LEGEND SITE DEVELOPMENT PLAN **GENERAL NOTES** EXISTING CONTOUR PROPOSED CONTOUR -----(82)--**EXISTING SPOT ELEVATION** 382.56 1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION PROPOSED SPOT ELEVATION ± 8253 INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK. EAGLE VALLEY DIRECTION OF FLOW 2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY momm EXCAVATION WORK. EXISTING TREES TO REMAIN 3. THE PROJECT BOUNDARY AND TOPOGRAPHY IS TAKEN FROM FIELD SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., JULY 2005 OF PARCEL 46 AND 815. LIGHT POLES 4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL LOTS 1-9 WHICH ARE BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 38DA AND 38D5 WERE USED FOR THIS PROJECT. M1D3 SOIL TYPE 5. STORMWATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT. WQv AND Rev ARE PROVIDED BY A BIORETENTION FACILITY, RAINGARDENS AND ROOFTOP DISCONNECTS. SEE SHEET 4 FOR DETAILS. THE BIORETENTION FACILITY IS HOWARD COUNTY, MARYLAND CONCRETE LOCATED ON HOA OPEN SPACE LOT 10 AND ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION. 6. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE PRIVATE SWM. DRAINAGE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. AND UTILITY EASEMENT 7. ANY DAMAGE TO PUBLIC RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. 8. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE. CONSERVATION EASEMENT 9. FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.03. (AFFORESTATION) 10. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK VICINITY MAP ON THESE DRAWINGS: PROP. FOREST MISS UTILITY 1-800-257-7777 CONSERVATION EASEMENT 1-800-743-0033 VERIZON TELEPHONE COMPANY: 410-313-4900 BUREAU OF UTILITIES: ADC MAP COORDINATE: 4937 C10 AT&T CABLE LOCATION DIVISION: 1-800-252-1133 410-637-8713 B.G.&E. CO. CONTRACTION SERVICES: 410-685-0123 B.G.&E. CO. (EMERGENCY): STATE HIGHWAY ADMINISTRATION 410-531-5533 SITE DATA **BENCHMARKS** 410-795-1390 COLONIAL PIPELINE CO: 11. THE SUBJECT PROPERTY IS ZONED "R-12" IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP LOCATION: TAX MAP 38, GRID 14, PARCEL 215 HOWARD COUNTY BENCHMARK 38DA (CONCRETE MONUMENT) LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06. EXISTING ZONING: R-12 N 556796.292 E 1390721.486 ELEV. 126.075 12. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR GROSS AREA OF PARCEL: 3.22 AC. HOWARD COUNTY BENCHMARK 38D5 (CONCRETE MONUMENT) DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK. DEED REFERENCE: L.9363/F.299. N 558378.575 E 1386524.158 ELEV. 192.964 DPZ REFERENCE: P-10-02, S-06-05, WP-10-81, F-10-49. AREA OF PLAN SUBMISSION: 78,712 SF / 1.807 AC. 13. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN. 14. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND AREA OF PROPOSED RIGHT-OF-WAY (HOLLY MARIE ROAD): 17,968 SF AREA OF PROPOSED RIGHT-OF-WAY DEDICATION (LOUDON AVENUE): 1.374 SF EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS: AREA OF 100-YR FLOODPLAIN: N/A A) WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) AREA OF STEEP SLOPES: N/A B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS NET AREA OF PROJECT: 3.22 AC D) STRUCTURES (CULVERTS/BRIDGES) - MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING) COORDINATE TABLE NUMBER OF PROPOSED RESIDENTIAL LOTS: 9 E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT AREA OF PROPOSED RESIDENTIAL LOTS: 1.81 AC. DEPTH OVER DRIVEWAY SURFACE AREA OF SMALLEST BUILDABLE LOT PROPOSED: 8,400 SF - LOT 7 F) STRUCTURE CLEARANCES - MINIMUM 12 FEET NUMBER OF PROPOSED OPEN SPACE LOTS: 1 (LOT 10) G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE AREA OF OPEN SPACE REQUIRED: 0.97 AC. (3.22 x 30%) 555852.25983 15. WATER AND SEWER FOR THIS SITE HAS BEEN PROVIDED BY PUBLIC CONTRACT #14-4639-D. AREA OF CREDITED OPEN SPACE PROVIDED: 0.97 AC. OR 30% (42.530 SF) 16. THERE ARE NO WETLANDS OR STREAMS LOCATED ON-SITE. AREA OF NON-CREDITED OPEN SPACE: 0.00 AC. 110 556050.55223 TOTAL AREA OF OPEN SPACE: 0.97 AC. 17. NO 100-YR FLOODPLAIN IS LOCATED ON-SITE. 556030.15750 18. A FOREST STAND DELINEATION PLAN WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC DATED OCTOBER 2005 AND APPROVED UNDER F-10-49. THE FOREST CONSERVATION OBLIGATIONS FOR THIS 556197.76046 PROJECT REQUIRES 0.48 ACRES OF AFFORESTATION HAS BEEN MET BY PLACEMENT OF 0.35 ACRES OF AFFORESTATION EASEMENT ON SITE AND THE REMAINDER OF 0.13 ACRES PLACED INTO MAINTAINED BY HO 556439.99824 116 AN OFF-SITE EASEMENT IDENTIFIED AS TRINITY HOMES AT CYPRESS SPRINGS FOREST CONSERVATION RETENTION BANK 300 555876.98880 (SDP-09-61); MAP 38, BLOCK 3, PARCELS 42, 44, 45 AND 46. SURETY HAS BEEN PROVIDED UNDER F-10-49. 19. APFO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, DATED SEPTEMBER 2005 WAS APPROVED UNDER F-10-49. 20. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE. MINIMUM LOT SIZE CHART 21. A NOISE STUDY WAS PERFORMED BY ROBERT H. VOGEL ENGINEERING DATED JULY 2009 AND APPROVED UNDER F-10-49. NOISE MITIGATION IS PROVIDED BY TWO 6' HIGH NOISE WALLS. LOT NO. | GROSS AREA | PIPESTEM AREA | MINIMUM LOT SIZE 22. THIS SITE IS LOCATED WITHIN THE BWI FOUR MILE HEIGHT RESTRICTION ZONE REQUIRING APPROVAL FROM THE MARYLAND AVIATION ADMINISTRATION FOR NEW HOUSE CONSTRUCTION AND FOR STORMWATER MANAGEMENT DESIGN. AN APPROVAL LETTER FROM THE MAA HAS BEEN PROVIDED UNDER THIS SITE PLAN. 8,824 SF 23. PERIMETER LANDSCAPING AND TRASH PAD SCREENING HAS BEEN PROVIDED IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. THE SURETY WAS POSTED AS PART OF THE DEVELOPER'S AGREEMENT 9,136 SF 8.993 SF 24. THERE ARE NO SLOPES IN EXCESS OF 25% ON THE PROPERTY. 25. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLES-CARNES, DATED APRIL 2009. MAINTENANCE, DRAINAGE & UTILITY 26. STREET TREES HAVE BEEN PROVIDED IN ACCORDANCE WITH SECTION 16.124(e)(1) OF THE SUBDIVISION SHEET INDEX REGULATIONS AND THE LANDSCAPE MANUAL APPROVED UNDER F-10-49. 27. WP-10-081 A WAIVER PETITION WAS APPROVED JANUARY 21, 2010 TO WAVE SECTION 16.120(b)(5)(ii) REQUIRING NOISE WALLS TO BE LOCATED ON AN OPEN SPACE LOT AND MAINTAINED BY A HOMEOWNERS ASSOCIATION WHEN OPEN SPACE IS BEING CREATED STATE HIGHWAY ADMINISTRATION TM 38 P 217 L.2583 F.610 ZONED: M-1 USE: EXEMPT COMMERCIAL WITHIN A SUBDIVISION, SUBJECT TO THE FOLLOWING: LAYOUT AND LANDSCAPING PLAN A MAINTENANCE AGREEMENT FOR THE NOISE WALL WHICH WILL BE CONSTRUCTED WITHIN THE 20' PRIVATE NOISE WALL MAINTENANCE GRADING, SEDIMENT & EROSION CONTROL PLAN DRAINAGE AND UTILITY EASEMENT LOCATED ALONG THE WESTERN PROPERTY BOUNDARY OF THIS SITE (LOTS 1 TO 4) SHALL BE RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MD SIMULTANEOUSLY WITH THE FINAL PLAT. F-10-049/ EAGLE VALLEY. EDIMENT & EROSION CONTROL DETAILS 28. THE HOMEOWNERS ASSOCIATION DECLARATION OF COVENANTS HAS BEEN RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND AS L.12504 F. 341 ON 4/28/2010. - EX. 30' PUBLIC DRAINAGE 29. USE-IN-COMMON MAINTENANCE AGREEMENT HAS BEEN RECORDED WITH AS L.12504 F.335 AND UTILITY EASEMENT IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MD. 30. MAINTENANCE AGREEMENT FOR NOISE WALL LOCATED ON LOTS 1 TO 4 HAS BEEN RECORDED AS L. 12470 F. 011 IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MD. 31. THE NOISE WALL AND FENCING LOCATED ON OPEN SPACE LOT NO. 10 SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION IN ACCORDANCE WITH THE HOA DOCUMENTS RECORDED AS L. 12504 F. 341 ON 4/28/2010. 32. ALL WATER METERS ARE INSIDE. MAINTAINED BY HOA PERMIT INFORMATION CHART SECTION/ AREA SUBDIVISION NAME EAGLE VALLEY REVISION LOTS 1-9 PLAT REF | BLOCK NO | ZONE | TAX MAP | ELECT DIST | CENSUS TO SITE DEVELOPMENT PLAN **LOCATION MAP** 14 R-12 38 ADDRESS CHART **COVER SHEET** LOT NO STREET ADDRESS **EAGLE VALLEY** 6403 HOLLY MARIE ROAD LOTS 1-9 6407 HOLLY MARIE ROAD 6411 HOLLY MARIE ROAD TAX MAP 38 BLOCK 14 1ST ELECTION DISTRICT 6415 HOLLY MARIE ROAD 6419 HOLLY MARIE ROAD 6423 HOLLY MARIE ROAD ROBERT H. VOGEL 6427 HOLLY MARIE ROAD ENGINEERING, INC. 6431 HOLLY MARIE ROAD 6435 HOLLY MARIE ROAD ENGINEERS . SURVEYORS . PLANNERS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHECKED BY: OWNER/DEVELOPER MICHAEL L. PFAU SCALE: 3675 PARK AVENUE ELLICOTT CITY, MD 21043 PHONE 410-480-0023

SHEET OF

THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE

PARCEL 215 HOWARD COUNTY, MARYLAND

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

1"=60'

05-61

SCALE: 1"=2000'

EAST

1388157.65527

1388093.45122

1388007.11370

1387887.45207

1388208.45019

1388362.76996

8,651 SF

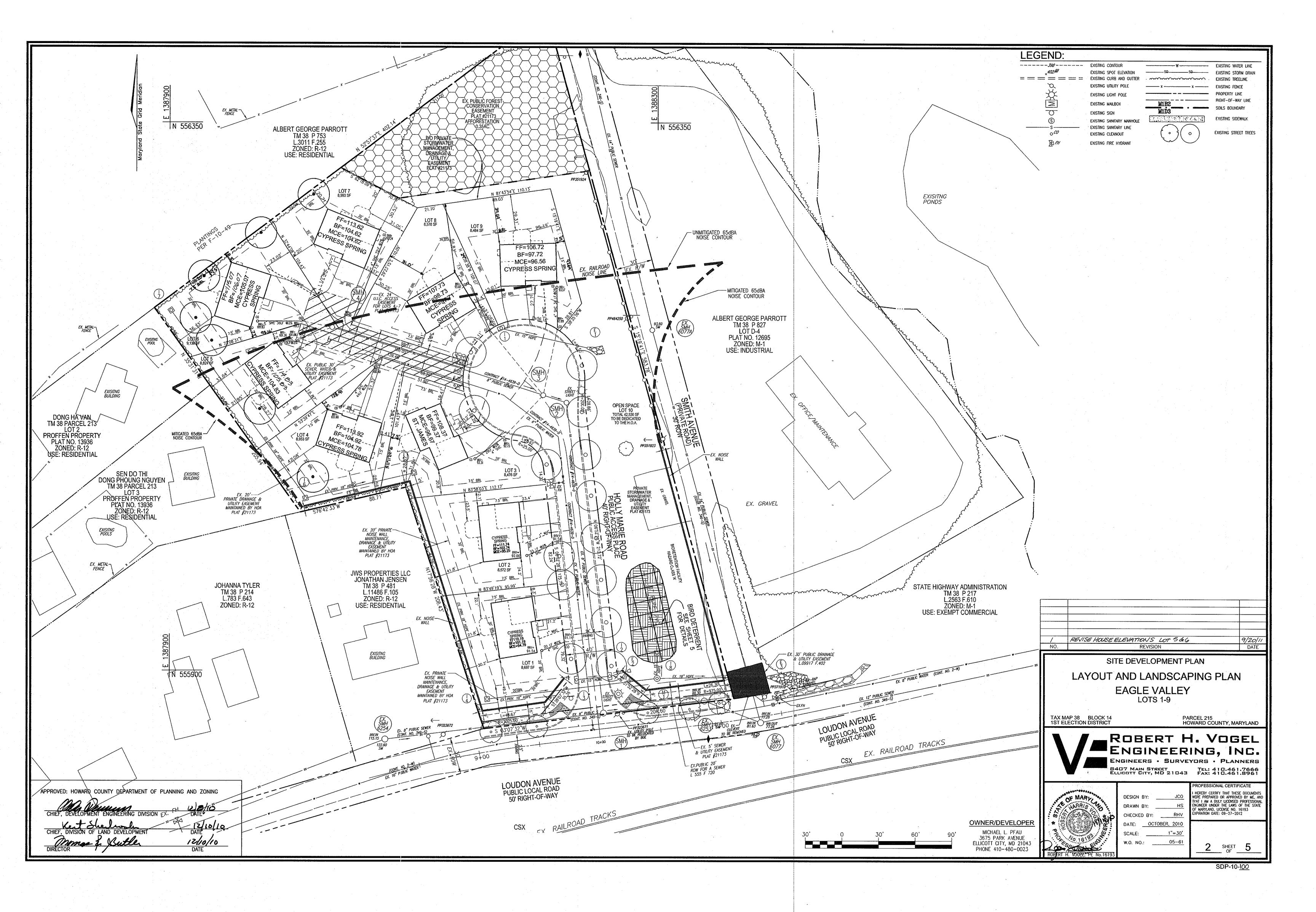
8,415 SF

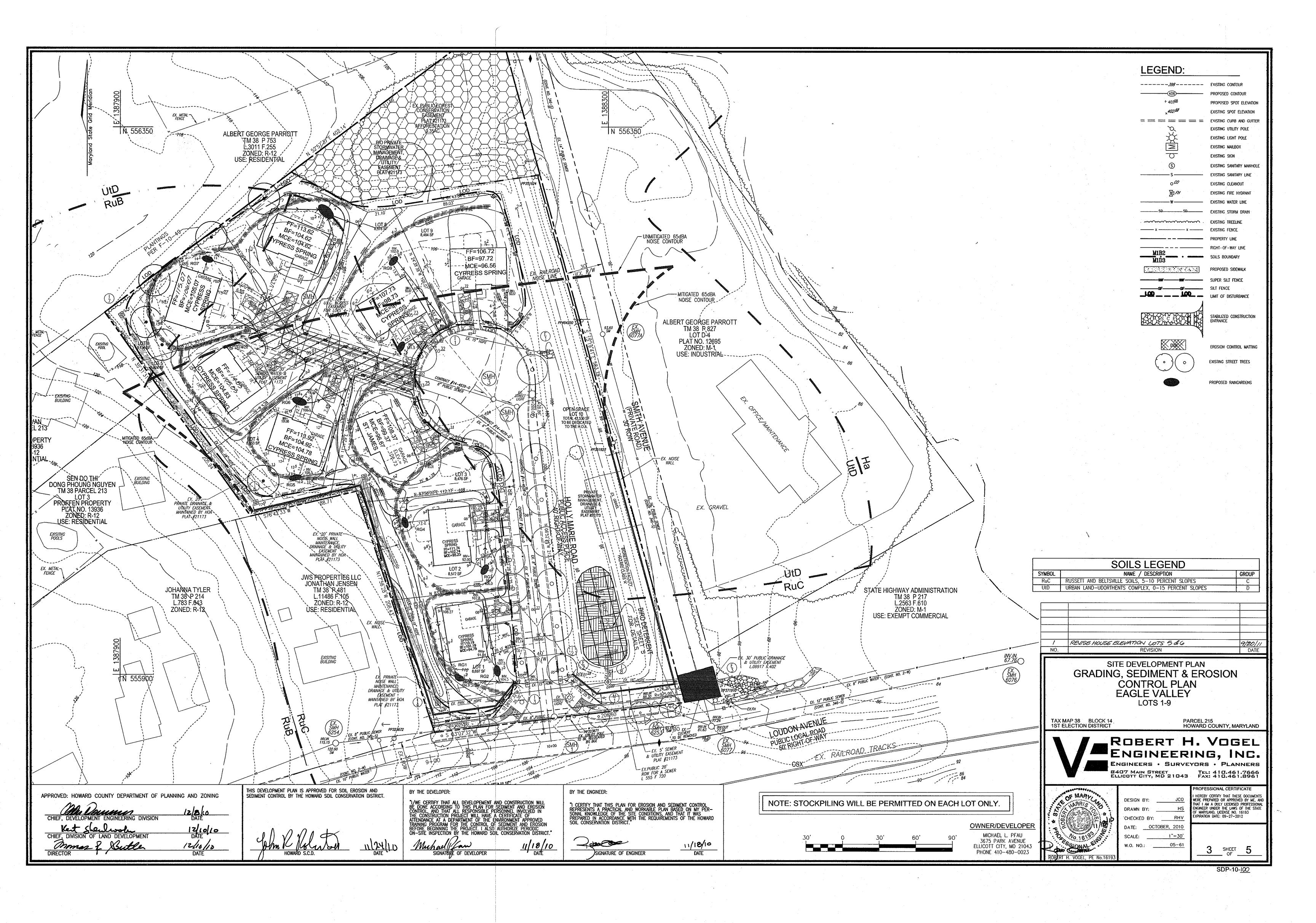
8,485 SF

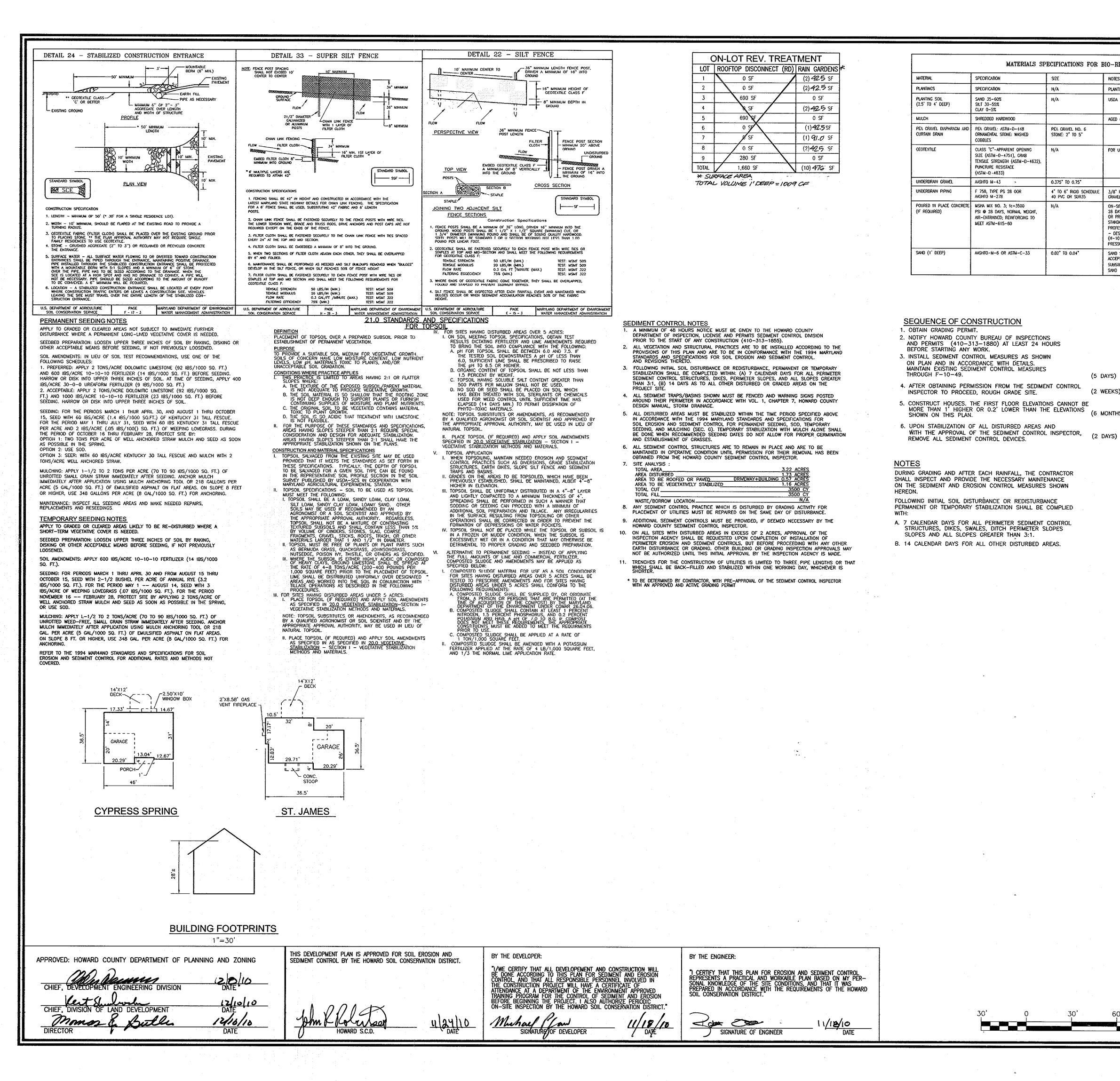
8,400 SF

651 SF

593 SF







MATERIALS SPECIFICATIONS FOR BIO-RETENTION			
MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SPECIFICATION	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL (2.5° TO 4° DEEP)	SAND 35-60% SNLT 30-55% CLAY 0-5%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA CRAVEL DIAPHRAGIA AND CURTAIN DRAIN	PEA GRAVEL: ASTM-D-448 Ornamental Stone: Washed Cobbles	PEA CRAVEL NO. 6 STONE: 2" TO 5"	
CEOTEXTILE	CLASS "C"-APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTACE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
underorain Piping	F 758, TYPE PS 28 OOR AASHIO M-278	4" TO 6" RIGID SCHEDULE. 40 PVC OR SUR35	3/8" PERF. @ 6" O.C., 4 HOLES PER ROW: MIN. OF 3" OF CHAVEL OVER PIPES: NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; fc=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 USBIG PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 350.R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1' DEEP)	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE \$10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND

(5 DAYS)

7.00' (LOT7) 4.25' Oc * MIN. SURFACE AREA 42.5 SF

4" OVERFLOW a

CLEANOUT PIPE

DEPTH

MICROBIORETENTION FACILITY) ROTOTILL AND SAND AUGMENTATION ---

IN BOTTOM TO PREVENT COMPACTION

DETAIL - MICROBIORETENTION/RAIN GARDEN

12" PONDING

GRADE

3" MULCH

24" PLANTING SOIL

(SEE PLANTING SOIL

4" PEA GRAVEL

CHARACTERISTICS)

1/8"-3/8" ----

6" #57 STONE

(1" ABOVE AND

UNDER DRAIN)

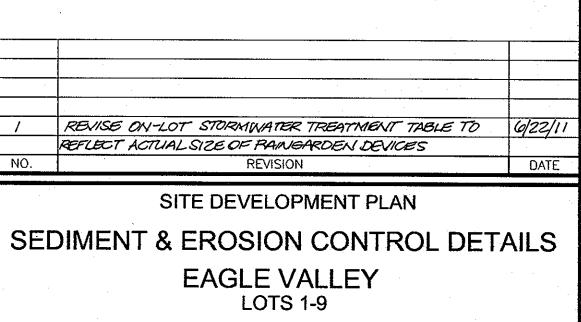
(SOLID OUTSIDE THE

4" PERFORATED HDPE UNDER DRAIN

RAIN GARDEN PLANTING DETAIL EXCEPT LOT 7 LOT 7 MIN. SURFACE AREA 93.5 SF

OPERATION AND MAINTENANCE SCHEDULE FOR RAIN GARDEN AREAS

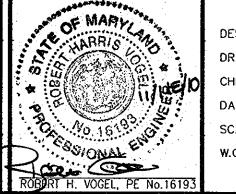
- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRIMING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REATMENT OF ALL DEFICIENT STAKES AND WIRES.
- 3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3
- 4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



TAX MAP 38 BLOCK 14 **1ST ELECTION DISTRICT** HOWARD COUNTY, MARYLAND

05-61

ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS . SURVEYORS . PLANNERS 8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



OWNER/DEVELOPER

MICHAEL L. PFAU

3675 PARK AVENUE

ELLICOTT CITY, MD 21043

PHONE 410-480-0023

DESIGN BY: DRAWN BY CHECKED BY: SCALE: W.O. NO.:

BEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2012 RHV OCTOBER, 2010 AS SHOWN

4 SHEET OF

AASCD/MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR THE PROJECT WITHIN 4 MILES OF BWI AIRPORT

VEGETATIVE ESTABLISHMENT
DETAILS AND SPECIFICATIONS FOR PROJECTS WITHIN

References to ITEM #s noted below are found in Maryland Aviation SOIL TESTS

 Following initial soil disturbances or re-disturbance, permanent or temporary stabilization shall be completed within seven calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and fourteen days for all other disturbed or graded areas on the project site.

2. Occurrence of acid sulfate soils (grayish black color) will require covering with a

minimum of 12 inches of clean soil with 6 inches minimum capping of top soil.

No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of sulfates.

3. The minimum soil conditions required for permanent vegetative a. Soil pH shall be between 6.0 and 7.0. b. Soluble saits shall be less than 500 parts per million (ppm).

c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. d. Soil shall contain 1.5% minimum organic matter by weight.

f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance ITEM 901 or amendments made as nded by a certified agronomist.

July 1, 2004

SEEDING ITEM 943 SEEDING

DESCRIPTION

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and methods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application,

MATERIALS

903-2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Se will be sampled and tested by an inspector from the Turf and Scod Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All lawn and turf seed and mixtures shall be free from the following state-listed restricted noxious weeds:

> bentgrass (Agrostis spp.)1, redtop (Agrostis gigantea) 1 wild onion (Allhum canadense), wild garlic (Allhan vineale), dodder (Cuscuta spp.), Bermuda grass (Cynodon dactylon orchardgrass (Dactylis glomer tall fescue (Festuca arundinac

meadow fescue (Festuca pratensis)

annual bluegrass (Poa annua

rough bluegrass (Poa trivialis) timothy (Phleum pratense), and

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture in addition, all seeds sold in Maryland shall be free from the following listed prohibited

³ These species may be included as a labeled component of a mixture when each is present in excess of five July 1, 2004

Seed shall be furnished in standard containers with the seed name, lot number, net weight, percentages of purity, germination rate and hard seed, and percentage of maximum weed seed content clearly marked. All seed containers shall be tagged with a MDA supervised mix program seed tag.

903-2.1.3 MIXTURES AND APPLICATION RATES. Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed mixtures have been formulated to minimize the attractiveness of areas to wildlife of common landscape scenarios. The appropriate seed mixture for application will be designated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

Seed mixtures, application scenarios, and rates for permanent cool-season grasses are as

a Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to conditions and regular mowing (Application rate = 234 lbs PLS/acre);

b. Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to mowing (Application rate = 115 lbs PLS/acre); and c. Seed Mixture No. 3 - wetlands and their associated buffer zones (Application 131 lbs PLS/acre).

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal

Application (Ibs of LS/acre) 85% Certified Turf-Type Tall Fescue 10% Certified Kentucky Bluegrass 5% Perennial Ryegrass

lot number, the results of tests as to name, percentages of purity and of germination, percentage of weed content for the seed furnished, and, in the case of a mixture, the proportions of each kind of seed

Andropogon scoperius

The percentage weight of pure seed present shall be free of any agriculture seeds, incrt matter, and other se

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in

Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the Turf and Seed Section, Maryland Department of Agriculture (MDA). The Contractor shall furnish the MAA Engineer with

duplicate signed copies of a statement by the Turf and Seed Section certifying that each

lot of seed has been laboratory tested within six months of date of delivery. This

statement shall include the following information:

name and address of laboratory,

noxious weeds: balloonvine (Cardiospermun halicacabum), quackgrass (Elytrigia repens), sicklepod (Senna obtusifolia), sorghum (Sorghum spp.), Canada thistle (Cirstum

903-2.1.1 APPROVED SPECIES. The following table contains species that are

approved by MAA for use in seed mixtures. Purity requirements and germination

PPROVED PLANT SPECIES

requirements are also provided.

MAA SEED MIXTURES

Application (lbs of PLS/acre) 75% Hard Fescu Seed Mixture No. 3 · Wetland areas and their associated buffer zones (Application rate =

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Application (lbs of PLS/scre) 60% Fowl Meadow Gras

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur within a specified seeding season unless otherwise approved by the MAA Engineer. No seed or seed mixtures are to be applied on frozen ground or when the temperature is at or below 35 degrees Farenheit (7.2 degrees Centigrade). Under these conditions, a layer of mulch should be applied in accordance with Item 905, Mulching, to stabilize the site, and permanent seeding should occur in the subsequent seeding season. Seed application may occur during the seeding season dates listed below. Seeding performed after October 20 should be a temporary cover of annual ryegrass and followed by overseeding of the appropriate seed mixture during the spring seeding season.

March I to April 20 and August 1 to October 20, inclusive emporary Cover of Annual Rys/Redtop | March 1 to April 30 and August 1 to November 30, inclusive May I to July 31, inclusive. Rate of application should be 13.6 lbs.

Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on seasonal trends.

If the time required to complete any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, extends beyond the Contract period, then such time will be charged against the Contract time, and liquidates damages will be enforced with respect to this portion of work

903-2.2 LIMP. Lime shall consist of ground limestone and contain at least 85 percent total carbonates. Lime shall be ground to a fineness so that at least 90 percent will pass through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve. Dolomitic lime or a high magnesium lime shall contain at least 10 percent magnesium oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this item. The rate of application will be based on results of soil tests.

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixtures) and meet the requirements of applicable state and federal laws (O-F-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen-Phosphorus-Potassium (N.P.-K) concentrations shall be determined from analysis of soil samples. [Approved fertilizer rate: 21 pomple of 10-10-10 per 1,000 square feet.] Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are clearly labeled with name, weight, and guaranteed analysis of the contents (percentage total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers shall not contain any hydrated time or cyanamide compounds. Fertilizers failing to meet the specified analysis may be approved by the MAA Engineer, providing sufficient materials are applied to conform with the specified nutrients per unit of measure without

The fertilizers may be supplied in the following forms:

a. A dry, free-flowing fertilizer suitable for application by a common fertilizer

b. A finely ground fertilizer soluble in water, suitable for application by power

c. A granular or pellet form suitable for application by blower equipment

The rate of application will be based on results of soil tests performed by the University of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned land shall follow the recommendations of the University of Maryland as set forth in the "Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the "Plant Nutrient Recommendations Based on Soil Tests for Sod Production" (see Appendix B). Application of the fertilizer shall be in a manner that is consistent with the pendations of the University of Maryland Cooperative Extension.

ONSTRUCTION METHODS AND EQUIPMENT

903-3.1 GENERAL. This section provides approved methods for the application of and includes standards for seedbed preparation, methods of application, and equipment to be used during the process. Lime and fertilizer shall be applied to seeded areas before the seed is spread. The mixture of seed will be determined for sites based on environmental conditions as described in Paragraph 903-2.1.3.

963-3.2 ADVANCE PREPARATION. Areas designated for seeding shall be properly prepared in advance of seed application. The area shall be tilled and graded prior to application of lime and fertilizer, and the surface area shall be cleared of any stones larger than 1 inch in diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. Damage caused by crossion or other forces that occur after the completion of grading shall be repaired prior to the application of fertilizer and lime. The Contractor will repair such damage, which may include filling gullies, smoothing irregularities, and repairing other incidental damage before beginning the application of fertilizer and ground limestone.

If an area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, all grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the oil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the ton 3 inches (75 mm) of soil shall be worked into a satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or

An area to be seeded shall be considered a satisfactory seedbed (without requiring additional treatment) if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches; the top 3 inches of soil is loose, friable, and is reasonably free fro large clods, rocks, large roots, or other undesirable matter; appropriate amounts of fertilizer and lime have been added; and, if it has been shaped to the required grade immediately prior to seeding. For slope areas steeper than 3:1 (three horizontal to on

After completion of tilling and grading, lime and fertilizer shall be applied within 48 hours according to the specified rate (Paragraphs 903-2.2 and 2.3) and methods

(Paragraphs 903-3.3.1 and 903-3.3.2) approved by MAA. The seeding mixture shall be applied within 48 hours after application of lime and fertilizer. To firm the seeded areas, cultipacking shall occur immediately after seeding.

903-3.3 METHODS OF APPLICATION. Lime, fertilizer, and seed mixes shall be applied by either the dry or wet application methods that have been approved by MAA

903-3.3.1 DRY APPLICATION METHOD a. Liming. If soil test results indicate that lime is needed, the following procedures will be used: following advance proparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on seedbeds that have been prepared as described in paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which

b. Fertilizing. Following advance preparations (and liming if necessary), fertilizer shall be spread uniformly at the specified rate to provide no less than the minimum quantity stated in Paragraph 903-2.3.

c. Seeding. Seed mixtures shall be sown immediately after fertilization of the scedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted using a cultipacker or an approved lawnroller. 903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

. General. The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by spraying over the previously prepared seedbed using methods and equipment approved b MAA. The rates of application shall be as specified in Paragraphs 903-2.1

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge capable of reading increments o auge shall be mounted so as to be visible to the nozzle operator at all times. The container or tank shall also be equipped with a mechanical power-driver agitator capable of keeping all the solids in the mixture in complete suspens

The spraying equipment shall also include a pressure pump capable of delivering 00 gallons per minute at a pressure of 100 pounds per square inch. The

pressure pump assemblage shall be configured to allow the mixture to flow through the tank when not being sprayed from the nozzle. All pump passages and pipelines shall be capable of providing clearance for 5/8-inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. A pressure gauge shall be connected to an

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture to be supplied so that mixtures may be properly sprayed over a distance varying from 20 feet to 100 nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings. In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles

e. Mixtures. Lime shall be applied separately in the quantity specified, prior to the fertilizing and seeding operations. Lime should be added to and mixed with water at a concentration not to exceed 220 pounds of lime for every 100 gallons of water. After lime has been applied, the tank should be emptied and rinsed with fresh water. Seed and fertilizer shall be mixed together in the relative proportions specified, but the resulting concentration should not exceed 220 pounds of mixture per 100 gallons of water and should be applied within 30 minutes to prevent fertilizer burn of the seeds.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the MAA Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a shorstory test the samples for chemical and saline content. The Contractor sh not use any water from any source that is disapproved by the Engineer following

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed or they shall be wasted and disposed of at a location acceptable to the Engineer.

d. Spraying. Lime shall be sprayed upon previously prepared seedbeds on which the lime, if required, shall have been worked in already. The mixtures

shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to guard against misses and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To checks the rate and uniformity of application, the applicator will observe the degree of wetting of the ground or distribute test

On surfaces that are to be mulched as indicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has drie

903-3.4 MAINTENANCE OF SEEDED AREAS. The contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and

heets of paper or pans over the area at intervals and observe the quantity of

When either the dry or wet application method outlined above is used for work performed out of season, the Contractor will be required to establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

MULCHING

Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immedia

Mulch shall be applied as per ITEM 905.

TEMPORARY SEEDING

100 pounds of dolomitic limestone per 1,000 square feet. 15 pounds of 10-10-10 per 1,000 square feet.

Mulch shall be applied as per ITEM 905.

No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Code - Article 21, Section 2-308, and compacted to 90% density; compaction to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within the building area is to be compacted to a minimum of 95% density as determined by methods previously mentioned. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

SODDING

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted above. Lime and fertilizer per permanent seeding specifical lightly irrigate soil prior to laving sod. Sod is to be laid on the contour with all ends ugnily abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved crosion control netting. Additions watering for establishment may be required. Sod is not to be installed on frozen ground Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall,

MINING OPERATIONS and mixtures:
For seeding dates of: February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and red top at the minimum rate of 0.5 pounds per 1,000 square feet.

NOTE: Use of this information does not preclude meeting all of the requirements of the current Maryland Standards and Specifications for Soil Erosion and Sediment Control.

Install sod as per ITEM 904.

July 1, 2004

WATERFOWL DETERRENT SYSTEM

There is a need to discourage ducks and other waterfowl from being attracted to stormwater in sediment traps. The system proposed for BWI will interfere with the ducks' landing pattern by installing a grid using lightweight wire above the surface of the trap. As they approach a water-filled trap, ducks, geese and other waterfowl will see the grid wires and not attempt to land. A perimeter lence consisting of two wire strands strong around the posts will keep birds from walking onto the traps.

the attoched detail for a typical layout. After monitoring the effectiveness of this system, MAA may require installation of additional long spans to decrease spacing to five feet. The ends of the grid wires will be strung from hooks placed on posts three feet above the ground. It is expected that the wires will sag two feet and will

Initial grid spacing will be five feet for short spans and ten feet for long spans. See

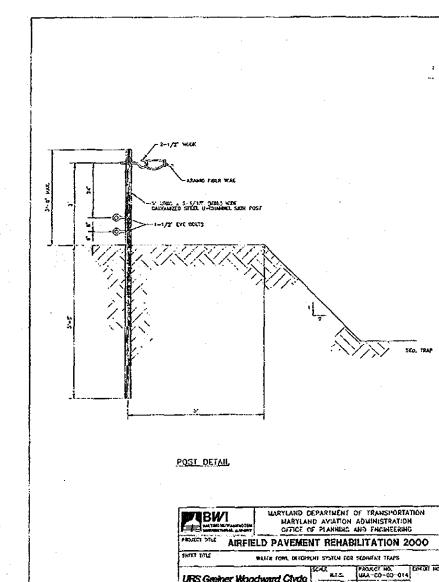
Grid wire will be high-strength, lightweight synthelic material made from aramid fiber as manufactured by Phillystran, Inc., Part No. PS29 1x7x.045J, or approved equal. Posts will be nine-foot long galvanized steel U channel signposts, driven five and one half fect into the ground. The height above ground shall be no more than three and one half feet. Three holes will be attached to each post to fasten one 2-1/2 inch hook and two 1-1/2 inch eye bolts. An access gate will be installed on the short end opposite the outlet to facilitate trap

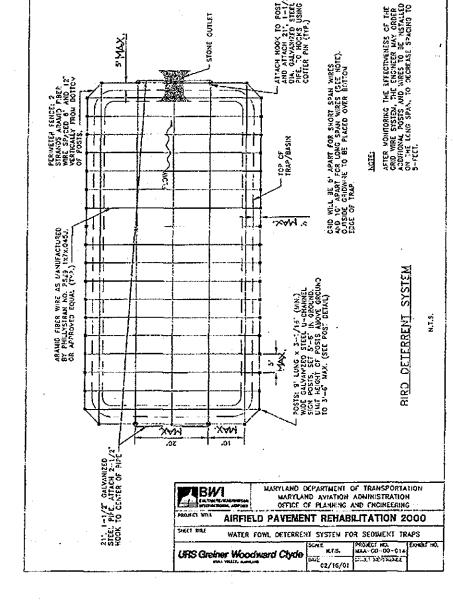
placed three feet above ground and spanning two posts spaced twenty feet apart. When sodiment is to be cleaned out from the trap, the long pipe is removed. An identical honzontal pipe will also span the stone outlet weir at the opposite end of the trap. Each pipe will have a hook placed in the middle to attach grid wire. PROCEDURE FOR INSTALLING AND REMOVING GRID WIRE SYSTEM After each sediment trap is constructed, posts are placed five feet outside of the top edge of the traps, spaced five feet on center on the long side of the trap and ten feet

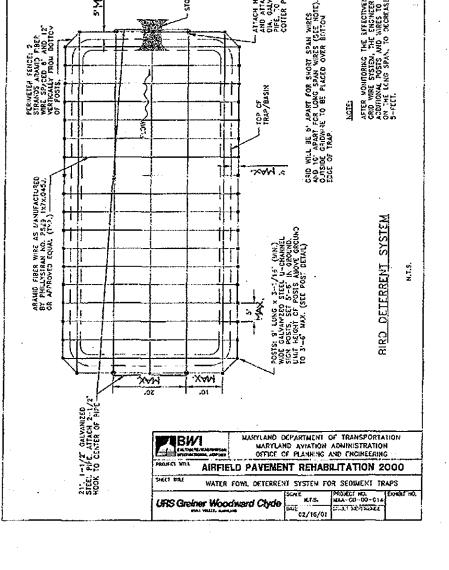
cleanout. Each gate consists of a twenty feet long, 1-1/2" diameter horizontal pipe

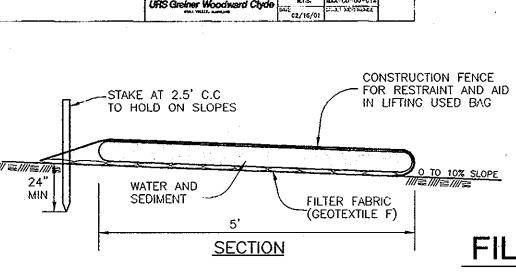
on center on the short sides, leaving one twenty foot gap for the gate. After monitoring for effectiveness, installation of additional long spans may be ordered by MAA. Attach hooks to posts. Attach beams to posts straddling outlet we'r and access date. Grid wires will then be sized and loops assembled according to manufacturer's directions. Grid wires are then attached to posts starting with the long dimension first so that the longer wires will sag below the shorter strands. Wire lengths should be sized to allow them to be pulled tight with two feet sag in the middle of the spans. After the grid is in place, the two-strand perimeter fence can be

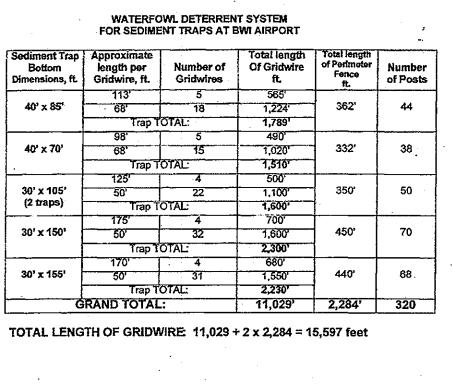
When sediment needs to be cleaned out, disconnect and store the grid wires. This can be done with a two-man crew, one on either end of the wire. Each person shall disconnect the wire from the hook at the same time, walk beyond the trap, holding wire and repeats the procedure until all the wires have been removed. Next, the crew shall remove the perimeter fence strands at the access gates as well as the trap to remove sediment. After sediment removal, the crew shall re-install grid assembly as described above.











THE PROPOSED PROJECT IS LOCATED IN HOWARD COUNTY, MARYLAND ON TAX MAP 38, BLOCK 14, PARCEL 215, THE PROPOSED PROJECT IS LOCATED NEAR THE

SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION

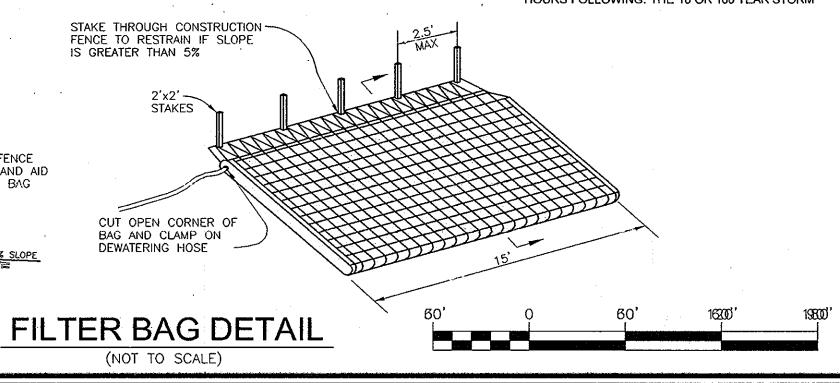
ANY RAINFALL EVENT. LANDSCAPING & STORM WATER POND LANDSCAPING ON SITE:

ANY DEVIATION TO PLANT SPECIES AND VEGETATION USED ON THESE PLANS NEED APPROVAL FROM AASCD/MAA. THE PLANT SPECIES USED ON THIS SITE ARE TO AVOID ITS POTENTIAL TO ATTRACT WILDLIFE THAT COULD POSE STRIKE HAZARD

THE SITE FOR THIS PROJECT IS LOCATED OUTSIDE THE BOUNDARIES OF THE AIRPORT NOISE ZONE.

THE ALLOWABLE HEIGHT FOR ANY PERMANENT OR TEMPORARY STRUCTURES TALLER THAN 277 FEET ABOVE MEAN SEA LEVEL NEED OBSTRUCTION ANALYSIS REVIEW AND PERMIT FOR

6. THE STORM WATER MANAGEMENT FACILITIES WITHIN 10,000 FEET OF ACTIVE RUNWAYS OR WITHIN 5 MILES OF AN APPROACH SURFACE MUST DRAIN WITHIN 24 HOURS FOLLOWING . THE 1 OR 2 YEAR STORM EVENTS AND WITHIN 48



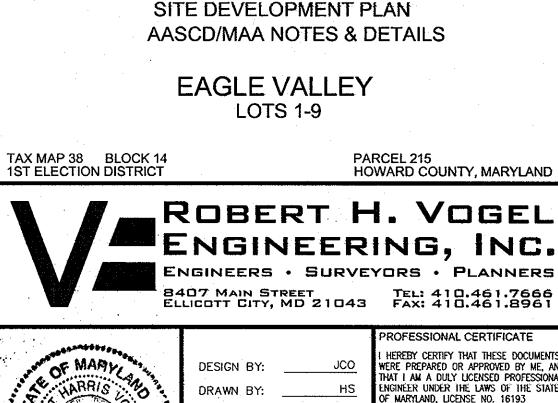
BALTIMORE (WASHINTON INTERNATIONAL THURGOOD MARSHALL AIRPORT (BWI). APPROXIMATELY 14,000 FEET NORTH OF RUNWAY 15R-33L.

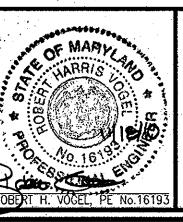
CONTROL DURING CONSTRUCTION. SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAR WATER OUTFALL WITHIN 24 HOURS FOLLOWING

TO AIRCRAFT. BWI AIRPORT NOISE ZONE:

THE AIRPORT ZONE.

HOURS FOLLOWING. THE 10 OR 100 YEAR STORM





OWNER/DEVELOPER

MICHAEL L. PFAU

3675 PARK AVENUE

PHONE 410-480-0023

ELLICOTT CITY, MD 21043

CHECKED BY: DATE: OCTOBER, 2010

REVISION

ROFESSIONAL CERTIFICATE HEREBY CERTIFY THAT THESE DOCUMENTS were prepared or approved by Me. and HAT I AM A DULY LICENSED PROFESSIONAL OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2012

5 SHEET _

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

