THE REAR PORTION OF THE DRIVEWAY WILL BE CONVEYED TO INFILTRATION BERM #1, ALONG WITH THE ROOFTOP RUNOFF FROM FRONT OF THE ROOF. PORTIONS OF THE ROOFTOP WILL BE PARTIALLY TREATED BY DISCONNECTION. FLOW DIRECTIONS AND GRADES HAVE BEEN

THE REAR ROOFTOP WILL FLOW TOWARD INFILTRATION BERM #2, AND WILL BE PARTIALLY TREATED BY DISCONNECT METHOD. FLOW ARROWS AND GRADES ARE PROVIDED, ALONG WITH PERTINENT SPOT ELEVATIONS NEEDED TO ENSURE THAT THE GRADING CONVEYS THE RUNOFF TO THE INFILTRATION BERM.

THE INFILTRATION BERMS WERE SELECTED BECAUSE THEY WILL RETAIN AND TREAT THE STORMWATER RUNOFF WITHOUT THE NEED FOR AN UNDERDRAIN. RETAINED WATER WILL INFILTRATE AND/OR DISCHARGE THROUGH THE STONE CORE OF THE BERM, DELAYING THE DISCHARGE.

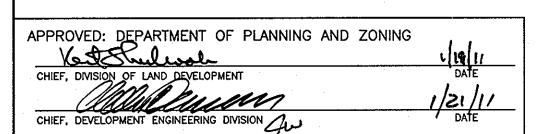
SEDIMENT AND EROSION CONTROLS, BASED ON THE 1994 MARYLAND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. EROSION CONTROL MATTING AND SUPER SILT FENCE ARE USED TO PREVENT RUNOFF CONTAINING UNACCEPTABLE LEVELS OF TSS FROM LEAVING THE SITE AND ENTERING THE ADJACENT STREAM DURING THE CONSTRUCTION. IT WILL BE THE OBLIGATION OF THE CONTRACTOR TO INSTALL, INSPECT AND MAINTAIN THESE PRACTICES.

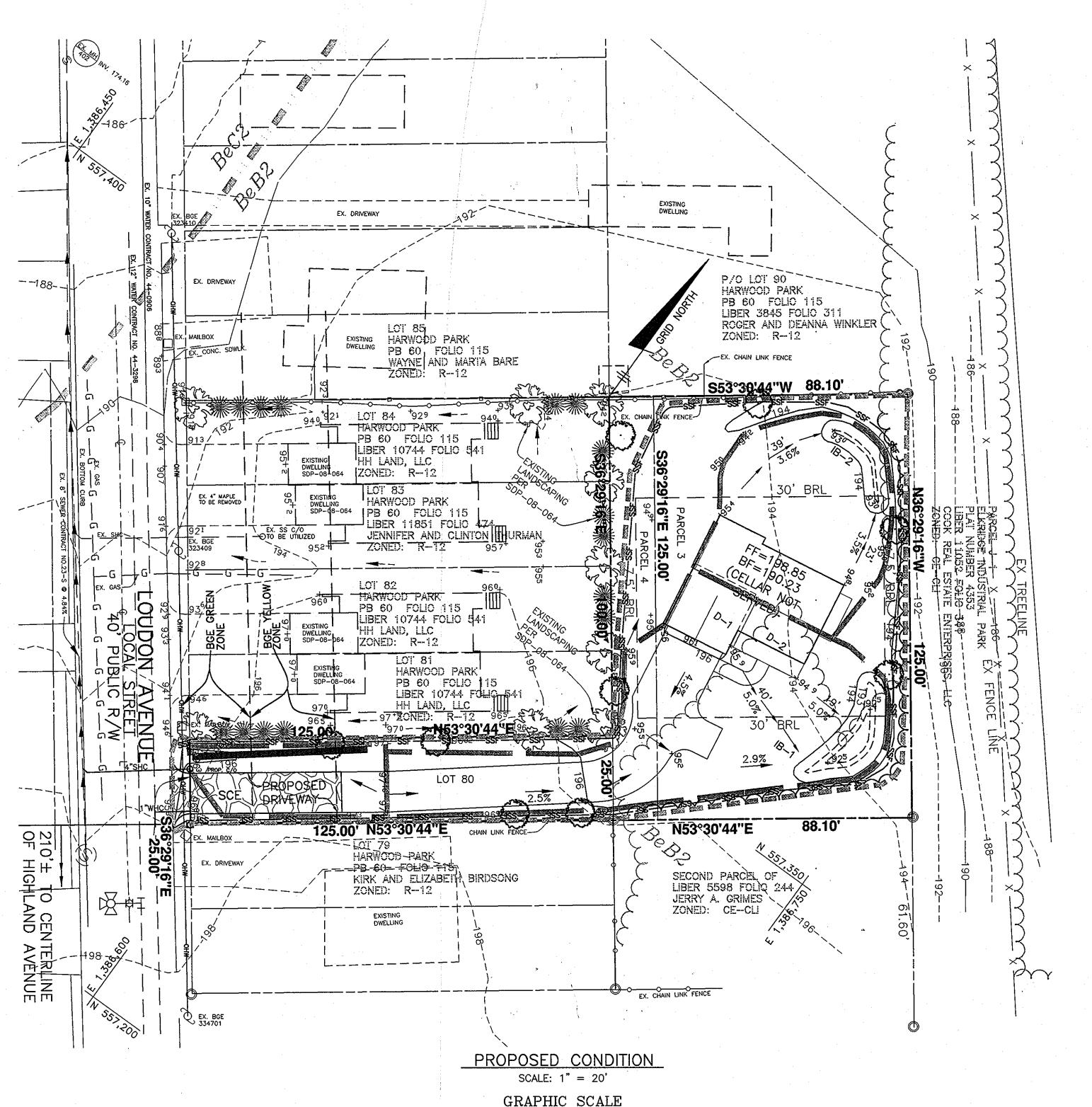
THE TARGET PE FOR THIS SITE IS 1.6" INCHES. BY USING ENVIRONMENTAL SITE DESIGN PRACTICES AS OUTLINE IN CHAPTER 5 OF THE 2000 MARYLAND STORMWATER DESIGN MANUAL AS AMENDED BY MARYLAND STORMWATER MANAGEMENT ACT OF 2007, FULL TREATMENT OF THE TARGET Pe OF 1.6" WAS ACHIEVED, FULLY ADDRESSING THE STORMWATER MANAGEMENT REQUIREMENTS.

A DESIGN MANUAL WAIVER FOR "CELLAR NO SERVICE" WILL BE REQUESTED FOR THIS PLAN.

## GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-12 PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND PER COMP. LITE ZONING AMENDMENTS EFFECTIVE 7-28-2006
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND
- EXISTING BOUNDARY AND TOPOGRAPHY SHOWN WITHIN PROJECT BOUNDARY WAS FIELD SURVEYED BY BENCHMARK ENGINEERING, INC. IN JULY, 2007. CONTOUR INTERVAL IS 2 FEET.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE WARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS 38D5 AND 38D6 WERE USED FOR THIS
- EXISTING UTILITIES SHOWN ARE SHOWN FROM APPROVED CONTRACT DRAWINGS AND FIELD RUN LOCATIONS. IF NECESSARY,
- CONTRACTOR SHALL ADJUST ANY OR ALL STRUCTURE TOP ELEVATIONS TO MATCH SDP GRADES. THERE ARE NO STREAMS, STREAM BUFFERS, 100-YR FLOODPLAIN OR STEEP SLOPES LOCATED ON THIS SITE. THERE ARE NO WETLANDS OR WETLANDS BUFFERS ON THE SITE, BASED ON A WETLAND CERTIFICATION PERFORMED BY BENCHMARK
- NGINEERING, INC. IN AUGUST, 2010
- 7. THERE ARE NO CEMETERIES LOCATED ON THIS SITE. 8. A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
- 9. THIS PROJECT IS EXEMPT FROM A TRAFFIC STUDY BECAUSE IT CREATES NO ADDITIONAL UNITS.
- 10. THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- 11. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER SERVICE SHALL BE PUBLIC, CONNECTING TO EXISTING CONTRACTS NO. 44-0906 AND 23-S, RESPECTIVELY, UNDER THIS SITE DEVELOPMENT PLAN.
- 12. THIS SUBDIVISION IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1202(b)(1)(i) OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE LOT IS LESS THAN 40,000 S.F. IN SIZE.
- 13. PREVIOUS HOWARD COUNTY FILE NUMBERS: N/A
- 14. STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II, AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007. THE ENVIRONMENTAL SITE DESIGN PRACTICES TO BE USED ARE INFILTRATION BERMS AND ROOFTOP DISCONNECT, TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNER. A SUPPLEMENTAL STORMWATER MANAGEMENT REPORT HAS BEEN





( IN FEET

1 inch = 20 ft.

A. Determine Pre-Developed Conditions Soil Conditions for "Woods in Good Condition" Area (ft2) Percent 14138 Target RCN . Determine Target Pe Using Table 5.3 Soil Conditions Developed Condition Area (ft2) Impervious Percent\* Target Pe 3926 30% Weighted Pe 14138 3926 30% \* Percent Impervious is rounded to the next higher ncrement of 5%

. Treatment Requirement, Pe:			1.6 inches			
		Drainage	Impervious			
	DA ID	Area	Area	ESDv		
		sf	sf	cf		
	JB-1	5196	2720	361		
	IB-2	2715	733	106		
	SW-1	1088	641	84		
				····		
reatmen	Provided					
	T					Converted to
		Type of	Area	Length	Pe	ESDv
DA ID	Facility ID	treatment	(sf)	(ft)	(in)	(cf)
IB-1				·	`````	
	D-1	Disconnect	201	40	0.5	8
	D-2	Disconnect	325	19	0.3	8
		Infiltration				
	IB-2	Berm				358
	<del></del>		da mena - acuse menada), ande melocombilismentellismen		Provided:	374
IB-2						
•	D-3	Disconnect	356	39	0.5	15
	D-4	Disconnect	325	23	0.3	8
		Infiltration				
	IB-2	Berm				127
					Provided:	150
	۵					
SW-1				,		
		Grass				
	SW-1	Swale	<u> </u>			110
					Provided:	110

NO. DATE HH LAND, LLC 16272 COMPROMISE COURT MOUNT AIRY, MARYLAND 21771 410-781-7533 **BUILDER:** WILLIAM DOUGLAS ASSOC., INC. 16272 COMPROMISE COURT MOUNT AIRY, MARYLAND 21771 410-781-7533

Design: AAM

Draft: AAM

Check: BFC

ELEV. 193.71 BEING 38.8 SOUTHEAST OF A FIRE HYDRANT, 5.6' NORTH OF THE EXISTING CONCRETE CURB ALONG NORTH SIDE OF WASHINGTON BLVD (RT.1) TROY HILL CORPORATE CENTER E 1,386,524.195 BEING 44' SOUTHWEST OF A LIGHT POLE & E 1,384,992.262 VICINITY MAP SCALE: 1" = 2000' ADC MAP 4937, GRID B9 LEGEND

-----999 -----

BENCH MARKS NAD 83

STAMPED DISC ON CONCRETE MONUMENT

148' NORTH OF THE GATE AT ATLANTIC

HO. CO. #38D5 (NAD '83)

EXISTING CONTOURS PROPOSED CONTOURS  $\sim$ EXISTING TREE LINE .mmm. PROPOSED TREE LINE EXISTING STRUCTURE PROPOSED STRUCTURE FACILITY DRAINAGE AREA SOILS CLASSIFICATION SUPER SILT FENCE STABILIZED CONSTRUCTION ENTRANCE EROSION CONTROL MATTING

SOILS LEGEND MAP SYMBOL SOIL GROUP SOIL TYPE BeB2 C BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 26

REVISION **BENCHMARK** ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. (P) 410-465-6105 (F) 410-465-6844 60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3506 WWW.BEI-CIVILENGINEERING.COM documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the Statof Maryland, License No. 28559, Expiration Date: 7-22-201

HARWOOD PARK LOT 80, PARCELS THREE AND FOUR OF LIBER 10744, FOLIO 541

SCALE:

TAX MAP No. 38, GRID No. 13, PARCEL No. 873 1st ELECTION DISTRICT HOWARD COUNTY, ELKRIDGE, MARYLAND 21075 TITLE: ENVIRONMENTAL CONCEPT PLAN

> AS SHOWN DRAWING 1 OF 2ECP-11-017

P:\2054 Harwood 80-84\dwg\8028-ECP-11-017 SHT 1.dwg, ECP, 1/6/2011 1:09:42 PM

PROJECT NO. 2054

# SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED
- AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY
- STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

TOTAL AREA OF SITE (THIS SUBMISSION)	0.32 ACRES
AREA DISTURBED	0.30 ACRES
AREA TO BE ROOFED OR PAVED	0.09 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.21ACRES
TOTAL CUT	249 cy
TOTAL FILL	264 cy
OFFSITE WASTE/BORROW AREA LOCATION	N/A

- 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 CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE
- 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.
- WHICHEVER IS SHORTER.

## PERMANENT SEEDBED PREPARATIONS

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED. SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING

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

15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

## TEMPORARY SEEDBED PREPARATIONS

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED. SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ I 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD

GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION DAY 1 1.) OBTAIN GRADING PERMIT.

DAY 7-10\* 3.) EXCAVATE FOR FOUNDATION, ROUGH GRADE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.

DAY 11-80 4.) CONSTRUCT HOUSE, BACKFILL AND CONSTRUCT DRIVEWAY.

DAY 81-85 5.) FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDBED NOTES.

NOTE: THE UTILITY INVERT ELEVATIONS PROVIDED ON THIS PLAN SHALL BE FIELD VERIFIED PRIOR TO BEGINNING CONSTRUCTION

### TOPSOIL SPECIFICATIONS

Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

- II. Topsoil Specifications Soil to be used as topsoil must meet the following: Topsoil shall be a loam, sandy loam, clay loam, silt loam, sondy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
- Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified. iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations
- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization Section 1 Vegetative Stabilization Methods and Materials.

### IV. For sites having disturbed areas over 5 acres:

III. For sites having disturbed areas under 5 acres:

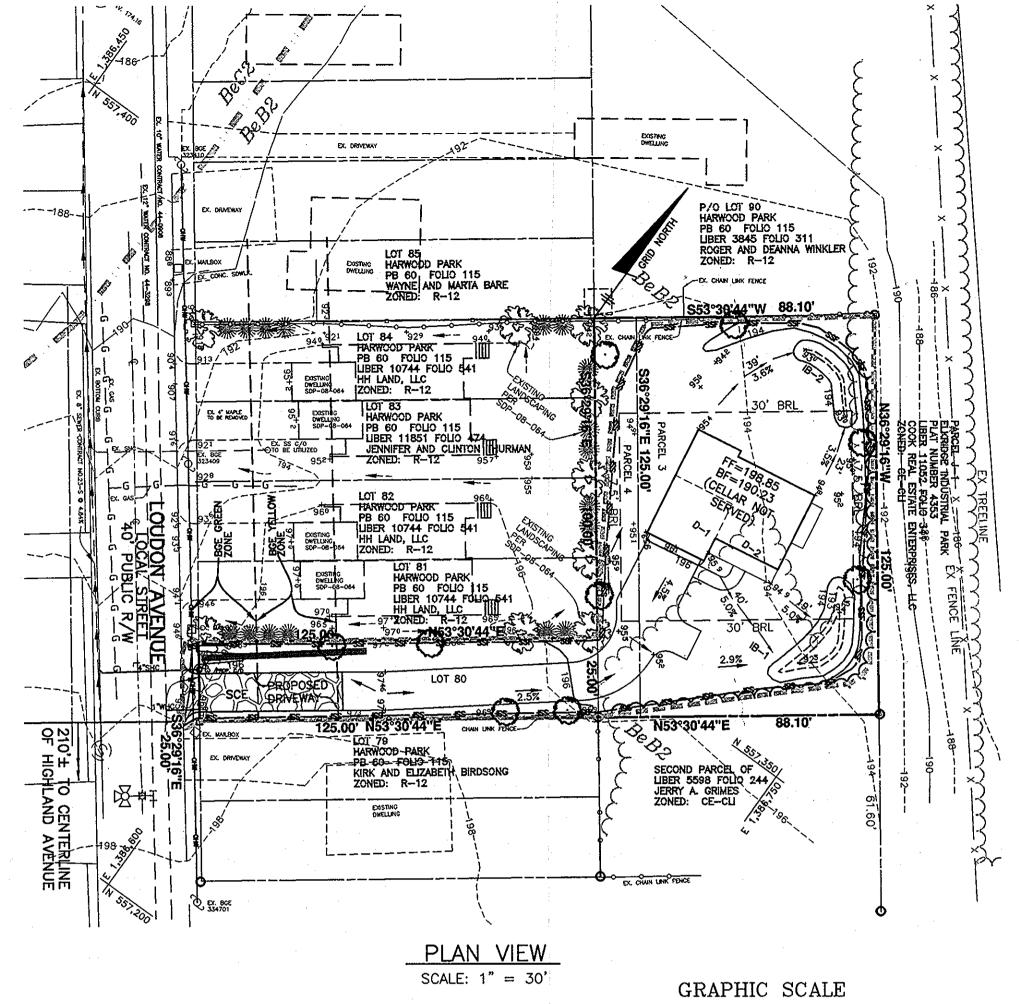
- On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
- a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
- b. Organic content or topsoil shall be not less than 1.5 percent by weight.
- Topsoil having soluble salt content greater than 500 parts per million shall not be used.
- No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of

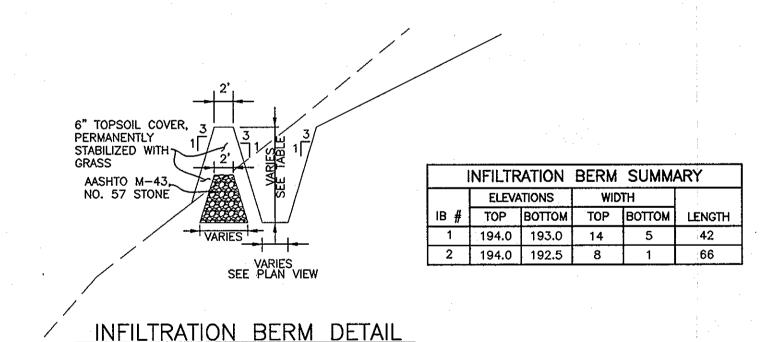
- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization Section I Vegetative Stabilization Methods and Materials.
- Topsoil Application
- When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" 8" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4" 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall 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 shall be corrected in order to prevent the formation of depressions or
- iv. Topsoil shall not be placed while 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.
- Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
- Composted Sludge Material for use as a soil conditioner for sites having distributed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
- a. Composted studge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
- c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet Composted sludge shall be amended with a potassium fertilizer applied at the rate

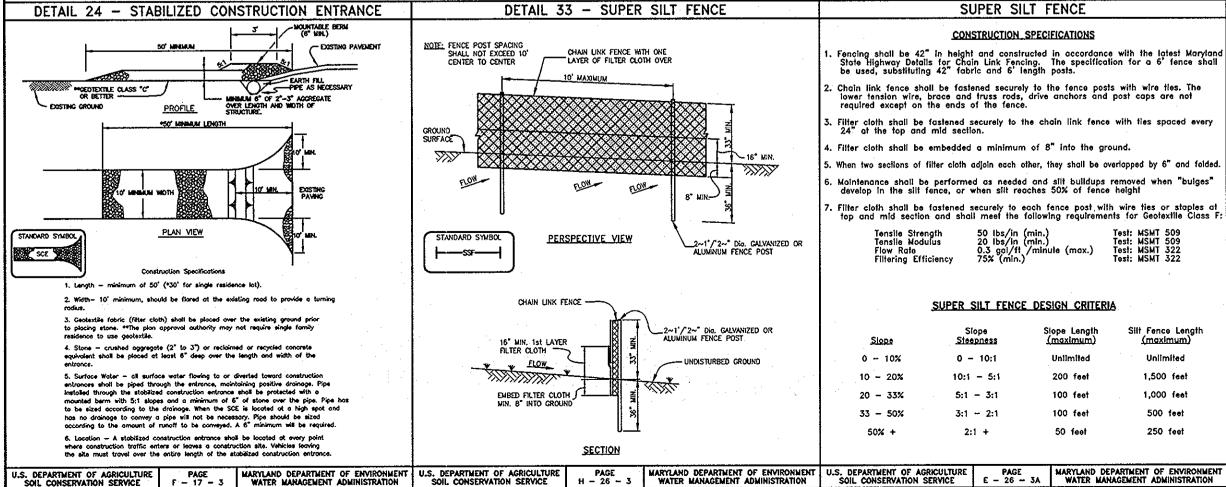
of 4 lb/1,000 square feet, and 1/3 the normal lime application rate. References: Guidelines Specifications, Soil Preparation and Sodding. MD-VA, Pub. Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes Revised 1973.

> NOTE: CONTRACTORS SHALL TAKE EXTREME CARE WHEN WORKING WITHIN THE AREA OF THE OVERHEAD POWER LINES AND WILL BRACE EXISTING UTILITY POLES AS NEEDED



( IN FEET ) 1 inch = 30 ft.





## AASCD / MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR PROJECTS WITHIN 4 MILES OF THE BW AIRPORT July 1, 2004 References to ITEM #s noted below are found in Maryland Aviation Administration's manual

entitled Specifications for Performing Landscaping Activities for the Maryland Aviation Administration dated May 2001 1. Following initial soil disturbances or re-disturbance, permanent or temporary stabilization shall be completed within sever calendar days for the surface of all perimeter controls, dikes, swales, ditches perimeter slopes, and all slopes greater tha 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 (grayis black color) will require covering with a inches minimum capping of top soil. No stockpiling of material is allowed. If needed 6-week incubation period to allow oxidation 3. The minimum soil conditions required for

soil tests should be done before and after a permanent vegetative establishment are: a. Soil pH shall be between 6.0 and 7.0. b. Soluble salts shall be less than 500 part per million (ppm). . 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 organi

matter by weight.

e. Soil must contain sufficient pore space to permit adequate root penetration.

f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance ITEM 901 or amendments made SEEDING ITEM 903 SEEDING 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. Al activities associated with seeding includin soil preparation, seed application, fertilization and maintenance shall also conform to these approved standards

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 rate of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. A lawn and turf seed and mixtures shall be

mixture. In addition, all seeds sold in listed prohibited a (1 These species may be included as a labeled component of a mixture when each is present in excess of five percent of the quackgrass (Elytrigia repens), sicklepod (Senna obtusifolia), sorghum

ertified Turf-Type (Poa protensis) Hord Fescue 90 1.13 98 (Festuca rubra commutata) Annual Ryegrass 90 80

903-2.1.2 PURITY. All seed shall be free of all state-designated

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.

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 lesignated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Se (PLS) per acre. Seed mixtures, application scenarios, and rates

a. Seed Mixture No. 1 — relatively flat areas (grade less than 4:1) subject to normal conditions and regular mowing (Application rate = 234 lbs PLS/gcre) b. Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to regular c. Seed Mixture No. 3 — wetlands and their

to regular mowing (Application rate = 115 lbs PLS/acre)

Seed (lbs of PLS/acre) 75% Hard Fescue 85 20% Chewings Fescue 23 5% Kentucky Bluegross Supplemental Seed Seed Mixture No. 3 - Wetland areas and their associated buffer zones (Application rate = 131 lbs PLS/acre) Rate of Application Seed (lbs of PLS/acre) 60% Fowl Meadow Grass 83 30% Chewings Fescue 34 10% Perennial Ryegrass 14

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 Fahrenheit (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 SEASONS Permanent Cool-Season Grasses ), inclusive Temporary Cover of Annual Rye/Redtor March 1 to April 30 and August 1 to lovember 30, inclusive

Supplemental Seed

(Little Bluestem only) seasonal trends.

free from the following state—listed restricted noxious weeds: corn cockle (Agrostemma githago) bentgrass (Agrostis spp.)1, wild onion (Allium canadense) wild garlic (Allium vineale), bindweed (Calstegia spp.), dodder (Cuscuta spp.) Bermuda grass (Cynodon dactylon) orchardarass (Dactvis glomerata). tall fescue (Festuca arundinacea) meadow fescue (Festuca protensis) 1 annual bluegrass (Poa annua) rough bluegrass (Poa trivialis)1 timothy (Phleum pratense), and Johnson grass (Sorgum halepense Restricted noxious-weed seed may not

(Carduus spp.—includes musk thistle and curled thistle), and requirements and germination requirements are also provided.

APPROVED PLANT SPECIES MAA SEED MIXTURES

(Andropogon weight of pure seed present shall be free of any their appearance.

b The percentage of germination shall be actual sprouts and shall not include hard seeds unless specifically permitted by the MAA

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 Departme 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 loboratory tested within six months of date of delivery. This statement shall include the following information:

— name and address of loboratory, - 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 Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed

moving (Application rate = 115 lbs PLS/acre) associated buffer zones (Application rate = 131 lbs PLS/acre). Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal conditions (Application rate = 234 lbs PLS/acre)

Seed (lbs of LS/acre) 85% Certified Turf-Type Tall Fescue 192 10% Certified Kentucky Bluegrass 28 Supplemental Seed Annual Ryegrass 25

Seed Mixture No. 2: Sloped areas not subject (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 application methods that have been approved by MAA and are detailed

> that lime is needed, the following procedures will be used: following advance preparation of the seedbe 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 the seedbed shall be properly graded again. b. Fertilizing. Following advance preparations (and liming if necessary the specified rate to provide no less than the minimum quantity stated in Paragraph 903-2.3.
> c. Seeding. Seed mixtures shall be sown mmediately after fertilization of the be lightly raked to a depth of 1 inch for newly graded and disturbed areas.
> d. Rolling. After the seed has been

spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of

Paragraphs 903-2.1 through 903-2.3.

application shall be as specified in

equipment shall have a container of

of the tank capacity. The liquid level

gauge shall be mounted so as to be visible to the nozzle operator at all

keeping all the solids in the mixture in

complete suspension at all times until

manner that it can be rotated through

below to at least 60 degrees above the

quick-acting, three-way control valve

to be supplied so that mixtures may be

properly sprayed over a distance varying from 20 feet to 100 feet. One shall be

medium~range ribbon nozzle, and one of

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.

the regular equipment, an extension

c. Mixtures. Lime shall be applied

separately in the quantity specified prior to the fertilizing and seeding

concentration not to exceed 220 pounds of lime for every 100 gallons of

and mixed with water at a

operations. Lime should be added

water. After lime has been applied, the

tank should be emptied and rinsed wit

fresh water. Seed and fertilizer shall be

proportions specified, but the resulting

water and should be applied within 30 minutes to prevent fertilizer burn of the

water at the source or from the

use any water from any source that is

All mixtures shall be constantly agitated

they are finally applied to the seedbed.

All such mixtures shall be used within

30 minutes from the time they were

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

NO. DATE

**BUILDER:** 

DESIGN: AAM

disapproved by the Engineer following

from the time they are mixed until

pounds of mixture per 100 gallons

hose at least 50 feet in length shall be

vertically from at least 20 degrees

horizontal. There shall be a

nozzle operator can control and

be equipped with a mechanical

mmediately compacted using a METHOD /HYDROSEEDING a. General. The Contractor may elect apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by

arch 1 to April 20 and August 1 to October Temporary Cover of Warm-Season Grasses May 1 to July 31, inclusive. Rate of

ation should be 13.6 lbs. PLS per acre. Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on 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 liquidated damages will be enforced with respect to this portion of work.

903-2.2 LIME. 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 through the tank when not being Dolomitic time or a high magnesium time shall sprayed from the nozzle. All pump contain at least 10 percent magnesium oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this item. The of providing clearance for 5/8-inch solids. The power unit for the pump rate of application will be based on results o mounted so as to be accessible to the be connected to and mounted

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixtures) and meet the requirements of applicable state and federal lows (0-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 pounds 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 of total nitrogen, available phosphoric acid, and water-soluble potash) Mixed fertilizers shall not contain any hydrated lime 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 additional cost to MAA. The fertilizers may be supplied in the following provided to which the nozzles may be a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader; b. A finely ground fertilizer soluble in water,

suitable for application by power sprayers; or c. A granular or pellet form suitable for Purityo Not Less Than % Germinationb Factor Pure Live Seed Less Than % Germinationb Factor Pure Live Seed 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 ommendations Based on Soil Tests for Turf Maintenance? and the ?Plant Nutrient Recommendations Based on Soil Tests for Sod

Production? (see Appendix B). Application of All water used shall be obtained from the fertilizer shall be in a manner that is fresh water sources and shall be free consistent with the recommendations of the from injurious chemicals and other University of Maryland Cooperative Extension CONSTRUCTION METHODS AND EQUIPMENT Brackish water shall not be used at 903-3.1 GENERAL. This section provides approved methods for the application of and all sources of water to the MAA Engineer at least two weeks prior to includes standards for seedbed preparation. methods of application, and equipment to be use. The Engineer may take samples o used during the process. Lime and fertilizer tank at any time and have a laboratory shall be applied to seeded areas before the seed is spread. The mixture of seed will be soline content. The Contractor shall not

determined for sites based on environmental conditions as described in Paragraph 903-3.2 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 ubsequent maintenance of grass-covered areas. Damage caused by erosion or other forces that occur after the completion o grading shall be repaired prior to the oplication 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 o fertilizer and around 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 satisfactority disposed of, and the soil then scarified or otherwise loosened

to a depth not less than 5 inches (125 mm)

ods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

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

of 1 inch. 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

shall be applied using a high-pressur upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzies or sprays shall such a manner that might produce be exercised to ensure that the prescribed rate, and to guard against nisses and overlapped area 903-3.3.1 DRY APPLICATION METHOD Predetermined quantities of the mixture a. Liming. If soil test results indicate specifications to cover specified sections of known areas. To checks the rate and uniformity of application, the

wetting of the ground or distribute test sheets of paper or pans over the quantity of material deposited thereon. On surfaces that are to be mulched as ndicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried. AREAS. The contractor shall protect by warning signs or borricades, 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

satisfactory condition until final aspection and acceptance of the work method outlined above is used for work performed out of season, the Contracto will be required to establish a good stand of grass of uniform color and Engineer. If at the time when the contract has been otherwise completed is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions o gauge capable of reading increments of 50 gallons or less over the entire range withheld until such time as these

requirements have been met. Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading.

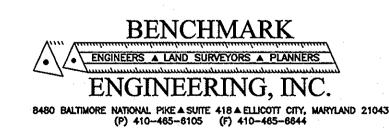
include a pressure pump capable of Lime: 100 pounds of dolomitic limestone per 1,000 square feet. pressure of 100 pounds per square inch. Fertilizer: 15 pounds of 10-10-10 per 1,000 The pressure pump assemblage shall be square feet. Seed: Per ITEM 903 Mulch: Mulch shall be opplied as per ITEM 905.

passages and pipelines shall be capable FILL No fills may be placed on frozen ground. All fill to be placed in approximately thickness of not more than 8 inches. A nozzle operator. A pressure gauge shall fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel
County Code — Article 21, Section 2–308, The nozzle pipe shall be mounted on an and compacted to 90% density; compactic elevated supporting stand in such a to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within the minimum of 95% density as determined b embankments shall be compacted as per

Installation of sod should follow permanent sod shall be as noted above. Lime and specifications and lightly irrigate soil prio contour with all ends tightly abutting. Water and roll or tamp sod to insure slopes steeper than 3:1, as shown, are to in approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry o wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod. Install sod as per ITEM 904. MINING OPERATIONS Sediment control plans for mining operations must include the following seeding dates 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

connecting the recirculating line to the other fills shall be compacted sufficiently s ENGINEER'S CERTIFICATE "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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 1/6/2011 -----"I/WE CERTIFY THAT ALL DEVELOPMENT 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 ENMIRONMENT 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. Boetimer THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. DATE APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION CHIEF, DMISION OF LAND DEVELOPMENT



410-781-7533

16272 COMPROMISE COURT

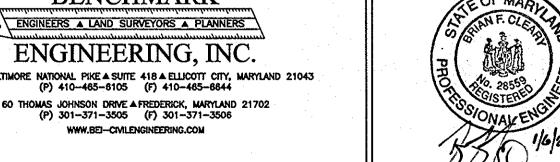
MOUNT AIRY, MARYLAND 21771

410-781-7533

Draft: AAM

Check: BFC

DIRECTOR



REVISION

WWW.BEI-CIVILENGINEERING.COM PROJECT HARWOOD PARK HH LAND, LLC LOT 80. PARCELS THREE AND FOUR 16272 COMPROMISE COURT OF LIBER 10744, FOLIO 541 MOUNT AIRY, MARYLAND 21771

LOCATION: TAX MAP No. 38, GRID No. 13, PARCEL No. 873 1st ELECTION DISTRICT WILLIAM DOUGLAS ASSOC., INC.

AS SHOWN

SCALE:

HOWARD COUNTY. ELKRIDGE, MARYLAND 21075 TITLE: SEDIMENT AND EROSION CONTROL PLAN AND DETAILS DATE: 1 PROJECT NO. 2054

> DRAWING 2 OF 2ECP-11-017

P:\2054 Harwood 80-84\dwg\8023-ECP-11-017 SHT 2.dwg, SED-ERO, 1/6/2011 1:07:20 PM,

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY,

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED. SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

## SEQUENCE OF CONSTRUCTION

NOTE: EROSION CONTROL MATTING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOD SHOULD BE USED.

DAY 2-6 2.) INSTALL SEDIMENT CONTROLS THAT ARE NOTED TO BE INSTALLED UNDER THIS SDP. DAY 86-89 6.) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTO REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED

SUPER SILT FENCE

NO SCALE

DATE