9VAC25-830. Minimum standards. A VESCP must be consistent with the following criteria, techniques and methods:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is 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 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. Topsoil may be used as permanent stabilization per the VESCH and must be compacted to a minimum depth of 2 to 4 inches. Contractor to adhere to these standards while developing this site.

2. During construction of the project, soil stock piles 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. Contractor to temporary seed stockpile if stockpile is not used within (14) FOURTEEN days

3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion. Contractor to adhere to this standard for developing this site.

4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.

5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.

6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap 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 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 25-year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. 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.

All cut and fill sites for this site will be at 3:1 min. or flatter

8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. There will be no concentrated runoff flowing down cut or fill slope.

Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. Contractor to adhere to this criteria for development of this site

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.

11. Before newly constructed stormwater conveyance channels or pipes 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.

All inlets and outlets culverts shall have either inlet or outlet protection.

Channels slopes are such that no protection is needed (i.e. jute mesh, geogrid, etc.)

12. 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. Not Applicable for this site

13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided. Not Applicable for this site

14. All applicable federal, state and local chapters pertaining to working in or crossing live watercourses shall be met. Not Applicable for this site

15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed. Not Applicable for this site

16. 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

b. Excavated material shall be placed on the uphill side

at one time.

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.

e. Restabilization shall be accomplished in accordance with this chapter.

f. Applicable safety chapters shall be complied with.

Contractor to adhere to this criteria for development of this site.

17. Where construction vehicle access routes intersect paved or 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 surface 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. Contractor to adhere to this criteria for development of this site. A construction entrance will be implemented for this site. Any mud/dirt/debris from construction site onto EXISTING ROADS shall be immediately cleaned.

18. 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 VESCP authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. Contractor to adhere to this criteria for development by permanent seeding.

19. 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 following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:

a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.

b. Adequacy of all channels and pipes shall be verified in the following manner:

(1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or

(2)(a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.

(b) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks.

(c) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.

c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:

(1) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel the bed or banks; or

(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the

(3) Develop a site design that will not cause the pre-development peak runoff rate from a two- year storm to increase when runoff outfalls into a natural channel or will not cause the pre- development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man- made channel; or

(4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.

d. The applicant shall provide evidence of permission to make the improvements. (VDOT Approval)

e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project .

f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.

g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.

h. All on-site channels must be verified to be adequate. Calculations on plans and

i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.

j. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations. The existing stormwater management facility installed during Phase I of the Daleville Town Center Development was designed to compensate for this

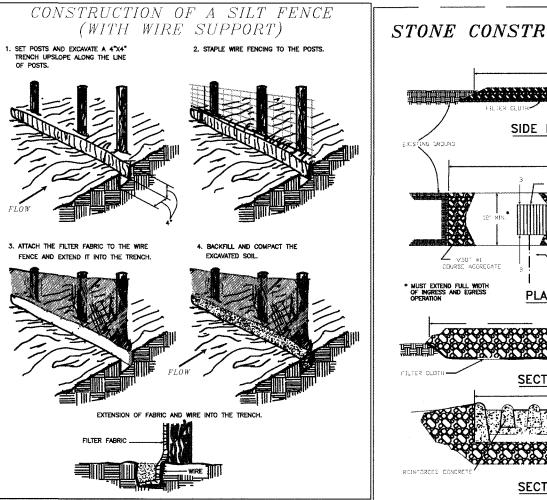
k. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state. This site was designed to comply with the above criteria by calling for inlet/outlet protection and silt fence where required.

I. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 10.1-562 or 10.1-570 of the Act.

The project meets MS-19.

m. For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of § 10.1-561 A of the Act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (§ 10.1-603.2 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 4VAC50-60-48 of the Virginia Stormwater Management Program (VSMP) Permit Regulations.

n. Compliance with the water quantity minimum standards set out in 4VAC50-60-66 of the Virginia Stormwater Management Program (VSMP) Permit Regulations shall be deemed to satisfy the requirements of Minimum Standard 19. This project adheres and satisfies the minimum standards



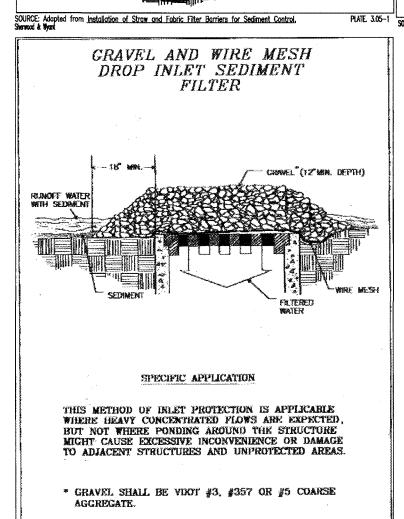
RETRIFFERED CONCRETE

SECTION B-B

SOURCE: ADAPTED from 1983 Noryland Standards for Soil erosion and Sediment Control, and Va. DSNC

Plate 3.05-1

GRAVEL AND WIRE MESH



	STONE CONSTRUCTION ENTRANCE
	79 MIN. EXISTENG PROTECTION S.1. FELTER CLUTH 6 MIN. A MEDIAL F. EERM GEPTIONAL.)
	SIDE ELEVATION EKSTING GROUND
	70° MIN. 3 VASHRACK IV MEN.
	12° MEN. 10° MEN. EXISING PAVEMENT
	V30" #1 PUSITIVE ERAINAGE 10" MIN. COURSE AGGREGATE 3 TRAPPING BEVICE
	* MUST EXTEND FULL WIDTH OF INVRESS AND EXPRESS OPERATION PLAN VIEW
JN	12' MN. 3" MIN. 3" MIN.
	SECTION A-A

SOIL C

TS PS MU SEEDING SPECIFICATIONS

TYPE A TYPE B (SLOPES 3:1 OR STEEPER)

15 OCTOBER TO 1 FEBRUARY

15 MARCH TO 1 MAY

K-31 FESCUE @ 5 LB / 1000 SF CROWN VETCH @ 1/2 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF

K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF 1 JUNE TO 1 SEPTEMBER K-31 FESCUE @ 5 LB / 1000 SF

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF 38-0-0 @ 7 LB / 1000 SF

GERMAN MILLET @ 1/2 LB / 1000 SF

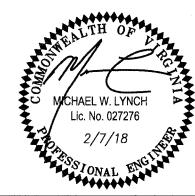
IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

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

NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF		3.20	ROCK CHECK DAMS		
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE		3.21	LEVEL SPREADER	LS	munitymumissis
3.03	CONSTRUCTION ROAD STABILIZATION	(CRS)	9	3.22	VEGETATIVE STREAMBANK STABILIZATION	VSS	9
3.04	STRAW BALE BARRIER	(STB)		3.23	STRUCTURAL STREAMBANK STABILIZATION	SSS	<u> </u>
3.05	SILT FENCE	(SF)		3.24	TEMPORARY VEHICULAR STREAM CROSSING		
3.06	BRUSH BARRIER	BB	08383330	3.25	UTILITY STREAM CROSSING	USO	
3.07	STORM DRAIN INLET PROTECTION	(IP)		3.26	DEWATERING STRUCTURE	DS	
3.08	CULVERT INLET PROTECTION	CIP	9	3.27	TURBIDITY CURTAIN	TC	DV
3.09	TEMPORARY DIVERSION DIKE	(D)	muutigaaaaatigaaaa	3.28	SUBSURFACE DRAIN	SD	
3.10	TEMPORARY FILL DIVERSION	(FD)	amatymumutymum.	3.29	SURFACE ROUGHENING	SR	-m(3)m
3.11	TEMPORARY RIGHT—OF—WAY DIVERSION	(RWD	çii; uuutypuuunitypuun	3.30	TOPSOILING	(10)	······································
3.12	DIVERSION	DV	Tunnitypunumitypunum	3.31	TEMPORARY SEEDING	TS	-14(3)
3.13	TEMPORARY SEDIMENT TRAP	(ST)	unintypi::::!!yuliyuuu.	3.32	PERMANENT SEEDING	PS	······································
3.14	TEMPORARY SEDIMENT BASIN	SB		3.33	SODDING	SO	
3.15	TEMPORARY SLOPE DRAIN	TSD	9	3.34	BERMUDA GRASS AND ZOYSIAGRASS ESTABLISHMENT	E	
3.16	PAVED FLUME	PF	(#)	3.35	MULCHING	MU	
3.17	STORMWATER CONVEYANCE CHANNEL	SCO		3.36	SOIL STABILIZATION BLANKETS AND MATTING		
3.18	OUTLET PROTECTION	(P)		3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	-15-11-11-11-11-11-11-11-11-11-11-11-11-
3.19	RIPRAP	RR		3.38	TREE PRESERVATION AND PROTECTION	TP	······································
				3.39	DUST CONTROL	DC	(%)

EROSION - SII	LTAT	ION	C	ONTE	R O	L
COST	ESTI	МА	TE			
ALL COSTS GIVEN ARE COMPLETE IN PLACE						
DESCRIPTION	DESCRIPTION UNIT QTY. UNIT COST		TOTAL COST			
3.02 - CONSTRUCTION ENTRANCE	EA	2	\$	1,500.00	\$	3,000.00
3.07 - SD INLET PROTECTION	EA	11	\$	625.00	\$	6,875.00
3.31 - TEMPORARY SEEDING	AC	0.80	\$	600.00	\$	480.00
3.32 - PERMANENT SEEDING	AC	0.80	\$	600.00	\$	480.00
3.35 - MULCHING	AC	0.80	\$	600.00	\$	480.00
SUB-TOTAL		-1			\$	11,315.00
10% CONTINGENCY					\$	1,131.50
TOTAL PROJECT COST					\$	12,446.50
TOTAL DISTURBED AREA	93,654 SF			2.15		· · · · · · · · · · · · · · · · · · ·



Drawn	ECI	EROSION & SEDIMENT CONTROL DETAILS	NO SCALE	
Designed	ECI	BROAD ST. & CHARTER AVE. EXTENSIONS	DATE: FEB 7, 2018	
Checked		PROJECT: 17056		
Approved	ECI			
Approved	ECI	C14		

