

4" LAYER OF

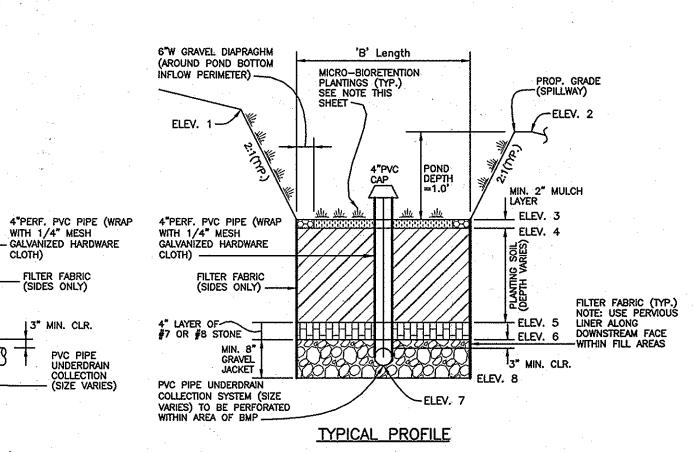
-PVC PIPE (SIZE

FILTER FABRIC (TYP.) NOTE: USE PERMOUS

LINER ALONG DOWNSTREAM FACE WITHIN FILL AREAS

VARIES) UNDERDRAIN COLLECTION SYSTEM — TO BE PERFORATED

MIC	RO-BI	ORI	TENTIO	N (M-	<u>-6)</u>	DESIG	N TAB	<u>LES</u>	<u>MIC</u>	RO-B	IOR	ETENTION (M	-6) F	PLAI	NTING TABLES	<u> </u>
	WOOI)BR	OOK SEC.2			DATE:	12/12/14			WOO	DBRO	OOK SEC.2	······································		DATE:	12/12/14
Micro			1-3) Design I			JOB NO:			(M-6) M	icro-Bior	etenti	on Planting Schedules	}		JOB NO:	2370
1111010	Dioreteria		ro, booigir.	LICTUROTIO		ISOB NO.	2070				<u> </u>	<u> </u>				
MB-1	(M-6)	genterated to grade and	MB-2	(M-6)	wwlw-v	MB-3	(M-6)	Ì	MB-1	(M-6)	and the same of th	MB-2	(M-6)	* *********	MB-3	(M-6)
Micro-Bio		********	Micro-Bio			Micro-Bio			Micro-Bioretentio	n		Micro-Bioretentic	'n		Micro-Bioretentic	
levation 1	350.15	territoria de la composición del composición de la composición de	Elevation 1	348.85		Elevation 1	346.85		Name	Quantity	No.	Name	Quantity		Name	Quantity
levation 2	349.65		Elevation 2	348.35	ne en un abrevol et mo	Elevation 2	346.35		VINCA MINOR	22		VINCA MINOR	22		VINCA MINOR	17
levation 3	348.65		Elevation 3	347.35	No. and the same	Elevation 3	345.35		(Common Periwinkle)			(Common Periwinkle)			(Common Periwinkle)	
levation 4	348.48		Elevation 4	347.18		Elevation 4	345.18		AJUSTA REPTANS	19	'	AJUSTA REPTANS	19		AJUSTA REPTANS	15
levation 5	346.48	mhr with companions	Elevation 5	345.18		Elevation 5	343.18		(Creeping Bungleweed) IRIS VERSICOLOR		*****	(Creeping Bungleweed) IRIS VERSICOLOR		*****	(Creeping Bungleweed) IRIS VERSICOLOR	
levation 6	346.15	24, 1 - 2- 2	Elevation 6	344.85	****	Elevation 6	342.85		(Iris)	10		(his)	10		(iris)	8
levation 7	345.57	· v memorany sering	Elevation 7	344.27		Elevation 7	342.27		HERMEROCALLIS SP			HERMEROCALLIS SP		~>,~	HERMEROCALLIS SP	-
levation 8	345.49	****	Elevation 8	344.19	40 A 31 A2M 14 1 May	Elevation 8	342.19		(Daylily)	6		(Davilly)	- 6		(Daviily)	5
Dimen		······································	Dimen		********	Dimer			ACER RUBRUM			ACER RUBRUM		- 	ACER RUBRUM	
A width	/ 15.50		A width	15.50		A width	15.00		(Red Sunset Red Maple)	1		(Red Sunset Red Maple)	1	,	(Red Sunset Red Maple)	7
B length	24.00		B length	24.00		B length	20.00									
MB-4	(M-6)	80 Clark / 6.1 e- 6.	MB-5	(M-6)		ļ	×4. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.		MB-4	(M-6)	nam varama dona	MB-5	(M-6)			Automorphism wastern and Adams
Micro-Bio		w v - v, v,	Micro-Bio	····			ar , ar ya i i i ayana awi		Micro-Bioretentic		470.00.00.00.00.	Micro-Bioretentic		and the second	Lance - progress our scale resource representations by Shaper for the Society of	
levation 1	346.65		Elevation 1	347.15		<u> </u>			Name	Quantity	TOTAL AND STORY	Name	Quantity			-
levation 2	346.15		Elevation 2	346.65	er den der den den de de de				VINCA MINOR	22		VINCA MINOR	18			
levation 3	345.15	All quantum	Elevation 3	345.65	philophia di anthro di an		e armitimo antico mente apertenda antico de deservicio de de la constanta de la constanta de la constanta de l		(Common Periwinkle) AJUSTA REPTANS			(Common Periwinkle) AJUSTA REPTANS				na a con no transferente entre esta esta esta esta esta esta esta est
levation 4	344.98	A11 81207 4 4 100	Elevation 4	345.48	WW-1986-114-00-1		a the control of the		(Creeping Bungleweed)	19		(Creeping Bungleweed)	16			
levation 5	342.98	- Andrew Andrew Steven	Elevation 5	343.48	- P(#4		THE STREET COLUMN TO ASSURE WE SHOULD SEE		RIS VERSICOLOR			IRIS VERSICOLOR		materials of according to		
levation 6	342.65	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Elevation 6	343.15			- ******* * ******** * * **** * *		(lris)	10		(kis)	8			
levation 7	342.07	************	Elevation 7	342.57	ere Arthur and reserve	\$			HERMEROCALLIS SP		~44V###***	HERMEROCALLIS SP		, game or seagons shown	September and the second and the second and the second and the second and demonstrate and the second and the se	
levation 8	341.99		Elevation 8	342.49					(Daylilly)	6		(Dayfilly)	, 5			
Dimen			Dimen	sions					ACER RUBRUM	1		ACER RUBRUM	1	K 2/ V2.124		
A width	15.50		A width	15.00			· · · · · · · · · · · · · · · · · · ·		(Red Sunset Red Maple)	1	-290	(Red Sunset Red Maple)				Smaller for section 2 in the literal physical sections
B length	24.00		B length	21.00		1	- and a common series and a common series and				L				L	11
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OPERATION & MAINTENANCE SCHEDULE FOR (M-6) MICRO-BIORETENTION

a. The Owner shall maintain the plant material, 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 replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.

b. The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires. c. The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

d. The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each

MICRO-BIORETENTION (M-6) CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR ALL BIORETENTION COMPONENTS SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. EMBANKMENTS SHALL PREPARED BY STRIPPING TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE AREAS, AND BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY REFERENCED TO AASHTO T-99 (STANDARD PROCTOR).

2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.

3, GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING, ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT. 4. STONE FOR THE RIP-RAP OR LEVEL SPREADERS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE

FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR LEVEL SPREADERS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. STONE SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT

5. THE STONE LINER SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

MICRO-BIORETENTION (M-6) PLANTING DATA

1. PLANTINGS WITHIN THE PONDING AREA OF THE LS INFILTRATION ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE

2. PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE LS INFILTRATION ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE SUGGESTED SPECIES:(PERENNIALS/ANNUALS)
IRIS (IRIS VERSICOLOR)
DAYLILY (HEMEROCALLIS SP.)
WHITE GLORY (ASTIBLE SP.)

MICRO-BIORETENTION (M-6) LANDSCAPE DATA

HYDROLOGIC ZONE 3 - REGULARLY INUNDATED HIDROLOGIC ZONE 3 - REGOLARI INDURED
SHORELINE FRINGE
(HIGH MARSH)
HYDROLOGIC CONDITION - 0" TO 1'-0" DEEP
HARDINESS - TEMPERATE ZONE 6b (-5' TO 0')
SEE SHEET _ FOR SEQUENCE OF CONSTRUCTION

NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES

LEGEND SOILS CLASSIFICATION SOILS DELINEATION **EXISTING CONTOURS** PROPOSED CONTOURS LIMIT OF WETLANDS ~~~ EXISTING WOODS LINE PROPOSED WOODS LINE **EXISTING STRUCTURE** PROPOSED STRUCTURE DRAINAGE AREA DRAINAGE DIVIDE LIMIT OF DISTURBANCE STABILIZED CONSTRUCTION ENTRANCE

SUPER SILT FENCE

Total treated Imp.within provided ESD = 100%

OVERHEAD UTILITY LINE

UNDERGROUND GAS LINE

UNDERGROUND ELECTRIC LINE

	,	ESD P	ractices Summary Table		
Lot No.	Practice	MDE	Туре	Number	Ownership/ Maintenance
LOT 1	DW	(M-5)	DRYWELL	2	Private
a Colombia de al destino de altitudo de colombia de destino de colombia de colombia de colombia de colombia de	GD-8	(M-X)	GRAVEL DRAIN 🕟 🕆	1,	Private
LOT 2	MB-1	(M-6)	Micro-Bioretention	1	Private
	GD-5	(M-X)	DRYWELL	1	Private
LOT 3	MB-2	(M-6)	Micro-Bioretention	1	Private
LOT 4	MB-3	(M-6)	Micro-Bioretention	1	Private
LOT 5	GD-1	(M-X)	GRAVEL DRAIN	1	Private
	MB-4	(M-6)	Micro-Bioretention	1	Private
LOT 6	GD-2	(M-X)	GRAVEL DRAIN	1	Private
tionioumous distante viterity (como	MB-5	(M-6)	Micro-Bioretention	1	Private
LOT 7	GD-3	(M-X)	GRAVEL DRAIN	1	Private
and and an	DW	(M-5)	DRYWELL	2	Private
LOT 8	GD-4	(M-X)	GRAVEL DRAIN	1	Private
***************************************	DW	(M-5)	DRYWELL	2	Private
SITE	GD-6	(M-X)	GRAVEL DRAIN	1	Private
manufacture inclines manufacture for in man desilien	GD-7	(M-X)	GRAVEL DRAIN	1	Private
	SWALE	(M-8)	Grass Swale	1	Private

N/A - hydrologically site has been returned to woods in condition by ESD *

DRY WELL INVERT HIN. 4 FT.ABOVE GROUNDWATER TABLE OR BEDROCK (2 FT. ON EASTERN SHORE) TYPICAL (M-5) DRYWELL DETAIL

NOT TO SCALE

1

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MICRO-BIORETENTION

PLANTINGS (TYP.) SEE NOTE THIS SHEET -

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<u>PLAN</u>

SEE TYPICAL SECTIONS 1

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED & MAINTAINED DRY WELLS (M-5)

TYPICAL SECTION

TYPICAL MICRO-BIORETENTION (M-6) DETAILS

DRY WELL (M-5)

DESIGN TABLE

5 ft .

160 cf

Drywell Design Chart

Depth =

Storage =

a. The Owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy storm event. o. The Owner shall record the water levels and sediment build up in the monitoring wells

WITH 1/4" MESH

FILTER FABRIC (SIDES ONLY)

13" MIN. CLR.

over a period of several days to insure trench drainage. c. The Owner shall maintain a log book to determine the rate at which the facility drains. d. When the facility becomes clogged so that it does not drain down within a seventytwo (72) hour time period, corrective action shall be taken.

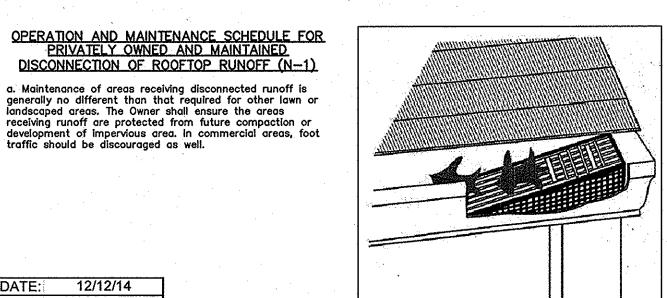
> WOODBROOK SEC.2 GRAVEL DRAIN (M-X) Design Information

e. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria. f. Once the performance characteristics of the infiltration facility have been verified, the

monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

> OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) a. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or

> > JOB NO:



GUTTER DRAIN FILTER DETAIL NOT TO SCALE

						:		ESD Mic	ro-Scale Prac	ctices Sun	mary Tab	ole		*					
	Target Pe=	1.80	inches		Target Qe =	0.70	inches	,		and year		entanger en	Ta	rget ESDv=	3,558	cf			***
Drainage Area	Practice	MDE Type	No. used	Total DA	Total DA Imp. Area	Qe	Total DA to Practice	Total Imp. to Practice	Imp.Treated by Practice	sf Reg.	Af (Tre	atment) 2% Min.	Depth(ft.)	cf Req.	ES cf Prov.		Total of Prov		ev Provided
LOT 1	DW	(M-5)	2	1,540	1,540	N/A	770	770	1,540	N/A	N/A	N/A	5.0	109.7	160.0	PASS	320.0		
	GD-8	(M-X)	1	730	525	1.26	730	525	525	N/A	N/A	N/A	5.0	76.4	69.0	PASS	69.0	,	
LOT 2	GD-5	(M-X)	, 1	1,407	953	1.19	1,407	953	953	N/A	N/A	N/A	5.0	139.2	125.0	PASS	125.0		
- 4 different betre freighen der German der	MB-1	(M-6)	`1	3,206	1,536	0.87	3,206	1,536	1,536	64	230	N/A	1.0	64.1	301.0	PASS	301.0		
LOT 3	MB-2	(M-6)	1 -	3,075	1,536	0.90	3,075	1,536	1,536	62	230	N/A	1.0	61.5	301.0	PASS	301.0		
LOT 4	MB-3	(M-6)	1	2,186	1,536.	1.23	2,186	1,536	1,536	44	176	N/A	1.0	43.7	238.0	PASS	238.0	*	
LOT 5	GD-1	(M-X)	1	635	330	N/A	635	330	330	N/A	N/A	N/A	5.0	49.3	33.1	PASS	33.1		
	MB-4	(M-6)	1	2,066	1,536	1.29	2,066	1,536	1,536	41	230	N/A	1.0	41.3	301.0	PASS	301.0		·
LOT 6	GD-2	(M-X)	1	431	285	N/A	431	285	285	N/A	N/A	. N/A	5.0	41.7	36.0	PASS	36.0		·
	MB-5	(M-6)	1	2,6 4 4	1,428	0.96	2,644	1,428	1,428	53	187	' N/A	1.0	52.9	251.0	PASS	251.0	N/A*	N/A*
LOT 7	GD-3	(M-X)	1	539	340	N/A	539	340	340	N/A	N/A	N/A	5.0	49.9	42.5	PASS	42.5	1	ý
	DW	(M-5)	2	1,540	1,540	N/A	770	770	1,540	N/A	N/A	N/A	5.0	109.7	160.0	PASS	320.0		
LOT 8	GD-4	(M-X)	1	1,110	495	N/A	1,110	495	495	N/A	N/A	N/A	5.0	75.2	43.1	PASS	43.1	#. ⁷	s* .
	DW	(M-5)	2	1,540	1,540	N/A	770	770	1,540	N/A	N/A	N/A	5.0	109.7	160.0	PASS	320.0		
SITE	GD-6	(M-X)	1	2,105	1,515	1.26	2,105	1,515	1,515	N/A	N/A	N/A	5.0	220.3	227.5	PASS	227.5		
makana kangi masalan dilika si makikishiri sa kemalar 1 yilika jamah melaksi	GD-7	(M-X)	1:	1,550	903	1.03	1,550	903	903	N/A	N/A	N/A	5.0	133.5	105.0	PASS	105.0		
	SWALE	(M-8)	1	14,125	4,814	0.64	14,125	4,814	4,814	1,840	1,930	PASS	N/A	755.8	755.8	PASS	755.8		·
ngganijana sagasasa na komilangg Palaguay lan silipananyidh.		"																	
		Totals		40,429	22,352	0.99			22,352								3,789	0	0

TABLE D 7	O MATERIAL C	AND ODEO	TECATIONIC FOR OWAL FACILITIES
TABLE B.S.	Z MATERIALS	AND SPEC	IFICATIONS FOR SWM FACILITIES
MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (IF REQUIRED)	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4.0' DEEP)	SAND: 35-60% SILT: 30-35% CLAY: 10-25%	N/A	USDA SOIL TYPES: ŁOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD	N/A	2" TO 3" DEPTH, AGED 6 MONTHS, MINIMUM
GEOTEXTILE (CLASS "C")	APPARENT OPENING SIZE: (ASTM D-4751) GRAB TENSILE STRENGTH: (ASTM D-4632) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SCH.40 PVC OR SDR35	3/8" PERF. • 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO.3; f'c=3500psi ♥ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST: ALL CONC. DESIGN (CAST -IN-PLACE OF PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. — DESIGN TO INCLUDE MEETING ACI CODE 350.R/89: VERTICAL LOADING (H-10 of H-20) ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
CHECK DAM (TREATED WOOD)	AWPA STANDARD C6	6"X6" OR 8"X8"	DO NOT COAT WITH CREOSOTE; EMBED AT LEAST 3' INTO SIDE SLOPES

APPROVED: HOWARD COUNTY DEPARTMENT OF	PLANNING AND ZONING
CU CL	1.9.15
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Net Seline	1-07-65
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

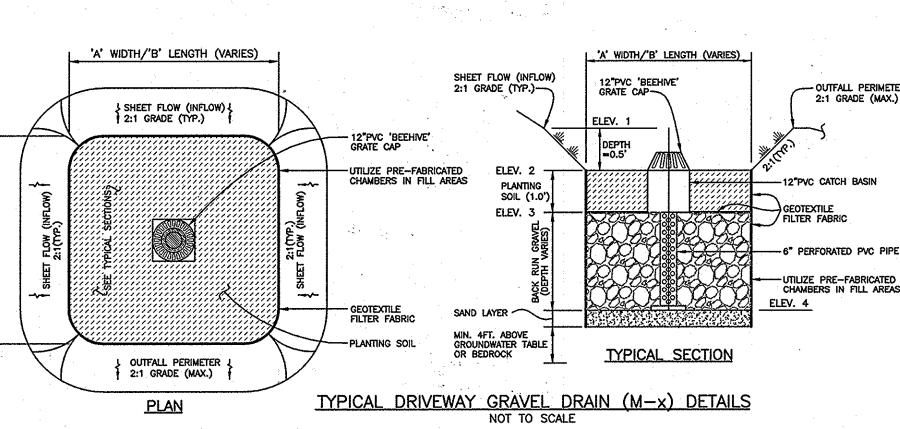
P.\2370 WOODBROOK SECTION 2\dwg\1000-V3.dwg, ESD-DET, 12/12/2014 11:06:28 AM,

	·							
GD-1	LOT 5		GD-2	LOT6		GD-3	LOT 7	
GRAVEL DRAIN	(M-X)		GRAVEL DRAIN	(M-X)		GRAVEL DRAIN	(M-X)	Contraction of the Contraction o
Length (Ld)	5.30	* avg. dim.	Length (Ld)	7.20	* avg. dim.	Length (Ld)	5.67	* avg dim.
Width (Wd)	2.50	* avg. dim.	Width (Wd)	2.00	* avg. dim.	Width (Wd)	3,00	* avg dim.
Gravel Depth (Dd)	5.00	and the second s	Depth (Dd)	5.00	, mangangi panèna ni Airikan kabahan pangkan panikan nanan manan	Depth (Dd)	5.00	(management Construction of the section of the sect
Inflow El.1	344.00		Inflow El.1	344.70	emilion at a consider to the many of the many to the contract definition.	Inflow El.1	347.00	
Bottom El.2	343.50	**************************************	Bottom El.2	344.20	e anni garri y varannore y più die na haganisteno e restante, com comunen i	Bottom El.2	346.50	. AND
Gravel Top El.3	342.50	The state of the s	Gravel Top El.3	343.20	e an aire (1900) (the entre of the colored and a second a second a second and a second a second and a second and a second and a second and a second	Gravel Top El.3	345.50	MANAGE AND AND THE MANAGEMENT AND
Gravel Bottom El.4	337.50	**************************************	Gravel Bottom El.4	338.20	e auto montro en esta	Gravel Bottom El.4	340.50	a distribution de des des autorias de la companya del companya de la companya de la companya del companya de la companya del la companya de l
Number Used	1		Number Used	1	a gapang ta addin 1995 ta pangangan ang manang n	Number Used	1	makanyi, amin'ny romanja ampin'ny mahanin
* asymetrical 13.2 sf	total	The Control of the Co	* asymetrical 14.4 sf	total		* asymetrical 17.0 sf	total	· · · · · · · · · · · · · · · · · · ·
t a transfer a transfer quant quaries problem (fine) and a continuous and quarter of a problem of an employment	offeren scenerous system to the new section.	plane a rose of decimal with right and the substitution of	Experience de la Contraction de la communicación de la communicaci		hojas, ja - k arindisen seomodaan hyvinni kroneri oj korseligiva di	роскорди в достовня в восна в подострои стойних орбинализмических принципализмических подострои.		holy sportane a grant of a sound annual for the formation
GD-4	LOT 8	modern modern umbass karijanapana massa agyar f	GD-5	LOT 2	narrowkohosubwinterarary obdinookenoosuukkidoly mere	GD-6	3&4	a accumana, accommeny sana militore na promoneno, y omo
GRAVEL DRAIN	(M-X)		GRAVEL DRAIN	(M-X)		GRAVEL DRAIN	(M-X)	AND REAL PROPERTY OF STATE OF
Length (Ld)	5.75	# 50 mm - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	Length (Ld)	10.00	* avg dim.	Length (Ld)	14.00	ny kominy dia mia 27 metanjara (inggresya) yan
Width (Wd)	3.00	a reject a committee of the property of the property of the committee of t	Width (Wd)	5.00	* avg dim.	Width (Wd)	6.50	- elikula iriy anglangi tiline erimla, erim njur diginari mashini
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Inflow El.1	347.80	The state of the s	Inflow El.1	351.70	Carry Salva de Communicación de Carra d	Inflow El.1	345.50	and the second s
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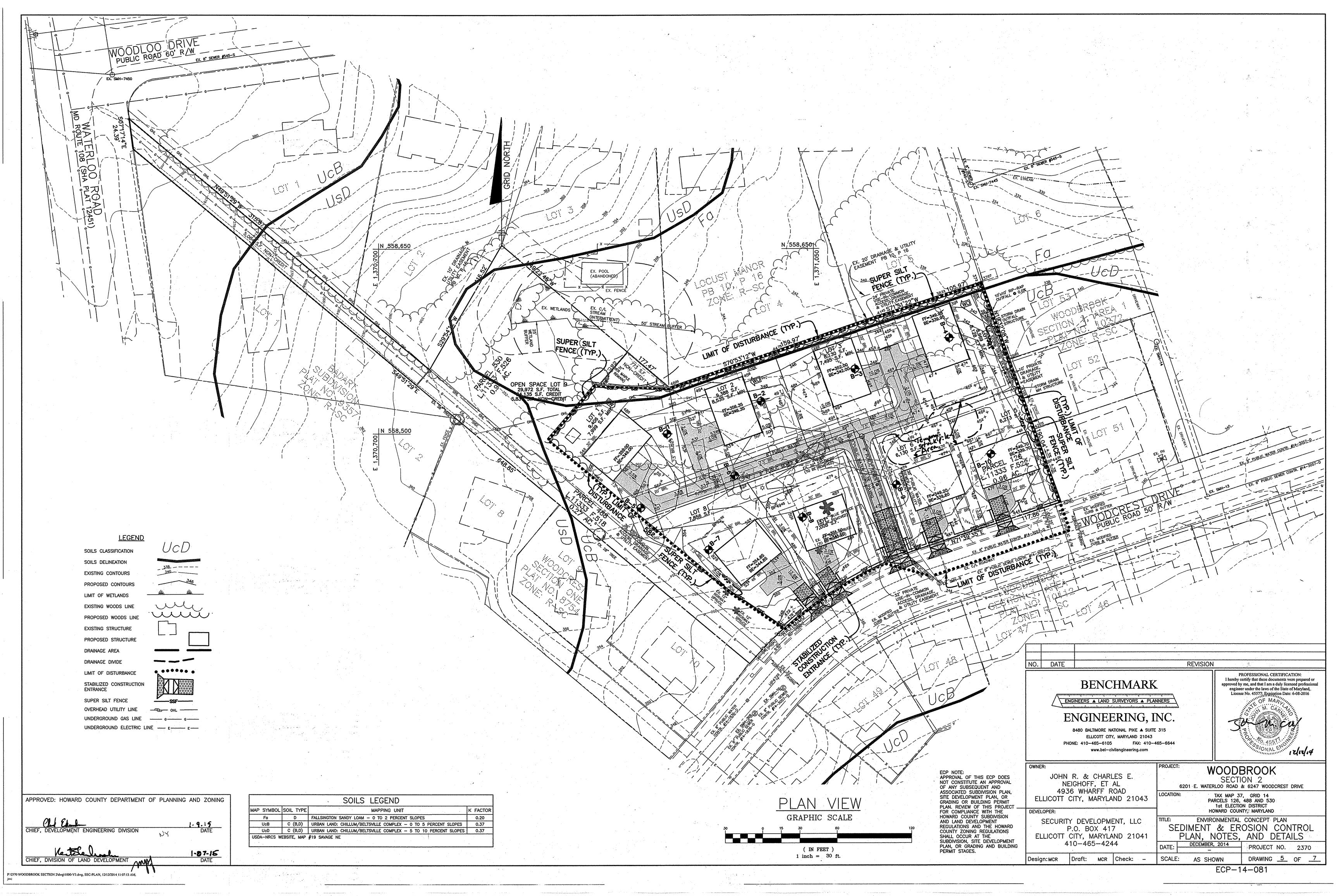
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ECP NOTE: APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN, SITE DEVELOPMENT PLAN, OR GRADING OR BUILDING PERMIT PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION, SITE DEVELOPMENT PLAN, OR GRADING AND BUILDING PERMIT STAGES.

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NO.	DATE		REVISION	4:
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OWNER	₹:	PROJECT:	W	OODBROOK

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SECURITY DEVELOPMENT, LLC P.O. BOX 417 LLICOTT CITY, MARYLAND 21041	SWN	MENTAL CONCEPT PLAN M-ESD PLAN S AND DETAILS
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B-4 STANDARDS AND SPECIFICATION VEGETATIVE STABILIZATION The process of preparing the soils to sustain adequate vegetative stabilization Ising vegetation as cover to protect exposed soil from erosion Purpose To provide a suitable soil medium for vegetative growth. To promote the establishment of vegetation on exposed soil. Conditions Where Practice Applies Where vegetative stabilization is to be established. On all disturbed areas not stabilized by other methods. This specification is divided into sections on stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary and permanent stabilization Effects on Water Quality and Quantity Stabilization practices are used to promote the estabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall. reducing sediment loads and runoff to downstream areas. Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation ease organic matter content and improve the water holding capacity of the soil and subsequent plan Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substance within the root zone. ediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, aspect seeded areas for vegetative establish reseedings within the planting season. 1. Adequate vegetative stabilization requires 95 percent groundcover. 2. If an area has less than 40 percent groundcover, restabilize following the original recommendation for lime, fertilizer, seedbed preparation, and seeding. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified. Maintenance fertilizer rates for permanent seeding are shown in Table B.6 **B-4-1 STANDARDS AND SPECIFICATIONS** INCREMENTAL STABILIZATION Topsoiling Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The stablishment of vegetative cover on cut and fill slopes. To provide timely vegetative cover on cut and fill slopes as work progresse Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles. L Incremental Stabilization - Cut Slooes 1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progre Construction sequence example (Refer to Figure B.1): a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff b. Perform Phase 1 excavation, prepare seedbed, and stabilize c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary. Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate 3. Incremental Stabilization - Fill Slopes 1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses. 2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans. 3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive Construction sequence example (Refer to Figure B.2): a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner. c. Place Phase 1 fill, prepare seedbed, and stabilize d. Place Phase 2 fill, prepare seedbed, and stabilize e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoli (if required) and permanent seed and mulch. Any nterruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization. B-4-5 STANDARDS AND SPECIFICATIONS PERMANENT STABILIZATION Purpose To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils. Conditions Where Practice Applies cosed soils where ground cover is needed for 6 months or more. a Select one or more of the species or mixtures listed in Table B.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 Guild, Section 342 - Critical Area Planting. c For sites having disturbed areas over 5 acres, use and show the rates recommended by the so d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown Turfgrass Mixtures a. Areas where turigrass 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 or purpose. inter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive managemen Irrigation required in the areas of central Maryland and Eastern Shore, Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight. 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 and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet. Notes:Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turigrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line. Ideal Times of Seeding for Turf Grass Mixtures Nestern 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) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION(CONTINUED) d. 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 ½ inches in diameter. The resulting seedbed must be in such condition that future moving of grasses will pose no difficulty e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (% to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter). a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job b. Sod must be machine cut at a uniform soil thickness of % 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. . 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. adversely affect its survival. . Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate 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 slippage 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 underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and imigating for any piece of sod within eight hours. a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as b. After the first week, sod watering is required as necessary to maintain adequate moisture content. 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. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

HIEF, DIVISION OF LAND DEVELOPMENT

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B-4-2 STANDARDS AND SPECIFICATIONS

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

be tracked with ridges running parallel to the contour of the slope.

conditions required for permanent vegetative establishment are:

. Soil contains 1.5 percent minimum organic matter by weight.

V. Soil contains sufficient pore space to permit adequate root penetration

Graded areas must be maintained in a true and even grade as specified on the

Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable

rradation. Fopsoil salvaged from an existing site may be used provided it meets the standards as set

The texture of the exposed subsoil/parent material is not adequate to produce

The soil material is so shallow that the rooting zone is not deep enough to support

Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loam

approved by the appropriate approval authority. Topsoil must not be a mixture of

Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack

grass. Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

scientist and approved by the appropriate approval authority, may be used in lieu of

Erosion and sediment control practices must be maintained when applying topsoil

seeding can proceed with a minimum of additional soil preparation and tillage. An irregularities in the surface resulting from topsolling or other operations must be

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 detrimented

corrected in order to prevent the formation of depressions or water pockets

Soil tests must be performed to determine the exact ratios and application rates for both lime

Fertilizers must be uniform in composition, free flowing and suitable for accurate application by

and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be

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

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

pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve

Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of

Where the subsoil is either highly acidic or composed of heavy clays, spread ground timestone

at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of

B-4-4 STANDARDS AND SPECIFICATIONS

TEMPORARY STABLIZATION

Conditions Where Practice Applies

Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along

H-5 STANDARDS AND SPECIFICATIONS

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3

illage: Till to roughed surface and bring clods to the surface. Begin plowing on windwarr

ide of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and

Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must

Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar

material can be used to control air currents and soil blowing.

Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan

similar plows are examples of equipment that may produce the desired effect.

seeding and Mulching, and Section 8-4-4 Temporary Stabilization. Mulch must be anchored to

with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and

s. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch

alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time,

Criteria

1. Select one or more of the species or seed mixtures listed in Table 8.1 for the appropriate Plant

Limestone must be ground to such fineness that at least 50 percent will

performed by a recognized private or commercial laboratory. Soil samples taken for

to proper grading and seedbed preparation.

thickness of 4 inches. Spreading is to be performed in such a manner that sodding or

Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum

sand. Other soils may be used if recommended by an agronomist or soil scientist and

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 tha

Topsoil substitutes or amendments, as recommended by a qualified agronomist or so

can be found in the representative soil profile section in the Soil Survey published by

plants or furnish continuing supplies of moisture and plant nutrients.

Areas having slopes steeper than 2:1 require special consideration and design. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

The original soil to be vegetated contains material toxic to plant growth. The soil is so acidic that treatment with limestone is not feasible.

Topsoiling is limited to areas having 2:1 or flatter slopes where:

vegetative growth.

1½ inches in diameter,

warranty of the producer.

soil by disking or other suitable means.

To stabilize disturbed soils with vegetation for up to 6 months

permanent stabilization practices are required

health and traffic hazards.

1-67-15

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

2. For sites having soil tests performed, use and show the recomm

Controlling the suspension of dust particles from construction activities

Vegetative Cover: See Section B-4-4 Temporary Stabilization

of be irrigated to the point that runoff occurs.

Soil tests are not required for Temporary Seeding.

forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type

Apply fertilizer and time as prescribed on the plans

ii. Soluble salts less than 500 parts per million (ppm).

Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of

suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be

Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other

A soil test is required for any earth disturbance of 5 acres or more. The minimum soil

rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than

30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture

Application of amendments or topsoil is required if on-site soils do not meet the above

approved plan, then scarified or otherwise toosened to a depth of 3 to 5 inches.

Apply soil amendments as specified on the approved plan or as indicated by the results

means. Rake lawn areas to smooth the surface, remove large objects like stones and

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

slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be

branches, and ready the area for seed application. Loosen surface soil by dragging with

Soil Preparation
1. Temporary Stabilization

Permanent Stabilization

i. Soil oH between 6.0 and 7.0

plus clay) would be acceptable.

B-4-3 STANDARDS AND SPECIFICATION

The application of seed and mulch to establish vegetative cover.

To protect disturbed soils from erosion during and at the end of construction

SEEDING AND MULCHING

Conditions Where Practice Applies

a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be

available upon request to the inspector to verify type of seed and seeding rate

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

directed on the package. Use four times the recommended rate when hydro

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil

i. Cultipacking seeding, medianized to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after

ii. Apply seed in two directions, perpendicular to each other. Apply half the

i. If fertilizer is being applied at the time of seeding, the application rates should

ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be

ili. Mix seed and fertilizer on site and seed immediately and without interruptio

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 desire

i. WCFM is to be dyed green or contain a green dye in the package that will

ii. WCFM, including dye, must contain no germination or growth inhibiting

manner that the wood cellulose fiber mulch will remain in uniform

fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on applicat

having moisture absorption and percolation properties and must

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

uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net

maximum of 50 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

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer

If used on sloping land, this practice should follow the contour.

Use of asphalt binders is strictly prohibited

approved Site Development Plans.

Obtain grading permit

necessary site grading.

DAY 51-60 Complete remaining mass grading of site

matting as applicable.

DAY 211-215 Install final paving and complete ESD construction

DAY 31-40 Begin installation of all other utilities as applicable.

mulch into the soil surface a minimum of 2 inches. This practice is most effective

dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a

specified by the manufacturer. Application of liquid binders needs to be heavier a

the edges where wind catches mulch, such as in valleys and on crests of banks.

dations. Netting is usually available in rolls 4 to 15 feet wide and 300 to

SEQUENCE OF CONSTRUCTION

Stabilize all disturbed areas in accordance with the temporary seedbed notes

DAY 21-30 Upon approval by the sediment control inspector, begin use-in-common driveway and

DAY 41-50 Construct remaining utilities as applicable. This work shall be approved by appropriate

DAY 61-65 Install base course paving for use-in-common driveway (Private Road).

inspection agencies prior to proceeding with further disturbance/grading

DAY 66-68 Once the utility and roadway construction is completed, fully stabilize the remaining areas

DAY 201-210 Final grade remainder of site and stabilize in accordance with permanent seeding notes

DAY 69-200 Construct proposed dwellings units (utilize applicable single lot SEC practices) including EC

Clear and grub site for installation of perimeter sediment control devices established under the

Begin installation of proposed utility connections at existing mains. This process to include

plans. This work shall be approved by the inspector prior to proceeding with further

daily control measures i:e trench backfill, installation/removal of silt fence, stabilization, etc.

These activities to be in conjunction with the Sequence of Construction shown on approved

on large areas, but is limited to flatter slopes where equipment can operate safely

so that the soil surface is not exposed. When using a mulch anchoring tool, increase the

iii. WCFM materials are to be manufactured and processed in such a

the growth of the grass seedlings, iv. WCFM material must not contain elements or compounds at

rater holding capacity of 90 percent minimum

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind

concentration levels that will be phyto-toxic.

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably

iv. When hydroseeding do not incorporate seed into the soil.

processed into a uniform fibrous physical state.

uniformly spread slurry.

a. Apply mulch to all seeded areas immediately after seeding.

of wood cellulose fiber per 100 gallons of water.

upon the size of the area and erosion hazard:

not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium),

applied by hydroseeding). Normally, not more than 2 tons are applied it

hydroseeding at any one time. Do not use burnt or hydrated time when

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

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 or

any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be

Mulch alone may be applied between the fall and spring seeding dates only if the ground is

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

Note: It is very important to keep inoculant as cool as possible until used. Temperature

chemicals used for weed control until sufficient time has elapsed (14 days min.) to

Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate

in each direction. Roll the seeded area with a weighted roller to provide good

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

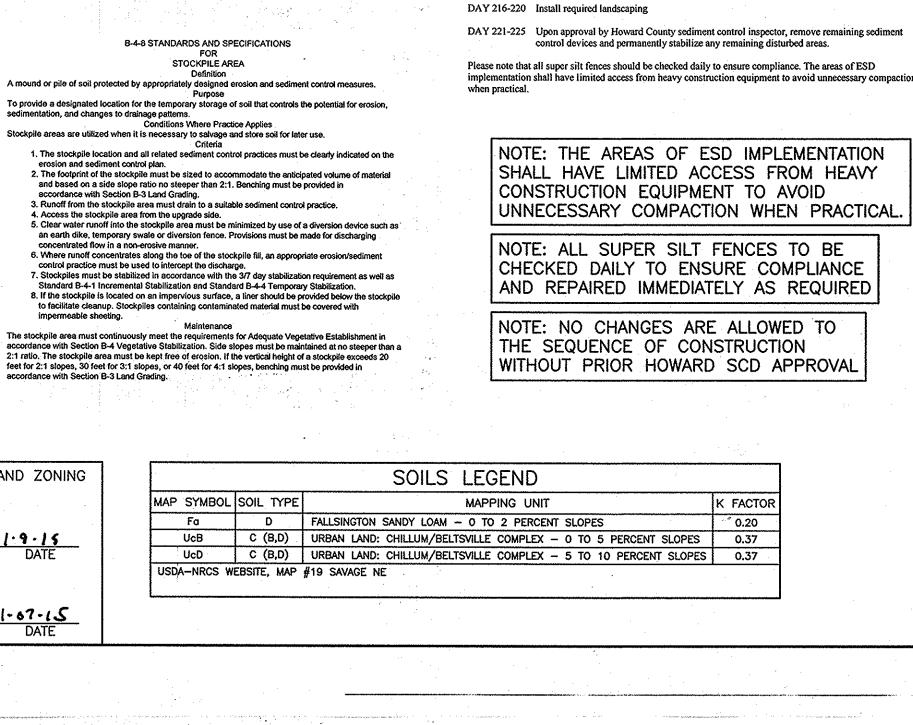
above 75 to 80 degrees Fahrenheit can weaken bact

seed to soil contact

seeding rate in each direction.

200 pounds per acre.

1. Mulch Materials (in order of preference)



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DETAIL B-4-6-C PERMANENT SOIL STABILIZATION

CONSTRUCTION SPECIFICATIONS:

U.S. DEPARTMENT OF AGRICULTURE TURAL RESOURCES CONSERVATION SERVICE

MATTING CHANNEL APPLICATION PSSMC - * 16/

ISOMETRIC VIEW

USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.

USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUS BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST

AVERAGE
1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A
MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES
MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE

PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL

IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLE ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.

ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMEN ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION 8-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

UPPER ROLL END

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

LEGEND

338______

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SHALL OCCUR AT THE

PERMIT STAGES.

SOILS CLASSIFICATION

SOILS DELINEATION

EXISTING CONTOURS

PROPOSED CONTOURS

LIMIT OF WETLANDS

EXISTING WOODS LINE

EXISTING STRUCTURE

PROPOSED STRUCTURE

LIMIT OF DISTURBANCE

SUPER SILT FENCE

OVERHEAD UTILITY LINE

UNDERGROUND GAS LINE ____ 6____

UNDERGROUND ELECTRIC LINE __ E____E_

STABILIZED CONSTRUCTION

DRAINAGE AREA

DRAINAGE DIVIDE

ENTRANCE

PROPOSED WOODS LINE

DETAIL E-3 SUPER SILT FENCE

CHAIN LINK FENCING -

EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN MIN. INTO GROUND

CROSS SECTION

FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

HOVEN SLIT FILM GEOTEXTILE—

FLOW

CONSTRUCTION SPECIFICATIONS

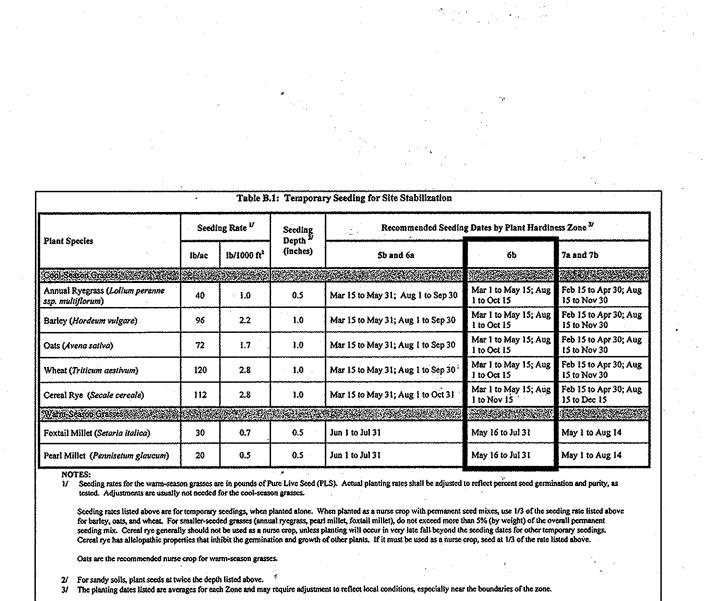
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

10 FT MAX.

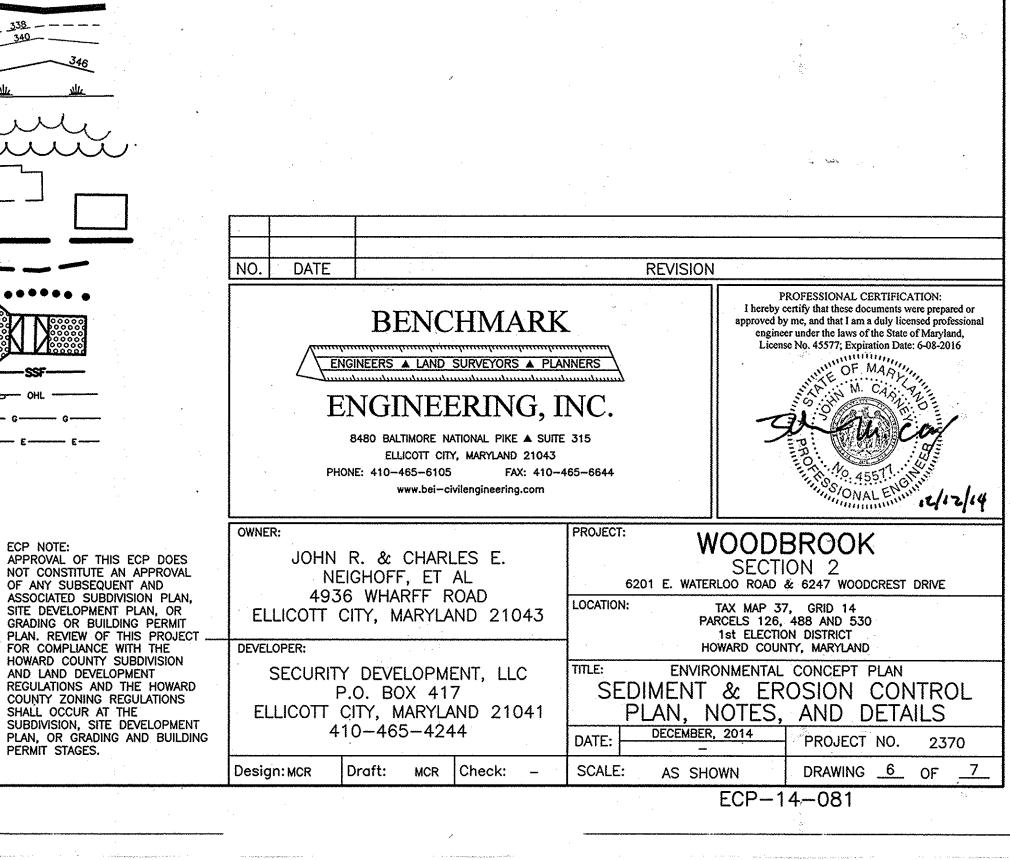
ELEVATION

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

├----SSF-----I



B.20



DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

MIN. 6 IN OF 2 TO 3 IN AGGREGATE OVER LENGTH AND WIDTH OF ENTRANCE

50 FT MIN.

LENGTH 4

PROFILE

PLAN_VIEW

PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES

MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE, PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.

PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR

TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

NONWOVEN GEOTEXTILE -

CONSTRUCTION SPECIFICATIONS

U.S. DEPARTMENT OF AGRICULTURE

EXISTING PAVEMENT

17777

-EARTH FILL

-PIPE (SEE NOTE 6)

4000

