GENERAL NOTES THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN

THE SUBJECT PROPERTY IS ZONED R-SC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN 3. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED

BENCHMARK ENGINEERING, INC. . TOPOGRAPHY SHOWN ON-SITE AND ALONG LINCOLN DRIVE IS BASED ON FIELD SURVEY BY BENCHMARK ENGINEERING, INC., DATED AUGUST, 2015, AND UPDATED FOR GRADING PROPOSED UNDER F-16-093. TOPOGRAPHY

SHOWN ON ADJACENT PROPERTIES IS BASED ON HOWARD COUNTY GIS. ALL CONTOURS ARE A MAXIMUM OF 2' ROUTE 1 AND INTERSTATE 95. DPZ ON 11-20-2015. A FEE-IN-LIEU IN THE AMOUNT OF \$8,820.00 FOR THE REQUIRED ROAD MITIGATION WAS

9. FOREST STAND AND WETLAND DELINEATION WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC., IN AUGUST, 2015. THERE ARE NO WETLANDS, WETLANDS BUFFER, STREAMS, STREAM BUFFERS, 100-YR FLOODPLAIN OR 25%

PAID AS PART OF THE DPW DEVELOPERS AGREEMENT PER DEVELOPMENT ENGINEERING DIVISION LETTER DATED

THE WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-4969-D.

13. THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE PUBLIC WATER AND SEWERAGE ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT

ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME CHAPTER 5" TO THE MAXIMUM EXTENT PRACTICAL (MEP) VIA THE (F-1) SURFACE SAND FILTER, WHICH IS A PRIVATELY OWNED AND MAINTAINED FACILITY CONSTRUCTED UNDER F-16-093. 15. LANDSCAPING IS PROVIDED WITH A CERTIFIED LANDSCAPE PLAN IN ACCORDANCE ACCORDANCE WITH SECTION 16.124

OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL, FINANCIAL SURETY IN THE AMOUNT OF \$3,900,00 FOR THE REQUIRED PERIMETER LANDSCAPING AND TWO ADDITIONAL SHADE TREES AS A CONDITION ON WP-16-072 DEVELOPERS AGREEMENT WITH THE FINAL PLAT.

FOREST CONSERVATION VIA THE THE ON-SITE RETENTION OF 0.23 ACRES OF FOREST WITHIN A FOREST PHELPS PROPERTY, SDP-14-026FC, RECORDED AS PLAT #22843

DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:

b) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.) c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS. d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING). e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT

g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE. 18. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT

19. THE PRIVATE MAINTENANCE ACCESS AGREEMENT FOR LOTS 3-6 WAS RECORDED SIMULTANEOUSLY WITH THE

TREES AND VEGETATION, IT WILL ALSO CONTAIN AN ESD SWM PRACTICE WHICH TREATS THE LOTS AND USE-IN-COMMON DRIVEWAY. IT IS DEDICATED TO THE HOMEOWNERS ASSOCIATION. 21. THERE IS NO RECREATIONAL OPEN SPACE REQUIREMENT FOR THIS PROJECT SINCE THERE ARE LESS THAN 10 LOTS 22. THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SHALL BE FULFILLED BY PAYMENT

AND PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID FOR LOTS/RESIDENTIAL UNITS 2

PLAT #9770

PLAT #10650 ZONED: R-SC

PLAT #10650 ZONED: R-SC

DESIGN NARRATIVE:

THROUGH 6 WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE. 23. WP-16-072, A REQUEST TO WAIVE SECTION 16.1205(A)(7) OF THE HOWARD COUNTY SUBDIVISION REGULATIONS WAS APPROVED ON JANUARY 14, 2016 AND SECTIONS 16.144(G) AND 16.146 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS WAS APPROVED ON FEBRUARY 24, 2016 SUBJECT TO THE FOLLOWING CONDITIONS: 1. THE REMOVAL OF THE ONE SPECIMEN TREE WILL REQUIRE MITIGATION WITH THE PLANTING OF 2:1

REPLACEMENT TREES (2 TOTAL) WITH A MINIMUM CALIPER NATIVE PLANT SPECIES, THE REPLACEMENT TREES 2. THE FINAL PLAN FOR THIS PROJECT MUST PROVIDE ALL OF THE REQUIRED INFORMATION THAT WILL ADDRESS HOW STORMWATER MANAGEMENT WILL BE PROVIDED. ANY REQUIRED PUBLIC ROAD RIGHT-OF-WAY IMPROVEMENTS, AND HOW FOREST CONSERVATION AND LANDSCAPING SHALL BE SATISFIED.

- OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING. BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES 25. A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF

HIGHWAYS AT THE DEVELOPERS EXPENSE. 26. PUBLIC SIDEWALK HAS BEEN PROVIDED ALONG THE PROPERTY FRONTAGE OF LINCOLN DRIVE. SIDEWALK IS NOT BEING PROPOSED BEYOND THE PROJECT LIMITS TO THE WEST DUE TO THE LACK OF AVAILABLE PUBLIC ROAD RIGHT-OF-WAY OR TO THE EAST SINCE THERE IS NO EXISTING ADJACENT SIDEWALK TO MAKE A CONNECTION TO AND SINCE THERE IS NO NEED FOR SIDEWALKS TO SERVE COMMERCIAL OR INSTITUTIONAL USES, SCHOOLS, PARKS OR OTHER PUBLIC FACILITIES WITHIN 1000 FEET OF THE PROPERTY.

27. SIGHT DISTANCE ANALYSIS WAS APPROVED UNDER S-16-002. 28. APPLICABLE DPZ FILE NUMBERS: ECP-16-009, S-16-002, WP-16-072, F-16-093

29. HOWARD COUNTY STANDARD DETAIL R-6.03 SHALL BE UTILIZED FOR THE DRIVEWAY APRONS. 30. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD

COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. 31. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY

32. 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. 33. 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 PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT. 34. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHT IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND

ANY TREE. THERE ARE NO STREET LIGHTS REQUIRED FOR THIS PROJECT. 35. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

36. EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS, AERIAL, GIS DATA AND FIELD SURVEYED LOCATIONS. 37. THE WETLAND DELINEATION STUDY WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN AUGUST, 2015, AND WAS APPROVED ON 11/09/2015.

38. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON AUGUST 20, 2015, PER SECTION 16.128 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. 39. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.

40. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.

41. ON May 24, 2016 waivers were granted by DPW for DMV II SECTIONS 4.3. B.3. b, 5.4. B.1 + 5.4. B.1.

THE CEDARS EXTENDED LOTS 1 thru 6 AND OPEN SPACE LOT 7

LOT 1

10T 2

THE CEDARS LOT 13 PLAT #17019 ZONED: R-SC

1 inch = 50 ft.

STORMWATER MANAGEMENT SUMMARY TABLE

339 1042

2. The 2.282 st of impervious area not draining to the (F-1) Surface Sand Filter is the individual Lincoln Drive improvements, driveways for Lot 1 and 2 and the beginning portion of the use-in-common

1042 PASS

2796

FOR THE PROPOSED IMPERVIOUS AREAS OF THIS SUBDIVISION, (F-1) SURFACE SAND FILTER HAS BEEN PROPOSED

NATURAL RESOURCE PROTECTION IS BEING ACHIEVED SINCE NO ENVIRONMENTAL AREAS OR BUFFERS ARE BEING

OF THE SITE AND DISCHARGING AT THE SAME CONCENTRATED LOCATION. THIS SHALL MIMIC THE EXISTING

SEDIMENT AND EROSION CONTROL SHALL MAINLY CONSIST OF SUPER SILT FENCE AROUND THE PERIMETER. CLEANWATER EARTH DIKE SHALL BE UTILIZED ALONG THE WESTERN SIDE OF THE PROJECT TO DIVERT RUNOFF TO

AS A RESULT OF UTILIZING ENVIRONMENTAL SITE DESIGN (ESD) TO THE MAXIMUM EXTENT PRACTICAL (MED). STORMWATER MANAGEMENT HAS BEEN ADEQUATELY ADDRESSED WITHOUT THE NEED FOR STRUCTURAL PRACTICES.

AN INLET AND BYPASS THE SITE. IT IS NOT ANTICIPATED THAT ANY SEDIMENT TRAPS WILL BE NEEDED.

19,367

 Storm
 2-year
 10-year
 25-year

 pre-developed
 6.78 cfs
 15.59 cfs
 18.06 cfs

post-developed 6.19 cfs 14.90 cfs 17.94 cfs

driveway. This area will drain into Lincoln Drive. There is not sufficient room between the garage and public right-of-way for ESD practice.

Overcompensation has been provided within (F-1) Surface Sand Filter for this area. The total ESDv required for the site is provided.

AS ALLOWED BY HOWARD COUNTY FOR A USE-IN-COMMON DRIVE.

Total Treated 39,000 17,085

1. Rev is provided via 0.6' deep stone chamber below outfall pipe within the (F-1) Surface Sand Filter.

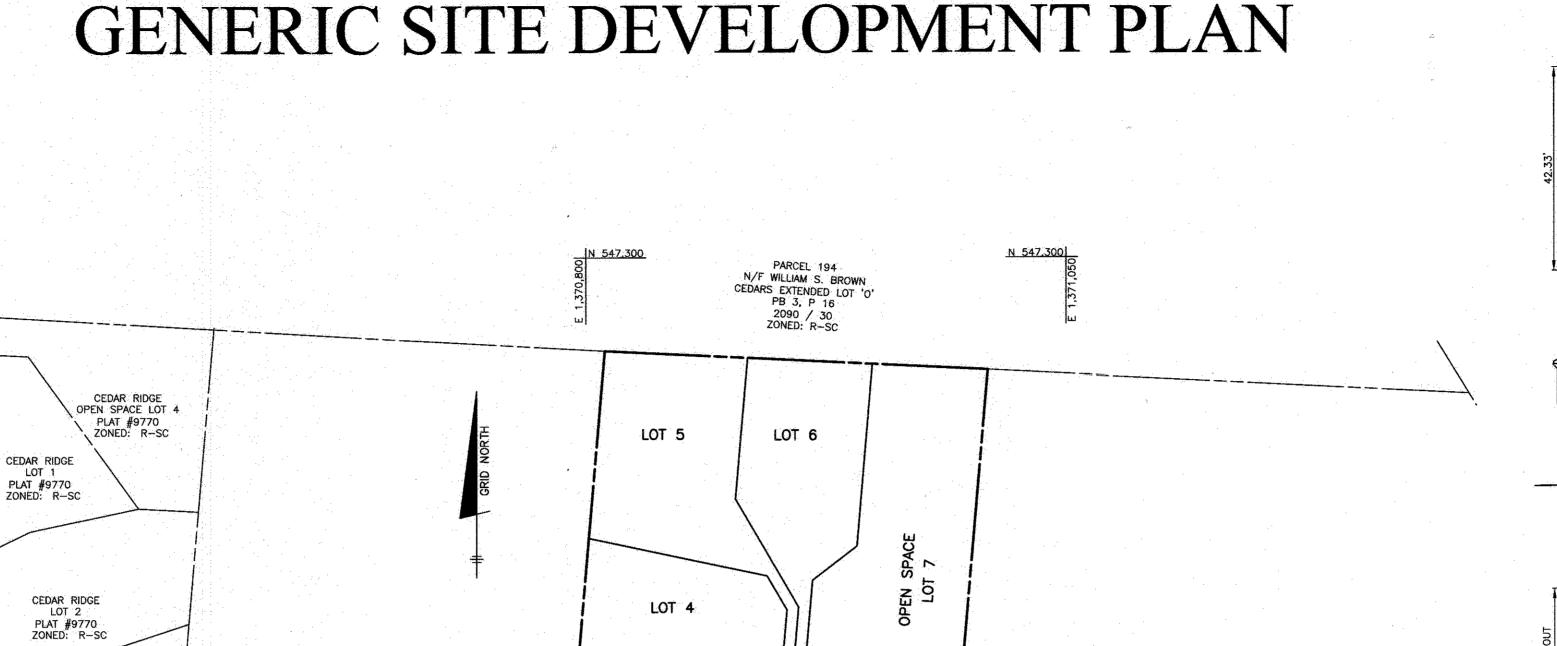
NATURAL FLOW PATTERNS HAVE BEEN PRESERVED BY PLACING THE ESD PRACTICE AROUND THE OUTER PERIMETER

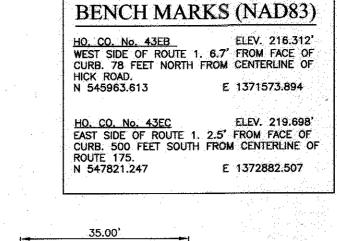
REDUCTION OF IMPERVIOUS AREAS HAS BEEN ACHIEVED BY UTILIZING THE NARROWEST POSSIBLE DRIVEWAY WIDTHS

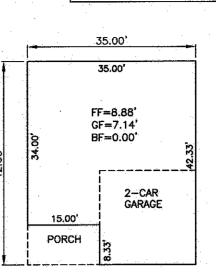
N 546,850

LINCOLN DRIVE

PUBLIC LOCAL ROAD
ULTIMATE 50' RIGHT-OF-WAY







ASEMENT FLOOR

______ OPTIONAL 34.00'

GF=7.14'

FIRST FLOOR

ROCKBURN

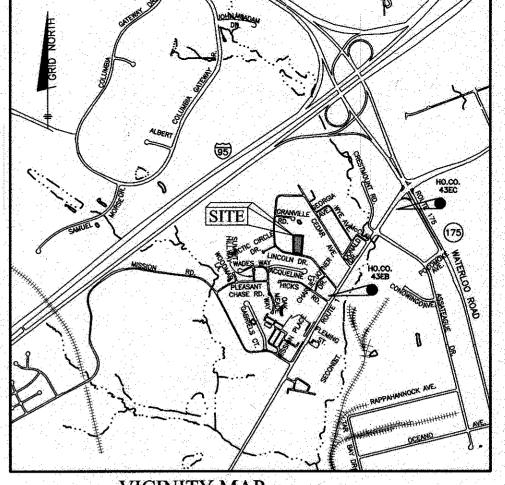
SCALE 1"=20'

GARAGE

BF=0.00

WALKOUT

OPTIONAL



MINIMUM LOT SIZE CHART					
LOT	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZ		
3	8,417	1,691	6,726		
4	7,950	1,098	6,852		
5	9,750	2,020	7,730		
6	8,227	1,505	6,722		

SITE ANALYSIS DATA CHART

[A.) TOTAL PROJECT AREA	1.62± acres
	B.) AREA OF PLAN SUBMISSION	1.62± acres
	C.) LIMIT OF DISTURBED AREA	1.39 gcres
: :	D.) PRESENT ZONING:	R−SC
	E.) PROPOSED USE OF SITE:	RESIDENTIAL SINGLE FAMILY DETACHED
	F.) FLOOR SPACE ON EACH LEVEL OF BLDG PER USE.	N/A
	G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S)	_ 6
	H.) TOTAL NUMBER OF UNITS PROPOSED	6
	I.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE	N/A
	J.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGS AND/OR FDP CRITERIA	
	K.) NUMBER OF PARKING SPACES PROVIDED ONSITE (INCLUDES HANDICAPPED SPACES)	18 (2 PER GARAGE AND 1 PER DRIVEW
Ž	L.) OPEN SPACE ON-SITE	0.48 AC. (RECORDED UNDER PLAT No.
	M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED AREA OF RECREATIONAL OPEN SPACE PROVIDED	N/A N/A
	N.) BUILDING COVERAGE OF SITE PERCENTAGE OF GROSS AREA	10,080 SF 14.2%
	O.) APPLICABLE DPZ FILE REFERENCES:	ECP-16-009, S-16-002, WP-16-072, F-16-093

	ADDRESS CHART				
	LOT	STF	STREET ADDRESS		
٠.	1	8218	LINCOLN DRIVE		
1.5	2	8216	LINCOLN DRIVE		
	3	8007	FIELDHOUSE WAY		
	4	8011	FIELDHOUSE WAY		
	5	8015	FIELDHOUSE WAY		
	6	8014	FIELDHOUSE WAY		

		SHEET INDEX
į	NO.	
	1	COVER SHEET
	2	SITE DEVELOPMENT PLAN
	3	STORMWATER MANAGEMENT DRAINAGE AREA MAP, NOTES & DETAILS
	4	GRADING, SEDIMENT & EROSION CONTROL PLAN
	5	SEDIMENT & EROSION CONTROL NOTES AND DETAILS

THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SHALL BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU IN AN AMOUNT THAT IS TO BE CALCULATED BY THE DEPARTMENT OF INSPECTIONS LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID FOR LOTS/RESIDENTIAL UNITS 2 THROUGH 6 WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE.

THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC

START OF WORK.

WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION

AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE

THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

DATE **BENCHMARK**

GENERIC BOX A

BELAIR 2016 & ROCKBURN ALL OPTIONS FIT

GENERIC BOX

(MAX 1,680 SF)

SCALE 1"=20'

ENGINEERS ALAND 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

prepared or approved by me, and that I am a duly licensed rofessional engineer under the laws of the State of Maryland

HARMONY BUILDERS INC. 4228 COLUMBIA RD ELLICOTT CITY, MD 21042 410-461-0833	LOTS 1 thr (A RESUBDIVISION OF I	
R:	TAX MAP ELECTION DISTRIC	
HARMONY BUILDERS INC. 4228 COLUMBIA RD ELLICOTT CITY, MD 21042 410-461-0833		
	DATE: DECEMBER,	
JMC/DBT DRAFT: NAF	SCALE: AS SHOWN	

THE CEDARS EXTENDED ru 6 AND OPEN SPACE LOT 7 LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16) 2: 43 - GRID: 8 - PARCEL: 451 ZONED: R-SC CT NO. 6 - HOWARD COUNTY, MARYLAND **COVER SHEET**

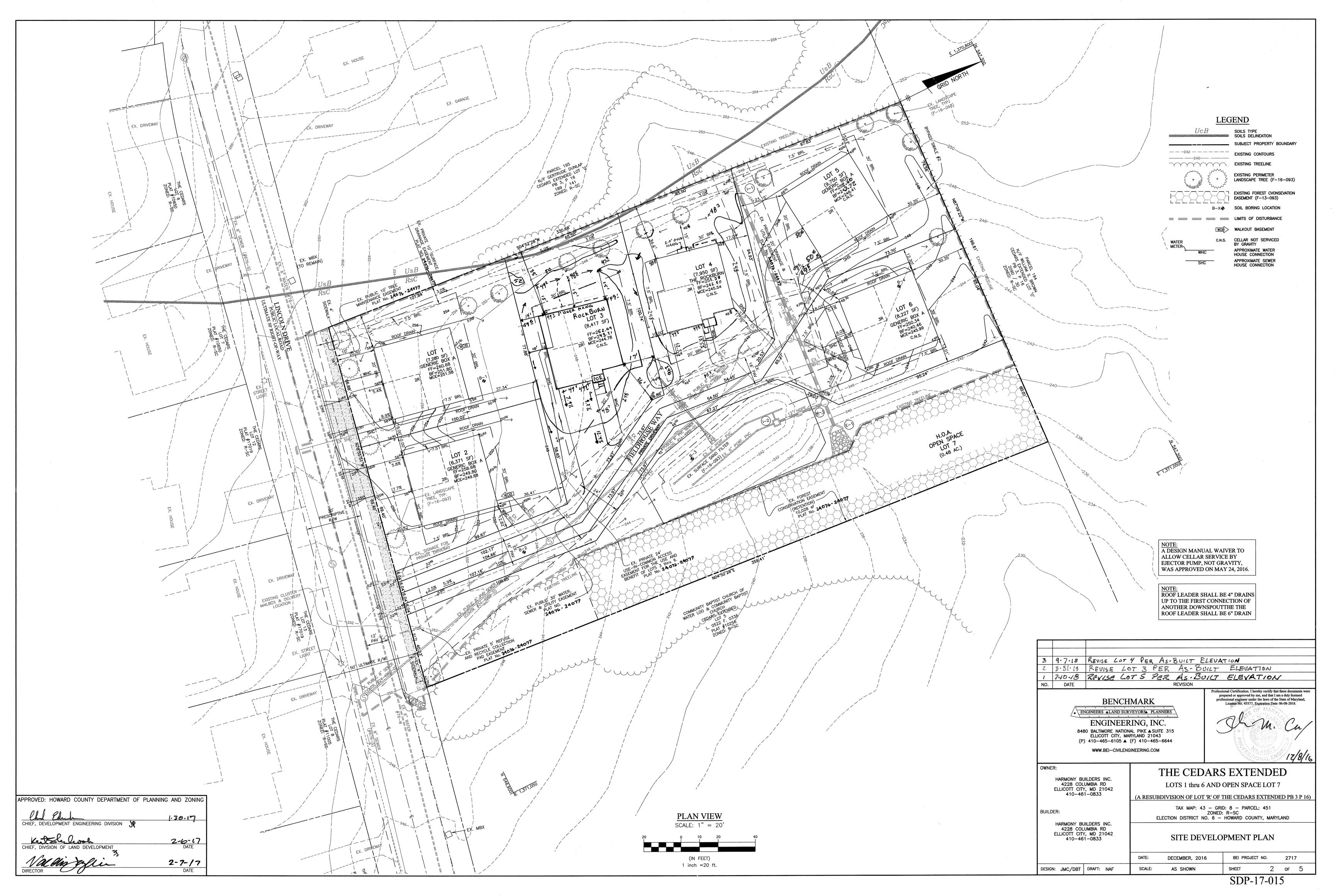
PERMIT INFORMATION CHART SUBDIVISION NAME: SECTION/AREA: LOT/PARCEL # THE CEDARS EXTENDED LOTS 1 thru 7 ZONING TAX MAP | ELECTION GRID DISTRICT TRACT 24076-24077 R-SC 43 6069.01 DESIGN:

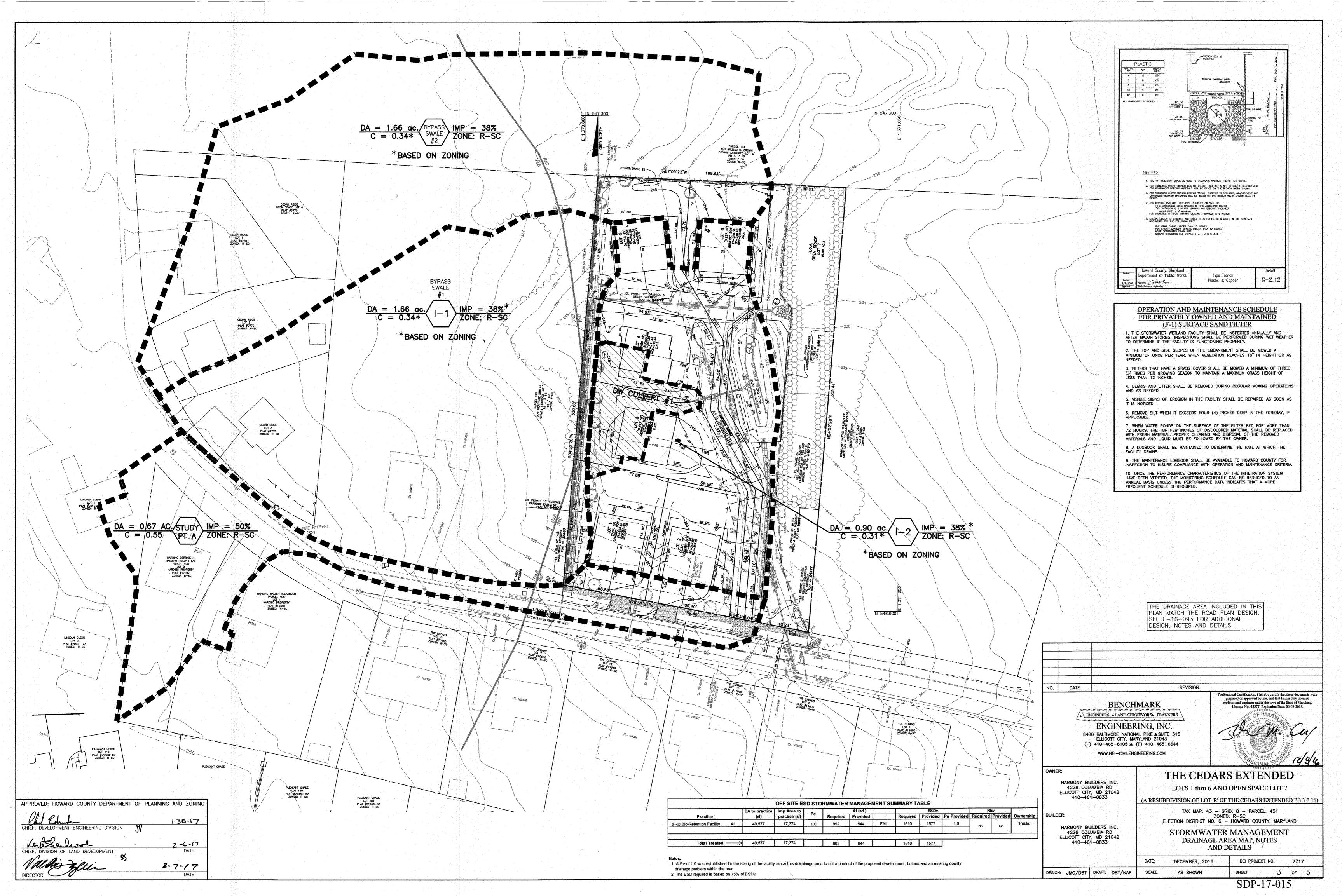
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION 19 1.30.17 2-6-17 2-7-17

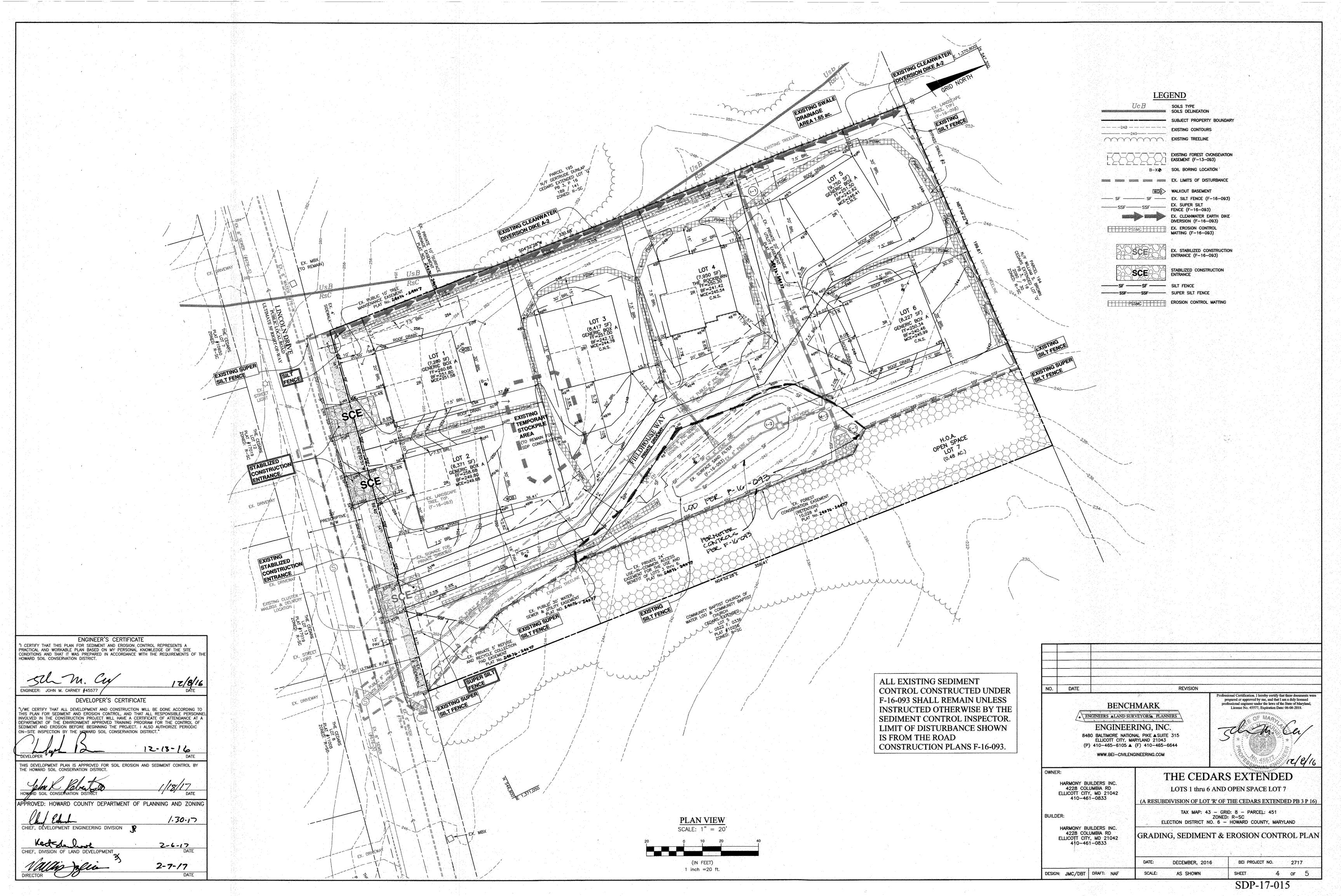
SDP-17-015

BEI PROJECT NO. 2717

1 of 5







STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION Using vegetation as cover to protect exposed soil from erosion <u>Purpose</u> To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization. Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is

stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas. Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting

Adequate vegetative stabilization requires 95 percent groundcover If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer,

seedbed preparation, and seeding. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally

Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Establishment of vegetative cover on cut and fill slopes To provide timely vegetative cover on cut and fill slopes as work progresses

Conditions Where Practice Applies Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles. Incremental Stabilization - Cut Slopes

1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses. 2. Construction sequence example (Refer to Figure B.1):

a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation. b. Perform Phase 1 excavation, prepare seedbed, and stabilize.

c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary. d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

B. Incremental stabilization - fill slopes Construct and stabilize fill slopes in increments not to exceed 15 feet in height, prepare seedbed and apply seed and mulch on all slopes as the work progresses

Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner

Construction sequence example (refer to figure b.2): a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. construct silt fence on low side of fill unless other methods shown on the plans address this area.

b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner. c. Place phase 1 fill, prepare seedbed, and stabilize.

 d. Place phase 2 fill, prepare seedbed, and stabilize. e. Place final phase fill, prepare seedbed, and stabilize overseed previously seeded areas as necessary. Note: once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch, any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization. figure b.

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS 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

A. Soil Preparation 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.

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:

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 love-grass will be planted, then a sandy Soil contains 1.5 percent minimum organic matter by weigh

 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 scanfied 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.

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, 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.

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

12/8/16

DATE

2-7-17

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

ENGINEER'S CERTIFICATE

CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF TH

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 PERSONN

EDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL (

CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A

HOWARD SOIL CONSERVATION DISTRICT.

THE HOWARD SOIL CONSERVATION DISTRICT.

WARD SOIL CONSERVATION DISTRICT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE

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

Areas having slopes steeper than 2:1 require special consideration and design. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria: 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 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 11/2 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. 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

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. 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 cetrimental to proper grading and seedbed preparation. Soil Amendments (Fertilizer and Lime Specifications)

Soil tests must be performed to determine the exact ratios and application rates for both time 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. 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 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. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8

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

The application of seed and mulch to establish vegetative cover.

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.

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

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

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.

d. 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

Application

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

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.

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

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

When hydroseeding do not incorporate seed into the soil.

STABILIZED CONSTRUCTION

PROFILE

PLAN VIEW

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

MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET

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

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

MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAK OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND

SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS

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 MOINTARIE REPORTED PROVIDED WATER

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.

NOT LOCATED AT A HIGH SPOT.

U.S. DEPARTMENT OF AGRICULTURE INTURAL RESOURCES CONSERVATION SERVICE

DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE

FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

50 FT MIN. LENGTH *

RYCH

ENTRANCE

processed into a uniform fibrous physical state 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 moistur absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting

iv.WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic . WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diamet 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. 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 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.

- EXISTING PAVEMEN

1111

PIPE (SEE NOTE 6)

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-C

PREPARED FLOW-CHANNEL WITH SEED IN PLACE

CONSTRUCTION SPECIFICATIONS:

PERMANENT SOIL

E MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR

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 MU BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN, IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF, 2X2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 % INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUTHON HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE ROUTHON

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 LINE. WORK FROM CENTER OF CHANNEL DUTWARD 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.

IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLEI 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 B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

MARYLAND DEPARTMENT OF ENVIRONMENT

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND

2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.

CHANNEL APPLICATION

STABILIZATION MATTING | PSSMC - * 15/ft

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

STANDARDS AND SPECIFICATION FOR PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation

usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

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.

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 Guild, Section 342

c. For sites having disturbed areas 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. Turforass 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 PermanentSeeding Summary. The summary is to be placed on

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 30 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 squarefeet. 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 1 1/2 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 (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

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

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

b. Sod must be machine cut at a uniform soil thickness of % 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

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

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. 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. . 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

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. 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 specifie

8-4-4
STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABLIZATION To stabilize disturbed soils with vegetation for up to 6 months To use fast growing vegetation that provides cover on disturbed soils

Conditions Where Practice Applies 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 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.

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

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. 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.

(* INCLUDE SHEAR STRESS)

DETAIL E-1

CENTER TO CENTER

WOVEN SLIT FILM ----GEOTEXTILE

EMBED GEOTEXTILE

AND COMPACT THE SOIL ON BOTH SIDES OF GEOTEXTILE.

STEP 1

STEP 3

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SILT

FENCE

ELEVATION

CROSS SECTION

JOINING TWO ADJACENT SILT

FENCE SECTIONS (TOP VIEW)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

STEP 2

TWIST POSTS TOGETHER

STAPLE-

STAPLE ----

CONFIGURATION (

STAPLE-

STAPLE

STAPLE

1 OF 2

B-4-8 STANDARDS AND SPECIFICATIONS

STOCKPILE AREA

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.

Criteria 1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment 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. 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.

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.

6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be

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 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 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.

STANDARDS AND SPECIFICATIONS DUST CONTROL Controlling the suspension of dust particles from construction activities

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards. Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment Specifications Mulches: See Section 8-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.

<u>Vegetative Cover:</u> See Section B-4-4 Temporary Stabilization.

<u>Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type</u> plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the

point that runoff occurs.

STANDARD SYMBOL

----SF----

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

16 IN MIN. HEIGHT OF WOVEN SLIT FILM GEOTEXTILE

Barriers: Solid board fences, silt fences, snow fences, burtap fences, straw bales, and similar material can be used to control air currents and soil blowing. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

> DETAIL C-1 EARTH DIKE PLACE DESIGNATION (e.g. A-1)
> ON FLOW CHANNEL SIDE OF DIK 2:1 SLOPE OR FLATTER 2:1 SLOPE OR FLATTER-CROSS SECTION DIKE TYPE CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE a - DIKE HEIGHT 18 IN MIN. 30 IN MIN.

b - DIKE WIDTH 24 IN MIN. 36 IN MIN. c - FLOW WIDTH 4 FT MIN. 6 FT MIN. d - FLOW DEPTH 12 IN MIN. 24 IN MIN. PLAN VIEW

FLOW CHANNEL STABILIZATION

SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.) SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD. A-3/B-3

4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.

STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE

PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.

UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE ATURAL RESOURCES CONSERVATION SERVICE DETAIL E-3 SUPER SILT FENCE SHATIKITIK T -36 IN MIN GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE **ELEVATION** WOVEN SLIT FILM GEOTEXTILE-CROSS SECTION

CONSTRUCTION SPECIFICATIONS

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

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

EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must e aiven 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 d. Prior to the removal or modification of sediment control practices.

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 <u>2011 MARYLAND STANDARDS AND</u> 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 hose 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 feet 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: 1.62_ Acres Total Area of Site: 0.19

1.41 Acres PER F-16-093 Area Disturbed: *CUT/FILL NUMBERS Area to be roofed or paved ARE FOR SEDIMENT 1.22 CONTROL PURPOSES Area to be vegetatively stabilized: _ Acres ONLY. CONTRACTOR 1.619* Cu Yds TO VERIFY. 4,578* Cu Yds

SITE WITH AN ACTIVE GRADING PERMIT Off-site 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 an=mount of last recorded • 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 work day, 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 be 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) a 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 GID; no more than 30 acres cumulatively may be disturbed at a given time. #5cD

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 curted uphill by 2' in elevation

15. Stream channels must not be disturbed during the following restricted time periods • Use 1 and IP March 1 - June 15

• Use III and IIIP October 1 - April 30 • Use IV March 1 - May 3

16. A copy of this plan, the <u>2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL</u> <u>EROSION AND SEDIMENT CONTROL</u> and associated permits shall be on—site and available when

SEQUENCE OF CONSTRUCTION NOTIFY SEDIMENT CONTROL DIVISION 48 HOUR

SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS.

BENCHMARK

► ENGINEERS ▲LAND SURVEYORS PLANNERS

ENGINEERING, INC

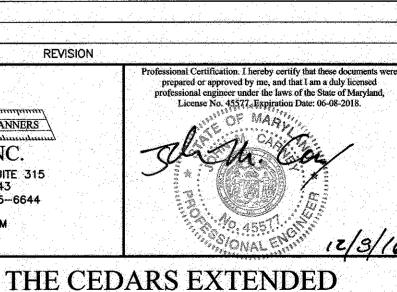
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ELLICOTT CITY, MARYLAND 21043

(P) 410-465-6105 ▲ (F) 410-465-6644

WWW.BEI-CIVILENGINEERING.COM

PRIOR TO START OF CONSTRUCTION DAY 1 1.) OBTAIN GRADING PERMIT 2.) INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER SEDIMENT CONTROLS (SILT FENCE AND SUPER SILT FENCE). DAY 2-4 3.) INSPECT AND REPAIR PERIMETER CONTROLS FROM F-16-093 & DAY 5-7 EXCAVATE FOR FOUNDATION. 4.) CONSTRUCT HOUSE. 5.) PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS. DAY 61-63 6.) INSTALL LANDSCAPING, STABILIZE ALL DISTURBED AREAS. DAY 64-71 7.) WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE

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



DAY 71-73

HARMONY BUILDERS INC. 4228 COLUMBIA RD ELLICOTT CITY, MD 21042 410-461-0833

HARMONY BUILDERS INC.

4228 COLUMBIA RD

ELLICOTT CITY, MD 21042

410-461-0833

DESIGN: JMC/DBT | DRAFT: DBT/NAF

NO. DATE

OWNER:

LOTS 1 thru 6 AND OPEN SPACE LOT 7 A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16 TAX MAP: 43 - GRID: 8 - PARCEL: 451

ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND SEDIMENT & EROSION CONTROL NOTES AND DETAILS

SDP-17-015

or 5

BEI PROJECT NO. DECEMBER, 2016

ZONED: R-SC