

Purpose To provide a suitable soil medium for vegetative growth. Conditions Where Practice Applies Where vegetative stabilization is to be established Criteria

Soil Preparation

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

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

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

2. Permanent Stabilization a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

ii. Soluble salts less than 500 parts per million (ppm).

i. Soil pH between 6.0 and 7.0

meet the above conditions.

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

iv. Soil contains 1.5 percent minimum organic matter by weight.

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

b. Application of amendments or topsoil is required if on-site soils do not

c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to

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 B. Mulching produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients. c. The original soil to be vegetated contains material toxic to plant growth

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

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

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

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 11/2

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

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

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.

Soil Amendments (Fertilizer and Lime Specifications) 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

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

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

98 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

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

DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

## 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.

Criteria

A. Seeding 1. Specifications a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to

> 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.

Table B.4 regarding the quality of seed. Seed tags must be available

c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.

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

2. Application

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

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. i. Cultipacking seeders are required to bury the seed in such a

fashion as to provide at least 1/4 inch of soil covering. Seedbed

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

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

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

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

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

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

1. Mulch Materials (in order of preference)

must be firm after planting.

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

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state. i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual

inspection of the uniformly spread slurry. ii. WCFM, including dye, must contain no germination or growth inhibiting factors.

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties

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

without inhibiting the growth of the grass seedlings.

and must cover and hold grass seed in contact with the soil

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

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

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

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water

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.

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

wood cellulose fiber per 100 gallons of water. iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited .

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

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

To stabilize disturbed soils with permanent vegetation

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 mor Criteria

A. Seed Mixtures 1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed

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

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.

percent of the total mixture by weight.

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary

2. Turforass Mixtures a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. b. Select one or more of the species or mixtures listed below based on the site

dates in the Permanent Seeding Summary. The summary is to be placed on the i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore, Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35

conditions or purpose. Enter selected mixture(s), application rates, and seeding

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas whererapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture pe 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 •• Warm—season grasses need a soil temperature of at least 50 degrees f

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 11/2 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

c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b. 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15

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 11/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse

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

scientist prior to its installation.

made available to the job foreman and inspecto b. Sod must 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 acceptable.

a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be

c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

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

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

c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.

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

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

b. After the first week, sod watering is required as necessary to maintain adequate

not mow until the sod is firmly rooted. No more than 1/2 of the grass leaf must OF Do not mow until the sou is litting to subsequent cuttings. Maintain a grass height of THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY THE STATE OF MARYLAND. 03 11

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

TEMPORARY STABILIZATION

To stabilize disturbed soils with vegetation for up to 6 months Purpose To use fast growing vegetation that provides cover on disturbed soils. Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration

lime rates must be out on the plan.

of time, permanent stabilization practices are required. Criteria 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths

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.

If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and

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

	Temporary Seeding Summary									
	Hardine	ss Zone (Fro	om Figure B.3)	7A						
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)	Lîme Rate				
	Annual Ryegrass Lolium perenne	40	2/15-4/30 8/15-11/30	į in.	436 lb/ac (10.0 lb/1000sf)	2 tons/ac (90 lb/1000sf				
	Foxtail Millet Setaria italica	30	5/1-8/14	½ in.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(00 10, 10000)				

	Pern	nanent See	ding St	umma	ry		
Hardines Seed Mi:	s Zone (From xture(From To	.7A 8 .		Lime Rate			
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
Deer Tongue	20	2/15-4/30 <b>**</b> 5/1-5/31	1 − ½ in.	45 lb/ac	90 lb/ac	90 lb/ac	2 tons/ac
Sheep Fescue	20	2/15-4/30 <b>**</b> 5/1-5/31	1 − ½ in.	1000sf)	1000sf)	1000sf)	1000sf)
Redtop	1	2/15-4/30 <b>**</b> 5/1-5/31	1 − ½ in.				
Korean Lespedeza	10	2/15-4/30 <b>++</b> 5/1-5/31	$\frac{1}{4} - \frac{1}{2}$ in.				,
Tall Fescue	100	2/15 - 4/30 8/15 - 10/31 11/1 - 11/30	1 − 1 in.				
	Species  Deer Tongue  Sheep Fescue  Redtop  Korean Lespedeza	Hardiness Zone (From Seed Mixture(From To Seed Mixture(From To Application Rate (lb/ac)  Deer Tongue 20  Sheep Fescue 20  Redtop 1  Korean Lespedeza 10	Hardiness Zone (From Figure B.3)   3   42	Hardiness Zone (From Figure B.3)       7A         Seed Mixture(From Table B.3)       Table B.3)       Table B.3       Table B.3<	Hardiness Zone (From Figure B.3)       7A       7A       Fe         Seed Mixture(From Table B.3)       3       4       8       (1)         Species       Application Rate (lb/ac)       Seeding Dates       Seeding Depths       N         Deer Tongue       20 $\frac{2}{15} - \frac{4}{30}$ ♦ $\frac{1}{4} - \frac{1}{2}$ in.       45 lb/ac (1.0 lb/1000sf)         Sheep Fescue       20 $\frac{2}{15} - \frac{4}{30}$ ♦ $\frac{1}{4} - \frac{1}{2}$ in.       1000sf)         Redtop       1 $\frac{2}{15} - \frac{4}{30}$ ♦ $\frac{1}{4} - \frac{1}{2}$ in.       1000sf)         Korean Lespedeza       10 $\frac{2}{15} - \frac{4}{30}$ ♦ $\frac{1}{4} - \frac{1}{2}$ in.       1 in.         Tall Fescue       100 $\frac{8}{15} - \frac{10}{31}$ 1 in.       1 in.	Seed Mixture(From Table B.3)         3 & 8         (10-20-20           Species         Application Rate (lb/ac)         Seeding Dates         Seeding Depths         N         P20s           Deer Tongue         20         2/15-4/30 ↔ 1/5/1-5/31         1/4 - 1/2 in.         45 lb/ac (1.0	Hardiness Zone (From Figure B.3)

0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or in order to germinate. If soil temperatures are colder than 50 degrees, or moisture is not adequate, the seeds will remain dormant until conditions are favorable. In general, planting during the latter portion of this period allows more time for weed emergence and weed control prior to planting. managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars When selecting a planting date, consider the need for weed control vs. the likelihood of having sufficient moisture for later plantings, especially on droughty sites.

### DUST CONTROL

Controlling dust blowing and movement on construction sites and roads <u>PURPOSE</u>

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and of-site damage, health hazards, and improve traffic: safety.

Conditions Where Practice Aolies his practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment

SPECIFICATIONS emporary Methods Mulches - See standards for vegetative stabilization with mulches only. Mulch

should be crimped or tacked to prevent blowing. Vegetative Cover - See standards for temporary vegetative cover Tillage - To roughen surface and bring clods to the surface . This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect. 4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers

placed at right angles to prevailing currents at intervals of about 10 times their height

6. Calcium Chloride - Apply at rates that will keep surface moist . May need retreatment Permanent Methods

are effective in controlling soil blowing

DEFINITION

Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling . Stone - Cover surface with crushed stone or coarse gravel.

. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Los 2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.~,

## **B-4-8 STANDARDS AND SPECIFICATIONS** STOCKPILE AREA

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

<u>Purpose</u>

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

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

1. The stockpile location and all related sediment control practices must be clearly

indicated on the erosion and sediment control plan. 2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading. 3. Runoff from the stockpile area must drain to a suitable sediment control practice

4. Access the stockpile area from the upgrade side. 5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner. . 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 stabilized in accordance with the 3/7 day stabilization requirement

as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary

Stabilization. CICENSE NO-40 784

8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

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#### 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

ENGINEERS CERTIFICATE

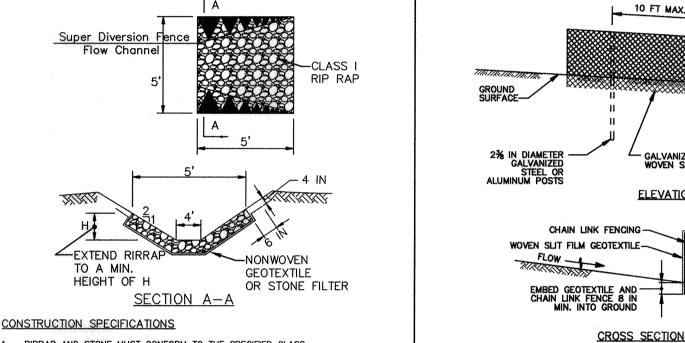
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION

BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS

REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN

AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE



DETAIL B-4-6-B

OVERLAP OR ABUT

CONSTRUCTION SPECIFICATIONS

SCE.

- EXISTING PAVEMENT

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IPE (SEE NOTE 6)

TEMPORARY SOIL STABILIZATION

MATTING SLOPE APPLICATION

ISOMETRIC VIEW

2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM)
NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND
DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT
MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND
NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM
MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG
LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT

SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.

PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION &

UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID

OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS B 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL E-3 SUPER SILT FENCE

USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.

RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.

**DETAIL B-1 STABILIZED** 

CONSTRUCTION SPECIFICATIONS

CONSTRUCTION ENTRANCE

**PROFILE** 

PLAN VIEW

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

MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

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.

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

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

SUPER DIVERSION FENCE OUTFALL DETAIL

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE

OUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

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

50 FT MIN.

LENGTH +

USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS. AN PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.

PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (% TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF PPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL

EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING TH VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVEN

AMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT

CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

## SEQUENCE OF CONSTRUCTION

1. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work. . The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done. Obtain grading permit and contact Howard County Sediment Control Inspector

(SCI) to arrange a pre-construction meeting. (I day) Install stone construction entrance (SCE), silt fence (SF), super silt fence (SSF), super diversion fence (SDF) and temporary asphalt berm. (I day) With the permission of the sediment control inspector, begin on-site construction and stabilize all disturbed areas. (3 months) Install phase II temporary access entrance and deliver necessary equipment using

this entrance. (I week) Stabilize all disturbed areas with permanent seeding. (I week) With the permission of the Sediment Control Inspector, remove all sediment control measures and stabilize all disturbed areas with permanent seeding. (I day

CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON

ZACHARIA Y. FISCH, PE#22418 DATE REV. DATE PROFESSIONAL CERTIFICATION /5) DEC 2019 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. #22418, Expiration Date: 07/29/2015. DEVELOPER'S CERTIFICATE

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

**ELEVATION** CHAIN LINK FENCING WOVEN SLIT FILM GEOTEXTILE-EMBED GEOTEXTILE AND -CHAIN LINK FENCE 8 IN MIN. INTO GROUND

CONSTRUCTION SPECIFICATIONS INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36

FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. TEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

~52418 De

ACCOUNT NO.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION EVELOPER (PARCELS 78 & 79 BALTIMORE GAS AND ELECTRIC COMPANY SPRING GARDENS COMPLEX 1699 LEADENHALL STREET BALTIMORE, MARYLAND 21230

<u>OWNER (PARCEL 79)</u> COLUMBIA GAS TRANSMISSION P.O. BOX 1273 CHARLESTON, WV 25325-1273 (304) 357-2000ATTN: Antonio Redd

ATTN: GREG KAPPLER (410) 470-6445

OWNER (PARCEL 78)
BALTIMORE GAS AND ELECTRIC COMPANY SPRING GARDENS COMPLEX 1699 LEADENHALL STREET BALTIMORE, MARYLAND 21230 ATTN: GREG KAPPLER (410) 470-6445

DESCRIPTION

updated to include New Sheet

APPROVED

ENGINEERING

PROJ. ENG.

PROJ. MGR.

PRIN. ENG.

DRAWN

APPROVED

SUPV. ENG.

DESIGN GROUP

CRH2

DESIGNED CRH2

CHECKED ZYF

DATE <u>APRIL 28, 2015</u>

10 FT MAX. CHAIN LINK FENCE COVERED WITH IMPERMEABLE SHEETING ELEVATION SECTION CONSTRUCTION SPECIFICATIONS USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING). USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN

SUPER DIVERSION FENCE

├── SDF-------

MAXIMUM DRAINAGE AREA = 2 ACRE

DETAIL C-9

TSSMS - 1.5 lb/ff

----SSF-----I

FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.

SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH

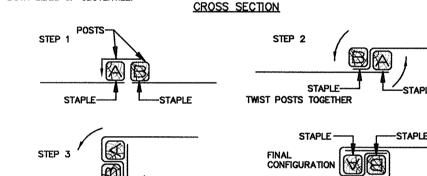
KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION DETAIL E-1 SILT ⊢----SF------**FENCE** CENTER TO CENTER

'16 IN MIN. HEIGHT OF WOVEN SLIT FILM GEOTEXTILE

**ELEVATION** WOVEN SLIT FILM-KIKIKIN. EMBED GEOTEXTILE



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW) CONSTRUCTION SPECIFICATIONS

USE WOOD POSTS 1 $\frac{1}{4}$  X 1 $\frac{1}{4}$   $\pm$   $\frac{1}{16}$  Inch (Minimum) square cut of sound quality hardwood. As an alternative to wooden post use standard "t" or "u" section steel posts weighing not USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART. LISE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.

ACCORDANCE WITH THIS DETAIL EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE A

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,

NOTES AND DETAILS BGE LINDEN CHURCH GAS GATE STATION (Zoned: RR-DEO) TAX MAP 28, PARCEL 78&79 5TH ELEC. DIST, HO. CO. MD SHEET 3 OF 6 8 5

REV

NONE

SIGNATURE OF ENGINEER 

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND

SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

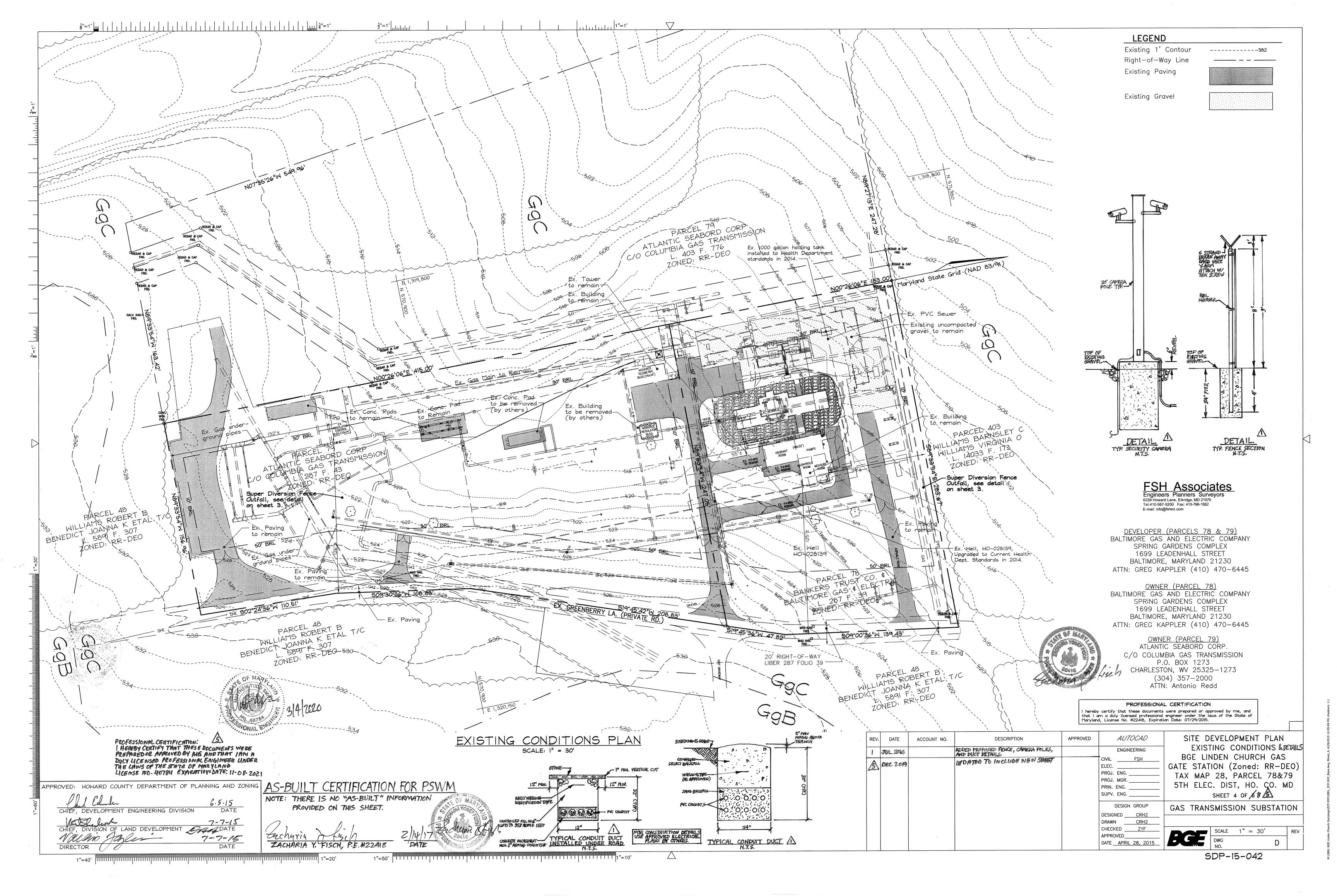
SIGNATURE OF DEVELOPER

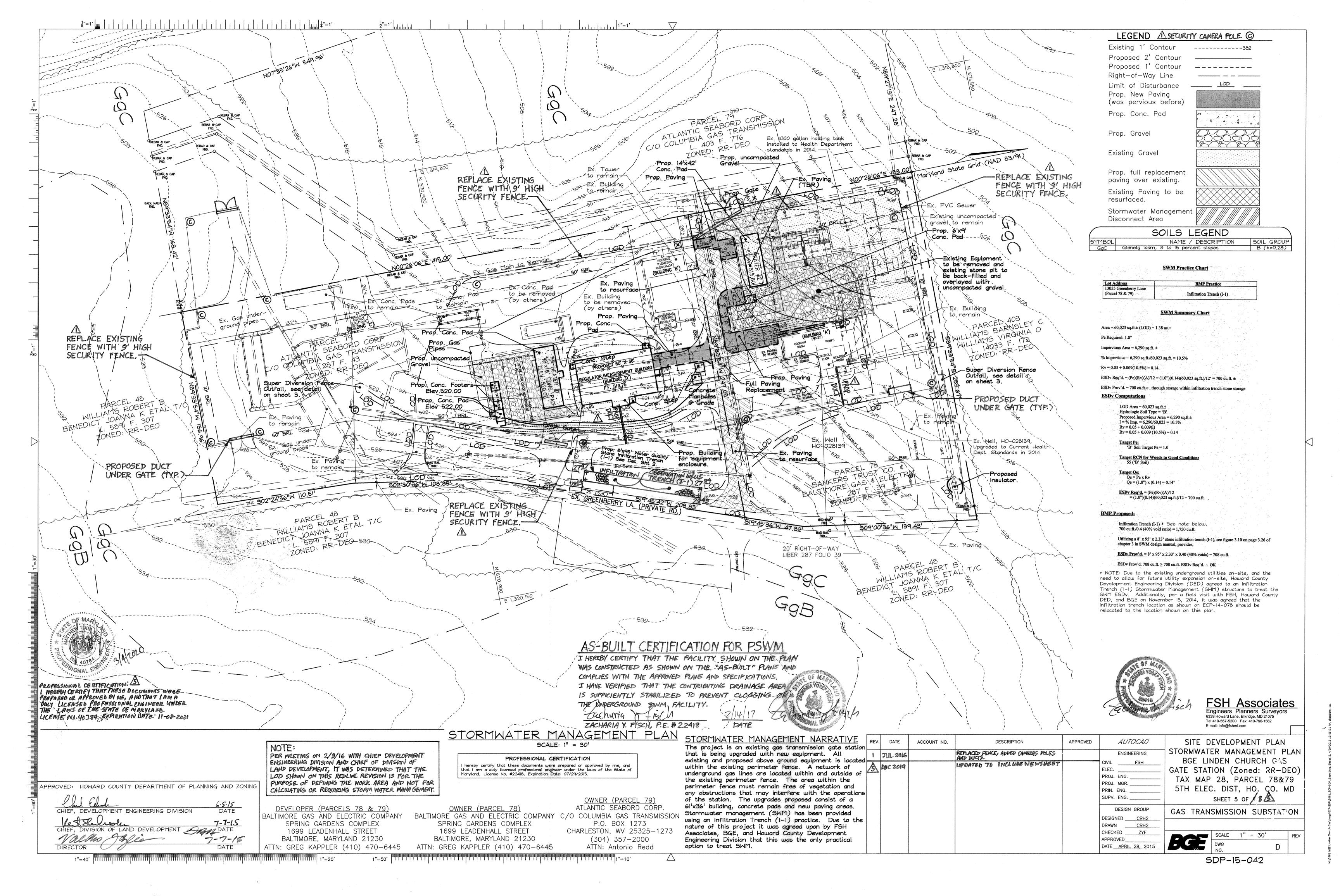
CONSERVATION DISTRICT.

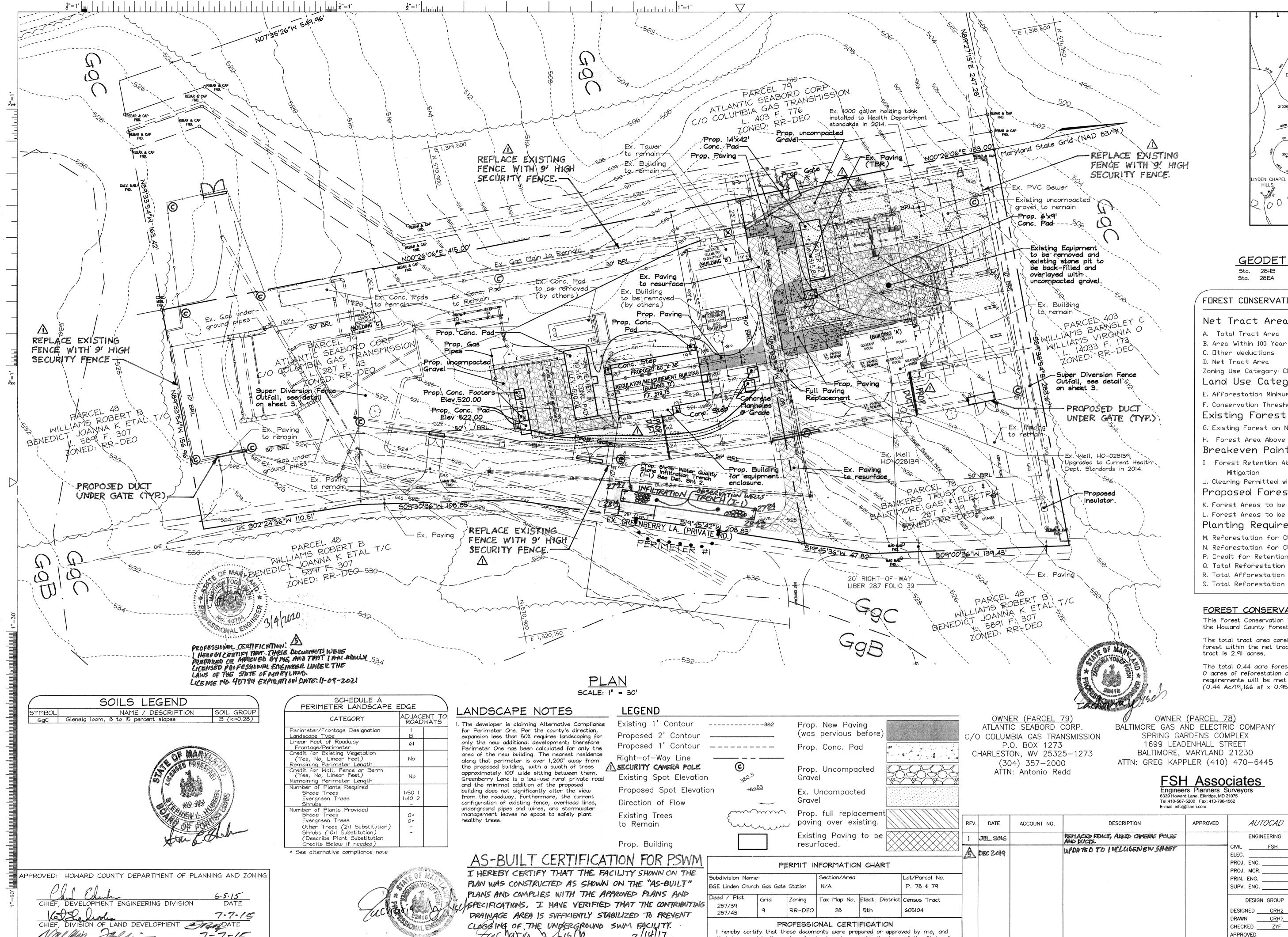
WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION FSH Associates Engineers Planners Surveyors 339 Howard Lane, Elkridge, MD 21075 Tel:410-567-5200 Fax: 410-796-1562 E-mail: info@fsheri.com AUTOCAD

SITE DEVELOPMENT PLAN

GAS TRANMISSION SUBSTATION







ZACHARIA Y. FISCH, P.E.#22418  that I am a duly licensed professional engineer under the laws of the State of

Maryland, License No. #22418, Expiration Date: 07/29/2015.

SITE CENTARUS LINDEN CHAPEL VICINITY MAP

1"=2000' ADC MAP 4933, E3 GEODETIC SURVEY CONTROLS + N 567,548.737 E 1,320,551.664 E1.: 556.082 (feet)

N 572,158.964 E 1,319,400.683 E1.: 484.995 (feet)

FOREST CONSERVATION WORKSHEET	
Net Tract Area	Acres
A. Total Tract Area	2.91
B. Area Within 100 Year Floodplain	0
C. Other deductions	0
D. Net Tract Area	2.91
Zoning Use Category: COMMERCIAL/OFFICE	
Land Use Category	
E. Afforestation Minimum (15 $\% \times D$ )	0.44
F. Conservation Threshold $(15 \% \times D)$	0.44
Existing Forest Cover	
G. Existing Forest on Net Tract Area	0
H. Forest Area Above Conservation Threshold	0
Breakeven Point	
I. Forest Retention Above Threshold with no	0.44
Mitigation	
J. Clearing Permitted without Mitigation	0
Proposed Forest Clearing	
K. Forest Areas to be Cleared	0
L. Forest Areas to be Retained	0
Planting Requirements	
M. Reforestation for Clearing Above Threshold	0
N. Reforestation for Clearing Below the Threshold	0
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	0
R. Total Afforestation Required	0.44
S. Total Reforestation and Afforestation Requirement	0.44

#### FOREST CONSERVATION NARRATIVE

DATE APRIL 28, 2015

This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Act of 1991.

The total tract area consists of 2.91 acres of land. There is no forest within the net tract area and no specimen trees. The net

The total 0.44 acre forest conservation obligation for the site is for 0 acres of reforestation and 0.44 acres of afforestation. Planting requirements will be met by a fee-in-lieu payment of \$18,208.00  $(0.44 \text{ Ac/}19,166 \text{ sf } \times 0.95/\text{sf})$ 

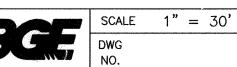
BALTIMORE GAS AND ELECTRIC COMPANY SPRING GARDENS COMPLEX 1699 LEADENHALL STREET BALTIMORE, MARYLAND 21230 ATTN: GREG KAPPLER (410) 470-6445

The improvement to this property include a new building, new gas compment, and new paved driveways and gravel areas.						
Previous Howard County reference numbers: Deed 287/39\$43, ECP-14-078, BA Case 191C.						
CITE DEVELOPMENT DIAM						

DEVELOPER (PARCEL 78 & 79)

SITE DEVELOPMENT PLAN LANDSCAPE/FOREST CON. PLAN BGE LINDEN CHURCH GAS GATE STATION (Zoned: RR-DEO) TAX MAP 28, PARCEL 78&79 5TH ELEC. DIST, HO. ÇO. MD SHEET 6 OF 68 A

GAS TRANSMISSION SUBSTATION



SDP-15-042

- A. PRIOR TO THE START OF EARTH DISTURBANCE.
- B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
- PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
- PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED. TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

SITE ANALYSIS:

AREA TO BE ROOFED OR PAVED: AREA TO BE VEGETATIVELY STABILIZED: 0.603 ACRES

OFFSITE WASTE/BORROW AREA LOCATION:

\*EARTHWORK QUANTITIES ARE SOLEY FOR THE PURPOSE OF CALCULATING FEES. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO START OF CONSTRUCTION.

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

INSPECTION DATE

INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)

NAME AND TITLE OF INSPECTOR

WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)

BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES

**EVIDENCE OF SEDIMENT DISCHARGES** 

**IDENTIFICATION OF PLAN DEFICIENCIES** 

IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE

IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS

COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS

**PHOTOGRAPHS** 

MONITORING/SAMPLING

MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED

OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
- 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD. NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
- 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

USE I AND IP MARCH 1 - JUNE 15

USE III AND IIIP OCTOBER 1 - APRIL 30

USE IV MARCH 1 - MAY 31

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

#### **GENERAL NOTES:**

- 1. BASE MAPPING SHOWN IS FROM A COMBINATION OF SOURCES BY OTHER FIRMS RESPONSIBLE FOR THE DESIGN OF THE GAS EQUIPMENT, AND FROM PUBLICLY AVAILABLE SOURCES. PROFESSIONAL RESPONSIBILITY OF JMT IS SOLELY THE CONSISTENCY OF THE EROSION CONTROL PLAN WITH THE BASE FILES PROVIDED, AND NOT THE ACCURACY OF THE BASE FILES THEMSELVES.
- 2. CONSTRUCTION SURVEY STAKEOUT FOR EROSION CONTROL WILL BE INTEGRATED WITH CONSTRUCTION STAKEOUT FOR THE NEW FACILITY TO ENSURE CONSISTENCY.
- 3. PROJECT HORIZONTAL DATUM IS MARYLAND GRID NAD83
- 4. NO CLEARING, GRUBBING, LAND GRADING, ROADS, OR BUILDINGS ARE INCLUDED IN THIS PROJECT
- 5. THE PRIMARY TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICE FOR THE PROJECT SHALL BE SILT FENCE AND SUPER SILT FENCE CONSISTING OF FILTER FABRIC ATTACHED TO THE EXISTING SECURITY CHAINLINK FENCE. ENSURE PROPER TRENCH DIMENSIONS AND COMPACTION OF THE ANCHOR TRENCH FOR THE EMBEDDED FILTER FABRIC. EXISTING DIVERSION FENCE, SUPER SILT FENCE, TEMPORARY ASPHALT BERM, A RIPRAP OUTFALL, AND MOUNTABLE BERMS OUTSIDE THE LOD ARE ALSO PROVIDING EROSION AND SEDIMENT CONTROL AND SHALL BE MAINTAINED.
- 6. MAINTENANCE: SILT FENCE, SUPER SILT FENCE, AND STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSPECTED AND MAINTAINED EACH DAY AND AFTER STORM EVENTS. MAINTENANCE SHALL INCLUDE BUT NOT LIMITED TO REMOVAL OF ALL ACCUMULATED SEDIMENT, AND REPLACEMENT OF DAMAGED FILTER
- 7. SEQUENCE OF CONSTRUCTION:
- A.NOTIFY HOWARD COUNTY INSPECTOR (SEE HOWARD SCD STANDARD NOTE 1) AND NOTIFY MARYLAND DEPARTMENT OF ENVIRONMENT, INSPECTION AND COMPLIANCE PROGRAM (410) 631-3510 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
- B. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS. (~2 DAYS)
- C. NOTIFY HOWARD SCD INSPECTOR UPON COMPLETION OF EROSION AND SEDIMENT CONTROL MEASURES.
- D. WITH THE APPROVAL OF THE INSPECTOR, COMPLETE SITE PREPARATIONS OF THE REMAINDER OF THE CONSTRUCTION AREA, AND INSTALL INTERNAL EROSION CONTROLS, IF APPLICABLE. (\*\* DAYS)
- E. CONSTRUCTION AND MATERIAL STAGING. (~42 DAYS)
- F. AFTER CONSTRUCTION IS COMPLETE, PROVIDE RESTORATION SEEDING AND MULCHING. (7) DAYS)
- G.AFTER VEGETATION REESTABLISHMENT AND RECEIVING PERMISSION FROM HOWARD COUNTY INSPECTOR, REMOVE EROSION AND SEDIMENT CONTROL PRACTICES AND STABILIZE THE AREAS DISTURBED BY THIS PROCESS.
- 8. EXCAVATED TOPSOIL AND SUBSOIL SHALL BE KEPT SEPARATE AND PROTECTED AS FOLLOWS
- A. STOCKPILES SHALL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE (LOD).
- B. STOCKPILES SHALL DRAIN TO A FUNCTIONING EROSION AND SEDIMENT CONTROL DEVICE
- C. STOCKPILES SHALL BE POSITIONED TO NOT IMPEDE UPON, OR IMPAIR THE FUNCTION OF THE SEDIMENT CONTROL DEVICE.
- D. STOCKPILES SHALL BE POSITIONED TO NOT ALTER DRAINAGE DIVIDES.
- TRACKOUT SHALL BE PREVENTED BY STABILIZED CONSTRUCTION ENTRANCES AT THE CONNECTION TO EXISTING DRIVEWAYS AND ROADS
- 10. STABILIZATION DOES NOT APPLY TO THOSE AREAS WHICH ARE BEING USED FOR MATERIAL STORAGE OF FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED.
- 11. ANY DEWATERING DISCHARGE SHALL BE FILTERED BY AN APPROVED PRACTICE.
- 12. COMPLETE UNDERGROUND UTILITY LOCATION INFORMATION IS NOT AVAILABLE. CONTRACTOR IS RESPONSIBLE TO LOCATE AND PROTECT EXISTING UTILITIES.

#### B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

FAST GROWING VEGETATION IS REQUIRED ON DISTURBED SOILS FOR AN EXPECTED DURATION OF LESS THAN 6 MONTHS BEFORE RE-DISTURBANCE OR PERMANENT SEEDING

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED.

SEEDING: SEE TABLE B.1 BELOW FOR ACCEPTABLE CHOICES OF TEMPORARY SEEDING. SEEDING DATES PER ZONE 66.

FERTILIZER: PER SOIL TEST OR 436 LB/AC OF 10-20-20.

LIME: PER SOIL TEST OR 2 TONS/AC

MULCHING: APPLY 3 TONS/AC (140 LBS/1000 SF) OR UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL.

#### **B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT SEEDING**

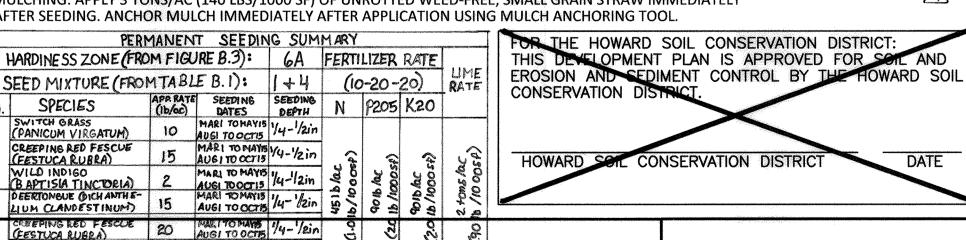
SEEDBED PREPARATION: IF NOT PREVIOUSLY LOOSENED, LOOSEN UPPER FOUR INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

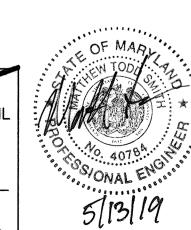
SEEDING: MD CERTIFIED SEED, 350 LB/AC (8 LB/1000 SF) TALL FESCUE. PERMANENT SEEDING SHALL BE WITHIN MAR 1-MAY 15 OR AUG 15-OCT 15.

FERTILIZER: IN ACCORDANCE WITH RESULTS OF SOIL TEST. IF REQUESTED, PROVIDE SOIL TEST RESULTS TO THE HOWARD SCD INSPECTOR.

#### LIME: IN ACCORDANCE WITH RESULTS OF SOIL TEST.

MULCHING: APPLY 3 TONS/AC (140 LBS/1000 SF) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL.





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. 40784 EXPIRATION DATE 11-08-2019

#### **DISCLAIMER:**

THE INFORMATION SET FORTH ON THIS PLAN THAT WAS PREPARED BY AND/OR APPROVED BY JMT AND THE PROFESSIONAL ENGINEER SIGNING AND SEALING THIS PLAN (COLLECTIVELY "THE ENGINEER") CONSISTS SOLELY OF THE REDLINED PORTIONS OF THE DOCUMENTS. THE UNDERLYING PLANS AND INFORMATION WERE GENERATED BASED ON INFORMATION AND RECORD PLANS OBTAINED FROM AND/OR FURNISHED BY THE COUNTY, PREPARED BY OTHERS, AND HAS NOT BEEN INDEPENDENTLY VERIFIED BY THE ENGINEER. THE ENGINEER HAS EXERCISED REASONABLE JUDGEMENT CONSISTENT WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN RELYING ON THE INFORMATION IN ORDER TO PREPARE THE REDLINE PORTIONS TO BE SUBMITTED FOR PERMITTING; BUT MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF THE EXISTING CONDITIONS OR ANY ACCURACY OR CONTENTS OF THE UNDERLYING RECORD PLANS OR ANY INFORMATION SET FORTH ON SUCH PLANS WHICH WAS NOT PREPARED BY OR UNDER THE DIRECT SUPERVISION OF THE ENGINEER. THE ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DEFECTS, DEVIATIONS OR INCONSISTENCIES ARISING FROM INACCURACIES OR OMISSIONS IN THE RECORD PLANS AND ACTUAL OR EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS.

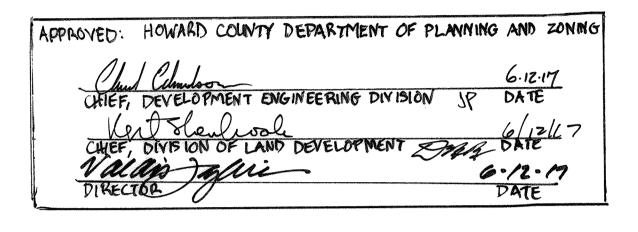


Table B.1: Temporary Seeding for Site Stabilization

Seeding Rate 1 Recommended Seeding Dates by Plant Hardiness Zone 3/ FERTILIZER RATE Seeding Depth 2 Plant Species (10-20-20) (inches) lb/ac lb/1000 ft<sup>2</sup> 5b and 6a бb 7a and 7b Cool-Season Grasses Annual Ryegrass (Lolium perenne Mar 1 to May 15: Aug | Feb 15 to Apr 30; Aug 1.0 Mar 15 to May 31; Aug 1 to Sep 30 ssp. multiflorum) 1 to Oct 15 15 to Nov 30 Mar 1 to May 15; Aug Feb 15 to Apr 30; Aug 2.2 Barley (Hordeum vulgare) Mar 15 to May 31; Aug 1 to Sep 30 1 to Oct 15 15 to Nov 30 Mar 1 to May 15; Aug | Feb 15 to Apr 30; Aug Oats (Avena sativa) Mar 15 to May 31; Aug 1 to Sep 30 1 to Oct 15 15 to Nov 30 Mar 1 to May 15; Aug Feb 15 to Apr 30: Aug Wheat (Triticum aestivum) 120 2.8 Mar 15 to May 31; Aug I to Sep 30 1 to Oct 15 15 to Nov 30 Mar 1 to May 15; Aug Feb 15 to Apr 30; Aug 112 2.8 Cereal Rye (Secale cereale) Mar 15 to May 31; Aug I to Oet 31 1 to Nov 15 15 to Dec 15 Warm-Season Grass Foxtail Millet (Setaria italica) Jun 1 to Jul 31 May 16 to Jul 31 May 1 to Aug 14 10 lb/1000st) 0.5 Pearl Millet (Pennisetum glaucum) 0.5 Jun 1 to Jul 31 May 16 to Jul 31 May I to Aug 14

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above. PROFESSIONAL CERTIFICATION:

Oats are the recommended nurse crop for warm-season grasses.

PROFESSIONAL CERTIFICATION. IHEREBY CERTIFY THAT

THEREBY CENTIFY THAT THESE DOCUMENTS WELE
PLE PARED OF APPROVED BY MY, ANDTHAT I AM A DULY
UCENSED PROFESSION ALE NOTNEER LINDS R. THE. LANS OF
THE STATE OF MARYLAND. LEENSE NO. 40784 EXPIRATION DATE NOT DEATEDS 2/ For sandy soils, plant seeds at twice the depth listed above. 3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local condit

4

## PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. EXPIRATION DATE 4/14/19 LICENSE NO. 17314

Columbia PROJECT DELIVERY PROJECT ENGINEERING **Gas Transmission** 5151 SAN FELIPE, SUITE 2400, HOUSTON TX 77056 LINDEN CHURCH METERING & REGULATING STATION UPGRADE **EROSION AND SEDIMENT** 

SDP-15-042

SHEET

**NOTES** 

72 Loveton Circle, Sparks, MD 2\*152 (410) 329-3130 Fax: (410) 472-3230 WEB WWW.P4T.COM

CATHODIC PROTECTION SYSTEM UPGRADES

**REVISIONS** 

ADDED FILTER SEPARATOR, ADDITIONAL GRAVEL, AND CANOPY OVER METER STATION

03/19

DATE

PERMANENT SEEDING ASSOCIATED WITH UTILITY EIGHTS OF WAYSHALL BE FURNISHED WITH SEED MIKHI AND HY AS DIRECTED IN THE UPDATED TO INCLUDE NEW SHEET

PERMENANT SEEDING SUMMARY

**REVISIONS** 

(ELYMUS VIRGINICUS)

MARI TOMAY B. 1/4-1/2in

AUGITO OCTIS

PPROVED BY

REVISIONS DATE

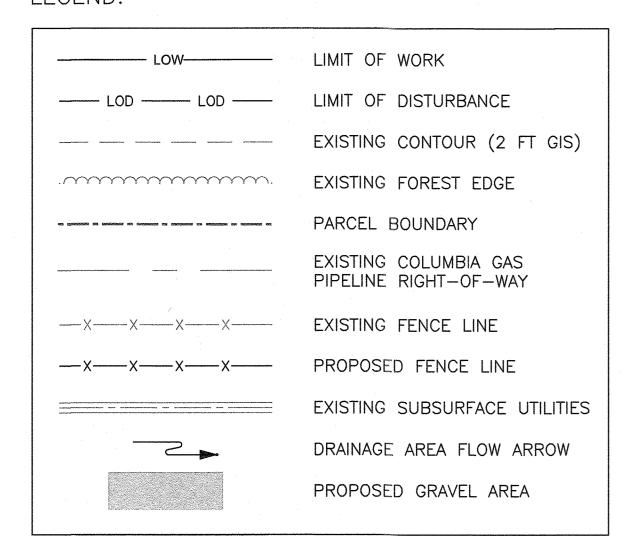
PPROVED DATE DWG. N

**CONTROL NOTES** <sup>TE:</sup>02/03/2017 19175 REFERENCE

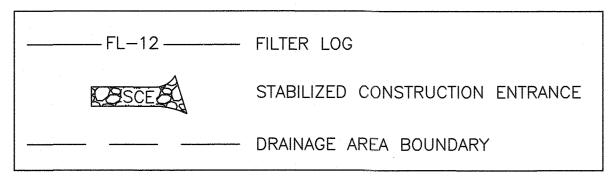
SC-03

DRAWING NUMBER

### LEGEND:



#### EROSION CONTROL PRACTICE LEGEND:



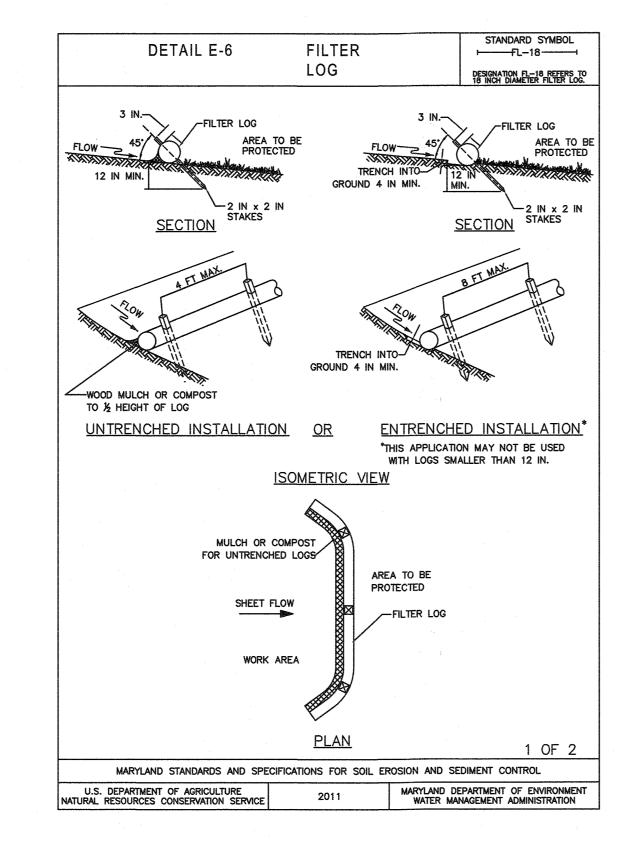
FILTER	LOG	ID	DIAMETER	LENGTH
FL-1			12"	62'

### NOTES:

- 1. AS AN ALTERNATIVE MEANS OF SUPPORTING SSF, THE FILTER FABRIC MAY BE ATTACHED TO THE EXISTING SITE SECURITY CHAIN LINK FENCE. ENSURE PROPER TRENCHING AND BACKFILL OF FABRIC TOE.
- 2. THE EXISTING SITE DOES NOT HAVE CURBS OR A STORM SYSTEM TO CONCENTRATE FLOW. ROOFS AND PAVEMENT ARE DISCONNECTED IMPERVIOUS AREAS WHICH SHEET FLOW INTO A WOODED AREA WEST OF THE SITE FENCE.
- 3. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO CONSTRUCTION.
- 4. NO DISTURBED AREA SHALL REMAIN UNSTABILIZED OVERNIGHT UNLESS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.
- 5. NO EARTH DISTURBANCE ACTIVITIES ARE PERMITTED WITHIN THE LOW. IF EARTH DISTURBANCE OCCURS. THE AREA MUST BE STABILIZED IMMEDIATELY AND SHALL NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TOWARD AN MDE APPROVED SEDIMENT CONTROL DEVICE.
- 6. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
- 7. AS PER SECTION 16.1201(b)(2)(i), THIS PROJECT IS LESS THAN 20,000 SF AND IS NOT SUBJECT TO FOREST CONSERVATION. A DOI WILL BE SUBMITTED.

#### WATER QUALITY COMPLIANCE:

DISTURBED AREA: AREA OF FACILITY: 0.05 ACRES 0.09 ACRES



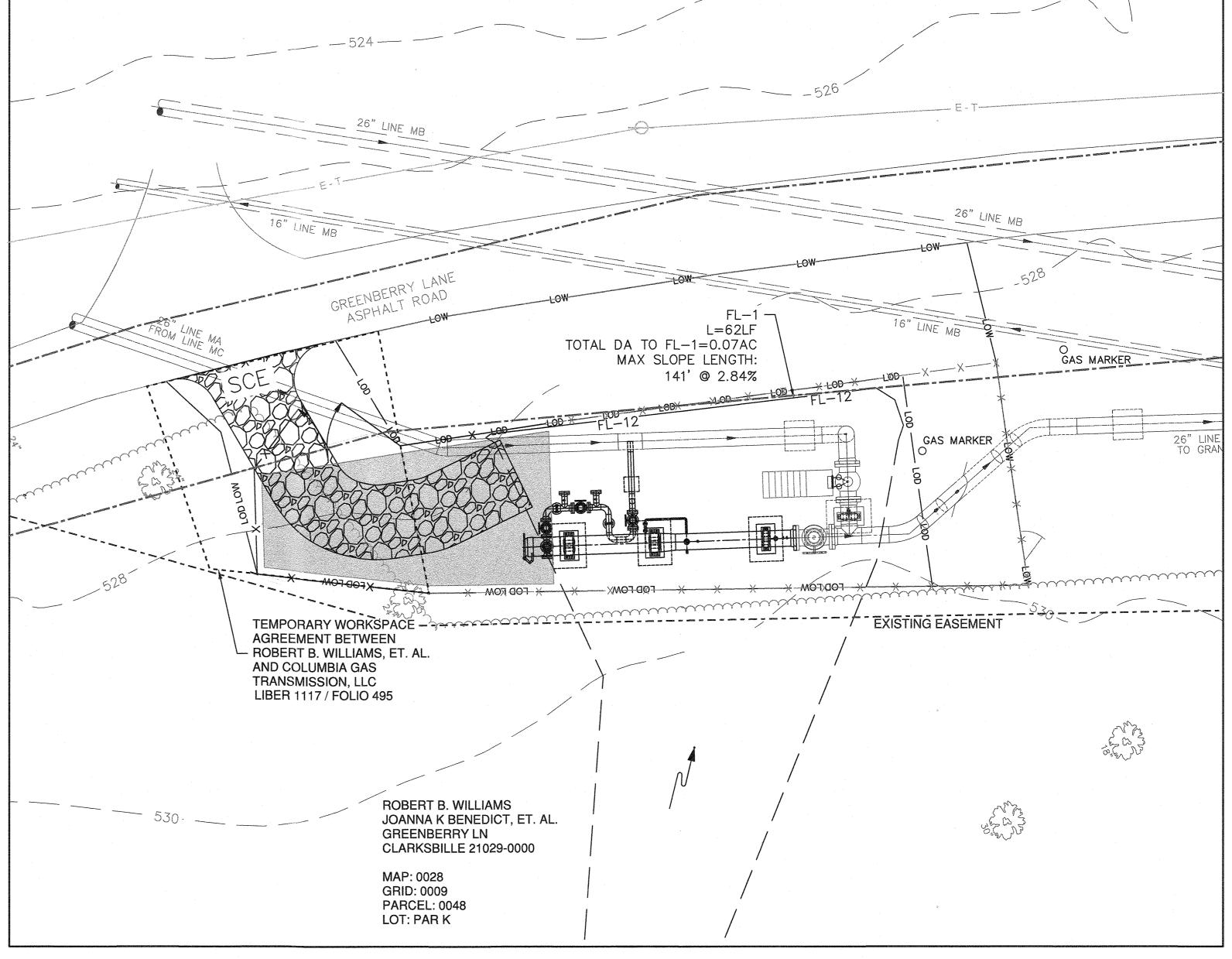
		STANDARD SYMBOL
DETAIL E-6	FILTER	⊢ FL-18
	LOG	DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.
		18 INCH DIAMETER FILTER LOG.

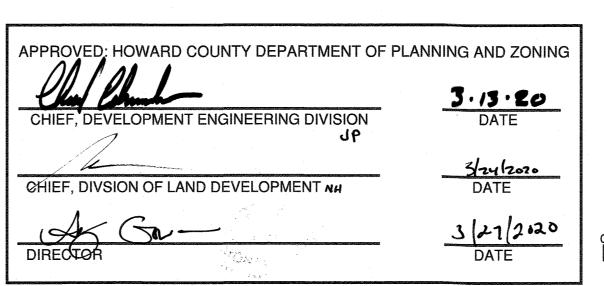
#### CONSTRUCTION SPECIFICATIONS

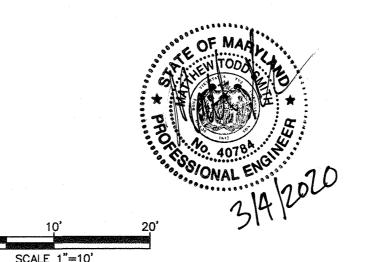
- PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
- FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
- INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
- FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
- 5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
- USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
- WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
- REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF 1/2 THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

				2	OF	2
MARYLAND STANDARDS AND SPEC	CIFICATIONS FOR SOIL EF	ROSION AND	SEDIMENT	CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011		DEPARTMEN MANAGEMEN			









## PROFESSIONAL CERTIFICATION

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. 40784

EXPIRATION DATE 11-08-2021

NOTES

**PURPOSE STATEMENT:** THE PURPOSE OF THIS PROJECT IS TO MODIFY THE LAUNCHER/RECEIVER BARREL ON LINE MA AT THE LINDEN CHRCH M&R STATION TO ALLOW FOR BI-DIRECTIONAL INSPECTIONS OF LINE MA.

PROJECT DELIVERY **B** Columbia PROJECT ENGINEERING Gas Transmission LINE MA LINDEN CHURCH M&R STATION L/R MODIFICATIONS REVISED SITE DEVELOPMENT PLAN Line MA Linden Church M&R Station L/R Modifications DRAWN BY: RLM DATE: 12/18/2019 DRAWING NUMBER SHEET ISSUE 15-1565-037 08 OF 08 APPROVED DATE NO. REVISIONS DATE No. REVISIONS REVISIONS DWG. NO REFERENCE DATE SDP. 15.042