SITE DEVELOPMENT PLAN

CHESTNUT HILL ESTATES

SECTION TWO, BLOCK E
LOT 13 & LOT 14
HOWARD COUNTY, MARYLAND

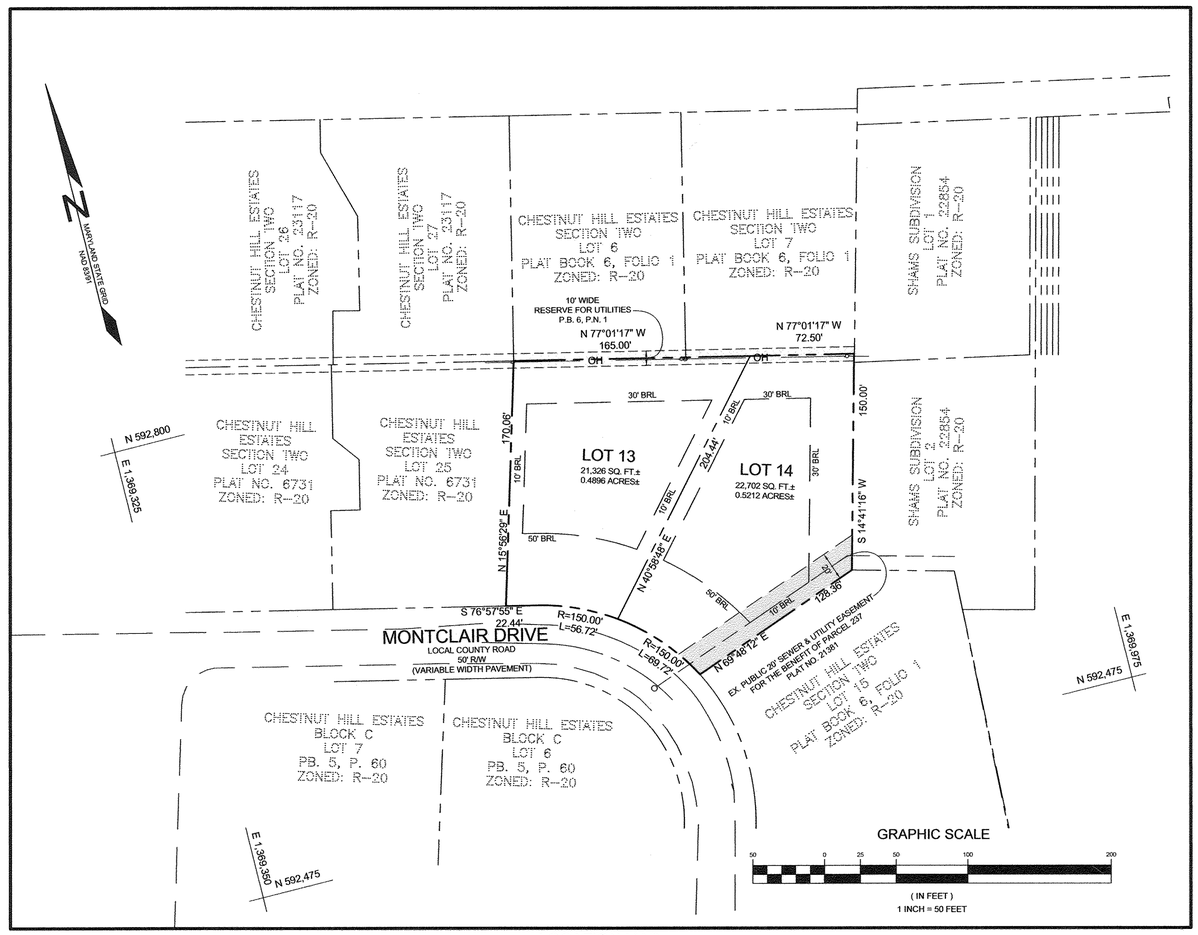
GENERAL NOTES

1. SUBJECT PROPERTY ZONED R-20 PER 10/06/2013 COMPREHENSIVE ZONING PLAN.
2. TOTAL AREA OF PROPERTY:
   LOT 13 = 21,326 S.F. OR 0.4896 AC.±
   LOT 14 = 22,702 S.F. OR 0.5212 AC.±
3. PUBLIC WATER AND PUBLIC SEWER WILL BE USED WITHIN THIS SITE.
4. THE EXISTING 3/4 INCH WATER HOUSE CONNECTION LOCATED ON LOT 13 IS TO BE ABANDONED AT THE WATER MAIN. THE ABANDONMENT OF EXISTING WATER SERVICE CONNECTION SHALL BE AS SPECIFIED UNDER SECTION 1015.03 OF THE STANDARD SPECIFICATIONS. REMOVAL OF THE EXISTING CORPORATION STOP OR TAPPING SADDLE REQUIRES A SCHEDULED SHUTDOWN OF THE WATER MAIN. THE EXISTING CORPORATION STOP SHALL BE REMOVED FROM FROM THE WATER MAIN AND THE PIPE REPAIRED WITH A COUNTY APPROVED STAINLESS STEEL FULL CIRCLE REPAIR CLAMP SUCH AS FORD METER FS2, MUELLER 550 OR ROMAC SS2 SERIES. THE EXISTING 4 INCH CAST IRON SEWER HOUSE CONNECTION IS TO BE INSPECTED BY CLOSED CIRCUIT TELEVISION (CCTV) TO DETERMINE IF IT SHOULD BE REPLACED.
5. THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY SHANABERGER AND LANE IN MARCH, 2017.
6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NUMBERS 17FB AND 18DA WERE USED FOR THIS PROJECT.
7. THE TOPOGRAPHY SHOWN ON SITE WAS FIELD RUN BY SHANABERGER AND LANE IN MARCH, 2017. THE EXISTING TOPOGRAPHY SHOWN OUTSIDE THE SITE IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004. THE CONTOURS SHOWN ARE AT TWO-FOOT CONTOUR INTERVALS.
8. PROPERTY ADDRESS:
   LOT 13 = 2821 MONTCLAIR ROAD, ELLICOTT CITY, MARYLAND 21043
   LOT 14 = 2825 MONTCLAIR ROAD, ELLICOTT CITY, MARYLAND 21043
9. REFERENCES:
   LOT 13: LIBER 17942, FOLIO 229
   LOT 14: LIBER 17539, FOLIO 91
10. PLAT REFERENCE: LOT 13 & LOT 14 , BLOCK E, SECTION 2, CHESTNUT HILL ESTATES PLAT NO. 21381
11. THERE IS AN EXISTING HISTORIC HOUSE (CIRCA 1957) THAT IS LOCATED ON BOTH LOTS 13 & 14 AND SHALL BE RAZED.
12. THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE.
13. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
14. A FIELD REVIEW PERFORMED BY SILL ENGINEERING GROUP, LLC IN JUNE, 2017 HAS CONFIRMED THAT NO WETLAND, FLOODPLAINS, STREAMS OR BUFFERS ARE PRESENT ON THE PROPERTY.
15. THERE ARE NO FLOODPLAINS, CEMETERIES OR CONTIGUOUS SLOPES OF 25% OR GREATER WITHIN THE PROJECT BOUNDARY.
16. THIS PLAN IS EXEMPT FROM A FOREST CONSERVATION PLAN AND FOREST STAND DELINEATION UNDER SECTION 16.1202(b)(viii) BECAUSE NO NEW LOTS ARE BEING CREATED.
17. STORMWATER MANAGEMENT OBLIGATIONS FOR LOT 13 WILL BE MET BY THE USE OF THREE (3) DRYWELLS (M-5), A MICRO-BIORETENTION (M-6) FACILITY AND NON-ROOFTOP DISCONNECT. STORMWATER MANAGEMENT OBLIGATIONS FOR LOT 14 WILL BE MET BY THE USE OF FIVE (5) DRYWELLS (M-5) AND NON-ROOFTOP DISCONNECT. ON LOT FACILITIES SHALL BE OWNED AND MAINTAINED BY THE LOT OWNER.
18. EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.
19. DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING REQUIREMENTS:
    1) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
    2) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM);
    3) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
    4) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
    5) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
    6) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
20. TBR = TO BE REMOVED
21. IN ACCORDANCE WITH SECTION 128.0 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.
22. LIMIT OF DISTURBANCE = 42,425 SF OR 0.9739 AC.±
23. ASSOCIATED DPZ FILE NOs.: F-11-033, 24-4574-D, 20 W&S, PLAT BOOK 6, FOLIO 1, ECP-18-001
24. LANDSCAPING IS NOT REQUIRED AS LOTS 13 AND 14 ARE INTERNAL TO THE CHESTNUT HILL SUBDIVISION.

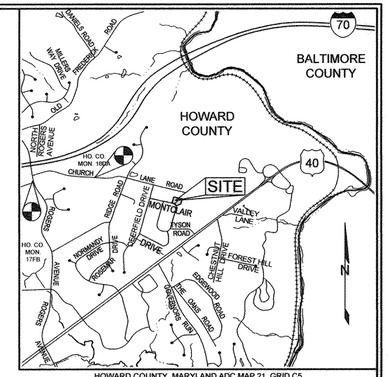
STORMWATER MANAGEMENT NOTES & DESIGN NARRATIVE

BELOW IS A LIST TO DESCRIBE THE STORMWATER MANAGEMENT REQUIREMENTS AND ACHIEVEMENTS FOR THE SITE PER THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II, AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007.

1. ENVIRONMENTALLY SENSITIVE AREAS (STREAMS AND STEEP SLOPES) DO NOT EXIST ON-SITE IN THE AREA OF DEVELOPMENT.
2. TO THE GREATEST EXTENT PRACTICABLE THE NATURAL FLOW PATTERNS OF THE SITE HAVE BEEN MAINTAINED.
3. IMPERVIOUS AREAS HAVE BEEN REDUCED BY THE USE OF THE NARROWEST DRIVE AISLE CONNECTION TO THE EXISTING STREET AND BY POSITIONING THE BUILDING AS CLOSE TO THE STREET AS THE SETBACKS AND GRADES ALLOW.
4. A STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCES ARE USED AS SEDIMENT AND EROSION CONTROL.
5. THE STORMWATER MANAGEMENT OBLIGATIONS FOR LOT 13 WILL BE MET BY THE USE OF THREE (3) DRYWELLS (M-5), A MICRO-BIORETENTION (M-6) FACILITY AND NON-ROOFTOP DISCONNECT. THE STORMWATER MANAGEMENT OBLIGATION FOR LOT 14 WILL BE MET BY THE USE OF FIVE (5) DRYWELLS (M-5) AND NON-ROOFTOP DISCONNECT. THE DRYWELLS ARE DESIGNED UNDER REQUIREMENTS SET FORTH IN SECTION 5.1 OF MARYLAND STORMWATER DESIGN MANUAL.



LOCATION MAP
SCALE: 1"=50'



HOWARD COUNTY, MARYLAND ADC MAP 21, GRID C5

VICINITY MAP
SCALE: 1"=2000'

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
17FB	593,214.401	1,365,669.05	456.316	4.5' NORTH OF RODGERS AVENUE
18DA	593,334.37	1,367,562.23	483.241	5' NORTH OF CHURCH LANE, 11.5' WEST OF HOUSE # 8432 MAIL BOX

SITE ANALYSIS DATA CHART

TOTAL PROJECT AREA: 44,028 SF OR 1.01 ACRES±
LIMIT OF DISTURBANCE: 0.97 ACRES±
ZONING DESIGNATION: R-20
PROPOSED SITE USE: RESIDENTIAL
TOTAL NUMBER OF UNITS ALLOWED: 2
TOTAL NUMBER OF UNITS PROPOSED: 2
NUMBER OF REQUIRED PARKING SPACES: 2 SPACES/SINGLE FAMILY HOUSE + 0.5 SPACE/UNIT FOR VISITOR
NUMBER OF PROVIDED PARKING SPACES: 2 SPACES/SINGLE FAMILY HOUSE + 0.5 SPACE/UNIT FOR VISITOR
TOTAL BUILDING COVERAGE: 15% OR 0.15 ACRES±
IMPERVIOUS AREA: 0.25 ACRES±
GREEN OPEN AREA (LAWN): 0.76 ACRES±
HIGHLY ERODIBLE SOILS: 0.21 ACRES±
DPZ REFERENCES: F-11-033, 24-4574-D, 20 W&S, PLAT BOOK 6, FOLIO 1, ECP-18-001

NOTE: (1) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

PERMIT INFORMATION CHART

PROJECT NAME			SECTION		PARCEL # / LOT #
CHESTNUT HILL ESTATES			SECTION TWO, BLOCK E		LOTS 13 & 14
LIBER/FOLIO	GRID #	ZONING	TAX MAP #	ELECT. DIS.	CENSUS TRACT
LOT 13:17942/229 LOT 14:17539/91	13	R-20	18	2ND	602600.02
WATER CODE			SEWER CODE		
CONTRACT 20 W&S			CONTRACT 20 W&S		

ADDRESS CHART

LOT	STREET ADDRESS
13	2821 MONTCLAIR DRIVE
14	2825 MONTCLAIR DRIVE

SHEET INDEX

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 5-31-18

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.25.18

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5.30.18

OWNER LOT 13

KALYAN BOLLA & SAILAJA KILAMBI
3371 SONIA TRAIL
ELLICOTT CITY, MARYLAND 21043
C/O PATRICK COSTELLO: 410-203-9980

OWNER LOT 14

WOODSTOCK LAND LLC
3230 BETHANY LANE
ELLICOTT CITY, MARYLAND 21042
410-203-9980

DEVELOPER

WOODSTOCK LAND LLC
3230 BETHANY LANE
ELLICOTT CITY, MARYLAND 21042
410-203-9980

COVER SHEET
CHESTNUT HILL ESTATES
SECTION TWO, BLOCK E
LOT 13 & LOT 14

TAX MAP 18 GRID 13 — ZONED: R-20 — PARCEL 178
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — PAUL A. SILL — No. 32025 — PROFESSIONAL ENGINEER

SILL ENGINEERING GROUP, LLC
11130 Dovedale Court, Suite 200
Marriottsville, Maryland 21104
Phone: 443.325.5076
Fax: 410.696.3022
Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: MAY 7, 2018
PROJECT #: 17-008
SHEET #: 1 of 5

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. 32025, EXPIRATION DATE: JUNE 20, 2019

SDP-18-020

WESTON DRIVE
50' PUBLIC RIGHT OF WAY LOCAL STREET
PLAT 10187

CHESTNUT RIDGE LOT 15
PLAT # 10187
ZONED R-20

GREGORY & SHEEN
CHESTNUT RIDGE LOT 14
PLAT # 10187
ZONED R-20
8516 WESTON DR.
ELLICOTT CITY, MD 21043

SYLVAN HILL
LOT 8
PB 8, F 14
ZONED R-20

MELVIN PROPERTY
OPEN SPACE LOT 7
PLAT # 24559
TO BE DEDICATED

R & T
FEDERLINE LLC
PLAT # 19833
ZONED R-20

THE OAKS
LOT 43
PLAT # 18759
ZONED R-20

THE OAKS
LOT 27
PB 4, F 1
ZONED R-20

THE OAKS
LOT 28
PB 4, F 1
ZONED R-20

THE OAKS
LOT 29
PB 4, F 1
ZONED R-20

THE OAKS
LOT 30
PB 4, F 1
ZONED R-20

MELNOR
LOT 7
PLAT # 9418
ZONED R-20

MELNOR
LOT 6
PLAT # 9418
ZONED R-20

MELNOR
LOT 4
PLAT # 4250
ZONED R-20

PRZYBYLA PROPERTY
LOT 1
PLAT # 5824
ZONED R-20

GnB
HSG "C"

GhB
HSG "B"

JaB
HSG "D"

LOT 1
22,312 SF

LOT 2
22,352 SF

LOT 3
22,569 SF

LOT 4
21,361 SF

LOT 5
21,236 SF

LOT 6
28,603 SF

P/O FOREST CONSERVATION EASEMENT #1 -RETENTION- 0.25 AC. (total) PLAT No. 24559

VERONICA WAY
PRIVATE DRIVE WAY

CHESTNUT CREST DRIVE
LOCAL STREET
50' PUBLIC RIGHT OF WAY
PLAT 17228

CHESTNUT HILL DRIVE
LOCAL STREET RIGHT OF WAY
ULTIMATE 50' PUBLIC
PLAT 4250

N 591,000
E 1,370,650
N 590,750
E 1,370,050
N 590,600
E 1,370,650

GRID NORTH

SENECA
SCALE 1"=30'

GENERIC BOX A
PATAPSCO W/ ALL OPTIONS
PATUXENT W/ ALL OPTIONS
POTOMAC W/ ALL OPTIONS
SENECA W/ ALL OPTIONS
SENECA I W/ ALL OPTIONS
EXCLUDING SUNROOM
SENECA II W/ ALL OPTIONS
EXCLUDING SUNROOM

GENERIC BOX B
PATAPSCO W/ ALL OPTIONS
PATUXENT W/ ALL OPTIONS
SENECA W/ ALL OPTIONS
SENECA I W/ ALL OPTIONS
EXCLUDING SUNROOM
SENECA II W/ ALL OPTIONS
EXCLUDING SUNROOM

ELEVATION 1
ELEVATION 2
ELEVATION 3
ELEVATION 4

POTOMAC
SCALE 1"=30'

ELEVATION 1
ELEVATION 2
ELEVATION 3
ELEVATION 4

PATUXENT
SCALE 1"=30'

SENECA I
SCALE 1"=30'

ELEVATION 1
ELEVATION 2
ELEVATION 3
ELEVATION 4

ELEVATIONS 1,2,3
ELEVATION 4

PATAPSCO
SCALE 1"=30'

SENECA II
SCALE 1"=30'

ELEVATION 1
ELEVATION 2
ELEVATION 3
ELEVATION 4

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE	K-FACTOR
GhB	B	GLENELG-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES	0.20
GnB*	C	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32
JaB	D	SILT LOAM, 3 TO 8 PERCENT SLOPES	0.43

FROM NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0
* INDICATES HYDRIC SOILS
** HIGHLY ERODIBLE, K>0.35, AND/OR 15% OR GREATER SLOPES
TAKEN FROM THE NRCS WEB SOIL SURVEY, AUGUST 2014. SHEET 16

SPECIMEN TREE CHART

NUMBER	DBH(INCHES)	COMMON NAME	CONDITION	NOTES
ST-1	34	PINE	FAIR	TO REMAIN
ST-2	31	PINE	FAIR	TO REMAIN
ST-3	38	SYCAMORE	GOOD	TO REMAIN

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3-12-19

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.7.19

DIRECTOR — DATE 3-12-19

LEGEND

- LIMIT OF SUBMISSION
- WETLAND LIMITS
- EXISTING TREELINE
- FOREST CONSERVATION EASEMENT
- SOILS DELINEATION
- STORM WATER MANAGEMENT FACILITIES
- BGE GREEN ZONE NO TREES OVER 25 ft
- BGE YELLOW ZONE NO TREES OVER 40 ft

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION
2	7/11/2019	REVISE LOT 1 TO SENECA II
1	2/8/2019	ADD SENECA I&II, ADJUST HOUSE BOX, SHOW SPECIFIC HOUSE ON LOT 1, REVISE LOT 6 CULVERT, AND ADJUST GRADE OVER LOT 4 SHC.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

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. 45577, Expiration Date: 06-08-2020.

2/28/19

OWNER/BUILDER:

PATAPSCO BUILDERS, LLC
5850 WATERLOO RD.
SUITE 140
COLUMBIA, MD 21045
240-375-1052

MELVIN PROPERTY
LOTS 1 thru 6

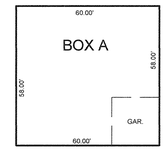
TAX MAP: 18 GRID: 20 PARCEL: 351
ZONED: R-20
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

REVISED
RESIDENTIAL SITE DEVELOPMENT PLAN

DESIGN: JMC	DRAWN: MDP	DATE: OCTOBER, 2018	BEI PROJECT NO: 2515
		SCALE: AS SHOWN	SHEET 2 OF 6

SDP-18-054

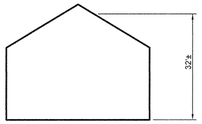
J:\2515 MELNOR LOT 5\dwg\8075 v1.dwg, 2/28/2019 4:17:14 PM, jcarney



KIRKWOOD
ELEVATION A

WELLINGTON
CRAFTSMAN: ALL OPTIONS
CLASSIC: ALL OPTIONS
SIGNATURE: ALL OPTIONS

RIDGEWOOD
CRAFTSMAN: ALL OPTIONS
CLASSIC: ALL OPTIONS
SIGNATURE: ALL OPTIONS
MORNING ROOM: ALL OPTIONS



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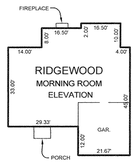

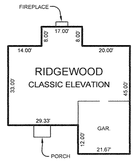

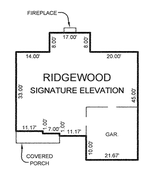

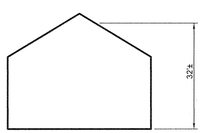

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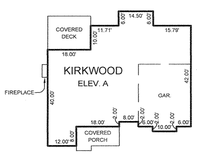
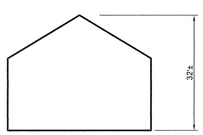


WELLINGTON
CRAFTSMAN: ALL OPTIONS
CLASSIC: ALL OPTIONS

RIDGEWOOD
CRAFTSMAN: ALL OPTIONS
CLASSIC: ALL OPTIONS
SIGNATURE: ALL OPTIONS



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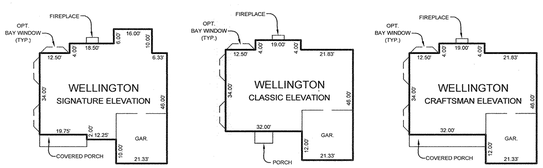
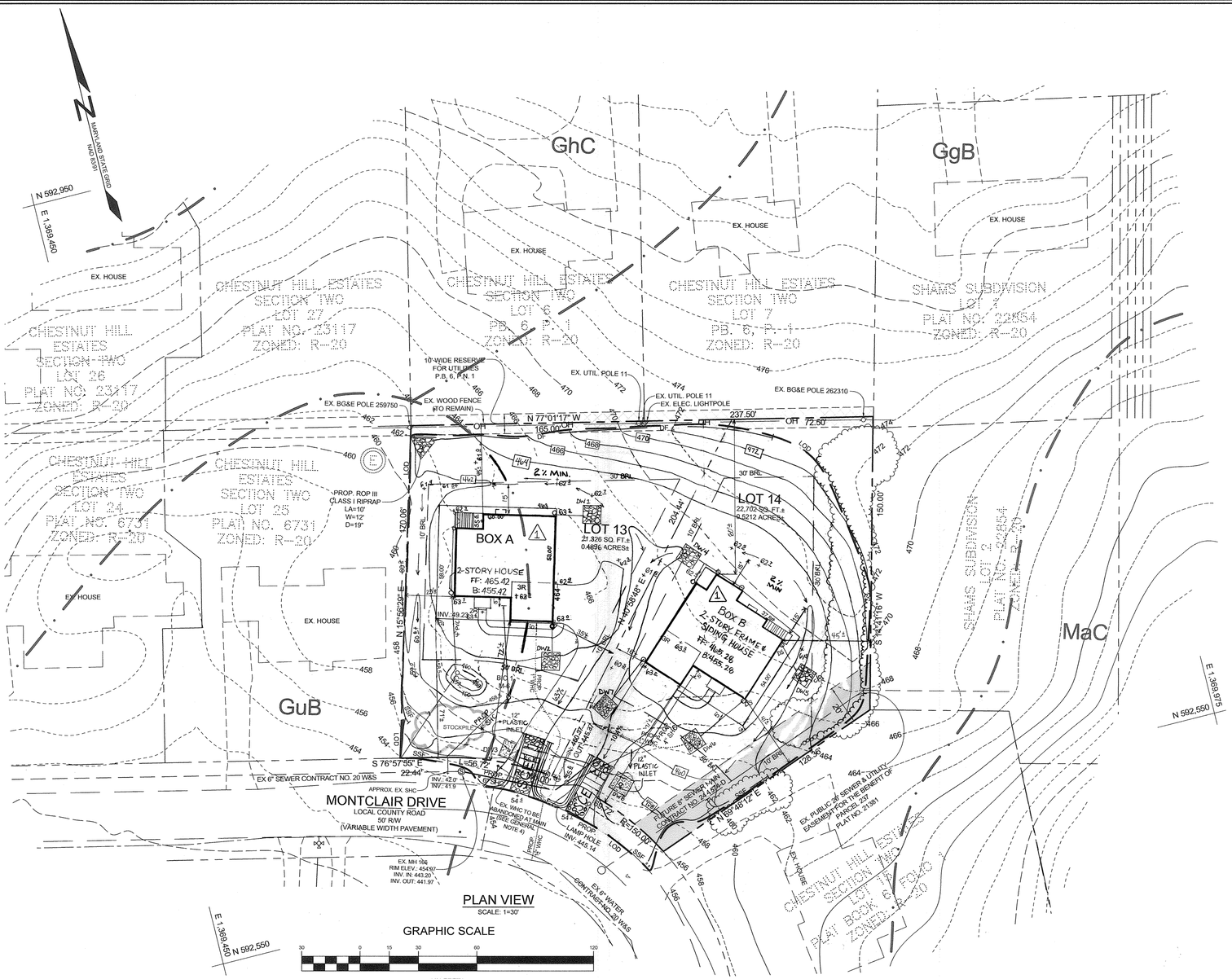


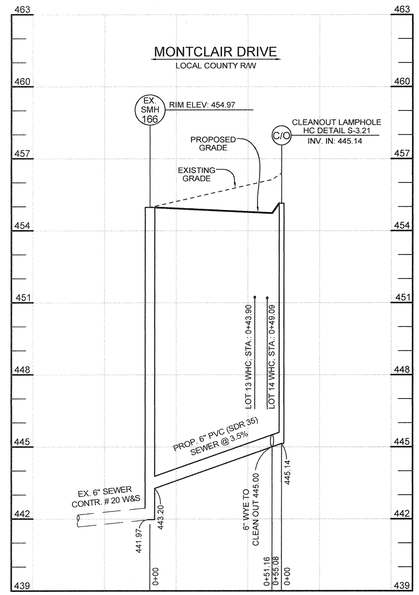


PLAN VIEW
SCALE: 1=30'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 INCH = 30 FEET

LEGEND

- EXISTING CONTOUR — 382
- PROPOSED CONTOUR — 382
- PROPOSED SPOT ELEVATION — 82.33
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL BOUNDARY
- PROPOSED DRYWELL (4" PVC TYP. WITH DOWNSPOUT) — DW2
- PROPOSED DRYWELL (WITH INLET) — DW5
- PROPOSED 1.5" WHC — PROP. WHC
- STABILIZED CONSTRUCTION ENTRANCE
- SUPER SILT FENCE — SSF — SSF
- ADJACENT OFF-SITE FENCE
- LIMIT OF DISTURBANCE — LOD
- OVERHEAD WIRES — OH
- EXISTING UTILITY POLE
- PROPOSED DIVERSION FENCE — DF
- PROPOSED WATER METER — W
- 10' WIDE RESERVE FOR UTILITIES
- EX. PUBLIC 20' SEWER & UTILITY EASEMENT FOR THE BENEFIT OF PARCEL 237



PROPOSED 6" SEWER EXTENSTION
SCALE - HORIZONTAL: 1"=30'
VERTICAL: 1"=3'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 5-31-18

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.25.18

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5-30-18

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

HOWARD SCD — DATE 5/22/18

ENGINEERS CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 5/9/18
PAUL M. SILL, P.E.

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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 9 MAY 2018

NO.	DESCRIPTION	DATE
1	REVISE HOUSE AND GRADING LOTS 13 & 14	01/11/2019

REVISIONS

OWNER LOT 13

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GRADING, LAYOUT, SEDIMENT & EROSION CONTROL AND STORMWATER MANAGEMENT PLAN
CHESTNUT HILL ESTATES
SECTION TWO, BLOCK E
LOT 13 & LOT 14

TAX MAP 18 GRID 13 — ZONED: R-20 — PARCEL 178
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

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SCALE: AS SHOWN
DATE: MAY 7, 2018
PROJECT #: 17-008
SHEET #: 3 of 5

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. 32025, EXPIRATION DATE: JUNE 20, 2019.

SDP-18-020

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

DEFINITION
- THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
- TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

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

CRITERIA

A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
   a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS 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.
2. PERMANENT STABILIZATION
   a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      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, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF 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.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE 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 NUTRIENTS.
   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES 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, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS,GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
   b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
   a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
   b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE 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 MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

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 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
- TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES:
- 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.

CRITERIA
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 B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
a. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.
2. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSE AND PERMITS AT (410) 313-1880 AT LEAST 24 HOURS BEFORE STARTING ANY WORK.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND DIVERSION FENCE. (1 WEEK)
4. CLEAR, GRUB, AND ROUGH GRADE LOTS. (1 WEEK)
5. BEGIN HOUSE CONSTRUCTION AND BASE PAVE DRIVEWAY (6 MONTHS)
6. FINAL GRADE AND STABILIZE LOT. (2 WEEKS)
7. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR INSTALL MICRO-BIORETENTION FACILITY 1 & DRYWELL FACILITIES, DW1-DW8. (2 WEEKS)
8. COMPLETE HOUSE AND FINAL PAVE DRIVEWAY. (2 WEEKS)
9. UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE ANY REMAINING DISTURBED AREA. (1 WEEK)

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

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

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

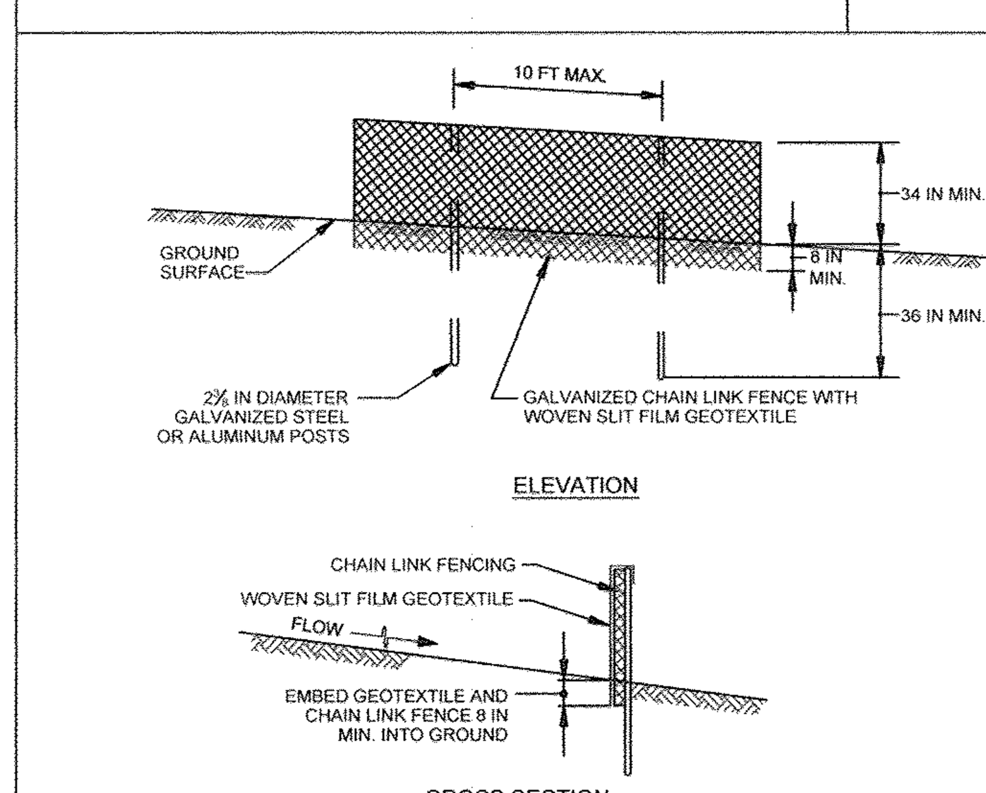
CRITERIA

A. SEEDING
1. SPECIFICATIONS
   a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
   b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
   c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
   d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
   a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
      I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 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 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.
   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; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (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.

B. 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 A UNIFORM FIBROUS PHYSICAL STATE.
      I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
      II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
      III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
      IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
      V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
   a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
   b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE 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 APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
   a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
      I. 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 PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A 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 SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
      IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS
1. INSTALL 2⅜ 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.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. 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.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. 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.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. 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 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
- TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

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 RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
   B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
   C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
   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 IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
   A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
   B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      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 B.22 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: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.
      NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR 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
   C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES:
      WESTERN 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 (HARDINESS ZONES: 7A, 7B)
   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 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ 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.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
   A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
   B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
   C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
   D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
   E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
   A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY 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 IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
   A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
   B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
   C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ 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-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
- A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE
- TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

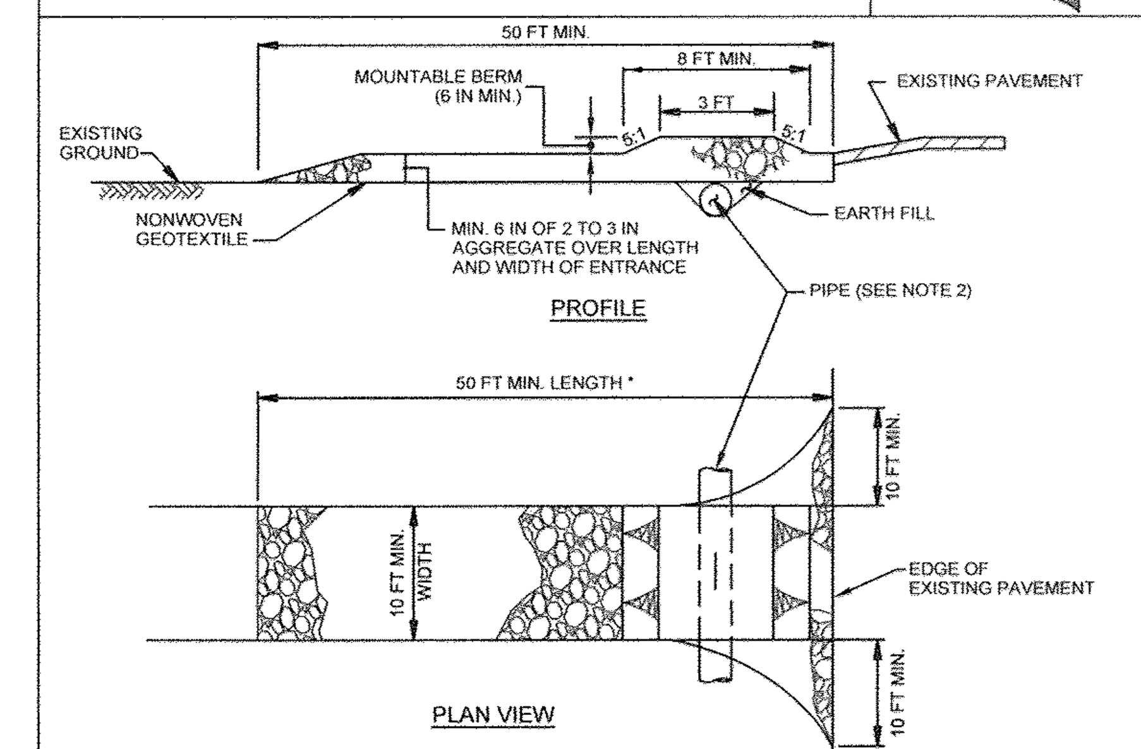
CONDITIONS WHERE PRACTICE APPLIES:
- STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA
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.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
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 THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-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.

MAINTENANCE
- THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-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 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 B-3 LAND GRADING.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS
1. 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.
2. 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. 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.
5. 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

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEDIMENT CONTROL NOTES

1. 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 PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
   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,
   D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES. 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.
2. 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.
3. 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 (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. 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. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-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. B-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 SOIL STABILIZATION MATTING (SEC. B-4-6).
5. 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.
6. SITE ANALYSIS:

TOTAL AREA:	1.0108 ACRES
AREA DISTURBED:	0.9739 ACRES
AREA TO BE ROOFED OR PAVED:	0.2445 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.7663 ACRES
TOTAL CUT:	* 8,229 CY
TOTAL FILL:	* 1 CY
OFFSITE WASTE/BORROW AREA LOCATION:	**

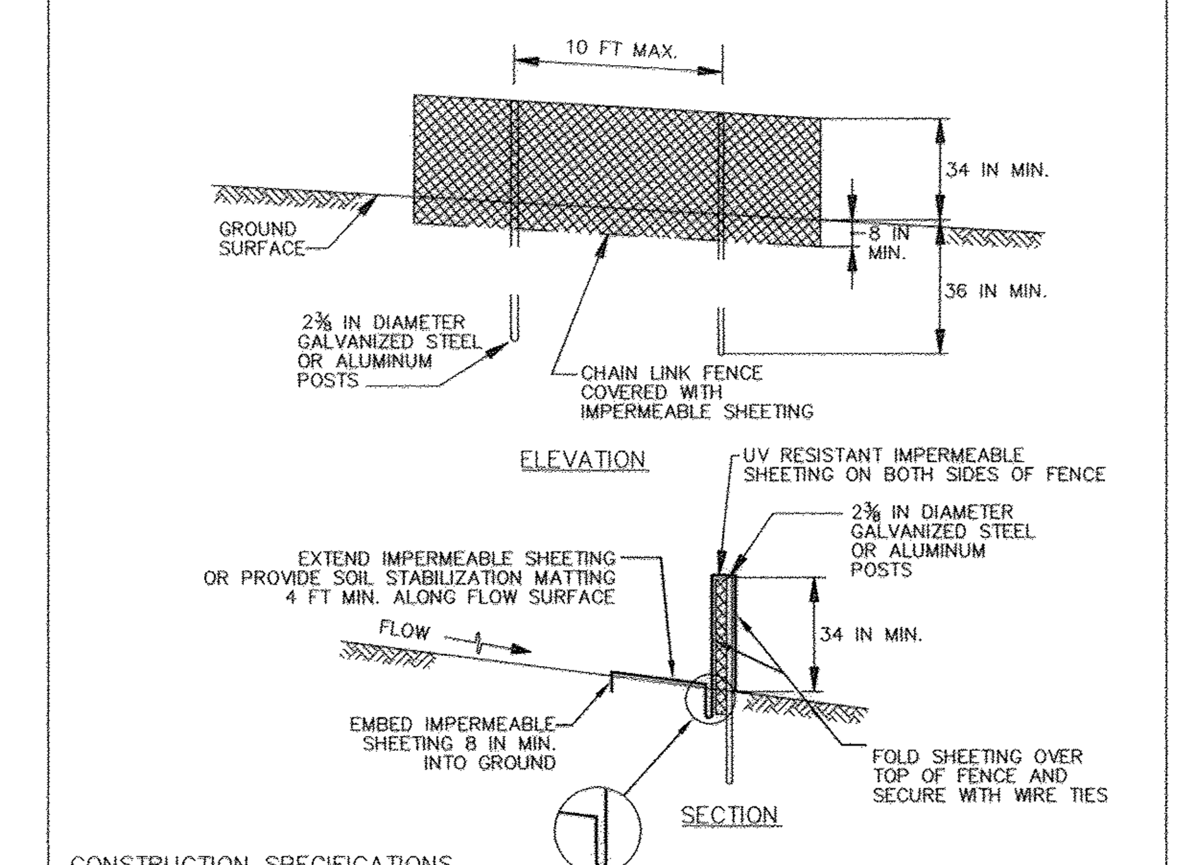
7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND 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 PROJECT'S 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
   - PHOTOGRAPHS
   - MONITORING/SAMPLING MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
9. 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.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. 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 CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
    - USE I AND IP MARCH 1 - JUNE 15
    - USE III AND IIIP OCTOBER 1 - APRIL 30
    - USE IV MARCH 1 - MAY 31
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.

* EARTHWORK QUANTITIES ARE SOLELY FOR THE PURPOSE OF CALCULATING FEES. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO THE START OF CONSTRUCTION.
** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. **KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.**

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TABLE B.1: TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECIES	SEEDING RATE		SEEDING DEPTH	RECOMMENDED SEEDING DATES BY PLANT HARDINESS ZONE		
	LB/AC	LB/1000 FT²	(INCHES)	5b & 6a	6b	7a & 7b
COOL-SEASON GRASSES						
ANNUAL RYEGRASS (*LOLIUM PERENNE SSP. MULTIFLORUM*)	40	1.0	0.5	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
BARLEY (*HORDEUM VULGARE*)	96	2.2	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
OATS (*AVENA SATIVA*)	72	1.7	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
WHEAT (*TRITICUM AESTIVUM*)	120	2.8	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
CEREAL RYE (*SECALE CEREALE*)	112	2.8	1.0	MARCH 15 TO MAY 31; AUG 1 TO OCT 31	MARCH 1 TO MAY 15; AUG 1 TO NOV 15	FEB 15 TO APR 30; AUG 15 TO DEC 15
WARM-SEASON GRASSES						
FOXTAIL MILLET (*SETARIA ITALICA*)	30	0.7	0.5	JUN 1 TO JUL 31	MAY 16 TO JUL 31	MAY 1 TO AUG 14
PEARL MILLET (*PENNISETUM GLAUCUM*)	20	0.5	0.5	JUN 1 TO JUL 31	MAY 16 TO JUL 31	MAY 1 TO AUG 14

FERTILIZER RATE (10-20-20): 436 LB/AC (10LB/1000SF) LIME RATE: 2 TONS/AC (90LB/1000SF)

NOTES:
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

*THIS SITE LIES WITHIN U.S.D.A. PLANT HARDINESS ZONE 6B.

TABLE B.5: RECOMMENDED PLANTING DATES FOR PERMANENT COVER IN MARYLAND

TYPE OF PLANT MATERIAL	PLANT HARDINESS ZONES		
	5b & 6a	6b	7a & 7b
SEEDS- COOL-SEASON GRASSES (*INCLUDES MIXES WITH FORBS AND/OR LEGUMES*)	MAR 15 TO MAY 31 AUG 1 TO SEP 30	MAR 1 TO MAY 15 AUG 1 TO OCT 15	FEB 15 TO APR 30 AUG 15 TO OCT 31 NOV 1 TO NOV 30♦
SEEDS- WARM-SEASON/ COOL-SEASON GRASS MIXES (*INCLUDES MIXES WITH FORBS AND/OR LEGUMES*)	MAR 15 TO MAY 31♦♦ JUN 1 TO JUN 15*	MAR 1 TO MAY 15♦♦ MAY 16 TO JUN 15*	FEB 15 TO APR 30♦♦ MAY 1 TO MAY 31*
SOD - COOL-SEASON	MAR 15 TO MAY 31 JUN 1 TO AUG 31* SEP 1 TO NOV 1*	MAR 1 TO MAY 15 MAY 16 TO SEP 14* SEP 15 TO NOV 15*	FEB 15 TO APR 30 MAY 1 TO SEP 30* OCT 1 TO DEC 1*
UNROOTED WOODY MATERIALS; BARE-ROOT PLANTS; BULBS, RHIZOMES, CORMS AND TUBERS [2]	MARCH 15 TO MAY 31 JUN 1 TO JUN 30*	MARCH 1 TO MAY 15 MAY 16 TO JUN 30*	FEB 15 TO APR 30 MAY 1 TO JUN 30*
CONTAINERIZED STOCK; BALLED-AND-BURLAPPED STOCK	MAR 15 TO MAY 31 JUN 1 TO JUN 30* SEP 1 TO NOV 15*	MAR 1 TO MAY 15 MAY 16 TO JUN 30* SEP 15 TO NOV 30*	FEB 15 TO APR 30 MAY 1 TO JUN 30* OCT 1 TO DEC 15*

NOTES:
1. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE. THESE DATES MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONES. WHEN SEEDING TOWARD THE END OF THE LISTED PLANTING DATES, OR WHEN CONDITIONS ARE EXPECTED TO BE LESS THAN OPTIMAL, SELECT AN APPROPRIATE NURSE CROP FROM TABLE B.1 TEMPORARY SEEDING FOR SITE STABILIZATION AND PLANT TOGETHER WITH THE PERMANENT SEEDING MIX.
2. WHEN PLANTED DURING THE GROWING SEASON, MOST OF THESE MATERIALS MUST BE PURCHASED AND KEPT IN A DORMANT CONDITION UNTIL PLANTING. BARE-ROOT GRASSES ARE THE EXCEPTION—THEY MAY BE SUPPLIED AS GROWING (NON-DORMANT) PLANTS.

♦ ADDITIONAL PLANTING DATES FOR THE LOWER COASTAL PLAIN, DEPENDENT ON ANNUAL RAINFALL AND TEMPERATURE TRENDS. RECOMMEND ADDING A NURSE CROP, AS NOTED ABOVE, IF PLANTING DURING THIS PERIOD.

♦♦ WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.

* ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT. FREQUENT FREEZING AND THAWING OF WET SOILS MAY RESULT IN FROST-HEAVING OF MATERIALS PLANTED IN LATE FALL, IF PLANTS HAVE NOT SUFFICIENTLY ROOTED IN PLACE. SOD USUALLY NEEDS 4 TO 6 WEEKS TO BECOME SUFFICIENTLY ROOTED. LARGE CONTAINERIZED AND BALLED-AND-BURLAPPED STOCK MAY BE PLANTED INTO THE WINTER MONTHS AS LONG AS THE GROUND IS NOT FROZEN AND SOIL MOISTURE IS ADEQUATE.

SEDIMENT AND EROSION CONTROL NOTES & DETAILS
CHESTNUT HILL ESTATES
SECTION TWO, BLOCK E
LOT 13 & LOT 14

TAX MAP 18 GRID 13 | ZONED: R-20 | PARCEL 178
2ND ELECTION DISTRICT | HOWARD COUNTY, MARYLAND

STATE OF MARYLAND · PAUL M. SILL · No. 32025 · PROFESSIONAL ENGINEER

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Civil Engineering for Land Development

DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: MAY 7, 2018
PROJECT #: 17-008
SHEET #: 4 of 5

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. 32025, EXPIRATION DATE: JUNE 20, 2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DIRECTOR — DATE 5-31-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.25.18
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5-30-18

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
HOWARD SCD — DATE 5/22/18

ENGINEERS CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF ENGINEER — DATE 5/4/18
PAUL M. SILL, P.E.

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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF DEVELOPER — DATE 9 MAY 2018

OWNER LOT 13
KALYAN BOLLA & SAILAJA KILAMBI
3371 SONIA TRAIL
ELLICOTT CITY, MARYLAND 21043
C/O PATRICK COSTELLO - 410-203-9980

OWNER LOT 14
WOODSTOCK LAND LLC
3230 BETHANY LANE
ELLICOTT CITY, MARYLAND 21042
410-203-9980

DEVELOPER
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3230 BETHANY LANE
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410-203-9980

SDP-18-020

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

- PRIVATELY OWNED PRACTICES SHALL HAVE A MAINTENANCE PLAN AND SHALL BE PROTECTED BY EASEMENT, DEED RESTRICTION, ORDINANCE, OR OTHER LEGAL MEASURES PREVENTING ITS NEGLECT, ADVERSE ALTERATION, AND REMOVAL.
- DRY WELLS SHALL BE INSPECTED AND CLEANED ANNUALLY. THIS INCLUDES PIPES, GUTTERS, DOWNSPOUTS, AND ALL FILTERS.
- PONDING, STANDING WATER, OR ALGAL GROWTH ON TOP OF THE DRY WELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA. IF WATER PONDS FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION FACILITIES (M-6)

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 INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR 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 HEAVY STORM.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) AND NON-ROOFTOP RUNOFF (N-2)

a. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

DRYWELL & ROOF LEADER/DOWNSPOUT NOTES

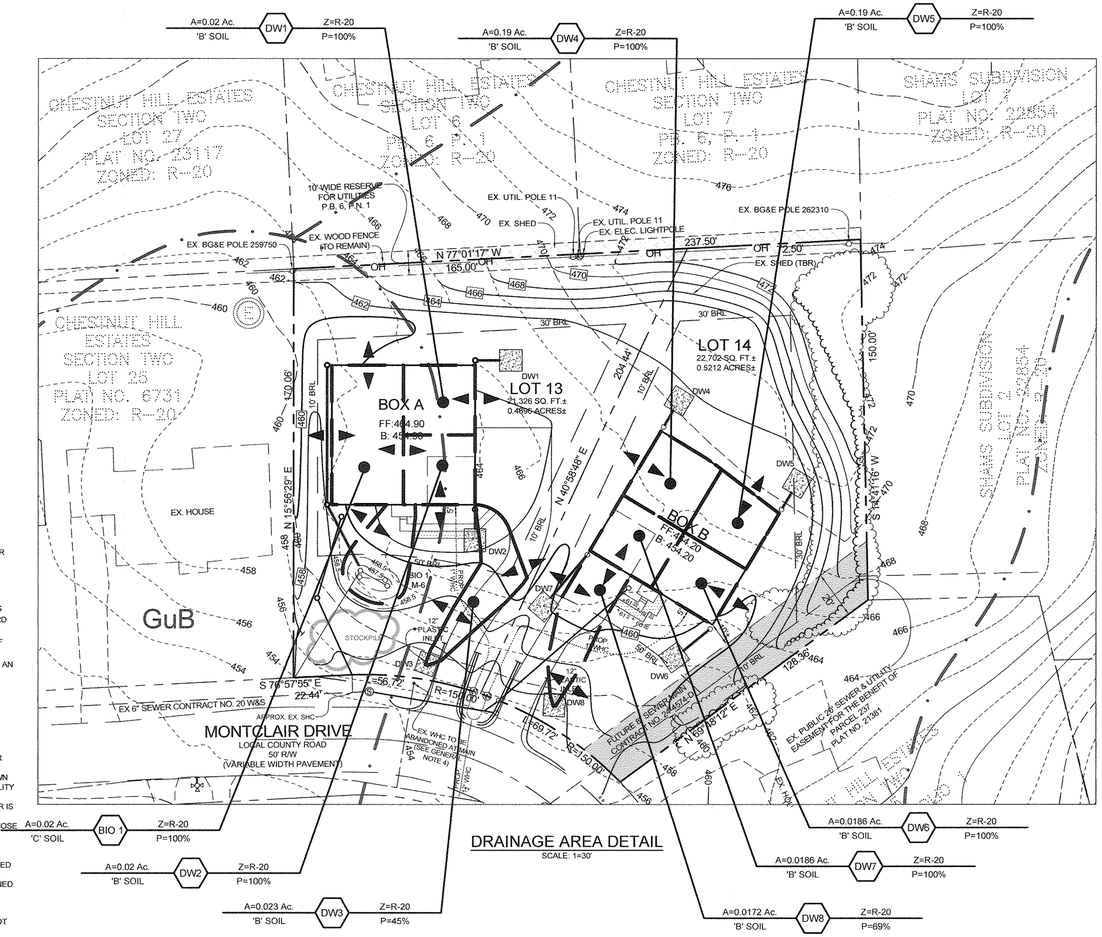
1. ALL CONSTRUCTION TO FOLLOW HOWARD COUNTY AND MDE SPECIFICATIONS IN MDE 2000 SWM DESIGN MANUAL.
2. DRYWELLS SHALL BE 10' MIN. FROM HOUSE/GARAGE FOUNDATION.
3. SAND SHALL MEET ASTM C-33 AND CLEAN AND FREE OF DEBRIS.
4. AGGREGATE SHALL BE 1.5" to 3", ASTM D448, CLEAN AND WASHED, AND FREE OF DEBRIS.
5. PVC UNDERDRAIN PIPE OUTSIDE DRYWELL: 6" SCHEDULE 40 SOLID PIPE WITH MINIMUM SLOPE OF 0.5% OR AS PER PLAN. PVC UNDERDRAIN IN DRYWELL: 6" SCHEDULE 40 APERFORATED. PERFORATIONS SHOULD BE ⅜" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A ½" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH (WELDED WIRE MESH).
6. CONTRACTOR SHALL DRILL TWO (2) 3/8"Ø HOLES IN THE CLEANOUT CAP TO ALLOW "BREATHING"/AIR ESCAPE.
7. NOTIFY THE ENGINEER IF GROUNDWATER OR ROCK IS DISCOVERED.
8. A LEAF SCREEN SHALL BE INSTALLED AS PER THE HOWARD COUNTY DETAIL (D-9.01) OR AS PER MDE (GUTTER SCREEN). GUTTER GUARDS ARE ALSO ACCEPTABLE. SCREENS SHALL BE CAPABLE OF PREVENTING PINE NEEDLES AND LEAVES FROM ENTERING THE DRYWELL. ALTERNATE SCREENS CAN BE USED IF ACCEPTABLE TO THE HOWARD COUNTY INSPECTOR.
9. THE ROOF LEADER INVERT IN CAN BE ADJUSTED TO RECEIVE DRAINAGE FROM NEAR-BY DOWNSPOUTS. THE ROOF LEADERS SHALL BE DESIGNED (BY OTHERS) PER HOCO. BUILDING CODE.
10. INSTALL A SINGLE SEPARATE OBSERVATION WELL (WITH IDENTICAL CONSTRUCTION TO CLEAN-OUT AS SHOWN) IF AN NDS POP-UP EMITTER® IS USED.

GENERAL STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH ONE (1) BIORETENTION FACILITY, SEVEN (7) DRYWELLS AND NON-ROOFTOP/SHEET FLOW TO BUFFER CREDIT. PLEASE REFER TO THE SECP REPORT PREPARED BY CIVIL DESIGN SERVICES, LC, DATED JUNE 30, 2015.
2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, SMALL EARTHEN DAM SPECIFICATION MD-378, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL, OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES.
3. UTILITIES ARE NOT EXPECTED IN THE PROPOSED AREA OF CONSTRUCTION. CONTRACTOR SHALL TEST PIT ALL KNOWN EXISTING UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY.
4. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
5. CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
6. THE MICRO-BIORETENTION BMP MAY BE GRADED, HOWEVER, THE PLANTING SOIL IN THE BMP SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
7. THE STORMWATER MANAGEMENT BIORETENTION BMP FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.

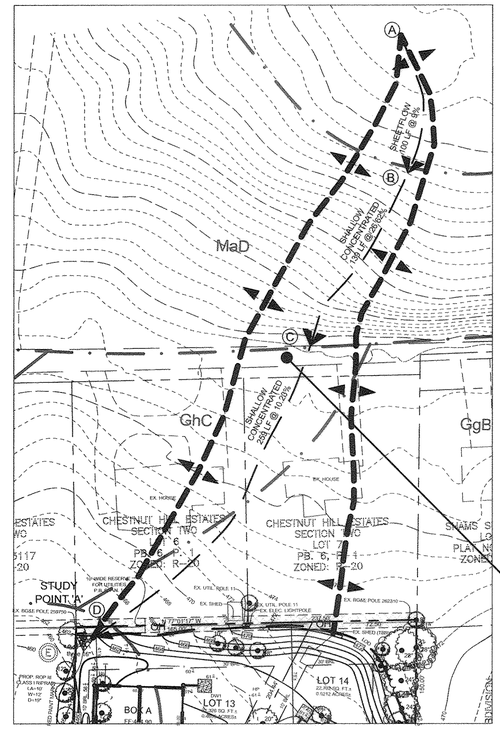
BMP BIORETENTION FACILITY NOTES AND SPECIFICATIONS

1. REFER TO THE LATEST MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION.
2. THE BIORETENTION BMP MATERIALS ARE AS FOLLOWS:
   PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM ANUAL,APPENDIX B.4. DO NOT MECHANICALLY COMPACT PLANTING SOIL, BUT CAN BE "WATERED" TO FACILITATE SETTLING.
   PVC UNDERDRAIN PIPE OUTSIDE BMP: SCHEDULE 40 SOLID PIPE WITH MINIMUM SLOPE OF 0.5% OR AS PER PLAN.
   PVC UNDERDRAIN IN BMP: SCHEDULE 40 AND PERFORATED WITH 3/4"Ø HOLES. WRAP UNDERDRAIN WITH GALVANIZED 1/4" HARDWARE CLOTH (WELDED WIRE MESH). PROVIDE 4 - 3/4" Ø HOLES EVENLY SPACED AROUND THE PIPE CIRCUMFERENCE, SPACE PERFORATIONS ALONG PIPE AT 6" ON CENTER. ADJACENT SETS OF PERFORATIONS SHALL BE STAGGERED AT 45°. PERFORATIONS MUST TOTAL 3.5 sq. inch MIN. PER LF OF PIPE.
   STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST WASHED, AND BE FREE OF FINES, SAND, DIRT & DEBRIS.
   GEOTEXTILE: PER MDE SWM MANUAL, OR MIRAFI 140N.
   MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
3. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE MICRO-BIORETENTION BMPs UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., PAVED, OR HAVE WELL-ESTABLISHED VEGETATION.
4. BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION OF THE BIORETENTION BMP.
5. GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH PRIOR TO GEOTEXTILE PLACEMENT. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS AND USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6" MINIMUM BURY OR EQUIVALENT ANCHORING METHOD.
6. THE CONTRACTOR SHALL PROVIDE TO THE OWNER INDEPENDENT CERTIFICATION THAT THE PLANTING SOILS AND OTHER BIORETENTION MATERIALS MEET THE SPECIFICATIONS.
7. THE BIORETENTION FACILITIES SHALL BE VEGETATED (TOP LEVEL SURFACE ONLY) IN ACCORDANCE WITH THE PLANTING PLAN AND THE BMP M-6 SPECIFICATIONS IN MDE's CURRENT STORMWATER MANAGEMENT DESIGN MANUAL.
8. INSTALL CLEANOUT (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT TOP SHALL EXTEND 2" ABOVE TOP OF MULCH.
9. THE LIMIT OF THE TYPICAL SECTION (i.e., PLANTING SOIL, AGGREGATE, ETC.) IS THE ENTIRE LEVEL SURFACE OF THE BIORETENTION FACILITY EXCLUDING RIPRAP AREAS AT ROOF LEADER DISCHARGE LOCATIONS.



DRAINAGE AREA DETAIL
SCALE: 1=30'

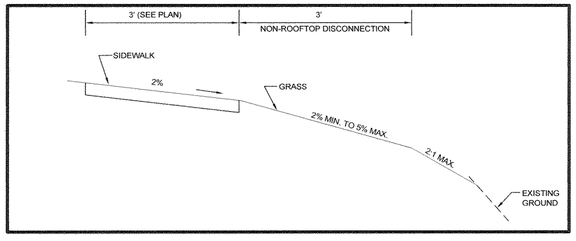
STORMWATER MANAGEMENT PRACTICES			
LOT #	ADDRESS	DRYWELLS M-5 (NUMBER)	MICRO-BIORETENTION M-6 (NUMBER)
13	2821 MONTCLAIR DRIVE	3	1
14	2825 MONTCLAIR DRIVE	5	0



DIVERSION FENCE DRAINAGE AREA DETAIL
SCALE: 1=50'

LEGEND

- EXISTING CONTOUR — 382
- PROPOSED CONTOUR — 382
- PROPOSED SPOT ELEVATION — 82.82
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL BOUNDARY
- PROPOSED DRYWELL (4" PVC TYP. WITH DOWNSPOUT) — DW2
- PROPOSED DRYWELL (WITH INLET) — "B" DW5
- PROPOSED 1.5" WHC — PROP. WHC
- ADJACENT OFF-SITE FENCE
- OVERHEAD WIRES — OH
- EXISTING UTILITY POLE
- PROPOSED WATER METER — W
- 10' WIDE RESERVE FOR UTILITIES
- EX. PUBLIC 20' SEWER & UTILITY EASEMENT FOR THE BENEFIT OF PARCEL 237
- PROPOSED DRAINAGE DIVIDE
- NON-ROOFTOP DISCONNECT

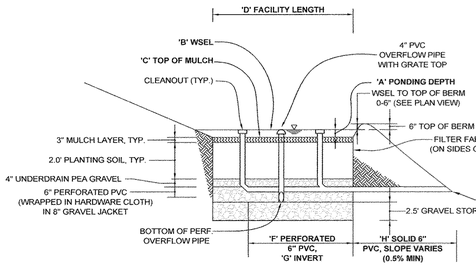


FRONT SIDEWALK TYPICAL SECTION
NOT TO SCALE

SWM DESIGN CHART			
AREA	PRACTICE	DRAINAGE AREA (SF)	DRYWELL SIZE L x W x H
DW1	M-5	870	9.5'x9.0'x5.0'
DW2	M-5	870	9.5'x9.0'x5.0'
DW3	M-5	1,000	8.5'x8.0'x5.0'
DW4	M-5	810	9.5'x9.0'x5.0'
DW5	M-5	810	9.5'x9.0'x5.0'
DW6	M-5	810	9.5'x9.0'x5.0'
DW7	M-5	810	9.5'x9.0'x5.0'
DW8	M-5	750	9.5'x9.0'x5.0'

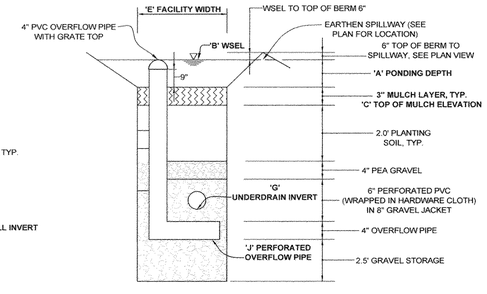
NOTES:
- PRACTICE M-5: DRYWELLS

BIORETENTION ELEVATIONS AND DIMENSIONS		
DESCRIPTION	BIO 1	
'A' PONDING DEPTH	1.00'	
'B' WSEL	458.50'	
'C' TOP OF MULCH	457.50'	
'D' FACILITY LENGTH	16.5'	
'E' FACILITY WIDTH	7'	
'F' PERF. UNDERDRAIN DIMENSION	11.00'	
'G' UNDERDRAIN INVERT	454.42'	
'H' SOLID UNDERDRAIN DIMENSION	52'	
'I' OUTFALL INVERT	454.00'	
'J' OVERFLOW PIPE	453.92'	

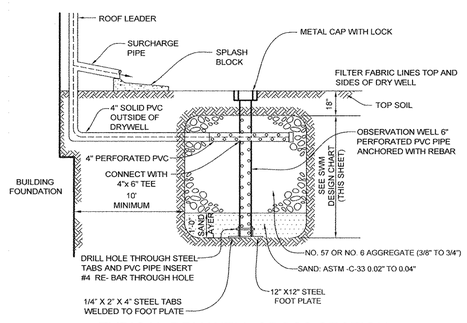


BIORETENTION FACILITY TYPICAL PROFILE
NOT TO SCALE

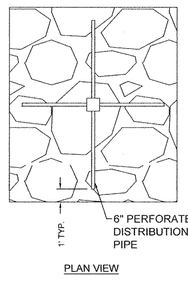
NOTES:
- FOR ADDITIONAL INFORMATION, SEE THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II.
- SEE CHART, THIS SHEET, FOR ELEVATIONS AND DISTANCES



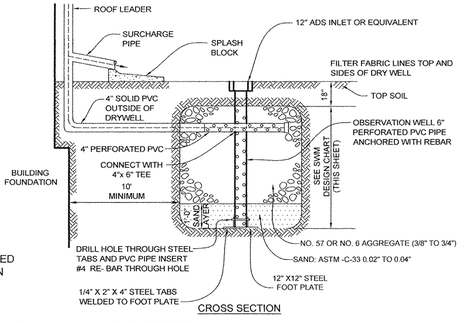
BIORETENTION FACILITY TYPICAL SECTION
NOT TO SCALE



TYPICAL DRY WELL CROSS SECTION
NOT TO SCALE



PLAN VIEW



CROSS SECTION

DRY WELL 3 & 8 DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 5-31-18

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.25.18

CHIEF, DIVISION OF LAND DEVELOPMENT JS — DATE 5-30-18

OWNER LOT 13

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DRAINAGE AREA MAPS AND STORMWATER MANAGEMENT DETAILS
CHESTNUT HILL ESTATES
SECTION TWO, BLOCK E
LOT 13 & LOT 14

TAX MAP 18 GRID 13 — ZONED: R-20 — PARCEL 178
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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SDP-18-020