GENERAL NOTES

- . ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE, UNLESS WAIVERS HAVE BEEN APPROVED.
- . THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. DATED FEBRUARY 14, 2000, WHICH WAS VERIFIED
- AS CORRECT BY ROBERT H. VOGEL ENGINEERING, INC. IN MARCH 2010. 3. THE EXISTING TOPOGRAPHY IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY WINGS AERIAL MAPPING COMPANY, INC. DATED MARCH 1995.
- 4. FOREST STAND DELINEATION PLAN PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED FEBRUARY 2011 5. THE FOREST CONSERVATION OBLIGATION FOR THE REQUIRED 0.21 ACRES OF AFFORESTATION WILL BE MET BY A FOREST BANK; COLLEGE AVENUE PUMP STATION, AUTUMN RIVER BULK PARCEL 'B', SDP-10-081
- 6. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO CEMETERIES OR GRAVE SITES LOCATED ON THE SUBJECT PROPERTY.
- 7. THERE ARE NO FLOODPLAIN, WETLANDS, STREAMS OR STEEP SLOPES WITHIN PARCEL 159.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION, OR BUILDING AND GRADING PERMITS.
- 9. THE SUBJECT PROPERTY IS ZONED "R-ED" IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06.
- 10. A TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED JULY 2010
- 1. ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.03
- MODIFIED FOR SIDEWALK ADJACENT TO CURB. 2. ALL CURB AND GUTTER TO BE HOWARD COUNTY MODIFIED DETAIL R-3.01 UNLESS OTHERWISE NOTED.
- 13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$17,700.00 FOR THE REQUIRED 39 SHADE TREES AND 40 EVERGREEN TREES SHALL BE POSTED WITH THE BUILDER'S GRADING PERMIT FOR THIS PLAN.
- 4. EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS, FIELD SURVEY, AND PREVIOUSLY SUBMITTED PLANS. 15. ALL SIGN POST 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 GAUGE - 3' LONG). A GALVANIZED STEEL POLE CAP SHALL BE
- MOUNTED ON THE TOP OF EACH POST. . NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- 8. STORM WATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING 2 MICRO BIO-RETENTION FACILITIES AND ROOFTOP DISCONNECTS FOR THE PARCEL 159 DEVELOPMENT. STORMWATER MANAGEMENT FOR THE ADDITIONAL UNITS LOCATED ON PHASE II IS PROVIDED UNDER F-09-021. THE 2 MICRO BIO-RETENTION FACILITIES LOCATED ON OPEN SPACE LOT 120 WILL BE OWNED AND MAINTAINED BY THE HOA.
- 19. SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE. 20. A NOISE STUDY IS NOT REQUIRED FOR THIS SUBDIVISION.
- 21. THE EXISTING STRUCTURES LOCATED ON PARCEL 159 AND SHALL BE REMOVED PRIOR TO RECORDATION OF THE PLAT.
- 22. COLLEGE AVENUE IS A SCENIC ROAD. 3. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
- A) WIDTH 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.) C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS
- D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING) E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
- F) STRUCTURE CLEARANCES MINIMUM 12 FEET
- G) MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE
- 4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 3044005R AND 3044004R
- 5. THIS PLAN IS SUBJECT TO WP-11-206 TO SECTION 16.120(c)(4) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATION TO EXTEND THE DISTANCE ALONG A PRIVATE ROAD FROM 200' TO 247' AND TO SECTION 16.1205(a)(7) FOR THE REMOVAL OF THE EXISTING 32" SILVER MAPLE SPECIMEN TREE. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS. A) ON THE PRELIMINARY EQUIVALENT SKETCH PLAN AND ALL FUTURE SUBDIVISION PLANS AND SITE DEVELOPMENT PLANS, PROVIDE A BRIEF DESCRIPTION OF WAIVER PETITION, WP-11-206, AS A GENERAL NOTE TO INCLUDE REQUEST, SECTIONS
- OF THE REGULATIONS, ACTION AND DATE. B) THE PRIVATE ROAD MUST BE CONSTRUCTED TO PUBLIC ROAD STANDARDS IN ACCORDANCE WITH THE COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION DATED JULY 8, 2011. C) PROVIDE A TYPE 'C' BUFFER ALONG THE COLLEGE AVENUE (SCENIC ROAD) PROPERTY BOUNDARY. THESE TREES MUST BE
- A MINIMUM 2-1/2" TO 3" CALIPER SHADES TREES AND 6'-8' IN HEIGHT EVERGREENS. D) WAIVER APPROVAL IS LIMITED TO THE REMOVAL OF THE ONE 32" SILVER MAPLE TREE AS SHOWN ON THE WAIVER EXHIBIT. E) THE DEVELOPER SHALL DESIGN THIS SUBDIVISION PROPOSAL TO BE IN ACCORDANCE WITH THE SCENIC ROAD PROTECTION REQUIREMENTS OF SECTION 16.125 OF THE SUBDIVISION REGULATIONS.
- STORMWATER MANAGEMENT TEST PITS #1 & #2 WITHIN THE PROPOSED MICRO BIORETENTION AREAS TO DETERMINE THE DEPTH OF ROCK AND WATER WAS DONE JULY 2011. AS A RESULT NO ROCK OR WATER ARE WITHIN 4' OF THE BOTTOM OF
- THE FACILITIES. PLANNING BOARD CASE NO. 393 APPROVED BY PLANNING BOARD ON JUNE, 21 2012.
- 3. IN ACCORDANCE WITH SECTION 107.D.1.6 OF THE HOWARD COUNTY ZONING REGULATIONS, LOT COVERAGE FOR ALL SINGLE FAMILY ATTACHED UNITS WITHIN THE ENTIRE AUTUMN RIVER SUBDIVISION WILL NOT EXCEED 60% OF THE GROSS ACREAGE OF EACH SINGLE FAMILY ATTACHED LOT.
- 29. A PRIVATE ROAD STREET NAME SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-343-2430 FOR DETAILS AND COST ESTIMATES.
- O. BG&E APPROVAL WILL BE PROVIDED AT THE FINAL PLAN PHASE FOR PHASE IV.
- . 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 START OF WORK.
- 2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE
- 3. 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. . WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE
- HOWARD COUNTY CODE. 5. PUBLIC WATER AND SEWERAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THE DEPARTMENT OF PUBLIC WORKS IS NOT REQUIRING A REFUSE PAD FOR THE DWELLING ALONG AUTUMN CREST WAY; HOWEVER TRASH COLLECTION MUST BE WITHIN 5 FEET OF THE COUNTY ROADWAY.

MILESTONES CHART

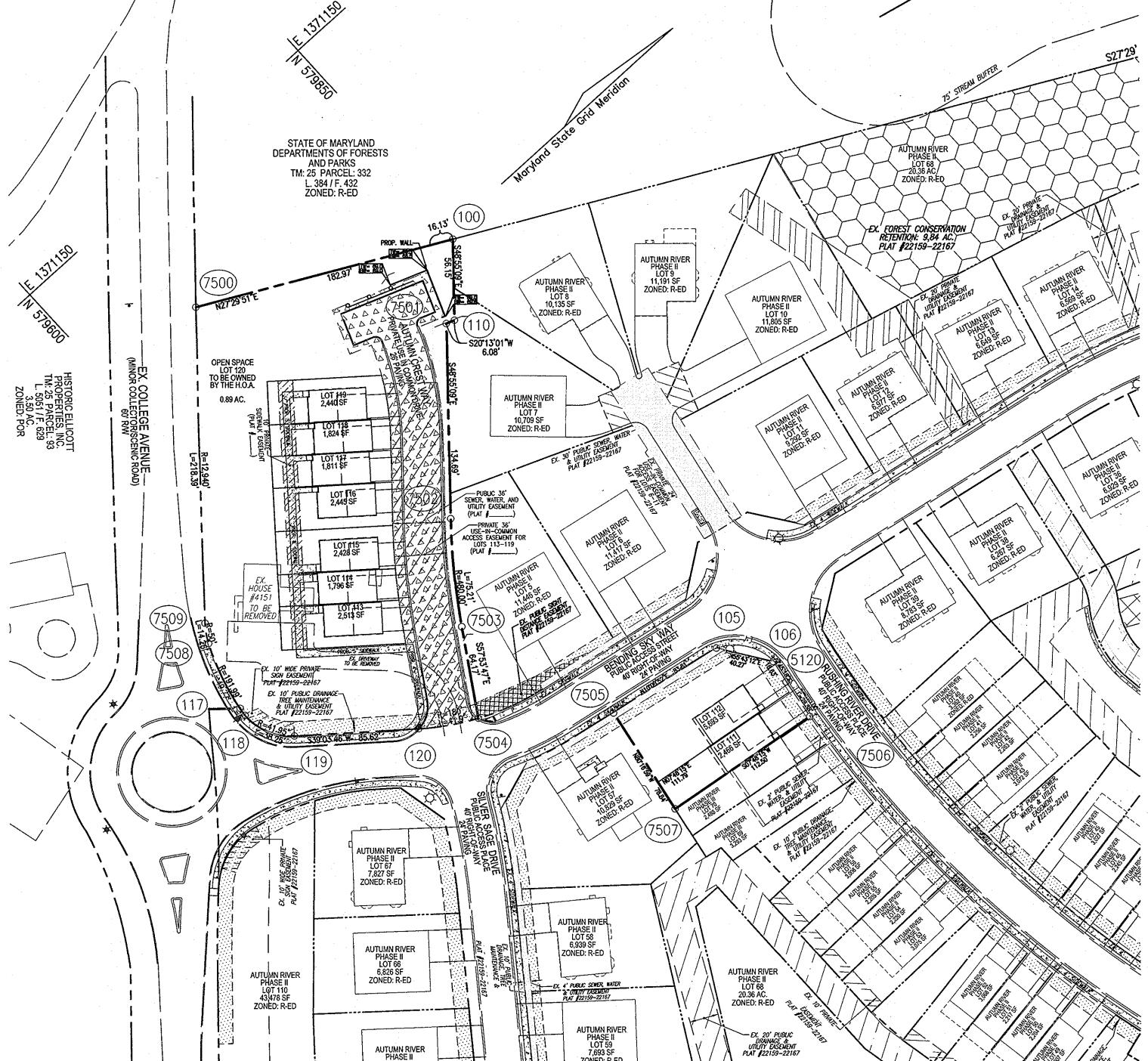
THE PROJECT IS LOCATED IN THE WORTHINGTON ELEMENTARY SCHOOL DISTRICT, THE NORTH EAST SCHOOL REGION AND THE ELLICOTT MILLS MIDDLE SCHOOL DISTRICT AND HAS PASSED THE OPEN/CLOSED SCHOOLS TEST GIVEN ALL AREAS ARE OPEN. THE NEW ALLOCATION YEARS AND MILESTONE DATES FOR SUBMISSION THE PRELIMINARY PLANS BASED ON THE PHASING, IF THE MILESTONE DATES ARE NOT MET S-98-016

	E VOIDED.			• • • •		
HASE		TENTATI\ OCATION:	-	ALLOC YE	ATIO AR	N

PHASE		LLOCATIONS	YEAR	PRELIMINARY PLAN SUBMISSION MILESTONES	
PHASE PHASE		- 58 37	2009 2010	BETWEEN JULY 1, 2006 AND JAN. 1, 2007 BETWEEN JULY 1, 2007 AND NOV. 1, 2007	
NOTE:	REFERENCE	S-98-016	LETTER DATED	OCTOBER 12, 2005.	

SUPPLEMENTAL PLAN AUTUMN RIVER - PHASE IV

LOTS 111-119 AND OPEN SPACE LOT 120 A SUBDIVISION OF PARCEL 159 AND A RE-SUBDIVISION OF AUTUMN RIVER - PHASE II NON-BUILDABLE BULK PARCELS 'C' & 'F'



105	N 579784.6276	E 1371649.3129
106	N 579807.3069	E 1371682.5843
110	N 579818.8938	E 1371343.2912
117	N 579514.4754	E 1371458.6404
118	N 579513.6237	E 1371464.5759
119	N 579529.1394	E 1371498.0950
120	N 579595.6209	E 1371552.0513
5120	N 579804.3500	E 1371698.9443
7500	N 579678.6312	E 1371233.5369
7501	N 579798.3254	E 1371358.2393
7502	N 579709.8144	E 1371459.7698
7503	N 579665.0282	E 1371520.0913
7504	N 579630.9242	E 1371574.4499
7505	N 579702.1243	E 1371634.5456
7506	N 579800.2752	E 1371727.5371
7507	N 579688.8165	E 1371712.2608
	106 110 117 118 119 120 5120 7500 7501 7502 7503 7504 7505 7506	106 N 579807.3069 110 N 579818.8938 117 N 579514.4754 118 N 579513.6237 119 N 579529.1394 120 N 579595.6209 5120 N 579804.3500 7500 N 579678.6312 7501 N 579798.3254 7502 N 579709.8144 7503 N 57965.0282 7504 N 579630.9242 7505 N 579702.1243

COORDINATE LIST

IO. NORTHING EASTING

100 N 579840.9292 E 1371318.0145

7508 N 579528.5598 E 1371411.0535

7509 N 579536.1088 E 1371399.0119

LEGEND

PARKING TABULATION:

TOTAL NUMBER OF UNITS PROPOSED :

PARKING SPACES PROVIDED

PARKING SPACES REQUIRED: 2 SPACES PER UNIT = 18 SPACES

TOTAL PARKING SPACES REQUIRED: = 21 SPACES

TOTAL PARKING SPACES PROVIDED: = 27 SPACES

0.3 SPACES PER UNIT FOR GUEST/OVERFLOW PARKING= 3 SPACES

 $\nabla \nabla \nabla \nabla \nabla \nabla \nabla \nabla \nabla \nabla$ 113–119

RIGHT-OF-WAY LINE

CENTERLINE OF EXISTING STREAM

EX. FOREST CONSERVATION EASEMENT (PLAT #22159-22167)

EX. PRIVATE 24' USE-IN-COMMON ACCESS EASEMENT FOR LOTS 6-11

EX. PUBLIC SEWER, WATER & UTILITY EASEMENT

PUBLIC 36' SEWER, WATER

ACCESS EASEMENT FOR LOTS

2 SPACES IN GARAGE = 18 SPACES (FOR 9 UNITS)

1 SPACE ON DRIVEWAY = 9 SPACES (FOR 9 UNITS)

AND UTILITY EASEMENT

UTILITY EASEMENT (PLAT #22159-22167)

OPEN SPACE TABULATION:

*AUTUMN RIVER PHASE I, II, III REQUIRED OPEN SPACE (25%) = 17.70 AC. *AUTUMN RIVER PHASE IV(PARCEL 159) REQUIRED OPEN SPACE (50%) = 0.55 AC. (1.09 AC x 50%) GROSS OPEN SPACE THIS SUBMISSION = 2.34 AC. NON-CREDIT OPEN SPACE THIS SUBMISSION = 0.17 AC.

NET OPEN SPACE THIS SUBMISSION = 2.17 AC. AUTUMN RIVER PHASE I, II, III AND IV REQUIRED OPEN SPACE = 18.25 AC. TOTAL CREDITED OPEN SPACE FOR AUTUMN RIVER PHASE I, II, III AND IV = 47.71 AC.

TOTAL RECREATION OPEN SPACE REQUIRED FOR AUTUMN RIVER = 26,260 SF TOWNHOUSE (PARCEL 159) 400SF/UNIT 7 UNITS = 2,800 SF TOWNHOUSE (PHASE II ADDITIONAL UNITS) 400SF/UNIT 3 UNITS = 1,200 SF PHASE II & III SINGLE FAMILY DETACHED UNITS = 77 x 250 SF/UNITS = 19,250 SF PHASE II TOWNHOUSE UNITS = 17 x 200 SF/UNITS = 3,400 SF

TOTAL RECREATION OPEN SPACE PROVIDED FOR AUTUMN RIVER = 29,324 SF. * EXISTING FINALS (F-09-021 & F-10-061) ARE SUBJECT TO THE AMENDED FOURTH EDITION OF THE BALTIMORE COUNTY

> VICINITY MAP SCALE 1"=2000' ADC MAP COORDINATE: PG. 4815 G3

BENCHMARKS

BENCHMARK NO. 1: COUNTY CONTROL #3044005R 3/4" REBAR 0.8' BELOW SURFACE N. 578233.92, E. 1473142.33 ELEV. = 374.389

BENCHMARK NO. 2: COUNTY CONTROL #3044004R 3/4" REBAR 0.6' BELOW SURFACE N. 578128.03, E. 1473460.71 ELEV. =362.575

GENERAL SITE DATA

PRESENT ZONING: R-ED LOCATION EAST SIDE OF COLLEGE AVENUE, APPROX. 1.5 MILES SOUTH OF HISTORIC ELECTION DISTRICT: 2ND TAX MAP: 25, PARCELS 159, 172, & 279

DEED REFERENCE: LIBER 5546 AT FOLIO 30 APPLICABLE DPZ FILE REFERENCE: S-98-16, P-99-16, F-00-131 F-01-08, P.B. 325, P.B. 148, PLAT# 15794, & 15795 PLAT# 14513 TO 14515, P-07-016, P-08-006, WP-09-063, F-09-021, F-10-061, ECP-11-054, WP-11-206

SP-12-001, W+S CONTRACT #14-4463,

PLAT #22159-22167

PROPOSED WATER SYSTEM: PUBLIC PROPOSED SEWER SYSTEM: PUBLIC GROSS AREA: AREA OF 100 YEAR FLOODPLAIN: N/A AREA OF STEEP SLOPES: NET AREA:

2 LOTS PER NET ACRE (2 X 1.09): 2 LOTS LIMIT OF DISTURBANCE:

SHEET INDEX					
DESCRIPTION	SHEET NO.				
COVER SHEET	1 OF 7				
LAYOUT SHEET	2 OF 7				
ROAD PROFILES AND PLAN DETAILS	3 OF 7				
SOILS, GRADING, SEDIMENT, AND EROSION CONTROL PLAN	4 OF 7				
GRADING, SEDIMENT, EROSION CONTROL, AND BIO-RETENTION NOTES AND DETAILS	5 OF 7				
LANDSCAPE PLAN	6 OF 7				
LANDSCAPE NOTES AND DETAILS	7 OF 7				

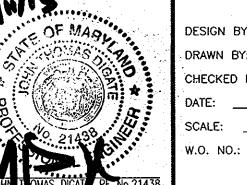
OWNERS DEVELOPER AUTUMN DEVELOPMENT CORPORATION HISTORIC ELLICOTT PROPERTIES, INC. C/O LAND DESIGN & DEVELOPMENT, INC. 5300 DORSEY HALL DR. STE 102 ELLICOTT CITY, MARYLAND 21042-7819 4100 COLLEGE AVE. ELLICOTT CITY, MD 21042-7819 ATTN: MR. RONALD L. SPAHN, PRESIDENT 443-367-0422 REVISION SUPPLEMENTAL PLAN **AUTUMN RIVER - PHASE IV**

COVER SHEET LOTS 111-119 AND OPEN SPACE LOT 120

A SUBDIVISION OF PARCEL 159 AND A RE-SUBDIVISION OF AUTUMN RIVER - PHASE II NON-BUILDABLE BULK PARCELS 'C' & 'F'

ZONING: R-ED ND ELECTION DISTRICT PARCELS: 159, 172, & 279 AX MAP: 25 GRID: 14 & 21 HOWARD COUNTY, MARYLAND





CHECKED BY: SCALE: AS SHOWN ____04-145

SHEET ____OF ____

F-13-019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

15.75 AC. 52.25 AC. 104.50 104 SKETCH PLAN S-98-016 APPROVED 95 UNITS PLUS 2 EXISTING UNITS TOTALING 97 UNITS (LETTER DATED OCTOBER 15, 2005) * PHASE II PLAN PROPOSED 58 UNITS PLUS 2 EXISTING UNITS FOR A TOTAL OF 60 UNITS

FLOODPLAIN

TOTAL SUBDIVISION

AREA (GROSS AREA)

48.229 AC.

37.344 AC.

1.09 AC.(PARCEL 159)

PROPOSED UNDER PHASE IV NETTING THE 9 ADDITIONAL UNITS ALLOWED.

INCLUDES 2.84 AC FROM PHASE II

PHASE

I (F-00-131)

II (F-09-021)

III (F-10-067)

V (SP-12-001

RECORDED

(# 14513)

14513)

(# 14513)

(# 15794)

** THIS PLAN PROPOSES 33 UNITS PLUS 2 UNITS FROM THE RESUBDIVISION OF PHASE II NON BUILDABLE BULK PARCEL D INTO 2 LOTS *** THERE ARE 18 UNITS RESUBDIVIDED (17 TOWNHOUSE AND 1 SINGLE FAMILY) FROM PHASE II TO BE RECONFIGURED. THERE ARE 27 UNITS

PREVIOUS AUTUMN RIVER DENSITY TABULATION

STEEP SLOPES NET AREA

5.786 AC. 30.70 AC.

9.964 AC.

20.46 AC.

.09 AC.

UNITS

PROPOSED

02

35**

27 ***

PERMITTED

40.92

2.18

TOTAL UNITS

REMAINING

102

44

TOTAL NO. OF DWELLING UNITS: NO. OF SINGLE FAMILY ATTACHED:

LOCATION MAP

TOTAL NO. OF PROPOSED LOTS: NO. OF OPEN SPACE LOTS:

AUTUMN RIVER PHASE IV

TOTAL AREA OF ATTACHED LOTS: 0.54 AC.

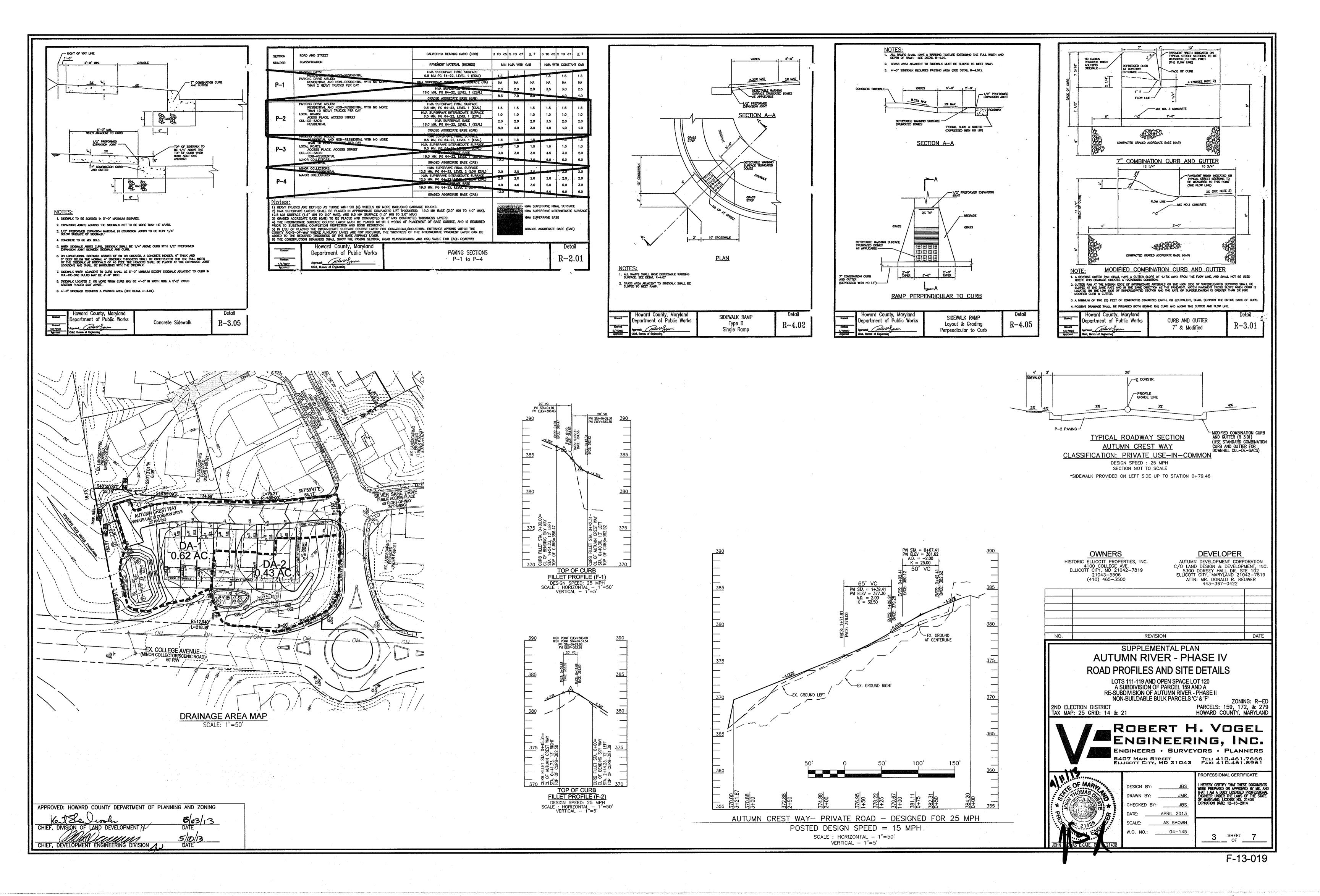
TOTAL AREA OF SUBMISSION: 1.43 AC.

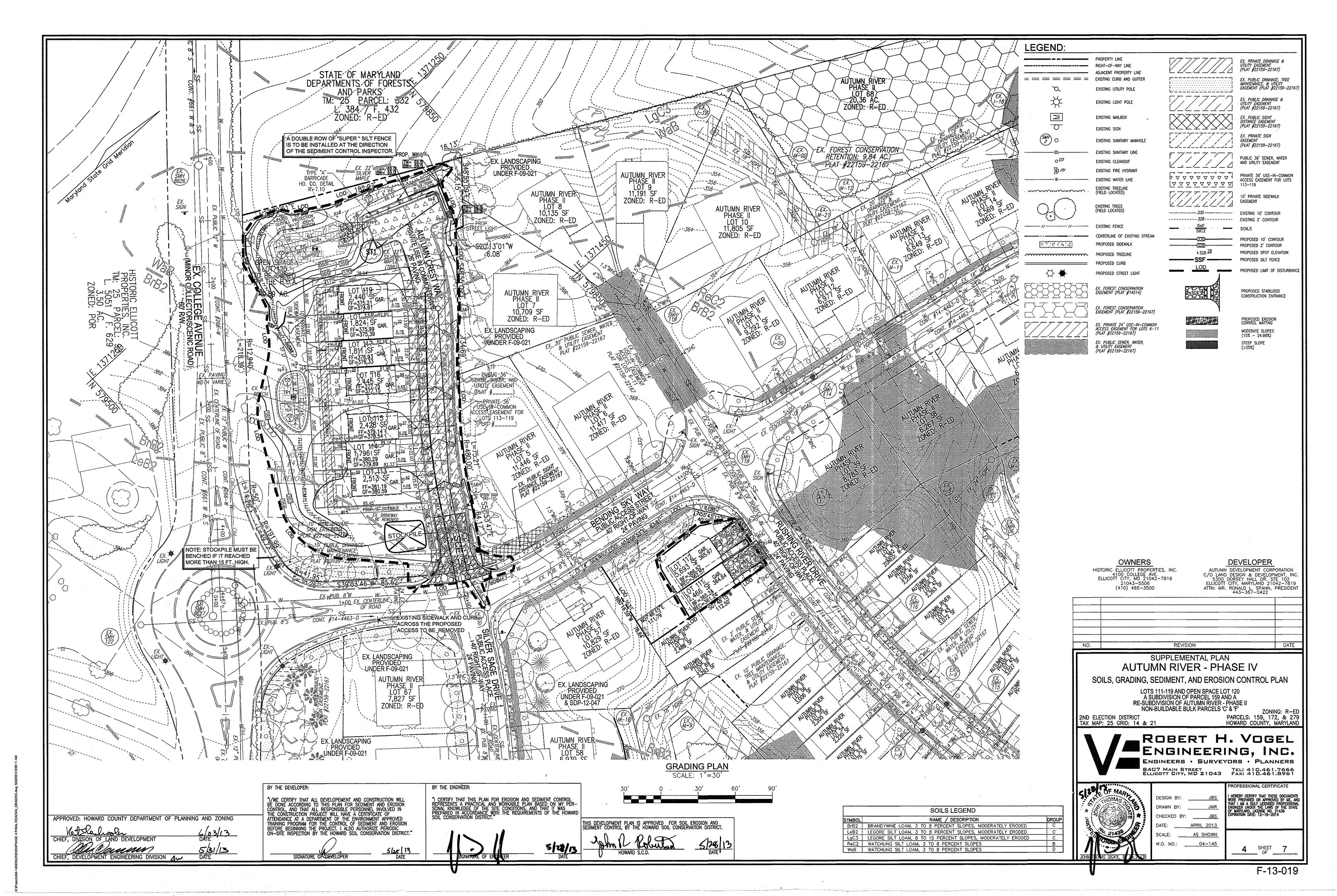
TOTAL NUMBER OF ATTACHED LOTS: 9

TOTAL NUMBER OF OPEN SPACE LOTS: 1 TOTAL AREA OF OPEN SPACE LOTS: 0.89 AC. LOT TABULATION

SUBDIVISION REGULATIONS, UNDER THESE REGULATIONS 25% OF THE GROSS ACREAGE WAS REQUIRED FOR OPEN SPACE. THE CURRENT REGULATIONS REQUIRE 50% OF THE GROSS ACREAGE FOR OPEN SPACE.







B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION TOPSOILING AND SOIL AMENDMENTS

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCHARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

OTHER SUITABLE MEANS.

PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE

MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

1. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIA. GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE

ACCEPTABLE.

N. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON—SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY TH RESULTS OF A SOIL TEST.

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

I. 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 CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS SOILS OF CONCEM HAVE LOW MOSTORE CONTENT, LOW NOTITIENT 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 GYEN 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: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE

A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS: TRASH, OR OTHER MATERIALS LARGER THAN 1% INCHES IN DIAMETER.

ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON MY, THISTLE, OR OTHERS AS SPECIFIED.

TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OF SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED I LIEU OF NATURAL TOPSOIL. OPSOIL APPLICATION A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES, SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM

TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES

FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE.

SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY.

SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL

ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER. . 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 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. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL

OBTAIN GRADING PERMIT. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND

GRADE ROAD TO SUB-BASE AND APPLY DUST CONTROL SPECIFICATIONS.

. CONSTRUCT MICRO-BIORETENTIONS FACLILTIES AND STABILIZE IMMEDIATELY.

9. INSTALL PERIMETER LANDSCAPING AS WELL AS MICRO-BIORETENTION PLANTINGS.

PERMITS (313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK.

WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR BEGIN

WITH ROAD GRADED TO SUB-BASE, BEGIN CURB AND GUTTER

ROAD PAVING COMPLETE, STABILIZE ANY REMAINING DISTURBED

8. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR AND WITH SITE

STABILIZED REMOVE REMAINING SEDIMENT CONTROL DEVICES.

. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE

FOLLOWING INITIAL SOIL DISTURBANCES OR RE-DISTURBANCE,

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL

AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1

B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR

3. IT WILL BE THE DECISION OF THE SITE SEDIMENT CONTROL

INLET PROTECTIONS LEFT OVER FROM THE ROAD CONTRACT

F-09-021, IF THE CLP, ON THE ROAD HAS ALREADY BEEN

REMOVED, THE INSPECTOR HAS THE DISCRETION TO HAVE IT

INSPECTOR WHETHER TO LEAVE OR REMOVE THE EXISTING CURB

PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES,

GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE

PERMANENT OR TEMPORARY STABILIZATION SHALL BE

CONSTRUCTION AND ROAD PAVING. INSTALL SIDEWALKS. . WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, AND FINAL

BEFORE STARTING ANY WORK, CONSTRUCT STABILIZED

SEQUENCE OF CONSTRUCTION

INSTALL PERIMETER SUPER SILT FENCE.

AREAS, AND FLUSH STORM DRAIN SYSTEM.

SEDIMENT CONTROL MEASURES ON THIS PLAN.

CONSTRUCTION: ENTRANCE.

MASS GRADING OF SITE

COMPLETED WITHIN:

GRADING.

RE-INSTALLED.

VERTICAL (3:1); AND

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING <u>DEFINITION</u>
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

<u>PURPOSE</u>
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES.
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE

SPECIFICATIONS

A ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY, ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED, SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEED AND SEEDING DATES ONLY IF THE GROUND IS SEED AND SEED B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERLANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

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

I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS, PERPEDICULIAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDED MUST BE FIRM AFTER PLANTING.

AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.

II. LINE: USE ONLY GROUND AGRICULTURAL LINESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING.

H. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

W. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

A STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR, STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY.

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

B. WOOD CELLULOSE FIBER MUICH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

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

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

. APPLICATION

A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOK, SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

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

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

11. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

111. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET.

MAXIMUM OF 30 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET,
TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION
RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE
HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF
BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER
RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO
3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.8 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

	HARDINESS Z	ONE (FROM FIGURE E (FROM TABLE B.	E B.3) :ZOI 1):	NE 6b	FELIZER LIME RATE			
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING Dates	SEEDING DEPTHS	(10-20-20)			
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)		
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.				

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION DEFINITION TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION

<u>PURPOSE</u> TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA A SEED MIXTURES

. GENERAL USE A.SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATI ASELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 — CRITICAL AREA PLANTING.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOUL TESTING ACENCY. HE SOIL TESTING AGENCY.). FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS 8. 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.

1. 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 35PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT

III. TALL FESCUE/KENTUCKY BLUEGRASS; FULL SUN MIXTURE; FOR USE IN DROUGHT PRONE AREAS III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

V. 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: 1½ 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

CHOOSE CERTIFIED MATERIAL CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY.
THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED
SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTEM MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) OUTHERN MD. EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS

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% INCHES IN DAMETER. 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.

	Hapidiness z Seed Moctur	one (from Figure E (from Table B.)	B.3): <u>ZONE</u> 1): <u>9</u>	FELIZER RATE (10-20-20)			LIME RATE	
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING Dates	SEEDING DEPTHS	N	P2 05	K ₂ 0	
1	COOL SEASON TALL PESCUE & KENTIUCKY BLUECRASS OR EOUAL	T.F. 60 LB / AC K.B. 40 LB / AC		1/4-1/2 M	(1 LB PER	90 LB/AC (2 LB PER 1000 SF)	(2 LB PER	
							1	

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED, SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH, BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION.

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY RRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL, JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

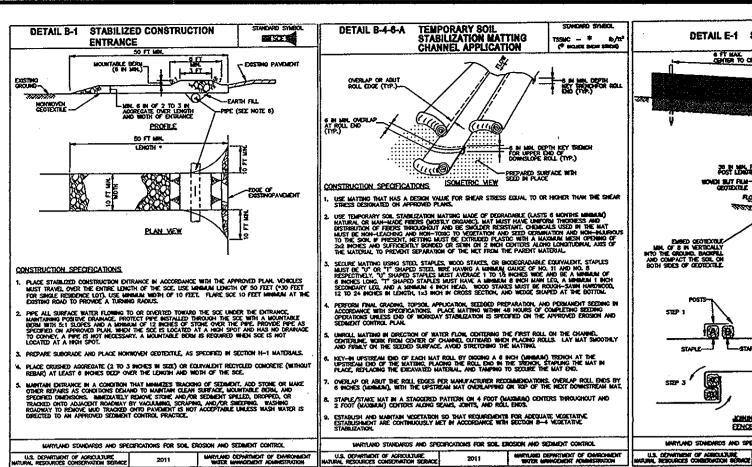
C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SUPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERLYING SOIL SURFACE.

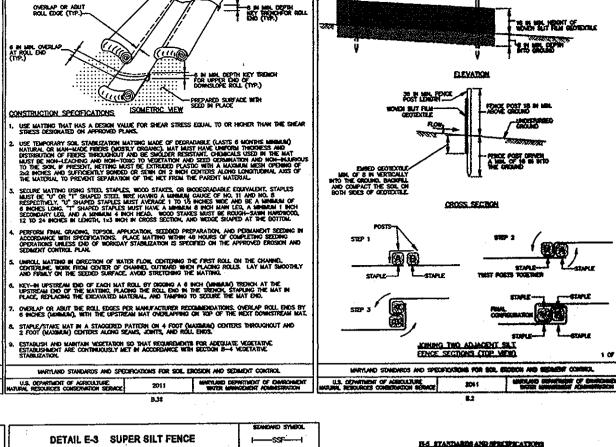
SOD MAINTENANCE

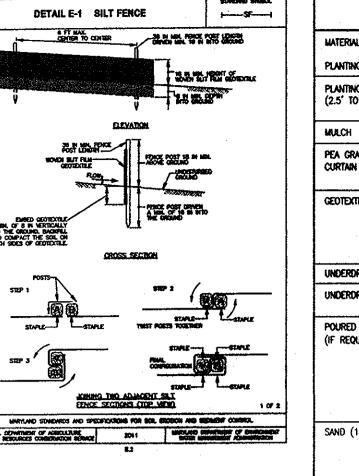
3. SOD MAINTENANCE

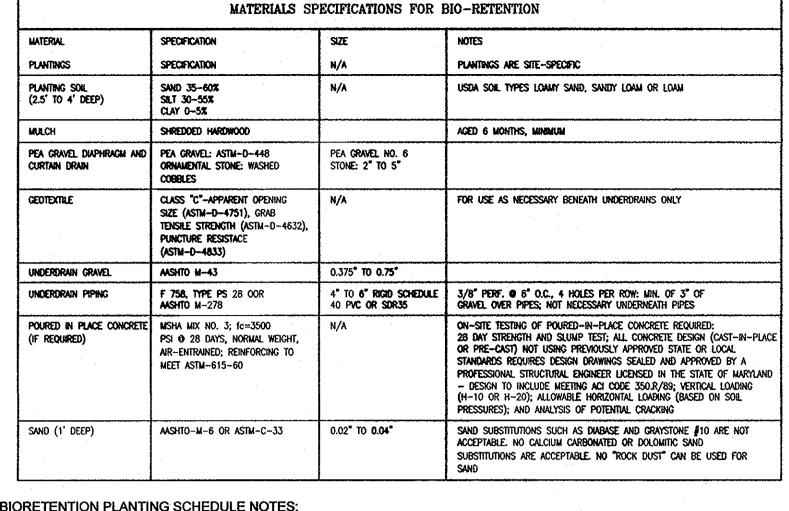
5. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING. B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS, MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

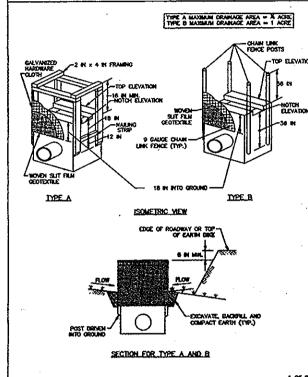


GROUND SURFACE









DETAIL D-4-1-C ROCK OUTLET PROTECTION III

9/2- now

OR STONE FILTER

NSTRUCTION SPECIFICATIONS

PROFILE

RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.

PREPARE THE SUBGRADE FOR GEOTETHE OR STONE PILITER (\$ TO 15, INCH IMMANA STONE FOR BOOK BROWN BY THE SUBGRADE SOUTH AND FREE TO THE REQUIRED LARGES AND GRADES COMPACT ANY FILL RECOURSE OF THE SUBGRADE TO A DESIGN OF APPROXIMATELY THAT OF THE SURROLMENING INDICATION MATERIAL.

EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AY LEAST 4 INCHES AY SIDES OF RIPRAP.

CONSTRUCT RIPRAP CUTLET TO FULL COURSE THROCHESS IN ONE OPERATION AND IN SUCH A MANNET AS TO AVOID DISPLACEDED! OF UNDERSTRUCK MATERIALS. PLACE STOKE FOR RIPRAP CUTLET IN A MANNER RIAT WILL DISINE THAT IT IS REASONABLY MONOCOPICIUS WITH THE SMALLER STOKES AND SPALLS FILLING THE VOIDS BETWEEN THE LINCOR STOKES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE PILLIPS RUMBET OR GEOFFLILE HAND PLACE TO THE EXTRAT RECESSARY.

WHERE NO ENOWALL IS USED, CONSTRUCT THE UPSTREAM DIO OF THE APRON SO THAT THE WOOTH IT TWO THICS THE DULKETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINISOR OF 18 BHCHES.

CONSTRUCT APRON WITH OX SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SCIENCE IT OF THAT IT BLENDS IN WITH EXISTING CROUND.

MAINTAIN LINE, CRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULAT SEDMENT AND DEBYS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIFRAP DISLODGED RIFRAP. MAJES MECESSARY REPUBLIS MANIFACTORY.

E. DEPARTMENT OF AGRICULTURE
RESOURCES CONSERVATION SERVACE
2011
WATER MANAGEMENT ADMINISTRATION

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

DETAIL E-9-1 STANDARD INLET PROTECTION

_____ s>

ROPIN

SECTION A-A A MATERIAL PROPERTY OF THE PARTY OF THE PART

SECDON B-B

CONSTRUCTION SPECIFICATIONS SETALL 2% MICH DIAMETER GALVANIZED STEEL POSTS OF GLOSS SICH WILL DIRECTED AND SIX POOR LIBERT SPACED NO PLETRICE BIAM TO FEST APART, DRIVE THE POSTS A MINISTRA OF 38 MICHES HOT THE GROUND. 2. FASTEN 9 GAUGE OR HEAVER GALMONIZED CHUIN LINK FEINDE (2% 60CH MAGRIAM OFFINING) 42 BACHES BU HEIGHT SPEEDSLY TO THE WINDE POSTS WITH WIRE THES OR NUR BINGS. S. FASTEN WOMEN SLIT FILM GENTEXTILE AS SPECIFIED IN SECTION H-4 MATRIMALS, SECURELY TO THE UPSCOPE SIDE OF CHAIN LINK FRICE WITH THE SPRACED EVERY ZA MONES AT THE TUP AND MID PROFESSION FROM THE CHAIN FRAME AND THE CHAIN AND THE GRACIAN OF THE GRACIAN THE GRACIAN STATES. 5. EXTEND BOTH DIGS OF THE SUPER SET FEMOL A MINISTER OF FIVE HERIZORTAL FRET UPSLOPE AT 45 DECREES TO THE MUNIFICACIONAL RECORD THE ENGS OF THE EUROP SET FORM. B. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THE GEORGETHE USED MEETS THE REQUIREMENTS IN SECTION H-4 MATERIALS. ROMONE ACCURATE ATED SEDMENT AND DERRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDMENT REACHED SED FENCE HEIGHT, REPLACE CEDITECTRILE IF TORN, IF UNCERSIMING OCCURS, RESISTALL CHARL LINK (EXPENSE AND CONTROLLE). U.S. DEPARTMENT OF AGRICULTURE

SPECIFICATIONS FOR BIORETENTION

WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

ORGANIC MATTER 1.5 - 4% (BY WEIGHT)
MAGNESIUM 35 LB./AC

POTASSIUM (POTASH - K 20) 85 LB./AC

PHOSPHORUS (PHOSPHATE - P205) 75 LB./AC

SOLUBLE SALTS NIT TO EXCEED 500 PPM

SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

WATER BEFORE PREPARING (ROTOTILLING) BASE.

ON THE OUTSIDE OF THE TREE BALL.

4. PLANT MATERIAL

6. UNDERDRAINS

7. MISCELLANEOUS

THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.

TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS.

EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

FOLLOWING THE NON-GRASS GROUND COVER PLNTING SPECIFICATIONS.

UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA

I. MATERIAL SPECIFICATIONS

PH RANGE 5.2 - 7.0

2. PLANTING SOIL

10 FT MAX

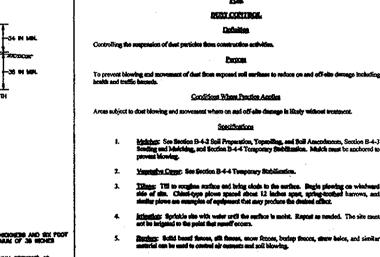
CHAN LINK FEICHIG

OVEN SUT PILM GEOTEXULE

now -

DABED GEOTEXTRE AND --CHAN LINK FENCE 8 IN MILL BITO GROUND

CALVANIZED CHAN LINK FENCE IN WOVEN SLIT FILM GEOTECHIE



APPENDIX B.3. CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS

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 BIORETENTION AREA 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

ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH. PHOSPHORUS.

SINCE DIFFERENT LAB CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY.

SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE. IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE-

HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK

EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRE. 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

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS 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

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

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELL AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

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 OF NITROGEN

UNDERDRAINS ARE TO BE PLACED ON A 3'-O" WIDE SECTION FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF

AND POTASSIUM AND ADDITIONAL TEST OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE

intendent: Sprinkle site with water creff the surface is moist. Report as rended. The site must Birder: Solid beed fences, all finces, enow fonces, budsp finces, above below, and similar Chemical Tuninant: Use of chemical treatment requires approval by the appropriate plan KEY SYM QTY BOTANICAL NAME/COMMON NAME

5. SEE LANDSCAPE PLAN FOR TYPICAL PLANTING DETAILS. BIORETENTION PLANTING REQUIREMENTS STEMS REQUIRED STEMS PROVIDED 18 18 1488 SF BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINMUM DENSITY O 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). MICRO-BIORETENTION PLANTING SCHEDULE

3 GALLON

5 GALLON

5 GALLON

5 EVERGREEN TREES 4 EVERGREEN TREES

SEE BIORETENTION PLANT LIST*

CONT

CONT

MBR#2

162 LF

YES, 100%*

NO

C BUFFER) S SHADE TREES

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED

SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING

2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND

FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE

3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET

4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF

PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN

SPECIFICATIONS

UTILITIES PRIOR TO DIGGING.

BOTTOM OF DRAINAGE SWALES.

ILEX GLABRA COMPACTA

VIBURNUM TRILOBUM

*SURETY FOR BIORETENTION PROVIDED IN THE DED COST ESTIMATE

KALMIA LATIFOLIA

MOUNTAIN LAURE

SCHEDULE D: STORMWATER MANAGEMENT

AREA LANDSCAPING:

CREDIT FOR EXISTING VEGETATION

(NO, YES AND LINEAR FEET

CREDIT FOR OTHER LANDSCAPING

NUMBER OF TREES REQUIRED

NUMBER OF TREES PROVIDED

LINEAR FEET OF PERIMETER

(NO. YES AND %)

EVERGREEN TREES

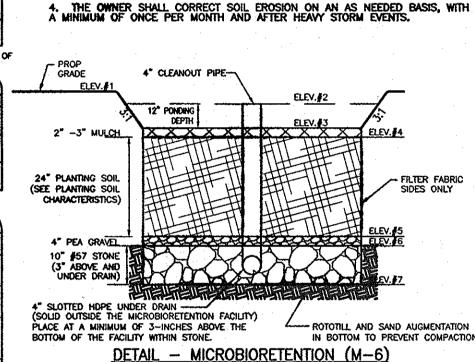
SHADE TREES

AMERICAN HIGHBUSH CRANBERR

111 LF

C BUFFER)

SHADE TREES



OPERATION AND MAINTENANCE

1. THE OWNER SHALL MAINTAIN THE PLANT, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II. TABLE A.4.1 AND 2.

2. THE OWNER SHALL PERFORM A PLANT INSPECT IN THE SPRING AND FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL, WITH ACCEPTABLE PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.

SCHEDULE FOR BIO-RETENTION AREAS

NOT TO SCALE RAIN GARDEN ELEVATIONS RAIN GARDEN 1 2 3 4 5 6 7 4" INV. OUTFAL #1 376.5 376.0 375.0 374.75 372.75 372.42 371.59 371.92 371.0

#2 364.0 363.8 362.8 362.55 360.55 360.22 359.39 359.72 359.0 SWM CHART ESDV MICRO-BIORETENTION TOTAL PROVIDED MBR-1 = 788 CF 2,276 CF 2.241 CF*-MBR-2 = 1.488 CF

* $2,989 \times 75\% = 2,241 \text{ CF}$ **OWNERS**

DEVELOPER

HISTORIC ELLICOTT PROPERTIES, INC. 4100 COLLEGE AVE. ELLICOTT CITY, MD 21042-7819 21043-5506 (410) 465-3500

AUTUMN DEVELOPMENT CORPORATION C/O LAND DESIGN & DEVELOPMENT, INC. 5300 DORSEY HALL DR. STE 102 ELLICOTT CITY, MARYLAND 21042-7819 ATTN: MR. RONALD L. SPAHN, PRESIDENT 443-367-0422

NO. REVISION SUPPLEMENTAL PLAN **AUTUMN RIVER - PHASE IV** GRADING, SEDIMENT, EROSION CONTROL, AND **BIO-RETENTION NOTES AND DETAILS**

LOTS 111-119 AND OPEN SPACE LOT 120 A SUBDIVISION OF PARCEL 159 AND A RE-SUBDIVISION OF AUTUMN RIVER - PHASE II NON-BUILDABLE BULK PARCELS 'C' & 'F'

TAX MAP: 25 GRID: 14 & 21

PARCELS: 159, 172, & 279 HOWARD COUNTY, MARYLAND

ZONING: R-ED



ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS . SURVEYORS . PLANNERS

8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

OF MAD

DESIGN BY: DRAWN BY CHECKED BY: DATE: SCALE:

PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEE UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21438 EXPIRATION DATE: 12–16–2014 ____JBS **APRIL 2013** AS SHOWN 04-145 SHEET ___ OF __

Table B.1: Temporary Seeding for Site Stabilization

Seedi	ng Rate ¹	Seeding	Recommended Seeding Dates by Plant Hardiness Zone 37			
lb/ac			5b and 6a	6ъ	72 and 7b	
	KING AND A					
40	1.0	0.5	Mar 15 to May 31; Aug I to Scp 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
96	2.2	1.0	Mar 15 to May 31; Aug 1 to Scp 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	
112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15	
THE WE						
30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14	
20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14	
	1b/ac 40 96 72 120 112	40 1.0 96 2.2 72 1.7 120 2.8 112 2.8	Ib/ac Ib/1000 ft ² Depth ^{2/2} (inches)	Ib/ac Ib/1000 ft ² Depth ³² (inches) Sb and 6a 40	Ib/ac Ib/1000 ft ² Depth ²⁷ (inches) Sb and 6a 6b	

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-scoded grasses (armual ryegrass, pearl millet, footail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a rurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above

For sandy soils, plant seeds at twice the depth listed above The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

NOTE: NO CHANGES TO THE SEQUENCE OF CONSTRUCTION ARE ALLOWED WITHOUT PRIOR APPROVAL FROM THE HOWARD SCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DIVISION OF LAND DEVELOPMEN , DEVELOPMENT ENGINEERING DIVISION 1.

BY THE DEVELOPER: "I/WE CERTIFY THAT ALL DEVELOPEMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON—SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER

BY THE ENGINEER: "I 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."

* EARTHWORK IS AN ESTIMATE ONLY; CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.

HIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD_SOIL_CONSERVATION DISTRICT.

COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855). 2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED

ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO. 3. FOLLOWING INITIAL SOIL DISTURBANCES OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE TAME MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF CRASSES. AND ESTABLISHMENT OF GRASSES

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

OFFSITE WASTE/BORROW LOCATION ON LOTS 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

ADDITIONAL SEDIMENT 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 ACRES, APPROVAL

OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. 11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

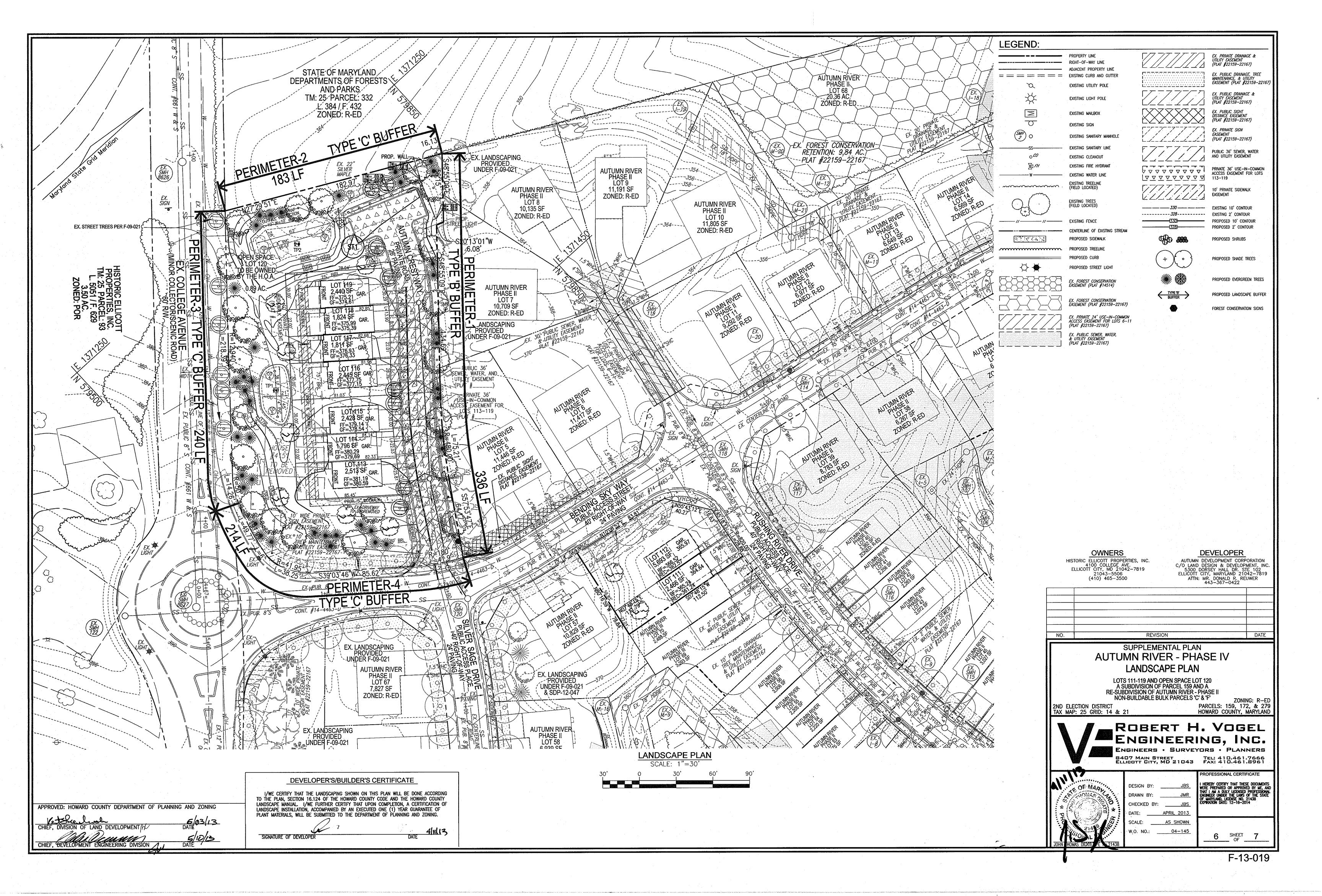
SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD

B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING. 4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS BE POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH

7. SITE ANALYSIS: TOTAL AREA
AREA DISTURBED
AREA TO BE ROOFED OR PAVED
AREA TO BE VEGETATIVELY STABILIZED

F-13-019



GENERAL NOTES:

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$17,700.00 FOR THE REQUIRED 39 SHADE TREES AND 40 EVERGREEN TREES SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.

THE OWNER, JENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

3. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HEREWITH AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

THERE ARE NO FLOODPLAIN, WETLANDS, STREAMS, OR STEEP SLOPES WITHIN PARCEL 159. 5. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE BE PERMITTED WITHIN THE WETLANDS, WETLANDS BUFFER, STREAM BANK BUFFER OR FOREST CONSERVATION EASEMENTS.

THE SUBJECT PROPERTY IS ZONED "R-ED" IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY FISHER, COLLINS, & CARTER, INC., DATED FEBRUARY 14, 2000. VERIFIED AS CORRECT BY ROBERT H. VOGEL ENGINEERING, INC. IN MARCH 2010.

THE EXISTING TOPOGRAPHY IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY WINGS AERIAL MAPPING COMPANY, INC., DATED MARCH 1995. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO GRAVE SITES, OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.

THE REMOVAL OF TREES 30" OR GREAT DHB IS PROHIBITED WITH OUT COUNTY APPROVAL. . THIS PLAN IS SUBJECT TO A WAIVER TO SECTION 16.1205(a)(7) OF THE SUBDIVISION REGULATIONS FOR THE REMOVAL OF THE 39" SILVER MAPLE SPECIMEN TRÉE, APPROVED SEPTEMBER 14, 2010.

LANDSCAPE NOTES

THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.

PLANTINGS SHOWN HEREON ARE THE RESPONSIBLITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCITON OF THE FINAL PLAN.

LANDSCAPE SCHEDULE NOTE:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.

2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.

4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN. BG&E NOTES:

1. THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

BGE LIST OF TREES AND PLANTS. . BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.

THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

Forest Conservation Worksheet 2.2

Net Tra	act Area				1
A.	Total Tract Area			A =	1.09
B.	Deductions			B =	0.00
C.	Net Tract Area			C =	1.09
Land l	Jse Category		-		
	Input the number "1" under the ap	propriate	land use		
	zoning, and limit to only one entry				
	ARA MDR IDA HDR	MPD	CIA		:
W 1 15m m	0 0 0 1	0	0		
D.	Afforestation Threshold (Net Tract Area x	15%)	D =	0.16
E.	Conservation Threshold (Net Tract Area x	20%	1)	E =	0.22
Existin	g Forest Cover				
F.	Existing Forest Cover within the Net Tract Are	ea		F=	0.05
G.	Area of Forest Above Conservation Threshold			G =	0.00
Break	Even Point				:
H.	Break Even Point			H =	0.05
I.	Forest Clearing Permitted Without Mitigation			=	0.00
Propos	sed Forest Clearing				
J.	Total Area of Forest to be Cleared			J =	0.05
K.	Total Area of Forest to be Retained			K =	0.00
Plantir	ng Requirements			· · · · · · · · · · · · · · · · · · ·	:
L.	Reforestation for Clearing Above the Conserva	shold	L =	0.00	
M	Reforestation for Clearing Below the Conserva	shold	M =	0.10	
N.	Credit for Retention above the Conservation T	hreshold	1	N =	0.00
P.	Total Reforestation Required			P =	0.10
Q.	Total Afforestation Required			Q =	0.11
R.	Total Planting Requirement			R=	0.21

MET BY A FOREST BANK; COLLEGE AVENUE PUMP STATION, AUTUMN RIVER BULK PARCEL 'B', SDP-10-081.

CATEGORY	ADJACENT	TO PERIMETER	PROPERTIES	S/ROADWAYS	TOTAL
PERIMETER/FRONTAGE DESIGNATION LANDSCAPE TYPE	1 8	2 C	3 C	4 C	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	336'	183	240'	214'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	YES 1 EX. 22" MAPLE	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED(LF REMAINING) SHADE TREES EVERGREEN TREES SHRUBS	1:50 7 1:40 8	1:40 5 1:2 <u>0</u> 9	1:40 6 1:20 12	1:40 5 1:2 <u>0</u> 11	23 40 -
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	7 8 - -	4* 9 -	6 12 - -	5 11 - -	22 40 - -

* CREDIT TAKEN FOR EXISTING 22" MAPLE TREE

4. KEEP MULCH 1" FROM TRUNK

5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.

TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$17,700.00 FOR THE REQUIRED 39 SHADE TREES AND 40 EVERGREEN TREES SHALL BE POSTED WITH THE BUILDER'S GRADING PERMIT FOR THIS PLAN.

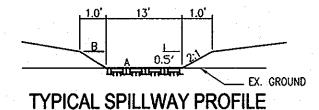
EE CALCULATION	S	
LINEAR FEET	NO. REQUIRED	NO. PROVIDED
322/40	8	8
	LINEAR FEET	LINEAR FEET REQUIRED

__3° DEPTH MULCH ∠2° EARTH SAUCER

SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING		
9		
9		
9		

	LANDSCAPE SCHEDULE									
KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS						
	22	ACER BUERGERIANUM TRIDENT MAPLE	2 1/2"-3" CAL.	B & B						
	9	CERCIS CANEDENSIS EASTERN REDBUD (INTERNAL LANDSCAPING)	2 1/2"-3" CAL.	B & B						
*	40	ILLEX "NELLIE R. STEVENS" NELLIE R. STEVENS HOLLY	6'-8' HT.	B & B						
	8	ACER GINNALA AMUR MAPLE (STREET TREE)	2 1/2"-3" CAL.	B & B						

MBR FACILITY	Α	В	С
MBR #1	376.0	376.5	375.0
MBR #2	363.8	364.0	362.8



NOT TO SCALE

UNDISTURBED -4" PVC @ 0% TYPICAL SPILLWAY SECTION

NOT TO SCALE

SUPPLEMENTAL PLAN **AUTUMN RIVER - PHASE IV** LANDSCAPE NOTES AND DETAILS LOTS 111-119 AND OPEN SPACE LOT 120 A SUBDIVISION OF PARCEL 159 AND A RE-SUBDIVISION OF AUTUMN RIVER - PHASE II NON-BUILDABLE BULK PARCELS 'C' & 'F' 2ND ELECTION DISTRICT TAX MAP: 25 GRID: 14 & 21

HISTORIC ELLICOTT PROPERTIES, INC. 4100 COLLEGE AVE. ELLICOTT CITY, MD 21042-7819 21043-5506 (410) 465-3500

ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS • SURVEYORS • PLANNERS

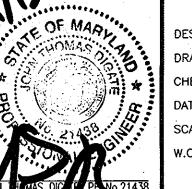
DEVELOPER

AUTUMN DEVELOPMENT CORPORATION

C/O LAND DESIGN & DEVELOPMENT, INC. 5300 DORSEY HALL DR. STE 102 ELLICOTT CITY, MARYLAND 21042-7819 ATTN: MR. DONALD R. REUWER 443-367-0422

C'&'F' ZONING: R-ED PARCELS: 159, 172, & 279 HOWARD COUNTY, MARYLAND

8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



--- RUBBER HOSE --- WIRE GUYS TURNBUCKLES - PLANT SAUCER - REMOVE BURLAP FROM TOP - 1/3 OF BALL 2"X4"X3" WOOD STAKES - BACKFILL MATERIAL COMPACTED BACKFILL MATERIAL 6" MIN.

> TYPICAL EVERGREEN TREE PLANTING DETAIL

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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

F-13-019