	SHEET INDEX	
SHEET	NO. DESCRIPTION	
1	TITLE SHEET	
2	SITE DEVELOPMENT PLAN	
3	DETAILS AND NOTES	

REQUIRED CU.FT.

279

Material

Organic Content

Curtain drain

Underdrain piping

Poured in place concrete (if

Pea gravel diaphragm

PROVIDED

CU.FT.

	SOILS LEGEND		
50IL	NAME	CLA55	K FACTOR
GhB	Glenelg—Urban land complex, 0 to 8 percent slopes	8	0.20
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes (HYDRIC)	С	0.37

GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	8	
GnB	Glenville-Baile sitt loams, 0 to 8 percent slopes (HYDRIC)	С	
<u></u>			
· · · · · · · · · · · · · · · · · · ·	STORMWATER MANAGEMENT SUMMARY		

REMARKS

DRY WELLS (M-5)

GROSS ARE LOD = 0.20 RCN = 58. TARGET Pe	9	E 5			
LEAF 5CREEN	ROOF	SURCHARGE PIPE SPLASH BLOCK	DRAINAGE PATTERI	er of drywells Ie length and wid Ned once downspo NS are determined VITH lock)UT
	<u>6</u> -		o FILTER FABRIC		12" PERF. P.V.C. PIP W/CAP. PERF. AREA 5 TIMES PIPE AREA
	E	12"-		12	
BUILDING FOUNDATION———	FILTER FABRIC	STONE ASTM D-440 SIZE	#1 0 STONE D-448	ASTM SIZE #1	* FILTER FABRIC TOP_AND SIDES (NON- WOVEN) M5HA CL. "C"

	CONCRETE FOOT PLAT	E 12" SAND, ROTOTILL 1'-0" BELOW TRENCH BOTTOM	
GROUND WATER 🗸	*	NOTE: TRENCH MAY NOT BE INSTALLED IN FILL.	
DRY WELL	DETAIL (1	<u>M-5)</u>	

see Appendix A; Table A.4

compost 35-40%

sandy loam 30% coarse sand 30% compost 40%

Min. 10% by dry weight (ASTM D 2974)

pea gravel: ASTM-D-440

ornamental stone: washed

air-entrained; reinforcing to meet ASTM-615-60

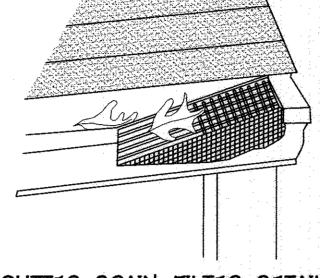
AASHTO-M-6 or ASTM-C-33

shredded hardwood

SITE DEVELOPMENT PLAN 10078 OLD FREDERICK ROAD MARK KLEIN PROPERTY, LOT 5

GRID No. 8 PARCEL NO. 613 TAX MAP No. 17 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

	LEGEN	ND ON	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
492	EXISTING 2' CONTOURS	182	PROPOSED CONTOUR
-490	EXISTING 10' CONTOURS	+ 362.5	SPOT ELEVATION
GfB GfC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
~~~~	EXISTING TREELINE	~~~~	PROPOSED TREELINE
x x	EXISTING FENCE LINE	5F	SILT FENCE
	PROPOSED PAVING	ECM	EROSION CONTROL MATTING
	DRAINAGE AREA DIVIDE	——55F——	SUPER SILT FENCE
	EXISTING 65 dBA NOISE LINE (PLAT NO. 10092)	風	STABILIZES CONSTRUCTION ENTRANCE
	EXISTING 30' PRIVATE USE—IN—COMMON ACCESS EASEMENT FOR LOTS 1—4 (PLAT NO. 10092 & L. 2392, F. 009) LOTS 1 & 2 RENUMBERED AS 5 & 6	rxxxx	30' PRIVATE ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOT 6 (PLAT NO. 23410)
7////	EXISTING 30' PUBLIC WATER, SEWER & UTILITY EASEMENT (PLAT NO. 10092)	(32.632)	30' PRIVATE SEWER, WATER EASEMENT FOR THE USE AND BENEFIT OF LOT 6 (PLAT NO. 23410)



### GUTTER DRAIN FILTER DETAIL

### STORMWATER MANAGEMENT NOTES

- 1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- 2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS. 3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH
- OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET. 4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

	D	RY WE		ART			<del>,.:::-</del> ,
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W (	)
FRONT LT	505 SQ. FT.	40 C.F.	72 C.F.	100%*	6' x	6' x 5	;,
FRONT RT	582 5Q. FT.	47 C.F.	72 C.F.	100%*	6' x	6' x 5	,
REAR	798 5Q. FT.	64 C.F.	162 C.F.	100%*	9' x	9' x 5	<b>,</b>

AREA OF TREATMENT EXCEEDS THAT REQUIRED.

plantings are site-specific
USDA soil types loamy sand or sandy loam; clay content <5%

Slotted or perforated pipe; 3/8" pert. 6 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth

on-site testing of poured-in-place concrete required:

20 day strength and slump test; all concrete design

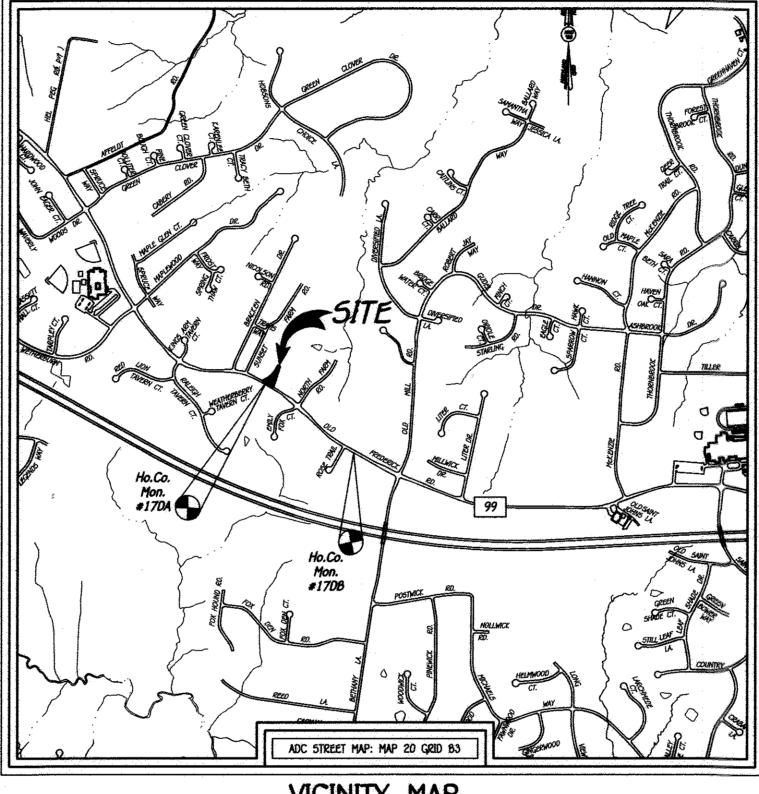
H-201; allowable horizontal loading (based on soil pressures); and analysis of potential cracking

(cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland — design to include meeting ACI Code 350.8/99; veritical loading [H-10 or

Sand substitutions such as Diabase and Graystone (AASHTO)

aged 6 months, minimum

PE Type 1 nonwoven



## VICINITY MAP

G 444	HOUSE COUNTY CONTROL STATION - 1704 HOGIZONTE MAD 1021
D.M.#1	- HOWARD COUNTY CONTROL STATION #17DA - HORIZONTAL - NAD '83)
	(LOCATED ON RT. 99, 0.4 MILES WEST OF BETHANY LANE)
	N 595,410.810
	E 1,351,641.161
	ELEVATION = 481.246- VERTICAL - (NAVD '86)
B.M.#2	- HOWARD COUNTY CONTROL STATION #1708 - HORIZONTAL - (NAD '83)
	(LOCATED ON RT. 99, 0.1 MILES WEST OF BETHANY LANE)
	N 594,529.513
	£ 1,352.722.655
	ELEVATION = 475.219 - VERTICAL - (NAVD '86)

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

- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT. B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS
- OVER A PERIOD OF SEVERAL DAYS TO ENSURE 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 SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- 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.

#### GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN). COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 17DA AND 17DB. EAST 1,351,641.1100 EAST 1,352,722.5920 STATION NO. 17DA NORTH 595,410.6380
- STATION NO. 1708 NORTH 594,529.5310 EAST 1,352,722.5920 ELEV.=475.23
  PREVIOUS DPZ FILE NUMBERS: F-91-43, F-15-107, WP-91-037; ECP-17-008.
  BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED MARCH, 201 TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN TOPOGRAPHY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED MARCH, 2015 AND SUPPLEMENTE HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
- (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
  STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5, THREE (3) DRYWELLS, ARE BEING UTILIZED.
  THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOT IS TO BE SERVED EXISTING PUBLIC WATER AND PUBLIC SEWER HOUSE CONNECTIONS, CONTRACT
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPI . NO 100 YEAR FLOODPLAIN, WETLANDS, STREAM(S) AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.
- NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY FISHER, COLLINS & CARTER, INC. DATED OCTOBER, 2016. THIS LOT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202(b)(1)(i), SINCE IT IS A LOT LESS THAN 40,000 SQ.FT. IN SIZE.
- DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD 83 GRID MEASUREMENT
- NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND BASED ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP WATER AND SEWER SERVICE TO THIS LOT WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 10.122.B OF THE HOWARD COUNTY CODE.
  PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- 21. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.

  22. ALL WATER HOUSE CONNECTIONS SHALL BE OUTSIDE METER SETTING UNLESS OTHERWISE NOTED ON THE PLANS OR IN SPECIFICATIONS.

  23. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT. STUDY PROVIDED UNDER F-91-043. THE 65 DBA NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 DBA NOISE EXPOSURE. THE 65 DBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

  24. THIS PLAN IS SUBJECT TO WP-91-037 WHICH ON DECEMBER 11, 1990 THE PLANNING DIRECTOR APPROVED A WAIVER TO SECTION 16.115.C.4 ALLOWING DIRECT ACCESS ONTO OLD FREDERICK ROAD (A MINOR ARTERIAL) FOR THE PROPOSED LOTS; AND ALSO TO SECTIONS 16.115.B.2 AND 16.115.C.1 TO REDUCE THE FLAG OR
- PIPESTEM WIDTH TO 10 FEET AND TO CLUSTER THREE FLAG OR PIPESTEMS TOGETHER.
- SOILS SHOWN HEREON ARE BASED ON HOWARD COUNTY SOIL SURVEY, MAP #13.
- 25. SOILS SHOWN HEREON ARE BASED ON HOWARD COUNTY SOIL SURVEY, MAP #13.

  26. FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF FLAG OR PIPE STEM AND ROAD RIGHT-OF-WAY LINE ONLY AND NOT ONTO THE FLAG OR PIPE STEM LOT DRIVEWAY.

  27. TRASH AND RECYCLABLES COLLECTION WILL BE AT OLD FREDERICK ROAD WITHIN 5' OF THE COUNTY ROADWAY.

  28. DRIVEWAY SHALL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06 IN THE VOL. IV DESIGN MANUAL.

  29. IN ACCORDANCE WITH SECTION 128 (0)(a)(1)(e) OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- LANDSCAPING IS NOT REQUIRED SINCE LOT 5 IS INTERIOR TO THE MARK KLEIN SUBDIVISION. THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
  EXISTING UTILITIES ARE BASED ON FIELD LOCATION AND SUPPLEMENTED WITH HOWARD COUNTY RECORDS
- SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
- 34. PARKING FOR THIS PROJECT IS PROVIDED AS FOLLOWS: 4 SPACES PER LOT (2 CAR GARAGE = 2 SPACES + 2 SPACES PER PRIVATE ON-LOT DRIVEWAY)
- TWO CAR GARAGE SHALL BE USED FOR PARKING PURPOSES ONLY OR STORAGE SPACE. (QUICK PUNCH), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP
- (B) A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DRIVEWAY ACCESS POINT ONTO
- TEN OAKS ROAD AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

410.313.490

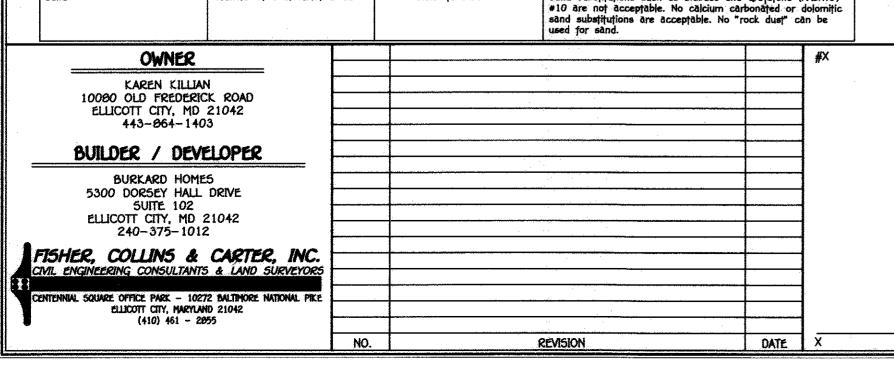
410.313.264 1.800.252.1133

- 410.850.4620 1.800.257.777 410 795 1396
- COLONIAL PIPELINE COMPANY HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES HOWARD COUNTY HEALTH DEPARTMENT
- 1.000.743.0033/410.224.9210 37. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM)
- b) SURFACE SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1 -1/2" MINIMUM):
- c) GEOMETRY MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS; d) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING); DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE;
- f) STRUCTURE CLEARANCES MINIMUM 12 FEET; g) MAINTENANCE SUFFICIENT TO ENSURE ALL WEATHER USE.

### SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 20,000 SQ.FT. OR 0.46 AC.+. LIMIT OF DISTURBED AREA = 11,140 SQ.FT. OR 0.26 Ac.+ PRESENT ZONING DESIGNATION = R-20
- (PER 10/06/2013 COMPREHENSIVE ZONING PLAN) PROPOSED USE: RESIDENTIAL PREVIOUS HOWARD COUNTY FILES: F-91-43, F-15-107, WP-91-037, &
- ECP-17-008. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC. TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC. TOTAL AREA OF EXISTING FOREST = 0.00 AC
- TOTAL GREEN OPEN AREA = 0.40 AC+ TOTAL IMPERVIOUS AREA = 0.06 AC+ TOTAL AREA OF ERODIBLE SOILS = 0.12 AC. (HYDRIC SOILS)
  - TOTAL AREA OF ROAD DEDICATION = 0.00 AC. PARKING REQUIRED = 2.5 SPACES PER LOT PARKING PROVIDED = 4 SPACES (2 GAR SPACES AND 2 DRIVEWAY SPACES)

ADDRESS CHART STREET ADDRESS 5 10076 OLD FREDERICK ROAD



0.02" to 0.04"

Table B.4. Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration

stone: 2" to 5"

n/a

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME

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

THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2018.

THE HOWARD SOIL CONSERVATION DISTRICT.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY

SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE

BUILDER/DEVELOPER'S CERTIFICATE

EROSION CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CYPTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND

ENGINEER'S CERTIFICATE "I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN

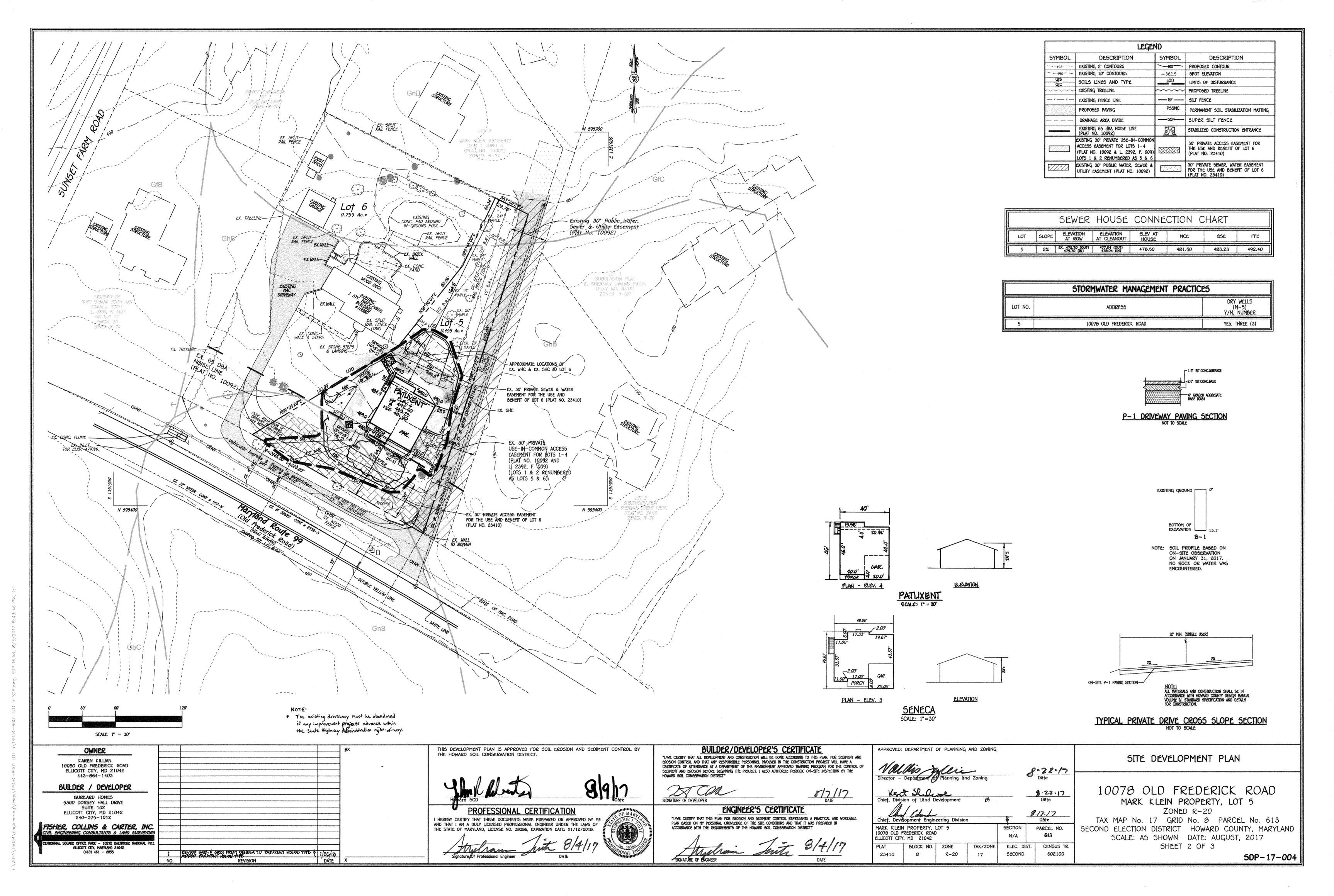
APPROVED: DEPARTMENT OF PLANNING AND ZONING P-22-17 8-22-17 8.17.17 Chief, Development Engineering Division MARK KLEIN PROPERTY, LOT 5 SECTION PARCEL NO. 10078 OLD FREDERICK ROAD ELLICOTT CITY, MD 21042 ELEC. DIST. CENSUS TR. BLOCK NO. ZONE TAX/ZONE 23410 SECOND

TITLE SHEET

10078 OLD FREDERICK ROAD MARK KLEIN PROPERTY, LOT 5 ZONED R-20

TAX MAP No. 17 GRID No. 8 PARCEL No. 613 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: AUGUST. 2017 SHEET 1 OF 3

5DP-17-004



A. Soil Preparation

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

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

a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishmen

i. Soil pH between 6.0 and 7.0. ii. Soluble salts less than 500 parts per million (ppm)

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus

clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable. iv. Soil contains 1.5 percent minimum organic matter by weight.

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

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions. c. Graded areas must be maintained in a true and even grade as specified on the approved plan, ther

scarified or otherwise loosened to a depth of 3 to 5 inches. d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to

vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant

c. The original soil to be vegetated contains material toxic to plant growth.

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

d. The soil is so acidic that treatment with limestone is not feasible.

4. Areas having slopes steeper than 2:1 require special consideration and design.

5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

a. Topsoil must be a loam, sandy loam, clay loam, sitt loam, sandy clay loam, or loamy sand. Other soils may be used it recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison by, thistie, or others c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority.

a. Erosion and sediment control practices must be maintained when applying topsoil.

may otherwise be detrimental to proper grading and seedbed preparation.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets. c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may

2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 90 to 100 percent will pass through a #20 mesh sieve.

t. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means. 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Purpose

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

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

a. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognizer seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.

b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws. c. Inocularits: The inocularit for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inocularits must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and

d. Sod or seed must not 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.

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

1. 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 weighted roller to provide good seed to soil contact.

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

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

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

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

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

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P O (phosphorus), 200 pounds per acre; K O (potassium), 200 pounds per acre.

ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

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

8. Mulching
1. Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical

OWNER

REVISION

WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate

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

III. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under adjustion and will blend with seed, tertilizer and other additives to form a homogeneous sturry. The mulch material must form a biotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the

growth of the grass seedlings.

iv. WCFM material must not confain elements or compounds at concentration levels that will by phyto-toxic.

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

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

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be application and depth of 1500 pounds per acre. Mix the wood cellulose fiber used as mulch must be applied to a net dry weight of 1500 pounds per acre.

 a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done
by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:

 A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a

 minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment

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

II. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds pe acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

TEMPORARY SEEDING NOTES (B-4-4)

To stabilize disturbed soils with vegetation for up to 6 months.

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

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

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

Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table 8.1 plus fertilizer and lime rates must be put on the plan. 2. For sites having soil tests performed, use and show the recommended rates by the

testing agency. Soil tests are not required for Temporary Seeding. 3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section 8-4-3.A.1.b and maintain until the next seeding season.

		Temporary Seeding	g Summary		
Hardiness Zor Seed Mixture	ne (from Figure B. (from Table B.1):	3): <u>6b</u>		Fertilizer Rate (10-20-20)	Lime Rațe
Species	Application Rate (lb/ac)	Seeding Dațes	Seeding Depths	-	
BARLEY	96	3/1 - 5/15,	1"	436 lb/ac	2 tons/ac
OAT5	72	8/15 - 10/15	1"	(10 lb/ 1000 sf)	(90 lb/ 1000 sf)
RYE	112		1"		

PERMANENT SEEDING NOTES (B-4-5) A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application ates, 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

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 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.

iv. 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.

Select turforass varieties from those listed in the most current University of Maryland

Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best quarantee 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 Western MD: March 15 to June 1, August 1 t 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

d. Till dreas 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 1/2 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 ( 1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (from Figure B. Seed Mixture (from Table B.3):			ardiness Zone (from Figure B.3): 6b eed Mixture (from Table B.3): 6		Fertilizer Rate (10-20-20)		Lime Rate	
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ 0	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 bs. per acre	90 lb/ac (2 lb/	90 lb/ac (2 lb/	2 tons/ac (90 lb/
	-				(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

General Specifications a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

b. Sod must be machine cut at a uniform soil thickness to % inch, plus or minus % inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and tom or uneven ends will not be acceptable. c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

d. Sod must not be harvested or transplanted when moisture content (excessively dry of wet) may adversely affect its survival.

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an

Sod 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

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 irrigating 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 necessary to maintain moist soil to a depth of 4

inches. Water sod during the heat of the day to prevent wilting. 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 otherwise specified.

B-4-0 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan. 2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.

3. Runoff from the stockpile area must drain to a suitable sediment control practice. 5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.

6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept 7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard 8-4-1 Incremental Stabilization and Standard 8-4-4 Temporary Stabilization.

8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting. The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section 8-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet

> HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section 8-3 Land Grading.

A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and projected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given

a. Prior to the start of earth disturbance. b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.

c. Prior to the start of another phase of construction or opening of another grading unit.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the

surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. 8-4-2), permanent seeding (Sec. 8-4-5), temporary seeding (Sec. 8-4-4) and mulching (Sec. 8-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. 8-4-1) specifications shall be enforced in areas with >15 of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive

oil stabilization matting (Sec. 8-4-6). All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has

been obtained from the CID. Site Analysis: Total Area of Site:

sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contracto

weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

Inspection date

Inspection type (routine, pre-storm event, during rain event) Name and title of inspector

Weather information (current conditions as well as time and amount of last recorded precipitation)

Brief description of projects status (e.g., percent complete) and/or current activities Evidence of sediment discharges identification of plan deficiencies

Identification of sediment controls that require maintenance identification of missing or improperly installed sediment controls Compliance status regarding the sequence of construction and stabilization requirements

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.

construction. Minor revisions may allowed by the CID per the list of H5CD-approved field changes.

Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.

Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout

Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25 minimum intervals, with lower ends curied uphill by

Use I and IP March 1 - June 15
Use III and IIIP October 1 - April 30 16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

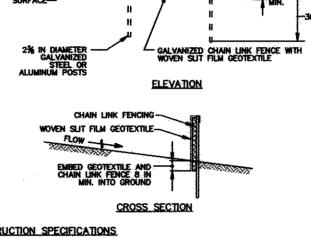
20 A 20 A **ENTRANCE** FARTH FE PROFILE 50 FT MIN. PLAN VIEW PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINMUM 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 MINIMAIN 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.

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRET (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. 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. HAMEDIATELY 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 2011 DETAIL E-3 SUPER SILT FENCE |----SSF-----| 10 FT MAX.

-36 IN MIN.



. INSTALL 2½ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.

FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

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 2011 MARYLAND DEPARTMENT OF ENVIRONMENT

STAPLE-STAPLE-JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW) PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. EXTEND BOTH ENDS OF THE 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 SILT FENCE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

SILT FENCE

ELEVATION

CROSS SECTION

——SF——1

36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND

**DETAIL E-1** 

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STABILIZATION MATTING CHANNEL APPLICATION CONSTRUCTION SPECIFICATIONS::: 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 GERMANATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, HETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2½2 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 8 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 SHAPE AT THE BOTTOM.

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. PLAN.

UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LI WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE, AVOID STRETCHING THE MATTING. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS, OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED 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 ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION 8-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF ACRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION SHEAR STRESS FOR PSSMC (LOT 4) = 62.4 LBS/FT 6  x 0.4 FT x 0.04 = 1.0 LBS/FT 6  SHEAR STRESS FOR PSSMC (LOT 5) = 62.4 LBS/FT 6  x 0.12 FT x 0.10 = 0.75 LBS/FT 6 

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR, (2 WEEKS) NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/ INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND TREE

PROTECTIVE FENCING. (1 DAY)

REMOVE NECESSARY TREES AND ROUGH GRADE LOT. (2 DAYS)

INSTALL TEMPORARY SEEDING. (1 DAY)

CONSTRUCT HOUSE AND DRIVEWAY. INSTALL SEWER AND WATER HOUSE CONNECTIONS. 7. INSTALL ROOF LEADERS & DRYWELLS UPON CONSTRUCTION OF HOUSE, FINE GRADE INSTALL PERMANENT SOIL STABILIZATION MATTING IN SWALES AS SHOWN. (3 DAYS)

ALL FINAL CRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES MAY BE REMOVED. (3 DAYS) NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE EACH RAINFALL

INSTALL PERMANENT SEEDING WITH CONSTRUCTION. (1 DAY)

SEDIMENT & EROSION CONTROL NOTES & DETAILS

SCALE: AS SHOWN DATE: AUGUST, 2017

SHEET 3 OF 3

KAREN KILLIAN 10080 OLD FREDERICK ROAD ELLICOTT CITY, MD 21042 443-864-1403 BUILDER / DEVELOPER 5300 DORSEY HALL DRIVE **5UITE 102** ELLICOTT CITY, MD 21042 240-375-1012 FISHER, COLLINS & CARTER, INC IVIL ENGINEERING CONSULTANTS & LAND SURVEYOR OLIARE OFFICE PARK - 10272 BALTIMORE NATIONAL PR FILICOTT CITY, MARYLAND 21042

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

PROFESSIONAL CERTIFICATION

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME

Stylian Just 8/4/17

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

THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2018.

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

ENGINEER'S CERTIFICATE "I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT:

Sydram Lite 8/4/17

Director - Department of Planning and Zoning 8-22-17 8.22-17 Chief, Development Engineering Division 8.17.17 MARK KLEIN PROPERTY, LOT 5 SECTION PARCEL NO. 10078 OLD FREDERICK ROAD 613 N/A ELLICOTT CITY, MD 21042 PLAT TAX/ZONE ELEC. DIST. CENSUS TR BLOCK NO. ZONE 23410 602100 R-20 SECOND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10078 OLD FREDERICK ROAD MARK KLEIN PROPERTY, LOT 5 ZONED R-20 TAX MAP No. 17 GRID No. 8 PARCEL No. 613 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

5DP-17-004