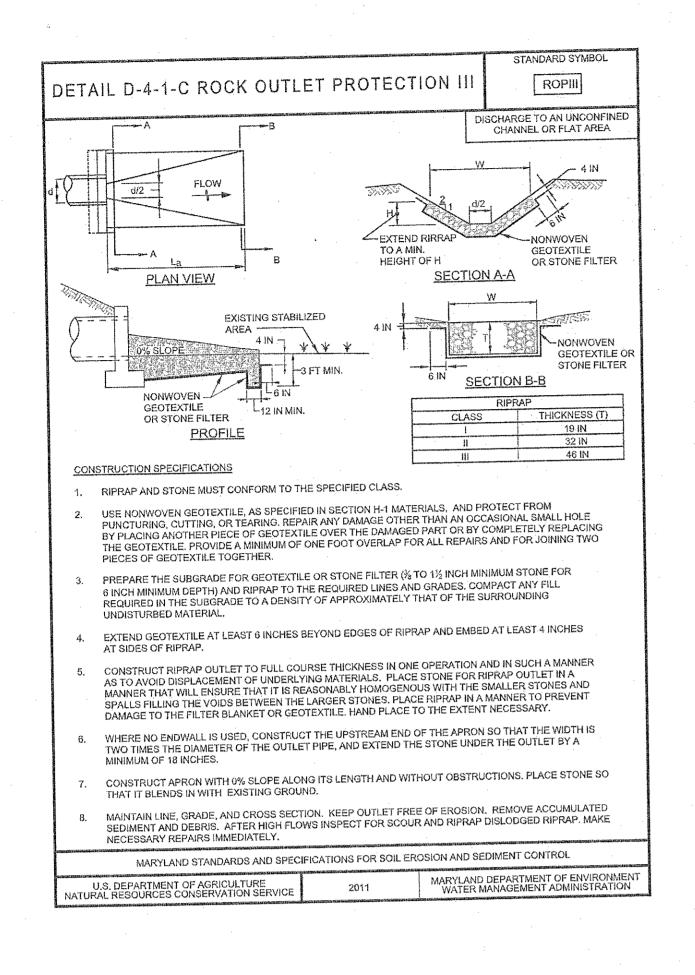
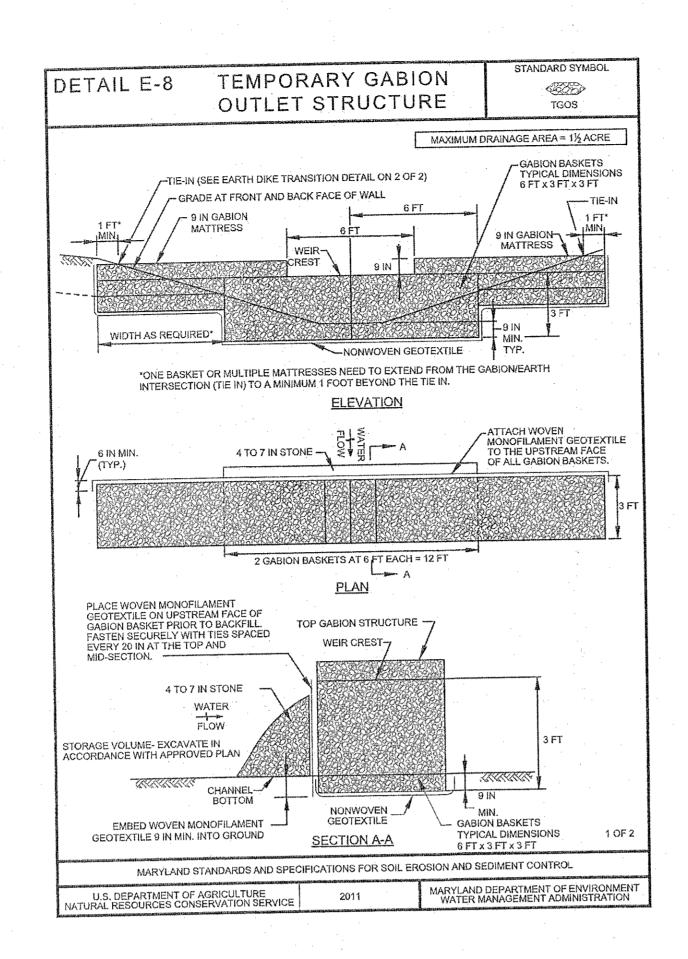


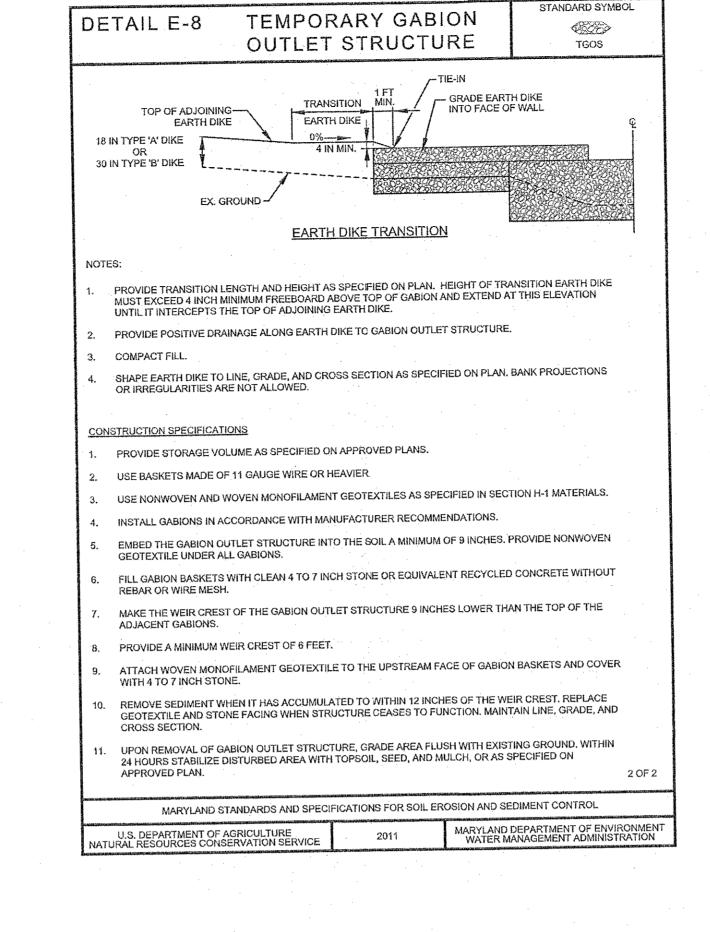
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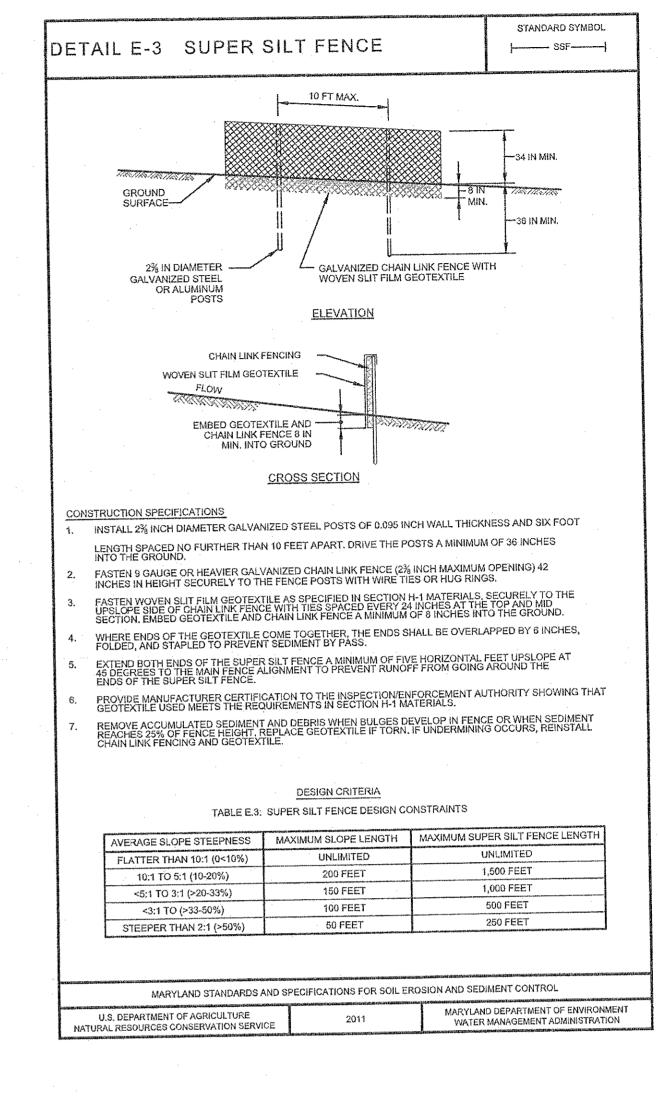
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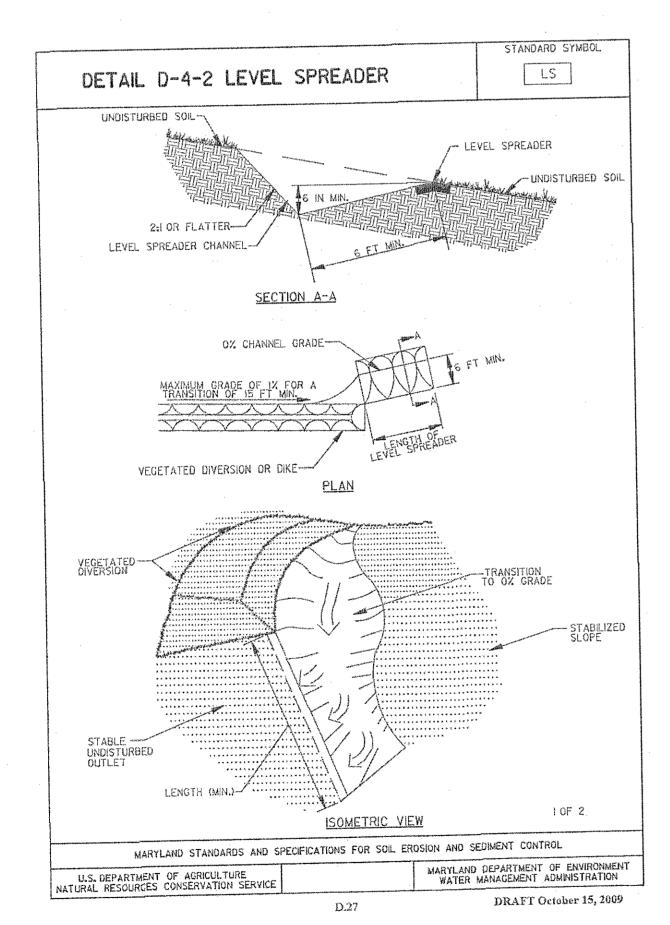
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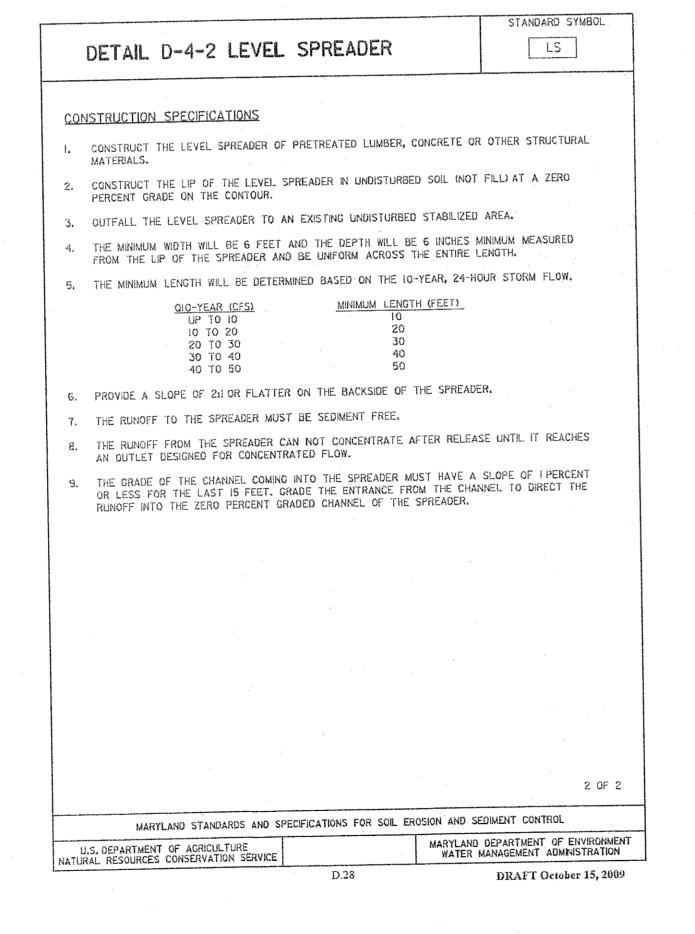


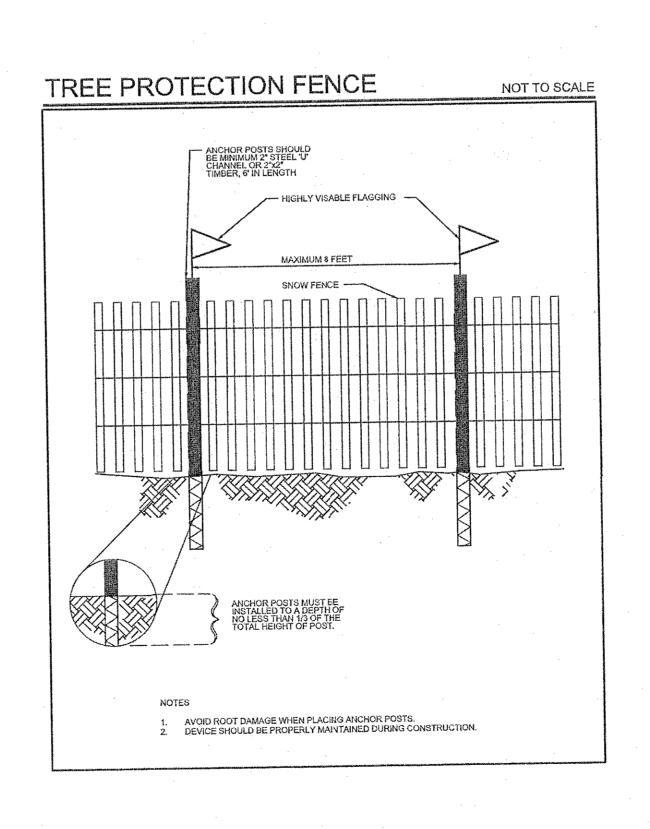


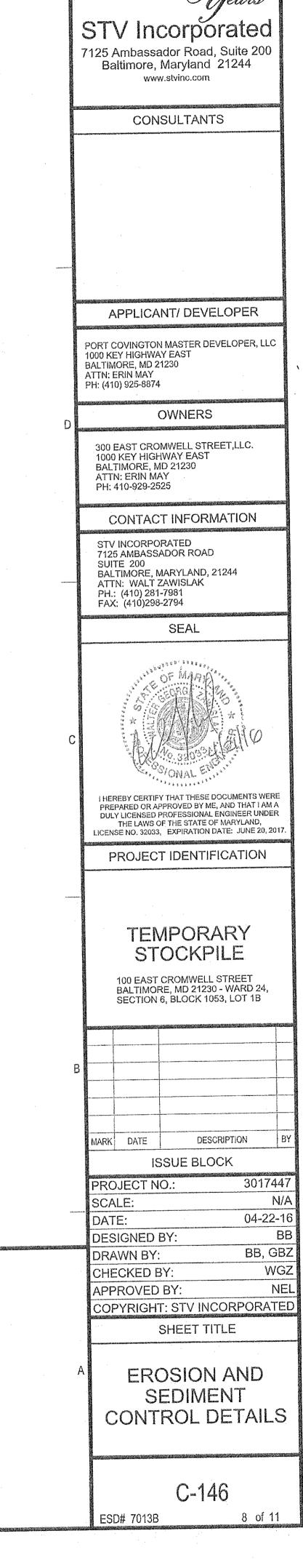












# **B-4-5 STANDARDS AND SPECIFICATIONS** PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

#### A, SEEDING MIXTURES

- GENERAL USE
- 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
- 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
- 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.
- TURFGRASS MIXTURES
  - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
  - 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
  - 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.
  - KENTUCKY BLUEGRASS / PERENNIAL RYE; FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS / CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET, CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
  - TALL FESCUE / KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND JOR 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
  - 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 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.

- 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)

- 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" 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 ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE

## PERMANENT SEEDING SUMMARY

HA SE	ARDINESS ZONE (FROM FIGUI ED MIXTURE (FROM TABLE B	RE B.3): 7a B.3): 8, 9, 11				FERTILIZER R (10-20-20)	ATE	LIME
NO.	SPECIES	APPLICATION RATE(LB./AC.)	SEEDING DATES	SEEDING DEPTHS	N	P,O,	K,O	RATE
8	TALL FESCUE	100	2 /15 - 4 /30 8 /15 - 10 /31 11 /1 - 11 /30	¼ - ½ IN	45 POUNDS PER ACRE (1.0 LB/ 1000 SF)	90 LB/AC (2 LB/ 1000 SF)	90 LB/AC (2 LB/ 1000 SF)	2 TONS/AC (90 LB/ 1000 SF)
9	HARD FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	40 40 20	2 /15 - 4 /30 8 /15 - 10 /31 11 /1 - 11 /30	.1⁄4 - 1⁄2 IN				inerial de la companya de la company
11	CREEPING RED FESCUE CHEWING FESCUE KENTUCKY FESCUE	30 30 20	2 /15 - 4 /30 8 /15 - 10 /31 11 /1 - 11 /30	½ - ½ IN	encenak in terpatanian an menekat katakan pangan bahan kan	managari amperan ana n'i gras comprision di anti-richi di		

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER)

- GENERAL SPECIFICATIONS
  - CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- SOD MUST NOT BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 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
- 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 BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- SOD MUST NOT 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
  - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
  - 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.
  - 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.
- SOD MAINTENANCE
  - 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 SPECIFIED.

### EROSION AND SEDIMENT CONTROL NOTES

- THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL AS SET FORTH IN THE MARYLAND SEDIMENT AND EROSION MANUAL AND BALTIMORE CITY CODE ARTICLE 7.
- SUBMIT A WRITTEN NOTIFICATION TO: THE DEPARTMENT OF PUBLIC WORKS, OFFICE OF COMPLIANCE AND LABORATORIES: 3001 DRUID PARK DRIVE, ROOM 228 BALTIMORE, MARYLAND 21215, PHONE NUMBER, 410-396-0732, FAX 410-523-9047, DPW.ESCInspections@BALTIMORECITY.GOV, AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION STATING:
- A REQUEST FOR A PRECONSTRUCTION MEETING, WHEN CONTRACTOR INTENDS TO BEGIN CONSTRUCTION
- WHEN CONTRACTOR INTENDS TO INSTALL STORMWATER
- MANAGEMENT FACILITIES. SOURCE OF BORROW MATERIAL
- LOCATION OF DISPOSAL AREA OF SITE MATERIAL. CONTRACTOR'S TENTATIVE CLOSING DATE.
- INITIAL DISTURBANCE WILL BE LIMITED TO THAT NECESSARY TO GAIN ENTRANCE TO THE SITE AND INSTALL
- NECESSARY SEDIMENT CONTROLS AS PER THE APPROVED PLANS. 4. ALL SEDIMENT CONTROLS AND CRITICAL SLOPES MUST BE STABILIZED WITHIN THREE (3) CALENDAR DAYS. ALL OTHER INACTIVE DISTURBED AREAS ON THE PROJECT SITE MUST BE STABILIZED WITHIN SEVEN (7)
- ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE WHENEVER POSSIBLE AND CONFINED TO AN AREA WHERE IT WILL NOT OBSTRUCT THE NORMAL COURSE OF DRAINAGE.
- PUMPING OF SEDIMENT LADEN WATER WILL NOT BE ALLOWED UNLESS IT IS FILTERED BY WAY OF AN APPROVED SEDIMENT TRAPPING DEVICE.
- CONTINUOUS INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES IS MANDATORY.
- ANY SEDIMENT CONTROL DEVICES DISTURBED DURING UTILITY CONSTRUCTION MUST BE RESTORED
- ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO MINIMIZE TRACKING OF MUD ON TO PUBLIC 10. ANY EARTH, GRAVEL, AND/OR OTHER MATERIAL TRACKED, SPILLED, OR WASHED ON TO ADJACENT ROADS
- MUST BE IMMEDIATELY REMOVED AND DISPOSED OF IN A PROPER MANNER. NO FLUSHING WILL BE PERMITTED. ALL MATERIAL MUST BE REMOVED BY MEANS OF SHOVELING AND SWEEPING. 11. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 5,000 SQ. FT., THE CONTRACTOR SHALL HAVE A
- BALTIMORE CITY EROSION AND SEDIMENT CONTROL INSPECTOR INSPECT AND APPROVE THE WORK COMPLETED AT THE STAGES OF CONSTRUCTION SPECIFIED BELOW:
- A. UPON COMPLETION OF THE INSTALLATION OF THE PERIMETER SEDIMENT CONTROLS; B. DURING ALL GRADING AND BUILDING OPERATIONS:
- C. UPON FINAL STABILIZATION OF THE ENTIRE SITE PRIOR TO REMOVAL OF THE SEDIMENT CONTROLS.
- 12. THE CONTRACTOR SHALL NOT DEVIATE FROM THE APPROVED SEDIMENT AND EROSION CONTROL PLAN WITHOUT FIRST RECEIVING APPROVAL FROM THE OFFICE OF COMPLIANCE AND LABORATORIES. VARIATIONS TO THE ORIGINAL PLAN MUST BE SUBMITTED IN WRITING WITH ALL PROPOSED MODIFICATIONS STILL BEING HIGHLIGHTED. SUBSTANTIAL CHANGES WILL NECESSITATE AMENDMENT OF THE GRADING/BUILDING PERMIT.

"FOR SEDIMENT CONTROL ONLY"

## H-5 STANDARDS AND SPECIFICATIONS

## **DUST CONTROL**

DEFINITION

CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION.

#### <u>PURPOSE</u>

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 B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, SECTION B-4-3 EEDING AND MULCHING, AND SECTION B-4-4 TEMPORARY STABILIZATION. MULCH MUST BE ANCHORED
- VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.
- TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE 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 JUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.
- BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND IMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
- CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN

## **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 FOR LATER USE.

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS.
- 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.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- 4. ACCESS TO STOCKPILE AREA FROM THE UPGRADE SIDE.
- 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.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/ SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE ESTABLISHED 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.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING. HOWEVER, THE LATEST EDITION OF THE "COMPREHENSIVE SOIL MANAGEMENT PLAN" APPROVED BY MDE DOES NOT REQUIRE CONTAMINATED MATERIAL TO BE COVERED WITH IMPERMEABLE

### **MAINTENANCE**

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

7125 Ambassador Road, Suite 200 Baltimore, Maryland 21244

CONSULTANTS

www.stvinc.com

APPLICANT/ DEVELOPER

PORT COVINGTON MASTER DEVELOPER, LLC 1000 KEY HIGHWAY EAST BALTIMORE, MD 21230 ATTN: ERIN MAY PH: (410) 925-8874

OWNERS

300 EAST CROMWELL STREET,LLC. 1000 KEY HIGHWAY EAST BALTIMORE, MD 21230 ATTN: ERIN MAY PH: 410-929-2525

CONTACT INFORMATION

STV INCORPORATED 7125 AMBASSADOR ROAD SUITE 200 BALTIMORE, MARYLAND, 21244 ATTN: WALT ZAWISLAK PH.: (410) 281-7981 FAX: (410)298-2794

SEAL



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, ICENSE NO. 32033, EXPIRATION DATE: JUNE 20, 2017

PROJECT IDENTIFICATION

**TEMPORARY** STOCKPILE

100 EAST CROMWELL STREET BALTIMORE, MD 21230 - WARD 24, SECTION 6, BLOCK 1053, LOT 1B

DATE	DESCRIPTION
veneranijem madamanavlaštareviten	

ISSUE BLOCK

3017447 PROJECT NO.: SCALE: 04-22-16 DATE: DESIGNED BY: BB, GBZ )RAWN BY: WGZ CHECKED BY:

**EROSION AND** SEDIMENT CONTROL

NOTES

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SHEET TITLE

7 of 11

ESD# 7013B

APPROVED BY:

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER

<u>PURPOSE</u>

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

**CONDITIONS WHERE PRACTICE APPLIES** 

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

**CRITERIA** 

#### A. SEEDING

#### 1. SPECIFICATIONS

- ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING
- 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
- 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.
- SOD AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

#### 2. APPLICATION

- 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
- APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH
  - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEED BED MUST BE FIRM AFTER PLANTING.
  - 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).
- IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL SOLUBLE NITROGEN; P.O. (PHOSPHOROUS), 200 POUNDS PER ACRE; K.O (POTASSIUM), 200 POUNDS PER ACRE.
- 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
- iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
- WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

### B. MULCHING

- 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
- 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 STATE SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE 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
  - ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
  - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER. ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
  - IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OF COMPOUNDS AT CONCENTRATION LEVELS
  - 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

### 2. APPLICATION

- APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT A 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.
- WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

#### ANCHORING

- 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
  - 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.
  - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

## **B-4-4 STANDARDS AND SPECIFICATIONS**

## **TEMPORARY STABILIZATION**

**DEFINITION** 

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

<u>PURPOSE</u>

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

CONDITIONS WHERE PRACTICE APPLIES

CRITERIA

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 PLAN.
- 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

## TEMPORARY SEEDING SUMMARY

	HARDINESS ZONE 7a SEED MIXTURE 1, 6,	<u>7</u>	FERTILIZER RATE				
NO.	SPECIES	APPLICATION RATE( LB. /AC.)	SEEDING DATES	SEEDING DEPTHS	(10-20-20)	LIME RATE	
1	ANUAL RYEGRASS		2 /15 - 4 /30 8 /15 - 11 /30	0.5	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LBS/1000 SF)	
6	FOXTAIL MILLET	30	5/1 - 8/14	0.5	-		
7	PEAR MILLET	20	5/1 - 8/14	0.5			-
					·		

## OWNER'S / DEVELOPER'S CERTIFICATION

I/WE DO HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED PLAN AND ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATION OF ATTENDANCE AT AN APPROVED MARYLAND DEPARTMENT OF THE ENVIRONMENTAL SEDIMENT AND EROSION CONTROL TRAINING PROGRAM PRIOR TO THE BEGINNING OF WORK. THE CITY'S DPW AND DHCD AND MDE WILL BE ALLOWED RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION.

PRINT NAME SIGNATURE PORT COVINGTON MASTER DEVELOPER, LLC 1000 KEY HIGHWAY EAST BALTIMORE, MD, 21230 410-617 -0015

## **ENGINEER'S CERTIFICATION**

ADDRESS

I DO HEREBY CERTIFY THAT THIS PLAN FOR EROSION SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED UPON PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE CITY OFFICE OF COMPLIANCE AND LABORATORIES.

TELEPHONE NUMBER

WALTER G. ZAWISLAK PRINT NAME **SIGNATURE** 

7125 AMBASSADOR RD., SUITE 200 BALTIMORE, MD 21244 **ADDRESS** 

(410) 281-7981 **TELEPHONE NUMBER** 

04/19/2016

DATE

## H-1 STANDARDS AND SPECIFICATIONS FOR **MATERIALS**

**TABLE H.1: GEOTEXTILE FABRICS** 

		WO\ SLIT GEOTE	FILM	MONOFI	VEN LAMENT EXTILE		VOVEN EXTILE
			MiNii	MUM AVERA	GE ROLL VAL	UE 1	
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
GRAB TENSILE STRENGTH	ASTM D-4632	200 LB	200 LB	370 LB	250 LB	200 LB	200 LB
GRAB TENSILE ELONGATION	ASTM D-4632	15%	10%	15%	15%	50%	50%
TRAPEZOIDAL TEAR STRENGTH	ASTM D-4533	75 LB	75 LB	100 LB	60 LB	80 LB	80 LB
PUNCTURE STRENGTH	ASTM D-6241	450	) LB	900	) LB	450	LB
APPARENT OPENING SIZE <sup>2</sup>	ASTM D-4751	U.S. SIE (0.59		U.S. SII (0.21		U.S. SIE (0.21 I	
PERMITTIVITY	ASTM D-4491	0.05 \$	SEC <sup>-1</sup>	0.28	SEC <sup>-1</sup>	1,1 S	EC <sup>-1</sup>
ULTRAVIOLET RESISTANCE RETAINED AT 500 HOURS	ASTM D-4355	70% ST	RENGTH	70% ST	RENGTH	70% ST	RENGTH

- ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION: CD IS CROSS DIRECTION.
- VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPEP) AND CONFORM TO THE VALUES IN TABLE H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

## MAINTENANCE OF SEDIMENT CONTROL

CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE PUBLICATION ENTITLED "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".

## UTILITY CONSTRUCTION NOTE

FOR ALL UTILITY CONSTRUCTION BEYOND SEDIMENT AND EROSION CONTROL MEASURES; ONLY THAT WITH WHICH CAN BE COMPLETED AND STABILIZED EACH DAY SHALL BE DONE. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF A TRENCH. IF THE CONTRACTOR IS UNABLE TO BACKFILL AND STABILIZE TRENCH, THEN SILT FENCE WILL BE PLACED ON THE LOW SIDE OF A TRENCH.

## TEMPORARY STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) THREE (3) CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES,\ PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. B) SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

## TRAP/ BASIN FLOW DIVERSION NOTE

"FOR SEDIMENT CONTROL ONLY"

TO PREVENT SLOPE EROSION, WITHIN SEDIMENT TRAP DEVICES, ADEQUATELY SIZED AND STABILIZED FLOW DIVERSION MEASURES (I.E. EARTH DIKE, TEMPORARY SWALE, PERIMETER DIKE/SWALE) SHALL BE INSTALLED AT THE UPSLOPE EXTENT OF THE TRAP AND BASIN STORAGE AREAS TO DIVERT ALL FLOWS TO APPROPRIATE INFLOW DEVICES. THESE MEASURES WILL BE LOCATED BY THE CONTRACTOR AND THEREFORE NOT SHOWN ON THE PLAN VIEW.

## **ESC INSPECTOR NOTE**

THE ESC INSPECTOR HAS AUTHORITY TO REQUIRE ADDITIONAL ESC CONTROLS BEYOND THOSE SHOWN ON THE APPROVED ESC PLAN. ANY ADDITIONAL CONTROLS REQUIRED BY THE INSPECTOR SHALL BE PROVIDED BY THE CONTRACTOR AT THE DIRECTION OF THE INSPECTOR WITHIN 24 HOURS OF VERBAL NOTIFICATION BY THE ESC INSPECTOR.

7125 Ambassador Road, Suite 200 Baltimore, Maryland 21244 www.stvinc.com

CONSULTANTS

APPLICANT/ DEVELOPER

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SEAL



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32033, EXPIRATION DATE: JUNE 20, 201

PROJECT IDENTIFICATION

**TEMPORARY** STOCKPILE

100 EAST CROMWELL STREET BALTIMORE, MD 21230 - WARD 24. SECTION 6, BLOCK 1053, LOT 1B

MARK DATE DESCRIPTION ISSUE BLOCK

PROJECT NO.: 3017447 SCALE: DATE: 04-22-1 DESIGNED BY: DRAWN BY: BB, GBZ CHECKED BY: WGZ APPROVED BY: NEL

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**EROSION AND** SEDIMENT CONTROL NOTES

ESD# 7013B

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## LAND GRADING

**DEFINITION** 

RESHAPING THE EXISTING LAND SURFACE TO PROVIDE SUITABLE TOPOGRAPHY FOR BUILDING FACILITIES AND OTHER SITE IMPROVEMENTS.

<u>PURPOSE</u>

TO PROVIDE EROSION CONTROL AND VEGETATIVE ESTABLISHMENT FOR EXTREME CHANGES IN GRADE.

**CONDITIONS WHERE PRACTICE APPLIES** 

EARTH DISTURBANCES OR EXTREME GRADE MODIFICATIONS ON STEEP OR LONG SLOPES.

**DESIGN CRITERIA** 

THE GRADING PLAN SHOULD BE BASED UPON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDINGS TO AVOID EXTREME GRADE MODIFICATIONS. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE IMPOSED ON THE GRADING OPERATION RELATED TO SLOPE STABILITY, ADJACENT PROPERTIES, DRAINAGE PATTERNS, MEASURES FOR WATER REMOVAL, AND VEGETATIVE TREATMENT, ETC.

MANY JURISDICTIONS HAVE REGULATIONS AND DESIGN PROCEDURES ALREADY ESTABLISHED FOR LAND GRADING THAT MUST BE FOLLOWED. THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS OF THE AREA(S) TO BE GRADED INCLUDING PRACTICES FOR EROSION CONTROL. SLOPE STABILIZATION AND SAFE CONVEYANCE OF RUNOFF (E.G., WATERWAYS, LINED CHANNELS, REVERSE BENCHES, GRADE STABILIZATION STRUCTURES). THE GRADING / CONSTRUCTION PLANS ARE TO INCLUDE THE PHASING OF THESE PRACTICES AND CONSIDERATION OF THE FOLLOWING:

- 1. PROVISIONS TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER
- 2. CUT AND FILL SLOPES, STABILIZED WITH GRASSES, NO STEEPER THAN 2:1. (WHERE THE SLOPE IS TO BE MOWED, THE SLOPE SHOULD BE NO STEEPER THAN 3:1, BUT 4:1 IS PREFERRED BECAUSE OF SAFETY FACTOR'S RELATED TO MOWING STEEP SLOPES.) SLOPES STEEPER THAN 2:1 SHALL REQUIRE SPECIAL DESIGN AND STABILIZATION CONSIDERATIONS TO BE SHOWN ON THE PLANS.
- BENCHING PER DETAIL B-3-1 WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 2:1 SLOPE EXCEEDS 20 FEET; FOR 3:1 SLOPES, WHEN IT EXCEEDS 30 FEET; AND FOR 4:1 SLOPES, WHEN IT EXCEEDS 40 FEET. LOCATE BENCHES TO DIVIDE THE SLOPE FACE AS EQUALLY AS POSSIBLE AND TO CONVEY THE WATER TO A STABLE OUTLET. SOILS, SEEPS, ROCK OUTCROPS, ETC. ARE TO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.
  - PROVIDE BENCHES WITH A MINIMUM WIDTH OF SIX FEET FOR EASE OF MAINTENANCE.
- DESIGN BENCHES WITH A REVERSE SLOPE OF 6:1 OR FLATTER TO THE TOE OF THE UPPER SLOPE AND WITH A MINIMUM OF ONE FOOT IN DEPTH. GRADE THE LONGITUDINAL SLOPE OF THE BENCH BETWEEN 2 PERCENT AND 3 PERCENT, UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND
- C. THE MAXIMUM ALLOWABLE FLOW LENGTH WITHIN A BENCH IS 800 FEET UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
- 4. DIVERSION OF SURFACE WATER FROM THE FACE OF ALL CUT AND FILL SLOPES USING EARTH DIKES OR SWALES. CONVEY SURFACE WATER DOWN SLOPE USING A DESIGNED STRUCTURE, AND:
- PROTECT THE FACE OF ALL GRADED SLOPES FROM SURFACE RUNOFF UNTIL THEY ARE STABILIZED.
- DO NOT SUBJECT THE SLOPE'S FACE TO ANY CONCENTRATED FLOW OF SURFACE WATER SUCH AS FROM NATURAL DRAINAGE WAYS, GRADED SWALES, DOWNSPOUTS, ETC.
- PROTECT THE FACE OF THE SLOPE BY SPECIAL EROSION CONTROL MATERIALS TO INCLUDE, BUT NOT BE LIMITED TO, APPROVED VEGETATIVE STABILIZATION PRACTICES, RIPRAP OR OTHER APPROVED
- 5. SERRATED SLOPE AS SHOWN IN DETAIL B-3-2. THE STEEPEST ALLOWABLE SLOPE FOR RIPABLE ROCK IS 1.5:1. FOR NON ROCK SURFACES, THE SLOPES ARE TO BE 2:1 OR FLATTER. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER AND SEED THUS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION.
- SUBSURFACE DRAINAGE PROVISIONS. PROVIDE SUBSURFACE DRAINAGE WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.
- PROXIMITY TO ADJACENT PROPERTY. SLOPES MUST NOT BE CREATED CLOSE TO PROPERTY LINES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED DAMAGES.
- 8. QUALITY OF FILL MATERIAL. FILL MATERIAL MUST BE FREE OF BRUSH, RUBBISH, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIAL. DO NOT PLACE FROZEN MATERIALS IN THE FILL NOR PLACE THE FILL MATERIAL ON A FROZEN FOUNDATION.
- 9. STABILIZATION. STABILIZE ALL DISTURBED AREAS STRUCTUALLY OR VEGETATIVELY IN COMPLIANCE WITH SECTION B-4 STANDARDS AND SPECIFICATIONS FOR STABILIZATION PRACTICES. <u>MAINTENANCE</u>

THE LINE, GRADE, AND CROSS SECTION OF BENCHING AND SERRATED SLOPES MUST BE MAINTAINED. BENCHES AND SERRATED SLOPES MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

# **B-4 STANDARDS AND SPECIFICATIONS VEGETATIVE STABILIZATION**

<u>DEFINITION</u>

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 SEASON.

- 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.
- 3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING
- HALF OF THE RATES ORIGINALLY SPECIFIED.
- MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

# **B-4-1 STANDARDS AND SPECIFICATIONS**

## INCREMENTAL STABILIZATION

DEFINITION

ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

<u>PURPOSE</u>

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.

#### CRITERIA

- A. INCREMENTAL STABILIZATION CUT SLOPES
  - 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):
- CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
- PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
- PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED AND STABILIZE. OVERSEED PHASE 1 AREAS AS
- 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.

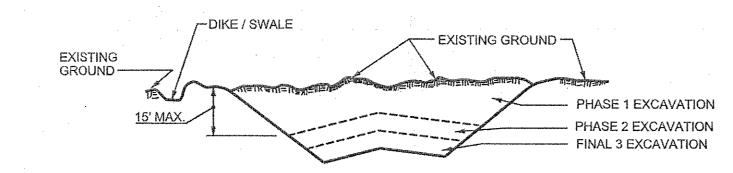
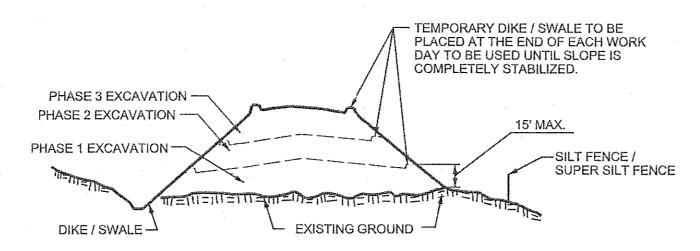


FIGURE B.1 INCREMENTAL STABILIZATION - CUT

- 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):
  - 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.
  - 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.
  - PLACE FINAL PHASE FILL, 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.



"FOR SEDIMENT CONTROL ONLY"

## **B-4-2 STANDARDS AND SPECIFICATIONS**

### SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

**DEFINITION** 

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

#### <u>PURPOSE</u>

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

#### **CRITERIA**

TEMPORARY STABILIZATION

A. SOIL PREPARATION

- 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.
- APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- PERMANENT STABILIZATION
- 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).
- 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.
- SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
- v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
- APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
- 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 STONE 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 NECESSARY ON NEWLY DISTURBED

#### B. TOPSOILING

- 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.
- 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
  - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT
- PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.

- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA: 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 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
- 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 AUTHORITY, MAY BE USED IN LIEU OF NATURAL

### TOPSOIL APPLICATION

- EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
- 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 OF 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 DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

### C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

PLACEMENT OF TOPSOIL

- 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.
- 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 (CALICUM 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 SUITABLE MEANS. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND

LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE

7125 Ambassador Road, Suite 200

**CONSULTANTS** 

Baltimore, Maryland 21244

www.stvinc.com

APPLICANT/ DEVELOPER

PORT COVINGTON MASTER DEVELOPER, LLC 1000 KEY HIGHWAY EAST BALTIMORE, MD 21230 ATTN: ERIN MAY PH: (410) 925-8874

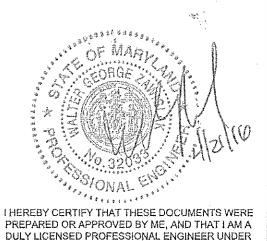
OWNERS

300 EAST CROMWELL STREET, LLC. 1000 KEY HIGHWAY EAST BALTIMORE, MD 21230 ATTN: ERIN MAY PH: 410-929-2525

CONTACT INFORMATION

STV INCORPORATED 7125 AMBASSADOR ROAD SUITE 200 BALTIMORE, MARYLAND, 21244 ATTN: WALT ZAWISLAK PH.: (410) 281-7981 FAX: (410)298-2794

SEAL



THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32033, EXPIRATION DATE: JUNE 20, 2017

PROJECT IDENTIFICATION

**TEMPORARY** 

BALTIMORE, MD 21230 - WARD 24,

SECTION 6, BLOCK 1053, LOT 1B

STOCKPILE 100 EAST CROMWELL STREET

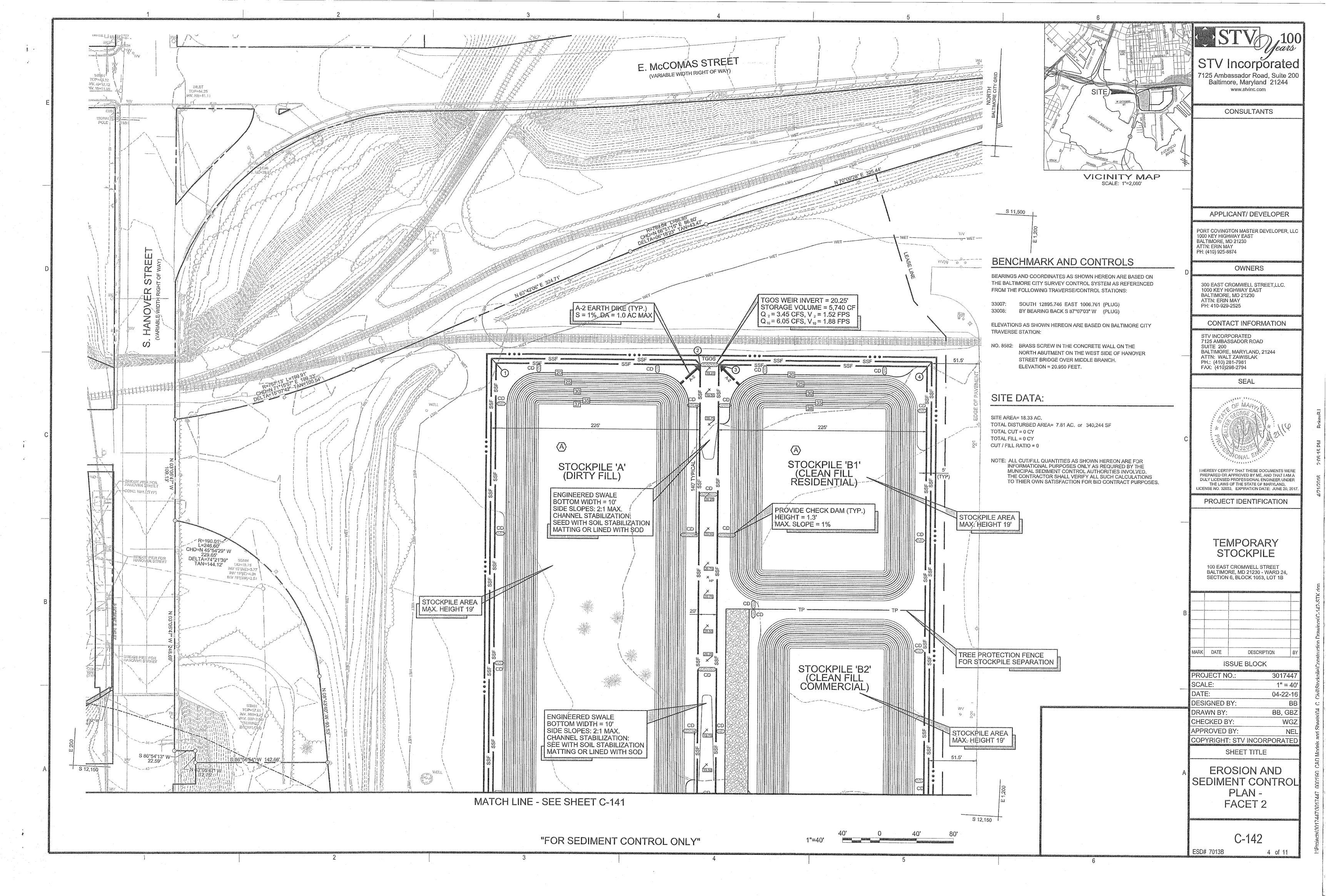
ARK DATE DESCRIPTION ISSUE BLOCK 3017447 PROJECT NO.:

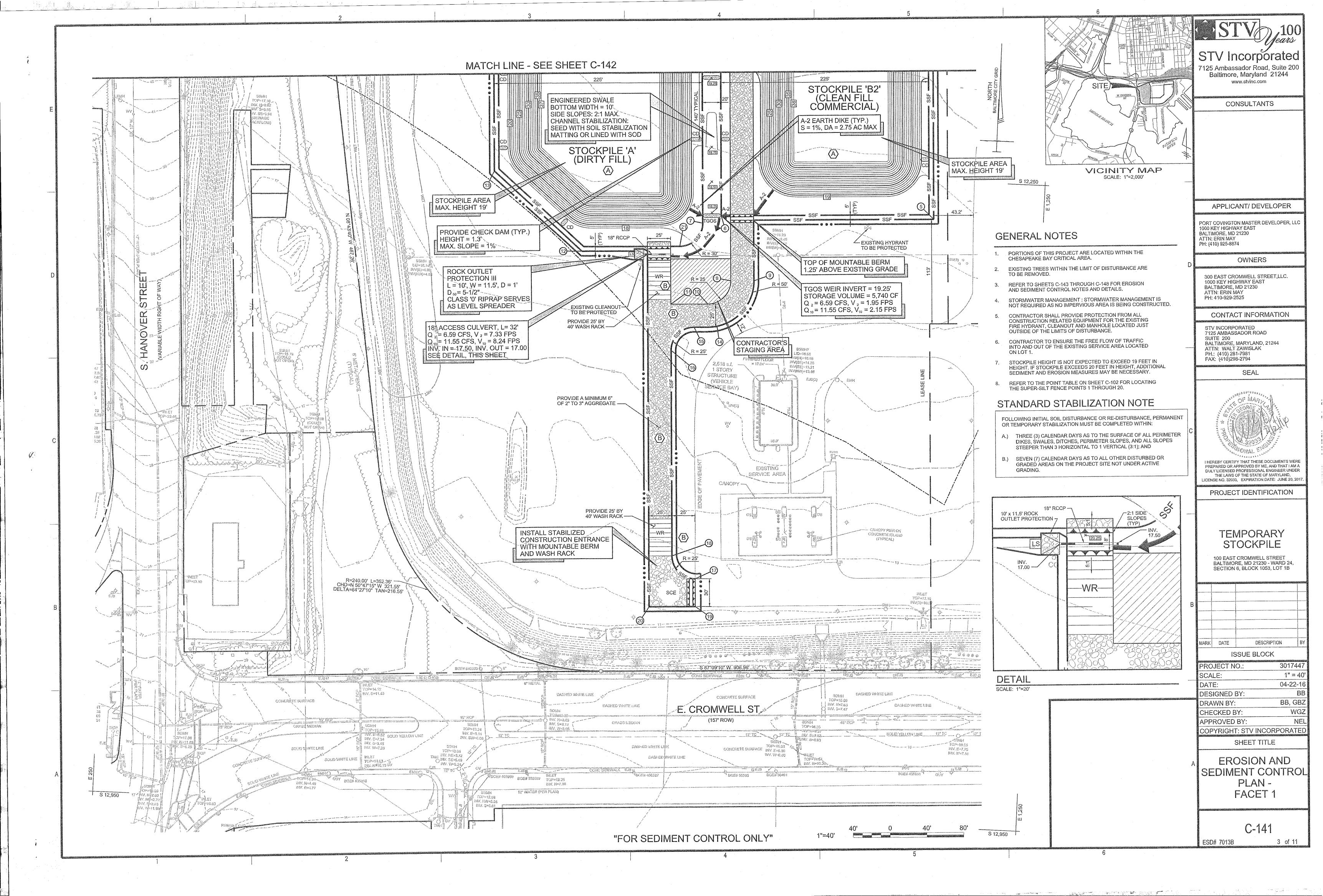
CALE: N/IDATE: 04-22-10 ESIGNED BY: DRAWN BY: BB, GB2 WGZ CHECKED BY:

APPROVED BY: NEL COPYRIGHT: STV INCORPORATE SHEET TITLE

**EROSION AND** SEDIMENT CONTROL NOTES

ESD# 7013B





AAL	ADANDON	ELEC	ELECTRIC	MATL	MATERIAL	RW	ROADWAY
AN	ABANDON AREA DRAIN	ENGR	ENGINEER	MAX	MAXIMUM	1714	HONDWAI
, A .	AMERICANS WITH DISABILITIES ACT	ENTR	ENTRANCE	MECH	MECHANICAL	S	SOUTH
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G	ABOVE FINISHED GRADE	EQ	EQUAL	MEMB	MEMBRANE	SCHED	SCHEDULE
GR	AGGREGATE	EQUIP	EQUIPMENT	MFR	MANUFACTURER	SD	STORM DRAIN
T	ALTERNATE	EW	EACH WAY	MFR REC	MANUFACTURER'S RECOMMENDATION	SDMH	STORM DRAIN MANHOLE
ΡD	APPROVED	EX/EXIST	EXISTING	MH	MANHOLE	SECT	SECTION
PROX	APPROXIMATE	EXP	EXPANSION	MIN	MINIMUM	SF	SQUARE FOOT (FEET), SILT FENCE
ICH .	ARCHITECT	EXT	EXTERIOR	MISC	MISCELLANEOUS	SHLDR	SHOULDER
CE	AMERICAN SOCIETY OF CIVIL ENGINEERS			MO	MASONRY OPENING MONUMENT	SHT SIM	SHEET SIMILAR
PH	ASPHALT	FD	FLOOR DRAIN	MON MPH	MILE(S) PER HOUR	SLNT	SEALANT
SY	ASSEMBLY	FDR	FEEDER FOUNDATION	MTL	METAL	SP	STANDPIPE
TM	AMERICAN SOCIETY FOR TESTING MATERIALS	FDTN FH	FIRE HYDRANT	IVI I L	When I The	SPEC	SPECIFICATION
E G	AVENUE AVERAGE	FIN	FINISH	Ν	NORTH	SPKLR	SPRINKLER
S WA	AMERICAN WATER WORKS ASSOCIATION	FIN FLR	FINISHED FLOOR	NA	NOT APPLICABLE	SQ	SQUARE
4 4 4 77	AZIMUTH	FL	FLOW LINE	NIC	NOT IN CONTRACT	SQ IN	SQUARE INCH
		FLR	FLOOR	NO -	NUMBER	SQ YD	SQUARE YARD
	BOTTOM OF CURB	FFP	FLAGPOLE	NTS	NOT TO SCALE	SS	SANITARY SEWER
RY .	BOUNDARY	FPS	FOOT (FEET) PER SECOND			SSF	SUPER SILT FENCE
'UM	BITUMINOUS	FRP	FIBER GLASS REINFORCED PLASTIC	OD	OUTSIDE DIAMETER	SSMH	SANITARY SEWER MANHOLE
	BASE LINE	FT	FOOT, FEET	OFD	OVERFLOW DRAIN	ST	STREET
DG	BUILDING	FTG	FOOTING	OH	OVERHANG	STA	STATION
VD	BOULEVARD	_	CONTRACTOR DATE	OPNG	OPENING OPENING	STD	STANDARD
	BEAM, BENCHMARK	G	GROUND, NATURAL GAS	OPT ORIG	OPTIONAL ORIGINAL	STM SVCE	STEAM SERVICE
T	BOTTOM	GA	GAGE	OVFL	OVERFLOW	SW	SIDEWALK, SWITCH
G /	BEARING	GAL GALV	GALLON GALVANIZED	OVEL	OVERILOW	SYM	SYMBOL.
	BOTTOM OF WALL	GALV GC	GENERAL CONTRACTOR	PC	POINT OF CURVE	OTIM	O TIMBOL
TV	CABLE TELEVISION	GPM	GALLONS PER MINUTE	PCC	POINT OF COMPOUND CURVE	TC	TOP OF CURB, TERRA COTTA
. 1 V	CATCH BASIN	GVL	GRAVEL	PCT	PERCENT	TD	TRENCH DRAIN
S	CUBIC FOOT (FEET) PER SECOND	~ · · · ·		PED	PEDESTRIAN	TEL	TELEPHONE
	CAST IRON, CURB INLET	Н	HIGH	PERF	PERFORATED	TEMP	TEMPORARY
	CAST IRON PIPE	HB	HANDBOX, HOSE BIBB	PERP	PERPENDICULAR	THK	THICKNESS
₹	CIRCLE	HDWL	HEADWALL	PH	PHASE	TOPO	TOPOGRAPHY
	CONSTRUCTION JOINT, CONTROL JOINT	HH	HANDHOLE	Pl	POINT OF INTERSECTION	TOS	TOP OF SLAB, TOP OF STEEL
	CENTER LINE, CLASS	HNDRL	HAND RAIL	PIV	POST INDICATOR VALVE	TP	TELEPHONE POLE
R	CLEAR	HORIZ	HORIZONTAL	PK GAR PL	PARKING GARAGE PROPERTY LINE	TW TYP	TOP OF WALL TYPICAL
1P	CORRUGATED METAL PIPE	HP	HEAT PUMP, HORSEPOWER HIGH PRESSURE SODIUM	PLC	PLACE	115	ITIOAL
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L	CLEAN OUT, COMPANY COLUMN	HVAC	HEATING, VENTILATING & AIR CONDITIONING	POB	POINT OF BEGINNING	UL	UNDERWRITERS LABORATORIES
MM .	COMMUNICATION	HWY	HIGHWAY	PR	PAIR	UP	UTILITY POLE
AC.	CONCRETE	HYD	HYDRANT	PREFAB	PREFABRICATE	UTIL	UTILITY
NSTR	CONSTRUCTION	* ~ * ****		PRELIM	PRELIMINARY		
VTR	CONTRACTOR	1	INLET	PRESS	PRESSURE	VC	VERTICAL CURVE
ORD	COORDINATE	ID	INSIDE DIAMETER, INSIDE DIMENSION	PREV	PREVIOUS	VEL	VELOCITY
₹	CENTER	ID NO	IDENTIFICATION NUMBER	PRKG	PARKING	VERT	VERTICAL
₹L	CONTROL	IN	INCH	PROJ	PROJECT	VOL	VOLUME
I FT	CUBIC FOOT (FEET)	INV	INVERT	PSI	POUND PER SQUARE INCH	142	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
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		1.004	HEIOTION DOV	PVC	POLYVINYL CHLORIDE	W/ WH	WITH WALL HYDRANT
	DEEP, DEPTH	J-BOX	JUNCTION BOX	PWR	POWER	WM	WALL HYDRANT WIRE MESH, WATER METER
	DRAINAGE AREA	W	KILOVOLT	QTY	QUANTITY	W/O	WITHOUT
MO	DEMOLITION DEPARTMENT	kV kW	KILOVOLT	, set I	SCHIEFFE I	WP	WATER PROOFING, WEATHERPROOF, WORKING
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Ą	DIAMETER	L	LENGTH	RCCP	REINF CONC PIPE	WT	WEIGHT, WIRE TROUGH
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ī	DISTANCE	LB	POUND	RDC	REDUCER	WV	WATER VALVE
<i>r</i> .	DIVISION	ĪF.	LINEAR FEET	REINF	REINFORCE		
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3				RM	ROOM	YD	YARD, YARD DRAIN
G		LT	LIGHT, LEFT				
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<b>⑤</b>	EXISTING STEAM MANHOLE	TP	TREE PROTECTION FENCE (FOR STOCKPILE SEPERATION)
opw O	EXISTING DPW MANHOLE		
১রব	EXISTING FIRE HYDRANT		
WV o	EXISTING WATER VALVE		
WM o	EXISTING WATER METER		
GV c	EXISTING GAS VALVE		
-francisco affi	EXISTING LIGHT POLE		•

EXISTING ELECTRIC HAND BOX

EXISTING SPOT ELEVATION

EXISTING MISCELLANEOUS POLE / SUPPORT

EXISTING CLEANOUT

EXISTING SIGN

## GENERAL CONSTRUCTION NOTES:

- ALL WORK SHOWN ON THESE DRAWINGS IS CONSIDERED NEW UNLESS INDICATED OTHERWISE.
- 2. DEFINITIONS:
  - A. "INSTALL" MEANS OTHERS WILL FURNISH EQUIPMENT OR MATERIALS WHICH CONTRACTOR SHALL INSTALL.
  - B. "FURNISH" MEANS CONTRACTOR SHALL ONLY FURNISH EQUIPMENT OR MATERIALS WHICH OTHERS WILL INSTALL.
  - C. "PROVIDE" MEANS THE CONTRACTOR SHALL FURNISH AND INSTALL EQUIPMENT AND MATERIALS.
  - D. "PROPOSED" MEANS FUTURE WORK BY OTHERS OR WORK NOT IN CONTRACT.
  - THE ABOVE DEFINITIONS DO NOT APPLY TO LANGUAGE CONTAINED IN STANDARD DETAILS, NOTES, OR SPECIFICATIONS THAT APPEAR ON THE CONTRACT DRAWINGS, ARE REFERENCED ON THE CONTRACT DRAWINGS OR HAVE BEEN SUPPLIED BY GOVERNING REGULATORY AGENCIES (I.E. MDE, SHA, ETC.)
- ALL CONSTRUCTION SHALL CONFORM TO THE BUILDING CODE OF BALTIMORE CITY.
- 4. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE PLANS, THE SPECIFICATIONS WHICH ARE INCLUDED AS PART OF THIS CONTRACT, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION'S "2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" DATED DECEMBER 2011.
- ANY QUANTITIES SHOWN HEREON ARE PROVIDED FOR THE REVIEWING AUTHORITIES USE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES TO THEIR OWN SATISFACTION PRIOR TO BIDDING THE WORK.
- ANY DAMAGE TO OFF-SITE RIGHTS-OF-WAY, PUBLIC ROADS, OR ADJACENT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE IN GRASS AND PAVED AREAS DURING ALL PHASES OF CONSTRUCTION AND IN FINISHED GRADES.
- EXISTING ON-SITE CONDITIONS SHOWN ARE TAKEN FROM FIELD SURVEY FOR 300 EAST CROMWELL STREET, LLC, PREPARED BY STV, INCORPORATED DATED 11/13/14. STV INCORPORATED MAKES NO GUARANTEE THAT THE INFORMATION IS COMPREHENSIVE OR AS IT PRESENTLY EXISTS. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE EXISTING CONDITIONS TO HIS SATISFACTION PRIOR TO BEGINNING CONSTRUCTION.
- 9. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 THREE (3) WORKING DAYS PRIOR TO STARTING WORK. THE CONTRACTOR SHALL NOTIFY BALTIMORE CITY STREET LIGHTING MAINTENANCE AT 410-396-4446 AND THE CONDUIT SECTION AT 410-396-1515, 15 DAYS PRIOR TO STARTING WORK. THE BALTIMORE CITY SEDIMENT AND EROSION CONTROL REPRESENTATIVES SHOULD BE NOTIFIED AT LEAST 72 HOURS PRIOR TO STARTING WORK AT 410-396-3693.

SUBMIT A WRITTEN NOTIFICATION TO: THE DEPARTMENT OF PUBLIC WORKS, OFFICE OF COMPLIANCE AND LABORATORIES: 3001 DRUID PARK DRIVE,

CHECK DAMS, ORANGE SAFETY FENCE, EARTH DIKES, ENGINEERED SWALE @ 0.5%

5. CLEAR AND GRUB TO REMOVE EXISTING VEGETATION WITHIN STOCKPILE AREAS.

STABILIZATION PER SOIL MANAGEMENT PLAN. SEE GENERAL CONSTRUCTION

ONCE SITE HAS BEEN RESTORED TO THE EXISTING VEGETATIVE CONDITION,

PERMANENT STABILIZATION EVIDENT AND WITH WRITTEN APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION CONTROL MEASURES

6. BEGIN STOCKPILING MATERIAL AND PROVIDE TEMPORARY / PERMANENT

AND PERMANENTLY STABILIZE ALL REMAINING DISTURBED AREAS.

BETWEEN STOCKPILE AREAS 'A' AND 'B-1 & B-2," ACCESS ROAD, TEMPORARY 18" RCP ACCESS ROAD CROSSING, ROCK OUTLET PROTECTION III AND SUPER SILT FENCE.

ROOM 228 BALTIMORE, MARYLAND 21215, PHONE NUMBER, 410-396-0732, FAX 410-523-9047, DPW.ESCInspections@BALTIMORECITY.GOV, AT LEAST 72

WHEN CONTRACTOR INTENDS TO BEGIN CONSTRUCTION,

WHEN CONTRACTOR INTENDS TO INSTALL STORMWATER

LOCATION OF DISPOSAL AREA OF SITE MATERIAL,

CONSTRUCTION ENTRANCE, MOUNTABLE BERMS, WASH RACKS.

SEQUENCE OF CONSTRUCTION

HOURS PRIOR TO START OF CONSTRUCTION STATING:

A REQUEST FOR A PRECONSTRUCTION MEETING

CONTRACTOR'S TENTATIVE CLOSING DATE.

UPON APPROVAL FROM INSPECTOR, INSTALL STABILIZED

4. NOTIFY INSPECTOR AND RECEIVE WRITTEN AUTHORIZATION TO

MANAGEMENT FACILITIES.

NOTES #12 THRU #14 ON THIS SHEET.

SOURCE OF BORROW MATERIAL

OBTAIN PROPER PERMITS.

BEGIN STOCKPILING.

- 10. UTILITIES AND OTHER OBSTRUCTIONS AS SHOWN HEREON HAVE BEEN LOCATED BY ACTUAL FIELD MEASUREMENTS SUPPLEMENTED BY INFORMATION OBTAINED FROM THE VARIOUS AGENCIES INVOLVED. HOWEVER, STV INCORPORATED DOES NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF THE INFORMATION RECEIVED. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION AND MUST NOTIFY THE UTILITY COMPANIES INVOLVED PRIOR TO THE START OF WORK.
- 11. THIS DOCUMENT INCLUDES INFORMATION AND DEPICTIONS OF BALTIMORE GAS AND ELECTRIC COMPANY'S ("BGE") ELECTRIC AND/OR GAS UTILITIES LOCATED WITHIN THE PROJECT AREA (THE "BGE UTILITY INFORMATION"). LOCATIONS, DIMENSIONS, DEPTHS, AND OTHER DETAILS OF ANY SUCH UTILITIES MAY NOT BE AS-BUILT, AND THE INFORMATION SHALL NOT BE RELIED UPON WITHOUT FIELD VERIFICATION. EXCAVATORS MUST EMPLOY SAFE DIGGING BEST PRACTICES WHEN APPROACHING BGE ELECTRIC AND GAS UTILITIES AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, INCLUDING, BUT NOT LIMITED TO, THE "MISS UTILITY LAW". NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY BGE AS TO THE QUALITY, COMPLETENESS, OR ACCURACY OF THE BGE UTILITY INFORMATION, AND IN ACCEPTING THIS DOCUMENT, THE RECIPIENT EXPRESSLY ACKNOWLEDGES AND AGREES THAT IT IS NOT RELYING ON THE ACCURACY OF THE SAME.
- 12. STOCKPILE A AND STOCKPILES B-1 (CLEAN RESIDENTIAL) AND B-2 (CLEAN COMMERCIAL) WILL BE BOUNDED BY A SUPER SILT FENCE. BOTH STOCKPILES WILL BE STABILIZED WITH HYDROSEED AFTER EACH MOBILIZATION OR WILL BE STABILIZED ACCORDING TO THE ESTABLISHED EROSION AND SEDIMENT CONTROL REQUIREMENTS.
- 13. CONTRACTOR TO OBTAIN, REVIEW AND IMPLEMENT THE "COMPREHENSIVE SOIL MANAGEMENT PLAN" LATEST EDITION FOR PORT COVINGTON AS IT PERTAINS TO THE SOIL MANAGEMENT ON THE SUBJECT PROPERTY. THE "COMPREHENSIVE SOIL MANAGEMENT PLAN" SHALL GOVERN IF THERE IS CONFLICT BETWEEN THESE PLANS AND THE "COMPREHENSIVE SOIL MANAGEMENT PLAN."
- 14. STOCKPILING IS BE TO SPREAD EVENLY ACROSS THE RESPECTIVE STOCKPILE AREAS, A, B-1 & B-2, IN ACCORDANCE WITH THE GRADING AND ESC DESIGN TO PREVENT DRAINAGE PATTERNS FOR WHICH THE ESC WAS NOT DESIGNED.
- 15. RUNOFF FROM THE WASH RACKS IS TO BE PUMPED THROUGH A PORTABLE SEDIMENT TANK TO A STABILIZED AREA WITHIN THE LIMITS OF DISTURBANCE AT A NON-EROSIVE VELOCITY.
- 16. THE "TREE PROTECTION FENCE" LOCATED BETWEEN STOCKPILES 'B-1' AND 'B-2' IS ONLY TO SEPARATE THE STOCKPILES AND IS NOT A SEDIMENT CONTROL MEASURE.
- 17. PHYSICAL BARRIERS (SUPER SILT FENCE) WILL SEPARATE IMPACTED AND CLEAN FILL STOCKPILES TO REDUCE THE POTENTIAL FOR CROSS CONTAMINATION. SIGNS WILL BE POSTED AT EACH STOCKPILE STAGING AREA IDENTIFYING THE DIFFERENT STOCKPILES (IMPACTED VERSUS CLEAN FILL).

POINT TABLE

SOUTH

11687.39

11676.22

11663.80

12292.11

12298.55

12307.63

12368.27

12367.02

12394.48

12396.96

12344.08

12261.21

12419.45

12420.68

12446.90

12693.14

12669.41

12723.10

12725.61

12333.84

WEST

625.55

855.28

1099.96

1131.21

901.25

881.67

924.74

949.71

901.01

851.10

752.77

654.09

902.25

877.34

853.62

890.86

864.65

892.38

842.39

857.95

POINT

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CONSULTANTS

APPLICANT/ DEVELOPER

7125 Ambassador Road, Suite 200

Baltimore, Maryland 21244

www.stvinc.com

PORT COVINGTON MASTER DEVELOPER, LLC 1000 KEY HIGHWAY EAST BALTIMORE, MD 21230 ATTN: ERIN MAY PH: (410) 925-8874

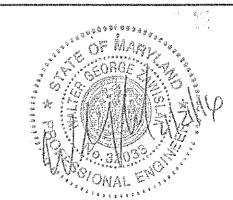
OWNERS

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ATTN: WALT ZAWISLAK
PH.: (410) 281-7981
FAX: (410)298-2794

SEAL



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32033, EXPIRATION DATE: JUNE 20, 2017.

PROJECT IDENTIFICATION

TEMPORARY STOCKPILE

100 EAST CROMWELL STREET BALTIMORE, MD 21230 - WARD 24, SECTION 6, BLOCK 1053, LOT 1B

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OLEAN DE LA COLOR			
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K	DATE	DESCRIPTION	В
	IS	SSUE BLOCK	

PROJECT NO.:	301/44/
SCALE:	N/A
DATE:	04-22-16
DESIGNED BY:	BB
DRAWN BY:	BB, GBZ
CHECKED BY:	WGZ
APPROVED BY:	NEL
COPYRIGHT: STV	INCORPORATED

SHEET TITLE

LEGEND AND
GENERAL
CONSTRUCTION
NOTES

C-102
ESD# 7013B 2

STABILIZATION SCHEDULE

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AREA S.F.		S.F.	STABILIZATION	SEQUENCE No.
(A)	PERVIOUS AREAS	322,915	TEMP: TEMPORARY SEEDING PERM: PERMANENT SEEDING / PLANTING	5 7
B	SEDIMENT CONTROL MEASURES	17,329	TEMP: STONE FOR STAB. CONSTR. ENTR. / SILT FENCE PERM: PAVING/PERMANENT SEEDING	3 7

AREAS ARE TO BE VEGETATIVELY STABILIZED TO SATISIFY THE 3/7 DAY REQUIREMENT AS PER THE BALTIMORE CITY STANDARD EROSION AND SEDIMENT CONTROL NOTES.

N/A

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