ENVIRONMENTAL CONCEPT PLAN 5514 WATERLOO ROAD

TAX MAP 31, GRID 19, PARCEL 487 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND ZONING: R-20

SWM NARRATIVE

THIS REPORT WILL DEMONSTRATE HOW THE CRITERIA SET FORTH IN THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II (EFFECTIVE OCTOBER 2000, REVISED MAY 2009) WILL BE SATISFIED ON THIS PROJECT. THE GOAL OF CREATING HYDROLOGY SIMILAR TO THAT OF "WOODS IN GOOD CONDITION" WILL BE ACCOMPLISHED THROUGH THE USE OF THE PRACTICES CONTAINED WITHIN CHAPTER 5 OF SAID MANUAL.

THIS PROPERTY IS ZONED R-20 AND IS LOCATED ON TAX MAP 31, PARCEL NO 487 OF THE HOWARD COUNTY, MARYLAND TAX MAP DATABASE SYSTEM AND IS IN THE LITTLE PATUXENT RIVER WATERSHED (02131105) THE PROPERTY CONSISTS OF 0.34 ACRES, OF WHICH NO ACRES ARE ENCUMBERED WITH A PRESERVATION EASEMENT DEDICATED TO HOWARD COUNTY MARYLAND AGRICULTURAL LAND PRESERVATION PROGRAM. THE SITE IS RELATIVELY RECTANGULAR IN SHAPE. THE SUBDIVISION WILL UTILIZE PROPOSED PUBLIC WATER AND SEWER EXTENSIONS. THE WATER RUNOFF ON THE SITE DRAINS TO THE SOUTH. THE WEB SOILS SURVEY SHOWS SOILS ON THE OVERALL SITE CONSIST OF USD

I. NATURAL RESOURCE PROTECTION:

ENVIRONMENTALLY SENSITIVE AREAS DO NOT EXIST ON-SITE. AS SUCH, WAIVERS ARE NOT

II. MAINTENANCE OF NATURAL FLOW PATTERNS:

IT IS THE INTENT OF THE PROPOSED DESIGN TO DISCHARGE RUNOFF SIMILAR TO THE CHARACTERISTICS AND DIRECTION OF THIS SITE PRIOR TO ANY OF THE PROPOSED IMPROVEMENTS. THE RUNOFF FROM LARGER STORMS WILL DISCHARGE AT THE SOUTHERN SIDE OF THE SITE AT THE SAME LOCATION WHERE EXISTING DISCHARGE CURRENTLY

III. REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN. ALTERNATIVE SURFACES AND NONSTRUCTURAL PRACTICES

IMPERVIOUS AREA ON THIS SITE HAS BEEN MINIMIZED BY UTILIZING PERMEABLE PAVEMENT OF THE DRIVEWAY AND LOCATION OF THE PROPOSED HOUSE CLOSE TO THE FRONT SETBACK... IV. INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO

STORMWATER STRATEGY: IF REQUIRED, SEDIMENT TRAPPING WILL BE PLACED IN THE AREA OF DRY

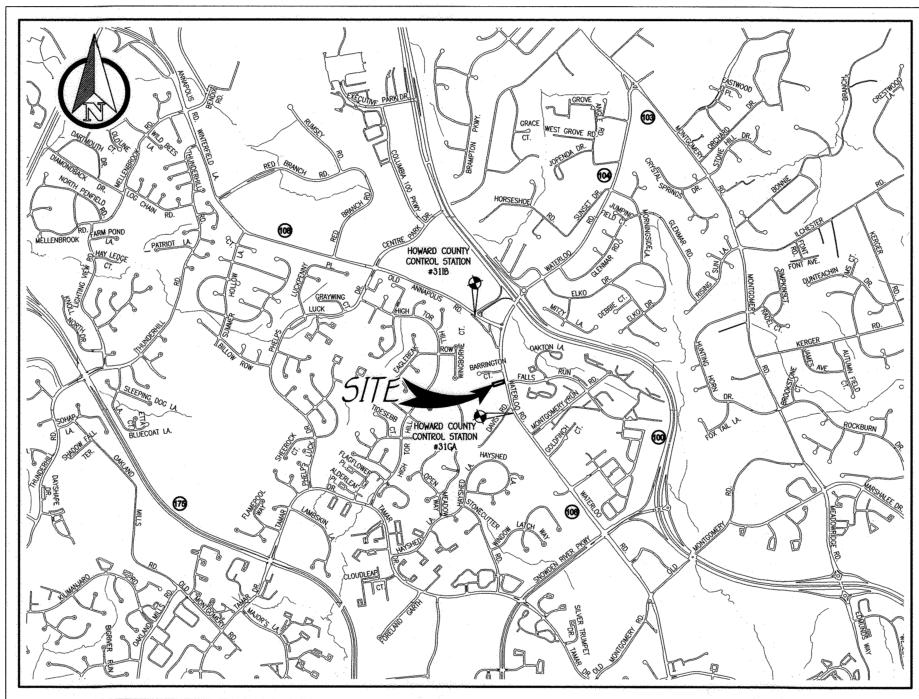
V. IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM EXTENT PRACTICABLE (MEP)

THE FULL REQUIRED ESD VOLUME IS BEING PROVIDED FOR PROPOSED

IMPROVEMENTS TO THE MAXIMUM EXTENT PRACTICABLE. VI. REQUEST FOR DESIGN MANUAL WAIVER:

A WAIVER REQUEST REGARDING THE FRONTAGE IMPROVEMENT WILL BE SUBMITTED

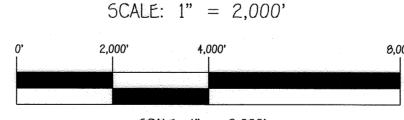
LEGEND						
SYMBOL	DESCRIPTION					
508	EXISTING CONTOUR 2' INTERVAL					
<u> </u>	EXISTING CONTOUR 10' INTERVAL					
S	EXISTING SEWER LINE					
W	EXISTING WATER LINE					
0/1E	EXISTING OVERHEAD ELECTRIC					
0	EXISTING IRON FENCE					
~~~~~	EXISTING TREELINE					
	EXISTING MACADAM PAVING					
	APPROX. AREA OF DEMOLITION					



N 564.925.766 E 1.367.067.712 N 566.937.934 E 1.366.270.807 ELEVATION: 511.69

HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 31GA GEODETIC SURVEY CONTROL NO. 311B ELEVATION: 526.108

REFER TO HOWARD CO. ADC MAP 27 F-8



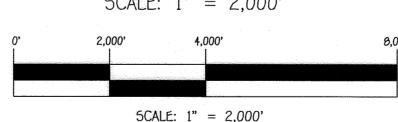
GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-20 (PER 10/06/13 COMPREHENSIVE ZONING PLAN.) BOUNDARY IS BASED ON A FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER ON
- 3. CONTOURS ARE BASED ON A TOPOGRAPHIC FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS
- AND CARTER, ON OR ABOUT JANUARY, 2019. 4. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL
  - HOWARD COUNTY MONUMENT NO. 31GA N 564,955.766
  - E 1,367,067.712 ELEV. 511.69'
- E 1,366,270.807 ELEV. 526.108' 5. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. THIS PLAN PROPOSES THE USE OF TWO (2) DRYWELL FACILITIES. ONE (1) DISCONNECTION OF ROOFTOP IMPERVIOUS CREDIT, AND ONE (1) AREA OF
- 6. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED FOR THIS PROJECT.
- 7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S 8. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL
- BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- 9. THERE ARE NO SPECIMEN TREES, WETLANDS, STREAMS OR THEIR BUFFERS LOCATED WITHIN THE 10. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
- 11. FOREST CONSERVATION REQUIREMENTS FOR THIS PROPOSED SUBDIVISION WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. IT IS ANTICIPATED THAT NO FCA OBLIGATION WILL BE REQUIRED BECAUSE SITE IS UNDER 40,000 SQ.FT. IN ADDITION THERE ARE NO SPECIMEN TREES LOCATED ON-SITE.

12. SOIL BORING INFORMATION WAS ACQUIRED AND IS SHOWN ON THE PLAN.

- 13. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE PRELIMINARY EQUIVALENT SKETCH PLAN AND FINAL PLAN STAGE. THEREFORE, THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES. 14. APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED
- SUBDIVISION OR SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN, OR RED-LINE REVISION PROCESSES. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THE PROJECT PROGRESSES THROUGH THE PLAN
- 15. THE LOT IS AN IN-FILL DEVELOPMENT, AS ADJACENT LOTS ARE ALL DEVELOPED. 16. THE FOREST CONSERVATION PLAN AND ASSOCIATED FOREST STAND DELINEATION WILL BE REVIEWED FOR COMPLIANCE WITH THE FOREST CONSERVATION ACT AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR GRADING PERMIT STAGES. UNDER COUNTY LAW, ONLY A MD LICENSED FORESTER, MD LICENSED LANDSCAPE ARCHITECT OR AN ISA CERTIFIED ARBORIST WHO IS ALSO A STATE QUALIFIED PROFESSIONAL MAY PREPARE FOREST STAND DELINEATIONS, FOREST CONSERVATION PLANS OR OTHER REQUIRED COUNTY FOREST CONSERVATION PROGRAM DOCUMENTS.
- WP-07-087 WAS DENIED. 18. A WAIVER REQUEST REGARDING THE FRONTAGE IMPROVEMENT WILL BE SUBMITTED

## VICINITY MAP



SURINDER SINGH 10610 WARBURTON CT ELLICOTT CITY, MD 410-350-6333

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 0.34 AC.±. B. LIMIT OF DISTURBED AREA = 0.24 Ac.±

PREVIOUS HOWARD COUNTY FILES: N/A

TOTAL AREA OF EXISTING FOREST

**EXCLUDES EXISTING IMPERVIOUS** 

O. TOTAL AREA OF ERODIBLE SOILS

PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)

TOTAL AREA OF STREAM (INCLUDING BUFFER)

TOTAL AREA OF FOREST TO BE RETAINED

TOTAL GREEN OPEN AREA (PERVIOUS)

PROPOSED USE: RESIDENTIAL SINGLE FAMILY DETACHED

TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0 AC

TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0 AC±

TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC. ±

TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.34 AC+

= 0.09 AC.

 $= 0.00 \text{ AC} \pm$ 

 $= 0 AC \pm$ 

= 0.06 AC± (WITHIN LOD,

(SWM BASED ON LOD)

N. TOTAL IMPERVIOUS AREA

OWNER/DEVELOPER

5514 WATERLOO ROAD DEED REF: LIBER 20053/FOLIO 465 TAX MAP NO.: 31 GRID NO.: 19 PARCEL NO.:487

ZONED R-20 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: JANUARY, 2022 SHEET 1 OF 3

TITLE SHEET

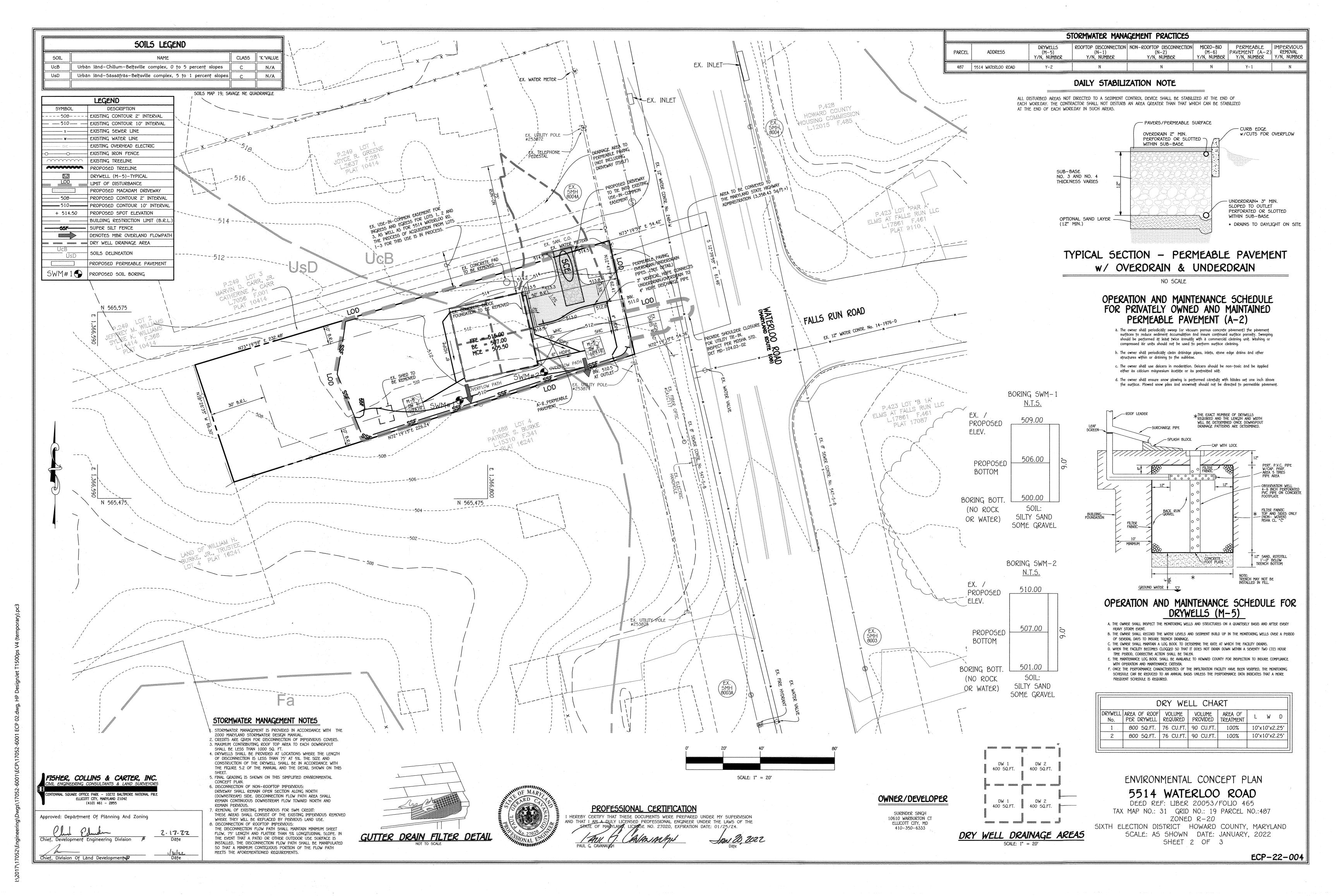
ECP-22-004

FISHER, COLLINS & CARTER, INC. ELLICOTT CITY, MARYLAND 21042

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development OD

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE ARPLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/24.



#### 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. Afte 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:

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

scarified or otherwise loosened to a depth of 3 to 5 inches.

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 roof 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

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.

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

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 1 1/2 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 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 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 90 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

5. Where the subsoil is either highly acidic or composed of heavy clays, spread around limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

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.

a. All seed must meet the requirement 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 legiume 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 cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with weighted roller to provide good seed to soil contact. b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

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

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction . Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per

acre total of soluble nitrogen; P 0 (phosphorus), 200 pounds per acre; K 0 (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.

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 greas where one species of grass is desired. b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical

i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate isual 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 bsorption 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 by phyto-toxic.

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

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 to 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

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard . A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour. ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of

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

#### usually available in rolls 4-15 feet wide and 300 to 3,000 feet long TEMPORARY SEEDING NOTES (B-4-4)

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

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.

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.

		Temporary Seedin	ng Summary		
Hardiness Zo Seed Mixture	one (from Figure B. (from Table B.1):	Fertilizer Rate (10-20-20)	Lime Rațe		
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
BARLEY	96	3/1 - 5/15.	1"	436 lb/ac (10 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
OAT5	72	8/1 - 10/15	1"		
RYE	112		1"		

#### PERMANENT SEEDING NOTES (8-4-5) A. Seed Mixtures

General Use

a. Select one or more of the species or mixtures listed in Table 8.3 for the appropriate Plant Hardiness Zone (from Figure 8.3) and based on the site condition or purpose found on Table 8.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan. b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office 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 1/2 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 rapid establishment is pecessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Select turforass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turforass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best quarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 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

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 moving of grasses will pose no difficulty. e. If soil moisture is deficient, supply new seedings with adequate water for plant growth ( 1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Hard Seed	iness Zone Mixture (	e (from Figure B. (from Table B.3):	3): <u>6b</u>		Ferțiliz	er Rațe (10-	20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ 0	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 1-Oct. 15	1/4-1/2 in.	45 lbs. per acre	90 lb/ac (2 lb/	90 lb/ac (2 lb/	(90 lb/
	,				(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)

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

a. Class of turfgrass sod 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 to 34 inch, plus or minus 14 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

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. Sod must not be harvested or transplanted when moisture content (excessively dry of wet) may adversely affect its survival. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be

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 d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping, and irrigating for any piece of sod within eight hours.

a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.

After the first week, sod watering is required as necessary to maintain adequate moisture content c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

### B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Conditions Where Practice Applies

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

approved by an agronomist or soil scientist prior to its installation.

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

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

4. Access the stockpile area from the uporade 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 8-4-1 Incremental Stabilization and Standard 8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated

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

## HOWARD SOIL CONSERVATION DISTRICT (HSCD)

STANDARD SEDIMENT CONTROL NOTES A pre-construction meeting must occur with the Howard County Department of Public Works, C on Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly n the field. A minimum of 48 hour notice to CID must be given at the following stages:

Prior to the start of earth disturbance. . Upon completion of the installation of perimeter erosion and sediment controls, but before

proceeding with any other earth disturbance or grading,
c. Prior to the start of another phase of construction or opening of another grading unit,

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

SEDIMENT CONTROL, and revisions thereto. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

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) 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 tlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID. Site Analysis: Total Area of Site: ___ 
 Area Disturbed:
 0.24
 Acres

 Area to be roofed or paved:
 0.06
 Acres

 Area to be vegetatively stabilized:
 0.29
 Acres
 Offsite waste/borrow area location: N/A Super Silt Fence:

material must be covered with impermeable sheeting

B-3 Land Grading

Quantities provided are for the reviewing agency only. Contractor is responsible for performing construction take-offs. 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 ne contractor, made available upon request, is part of every inspection and should includ

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

Maintenance and/or corrective action performed Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES MOE) 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 Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the H5CD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of H5CD-approved field changes. Disturbance shall not occur outside the LO.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 HSCD, no

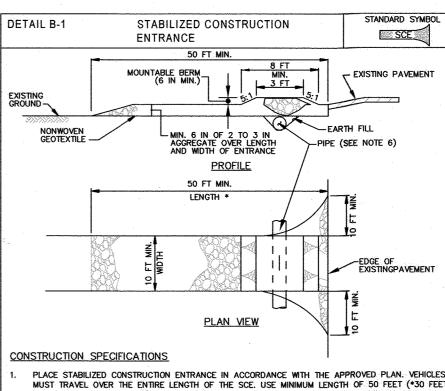
more than 30 acres cumulatively may be disturbed at a given time. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

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 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

## SWM SUMMARY:

1.7	ESDv PROV'D (cf)	ESD _V REQ'D (cf)	NOTES	
Drywell 1	90 cf	76 cf	Refer to Drywell comp	
Drywell 2	90 cf	76 cf	Refer to Drywell comps	
Permeable pavement	131 cf	n/a	Refer to Permeable pavement comps	
TOTAL SITE ESDV Provided	311 cf		Cpv, Rev provided (Re _v = 180 cf drywells)	
TOTAL SITE ESDV Required		284 cf	Rev Req'd – 8 cf	
TOTAL QUANTITY			ESDv has been met and quantity is not required	



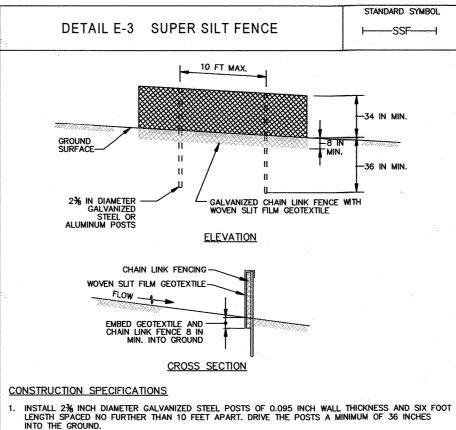
PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, VEHICLES FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

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

PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS 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 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
TURAL RESOURCES CONSERVATION SERVICE



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. 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. . 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.

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 CHAIN LINK FENCING AND GEOTEXTILE.

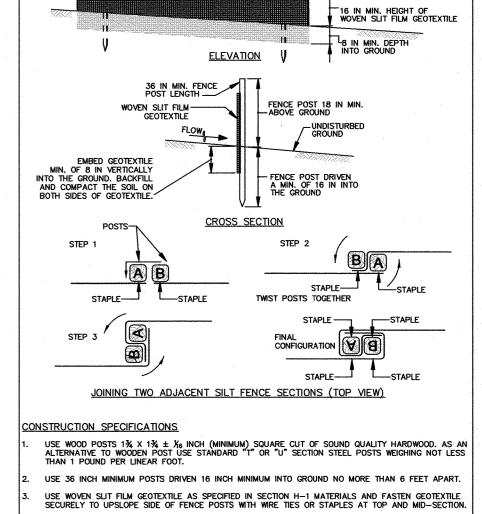
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

SEQUENCE OF CONSTRUCTION

OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. NOTIFY "MISS UTILITY" AT LEAST 40 HOURS BEFORE BEGINNING ANY WORK AT 1-000-257-7777. (7 DAYS) NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/ INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK. 3. CLEAR AND GRUB AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS. 4. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE, AND SUPER SILT FENCE. 5. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BEGIN ROUGH GRADE DRIVEWAY, ROUGH GRADE AROUND HOUSE SITE AND INSTALL TEMPORARY SEEDING, IF REQUIRED.

BEGIN CONSTRUCTION BUILDING DRIVEWAY UTILITIES AND STORM WATER FRATURES. NOTE THAT ALL CONTRIBUTING DRAINAGE AREAS SHALL BE STABILIZED PRIOR TO INSTALLATION OF DRYWELLS AND PERMEABLE PAVEMENT 6. FINE GRADE SITE AND INSTALL PERMANENT SEEDING. 8. ALL FINAL GRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND

1) THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROLS AFTER EACH RAINFALL AND ON A DAILY BASIS.



SILT FENCE

DETAIL E-1

STANDARD SYMBOL

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE
URAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION 2011

WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES

PRELIMINARY EROSION/SEDIMENT CONTROL NOTES AND DETAILS

(8 MONTHS)

# 5514 WATERLOO ROAD

DEED REF: LIBER 20053/FOLIO 465 TAX MAP NO.: 31 GRID NO.: 19 PARCEL NO.:487

ZONED R-20 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: JANUARY, 2022

SHEET 3 OF 3

ECP-22-004

ntennial square office park — 10272 baltimore national pike ELLICOTT CITY, MARYLAND 21042 Approved: Department Of Planning And Zoning Chief, Development Engineering Division

Chief, Division Of Land Development

FISHER, COLLINS & CARTER, INC.

PROFESSIONAL CERTIFICATION

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE AND, UCENSE NO. 27020, EXPIRATION DATE: 01/25/24.

OWNER/DEVELOPER

SURINDER SINGH 10610 WARBURTON C ELLICOTT CITY, MD 410-350-6333