conservation Threshold P. Reforestation for clearing below Conservation Threshold	NA NA O O O O O O O O O O O O O O O O O				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS N. Reforestation for clearing above Conservation Threshold P. Reforestation for clearing below Conservation Threshold Q. Credit for retention above conservation threshold	0 0 0				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS N. Reforestation for clearing above Conservation Threshold P. Reforestation for clearing below Conservation Threshold Q. Credit for retention above conservation threshold R. Total reforestation required	0 0 0 0				
J. Forest retention above threshold with no mitigation Break-Even Point K. Clearing permitted without mitigation PROPOSED FOREST CLEARING L. Total area of forest to be Cleared or Retained Outside FCE M. Total area of forest to be Retained in FCE PLANTING REQUIREMENTS N. Reforestation for clearing above Conservation Threshold P. Reforestation for clearing below Conservation Threshold Q. Credit for retention above conservation threshold	0 0 0				

Appendix B.4. Construction Specifications for Environmental Site Design Practices

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%)	n/a	USDA soil types loamy sand or sandy fourn: clay content < 3%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum: no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone; washed cobbles	stone: 2 st to 5 st	
Geotextile		n/a	PE Type I nanwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" tn 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe: 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f _e = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved 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 K/89; vertical loading [11-10 or 11-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

B.4.C Specifications for Micro-Bioretention. Rain Gardens, Landscape Infiltration & Infiltration Berms 1. Material Specifications

The allowable materials to be used in these practices are detailed in Table 8.4.1.

2. Filtering Media or Planting Soil The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05. The planting soil shall be tested and shall meet the following criteria: Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification) Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met

with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%). coarse sand (30%), and compost (40%). Clay Content - Media shall have a clay content of less than 5%.

pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated. 3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If

8.4.5 Supp. 1 excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment. Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade. When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter

of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks. 4. Plant Material

Recommended plant material for micro-bioretention practices can be found in Appendix A, section A.2.3.

5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball. Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per

6. Underdrains

Underdrains should meet the following criteria: Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 750, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be 3" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) adjuantized hardware cloth.

Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.

The main collector pipe shall be at a minimum 0.5% slope. A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to provide a clean-out port and monitor performance of the filter. A 4" layer of pea gravel (%" to %" stone) shall be located between the filter media and

underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area). 7. Miscellaneous

These practices may not be constructed until all contributing drainage area has been

SUPPLEMENTAL PLAN (LANDSCAPE NOTES & DETAILS)

CLEARWATER CROSSING 4925 MONTGOMERY ROAD

LOTS 1 THRU 5 & NON-BUILDABLE PARCELS 'A' & 'B' ZONED R- 20 TAX MAP NO.: 0031 GRID NO.: 0008 PARCEL NO.: 0593 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

> SCALE: AS SHOWN DATE: APRIL, 2013 SHEET 7 OF 8

remeions

DATE

F-13-021