EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The project depicted herein will involve extending a new public gravity sewer from a current intersection point near the Interstate 81 (SBL) overpass to the properties owned by EJ Miles. The total area of land disturbance is 0.62 acres.

EXISTING SITE CONDITIONS

Existing site conditions include suburban streetscapes and yard scapes reflective of urban areas. The site contains standard vegetation that would occur in a commercial and urban areaa. The topography of the project site is flat with varied slopes ranging from 0 to 5%. The site drains generally in the sourtherly direction and towards the existing creek.

ADJACENT AREAS

Areas adjacent to the project include commercial and governmental properties. The terrain adjacent to the project corridor is a mix of grass, paved, and wooded areas. It is mostly adjacent to streets surrounded by existing commercial and governmental

OFF-SITE AREAS

No off-site areas will be disturbed as part of this project except for access and staging.

CRITICAL AREAS

Some portions of the work will traverse steep slopes for short distances.

SOILS

Soils data taken from NRCS Soil Survey for Roanoke County

Unit	Soil Name	Slope
42A	Sindion Loam	0-10%
52	Udorthents-Urban ·	0-10%

EROSION AND SEDIMENT CONTROL MEASURES

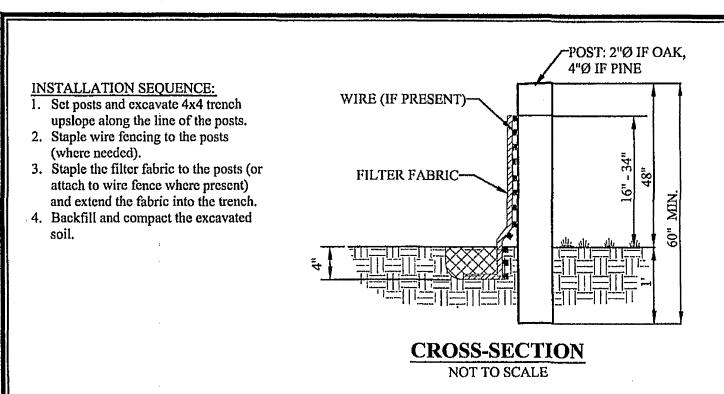
- Silt Fence (Section 3.05) Temporary silt fence shall be installed along the peripheries of the areas disturbed for the sewer
- Permanent Seeding (Section 3.32) All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. Erosion control blankets will be installed over fill slopes which have been brought to final grade and have been seeded to protect the slopes from rill and gully erosion and to allow seed to germinate properly. Mulch (straw or fiber) will be used on relatively flat areas. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching.
- Mulching (Section 3.35) Mulch shall be used over all seeded areas and shall be applied in accordance with Standard and Specification 3.35 of the Virginia Erosion and Sediment Control Handbook, latest edition.

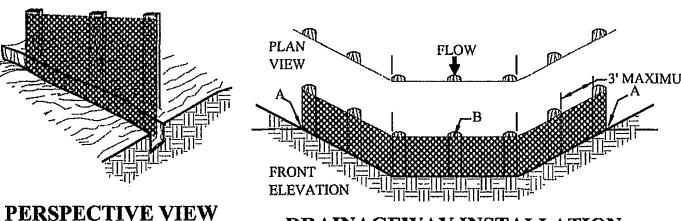
PERMANENT STABILIZATION

Permanent stabilization will be accomplished by establishment of turf.

CALCULATIONS

No Design Calculations are required. No new above surface physical improvements are proposed.





DRAINAGEWAY INSTALLATION POINTS 'A' SHOULD BE HIGHER THAN POINT 'B' NOT TO SCALE

Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the requirements noted in VESCH Table 3.05-B, latest edition. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When ioints are unavoidable, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and securely sealed.

A trench shall be excavated approximately 4-inches wide and 4-inches deep on the upslope side of the proposed location of the measure When wire support is used, standard-strength filter cloth may be used. Wire fence reinforcement for silt fence using standard-strength filter cloth shall be a minimum of 14 gauge and shall have a minimum mesh spacing of 6 inches.

Posts for this type of installation shall be placed a maximum of 10 feet apart. When wire support is not used, extra-strength filter cloth must be used. Posts for this type of installation shall be placed a maximum of 6 feet apart.

inspect all silt fencing each week and after every significant runoff producing event, and repair the fence as needed

ACS SF - SILT FENCE BARRIER
Refer to and comply with the Standards and States addition. This factor that the Standards and States addition.

NOT TO SCALE

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KEY	NAME	SYMBOL	VESCH No.
(B/M)	Soil Stabilization Blankets and Matting		3,36
(CE)	Temporary Gravel Construction Entrance		3.02
CIP	Culvert Inlet Protection		3.08
(CRS)	Construction Road Stabilization		3.03
(DD)	Temporary Diversion Dike		3.09
ES-I)	Silt Fence Break		
(IP)	Storm Drain Inlet Protection		3.07
MU	Mulching		3.35
(OP)	Outlet Protection		3.18
PS	Permanent Seeding		3.32
SAF	Construction Safety Fencing	<u> </u>	3.01
(SF)	Silt Fence		3.05
(SR)	Surface Roughening		3.29
(ST)	Temporary Sediment Trap		3.13
(TP)	Tree Preservation and Protection		3.38
(TS)	Temporary Seeding		3.31

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-l: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook, latest edition and Virginia Regulations 4VAC50-30, Erosion and Sediment Control Regulations. ES-2: The plan approving authority must be notified one week prior to the preconstruction conference, one week prior to

the commencement of land disturbing activity, and one week prior to the final inspection. ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing. ES-4: A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved.

ES-8: During dewatering operations, water will be pumped into an approved filtering device. ES-9: The contractor shall inspect all erosion control measures periodically and after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made

EROSION CONTROL LEGEND AND GENERAL NOTES
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	EROSION SEDIMENT CONTROL MINIMUM STANDAROS		
MS #	MINIMUM STANDARDS	MEASURE APPLIED FOR EACH MINIMUM STANDARD	
na N	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENIDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENIDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN CHE (1) YEAR.	PERMANENT SEEDING HAS BEEN SPECIFED FOR ALL DENUDED AREAS ALONG WITH APPLICABLE MULCH, LIME AND FERTILIZATION.	
MS #2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES, THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE.	THERE ARE NO SOIL STOCKIMLES PROPOSED, IF SOIL IS TO BE STORED ON SITE IS SHALL HAVE SILT FENCE INSTALLED AROUND THE DOWN HILL SIDE OF THE PILE TO HISURE PROTECTION FROM SEDWIENT LADEN RUN-OFF FROM LEAVING THE SITE	
nz to	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABLIZED, PERMANENT VEDETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHEVED THAT, BY THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL BHRIBIT EROSION.	PERMANENT SEEDING HAS BEEN SPECIFIED FOR ALL DENUDED AREAS ALONG WITH APPLICABLE MULCH, LINE AND FERTILIZATION.	
NS #4	SEDIMENT BASINS AND TRAPS, PERIMETER DINCES, SEDIMENT BARNIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FRIST STEP IN THE LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCES OCCURS.	SILY FENCE WILL BE INSTALLED AT AREAS DISTURBED FOR THE SEWER SYSTEM.	
MS 4 5	STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS INMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE	
NS #6	SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TITAP OR BASIN. A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ORLY CONTROL DRAINAGE AREA LESS THAN 3 ACRES. B. FLOW GREATER THAN THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STROAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.	NOT APPLICABLE	
NS 4 7	CUT AND FILL SLOPES SKALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION, SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES LINTIL. THE PROBLEM IS CONFECCED.	NOT APPLICABLE	
MS #6	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL. FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE	
NS PO	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRANAGE OR OTHER PROTECTION SHALL BE PROMOBEL.	NOT APPLICABLE	
M3 4 10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT—LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	NOT APPLICABLE	
MS # 11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REGURED TEMPORARY OR PERMANENT CHANNEL LINNO SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE	
NS # 12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MEMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST ENTENT POSSIBLE DURING CONSTRUCTION, NONERCODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS, EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY MONERCOBILE COVER MATERIALS.	NO CAUSEWAYS, COFFEROAMS, OR EARTHEN FILL IS PROPOSED FOR THE PROJECT.	
MS #13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TIME IN ANY SIX-MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERCOUBLE MATERIAL SHALL BE PROVIDED.	NO CONSTRUCTION VEHICLES SHALL ENTER THE WATERCOURSE.	
NS #14	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.	NOT APPLICABLE	
MS # 15	THE BED AND EANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE	
MS (FIG	Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria: A. No nore than 600 linear feet of trench may be opened at one time. B. Excavated Material shall be placed on the uphill side of trenches. C. Efflicht from Dewatering operations shall be filtered or passed thru an approved sedment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. D. Material used for bacagilling trenches shall be properly compacted in order to maintee proson and promote stabilization. E. Restabilization shall be accomplished in with these regulations. F. Applicable safety regulations shall be computed with.	CRITERIA A THROUGH F WILL BE APPLIED DURING THE INSTALLATION OF THE SEWER SYSTEM LINES	
NS # 17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MOMMETE THE TRANSPORT OF SEDMENT BY VEHICLIAR TRACKING ONTO THE PAYED SURFACE, WHERE SEDMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEAVED THOROUSHLY AT THE END OF THE DAY, SEDMENT SHALL BE REMOVED FROM THE ROADS BY SHOVEDING OR SWEEPING AND TRANSPORTED TO A SEDBENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED GIVLY AFTER SEDMENT IS REMOVED IN THIS MANNER.	CONSTRUCTION VEHICLES WILL REMAIN ON PAYED SURFACES ELIMINATING THE POTENTIAL, FOR THE TRANSPORT OF SEXIMENT TO THE PUBLIC ROAD.	
MS #18	ALL TEMPORARY EROSION AND SEDMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THEITY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE ALITHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDMENT AND THE DISTRIBUD SOB, AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDMENTATION.	REMOVAL OF TEMPORARY EROSION CONTROL MEASURES ARE SPECIFIED IN THE DETAILS SHOWN OR WHEN THE COUNTY DEEMS THE SITE FULLY STABILIZED.	
MS #19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDMENT DEPOSITION, EROSION & DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY & PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24 HOUR DURATION.	THERE IS NO INCREASE IN STORMWATER VOLUME OR VELOCITY DUE TO THE PROPOSED WORK, THE PROPOSED EROSION CONTROL MEASURES WILL ELIMINATE ANY POTENTIAL OF DOWNSTREAM EROSION OR DAMAGE.	

Rate per acre	Rate per 1000SF	NOTES
½ - 2 tons (min. 2 ons for winter cover)	70 - 90 lbs	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
ninimum 1500 lbs,	35 lbs	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
- 6 tons	35 lbs	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
- 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs. nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
60 - 70 cu.yds.	1 -2 CY	Free of coarse matter. Air- dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
	ons for winter cover) ninimum 1500 lbs, - 6 tons - 6 tons 0 - 70 cu.yds.	2 - 2 tons (min. 2 ons for winter cover) 70 - 90 lbs 185 - 275 lbs.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs/ac. or 45 lbs./1000 sq.ft.

- Before mulching, complete required grading and install needed sediment control practices.
- Lime and fertilizer should be incorporated and surface roughening accomplished as needed. Seed should be applied before mulching except in the following cases:
- a. Where seed is to be applied as part of a hydroseeder slurry containing fiber mulch. b. Where seed is to be applied following a straw mulch spread during winter months.
- Application. Mulch material shall be spread uniformly, by hand or machine. When spreading straw by hand, divide the area to be mulched into approximately 1,000 SF sections and place 70-90 lbs. (1-1/2 to 2 bales) of straw in each section to facilitate uniform distribution.
- Mulch anchoring. Straw mulch must be anchored immediately after spreading to prevent displacement. Other organic
- mulches listed in table do not require anchoring. The following methods of anchoring straw may be used: a. Mulch anchoring tool (often referred to as a krimper or krimper tool). This is a tractor-drawn implement designed to punch mulch into the soil surface. This method provides good erosion control with straw. It is limited to use on slopes no steeper than 3:1 where equipment can operate safely. Machinery shall be operated along the contours. Fiber mulch. Apply fiber mulch by means of a hydroseeder at a rate of 500-750 lbs./ acre over top of straw mulch
- or hay. It has an added benefit of providing additional mulch to the newly seeded area. c. Liquid mulch binders. Application of liquid mulch binders and tackifiers should be heaviest at the edges of areas and at crests of ridges and banks, to prevent displacement. The remainder of the area should have binder applied uniformly. Binder may be applied after mulch is spread or may be sprayed into mulch as it is being blown onto the
- Mulch nettings. Lightweight plastic, cotton, or paper nets may be stapled over the mulch according to manufacturer's
- Peg and twine. Because it is labor-intensive, this method is feasible only in small areas where other methods cannot be used. Drive 8-10 inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes may be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross-within-a square. Turn twine 2 or more times around each peg.
- Chemical mulches, synthetic binders, and asphalt binders may be used in situations as described in VESCH, latest
- Maintenance. All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nots and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, re-install netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place up until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed

TYPE A SEED MIX SELECTION		
SEEDING DATE SEED MIX		
15 October to 1 February	KY-31 fescue @ 5 lb / 1000 SF winter rye @ 1/2 lb / 1000 SF	
I February to I June	KY-31 fescue @ 5 lb / 1000 SF annual rye @ 1/2 lb / 1000 SF	
1 June to 1 September	KY-31 fescue @ 5 lb / 1000 SF German millet @ 1/2 lb / 1000 SF	
1 September to 15 October	KY-31 fescue @ 5 lb / 1000 SF annual rye @ 1/2 lb / 1000 SF	

TYPE B (SLOPES 3:1	OR STEEPER) SEED MIX SELECTION
SEEDING DATE	SEED MIX
15 March to 1 May	crown vetch @ 1/2 lb / 1000 SF pcrcnnial rycgrass @ 1/2 lb / 1000 SF red top @ 1/8 lb / 1000 SF
15 August to 1 October	crown vetch @ 1/2 lb / 1000 SF perennial ryegrass @ 1/2 lb / 1000 SF red top @ 1/8 lb / 1000 SF

140 lb / 1000 SF pulverized agricultural limestone

FERTILIZER: 5-20-10 @ 25 lb / 1000 SF

38-0-0 @ 7 lb / 1000 SF MULCH:

Specification 3.35 of the Virginia Erosion and Sediment Control Handbook, latest edition. SOIL CONDITIONING: Incorporation of lime and fertilizer, selection of certified seed, mulching, maintenance of new seedlings, and reseeding shall be in accordance with specifications contained within the Virginia

Shall be used over all seeded areas and shall be applied in accordance with Standard and

Additional seeding to be performed as required by the inspector.

Erosion and Sediment Control Handbook, latest edition.

Apply seed uniformly with a cyclone secder, drill, cultipacker seeder, or hydroseeder on a firm, friable, seedbed. Maximum seeding depth shall be 1/4 inch.

PS - PERMANENT SEEDING Refer to and comply with the Standards and Specifications of the Virginia Erosion & Sediment Control Handbook, latest edition. This information is based on and modeled after it and is provided as a quick reference.

WWW.ACSDESIGNALC.COM | ENGINEERING | SURVEYING | CONSTRUCTION MANAGEMENT Erosion and sediment control must be consistent with the following criteria, techniques and methods, as required in the Virginia Administrative Code, 4VAC50-30-40. "Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade has been reached on

any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final

grade but will remain dormant for longer than thirty days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. "During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.

shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit "Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as

"A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation

a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. "Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation. "Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap

a. "The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.

- b. "Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a twenty-five year storm of 24-hour duration. Runoff coefficiencies used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.
- "Cut and fill slopes shall be designed and constructed in a manner that will minimize crosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.
- "Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.
- "Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. "All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment. "Before newly constructed stormwater conveyance channels are made operational, adequate outlet protection and any required
- temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel. "When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials. "When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary stream
- crossing constructed of nonerodible material shall be provided. "All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.
- "The bed and banks of any watercourse shall be stabilized immediately after work in the watercourse is completed. "Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria: a. "No more than 500 linear feet of trench may be opened at one time.
- b. "Excavated material shall be placed on the uphill side of trenches. c. "Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. d. "Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
- f. "Applicable safety regulations shall be complied with. "Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This
- provision shall apply to individual development lots as well as to larger land-disturbing activities. "All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion
- "Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the standards and criteria" ... given in detail in the Virginia Erosion & Sediment Control Handbook, latest edition.

DESCRIPTION UNIT QUANTITY UNIT COST TOTAL COST CONSTRUCTION EA ENTRANCE SILT FENCE EA \$750.00 INLET PROTECTION **TEMPORARY** DIVERSION DIKE TEMPORARY LF FILL DIVERSION SEDIMENT TRAP EA CHECK DAM EA LS \$1,750.00 PERMANENT SEEDING OUTLET PROTECTION EA EA SEDIMENT BASIN 1000 SF TEMP. SEEDING

ALL COSTS GIVEN ARE COMPLETE IN PLACE

ROW DIVERSION

SUBTOTAL COST

TOTAL PROJECT COST

EROSION & SEDIMENT CONTROL

COST ESTIMATE

: Lic No 031787

ENGINEERING - SURVEYING CONSTRUCTION MANAGEMENT

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DESIGNED BY:	DME
CHECKED BY:	SFE
DATE:	September 20, 2009
JOB NUMBER:	09030
REVISIONS:	

\$2,500.00

SHEET NO.

I Erosion Control Narrative & Standard Details

ACS MU - MULCHING
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ACS EROSION & SEDIMENT CONTROL MINIMUM STANDARDS
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e. "Restabilization shall be accomplished in accordance with these regulations.