MS-2: The contractor shall stabilize with TS and protect from erosion, with any applicable method, all stockpiles and any on-site or off-site borrow or spoil areas, as applicable. Approval of this plan does not cover off-site borrow or spoil areas. 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 for review and approval by the Plan Approving Authority.

MS-3: Where TS/PS are not applicable provide other means of stabilization (CRS, etc.) within 7 days of reaching final grade or within 30 days where the area is yet to reach final grade but is not proposed to be actively involved in the

MS-4: All soil erosion and sediment control measures shall be placed in advance of the work they are intended to

MS-5: Earthen controls and structures shall be stabilized immediately upon installation.

MS-6: NOT APPLICABLE; no sediment traps or basins are proposed for this project.

MS-7: Care has been taken in design to minimize drainage over slopes and provide a suitable protective stabilization method. Contractor shall protect slope areas during and after construction from concentrated runoff and the erosion effects of wind and rain. Stabilize as soon as practical to minimize erosion.

MS-8: NOT APPLICABLE: no channels or drains are proposed over slopes.

MS-9: NOT APPLICABLE; seepage through slopes is not anticipated to be encountered on this project.

MS-10: NOT APPLICABLE; no culverts or storm sewer are proposed in this project and no culvert or storm sewer inlets are adjacent to the project.

MS-11: RLD shall verify that adequate channel linings and proper outlet protection is in place prior to operation of storm sewer system.

MS-12: Live watercourse protection and permits are NOT APPLICABLE; no live watercourses exist within or adjacent to this project.

MS-13: Stream crossing is NOT APPLICABLE; no live watercourses exist within or adjacent to this project.

MS-14: Regulations pertaining to live watercourses are NOT APPLICABLE; no live watercourses exist within or adjacent to this project.

MS-15: Live watercourse bed and bank stabilization are NOT APPLICABLE; no live watercourses exist within or adjacent to this project.

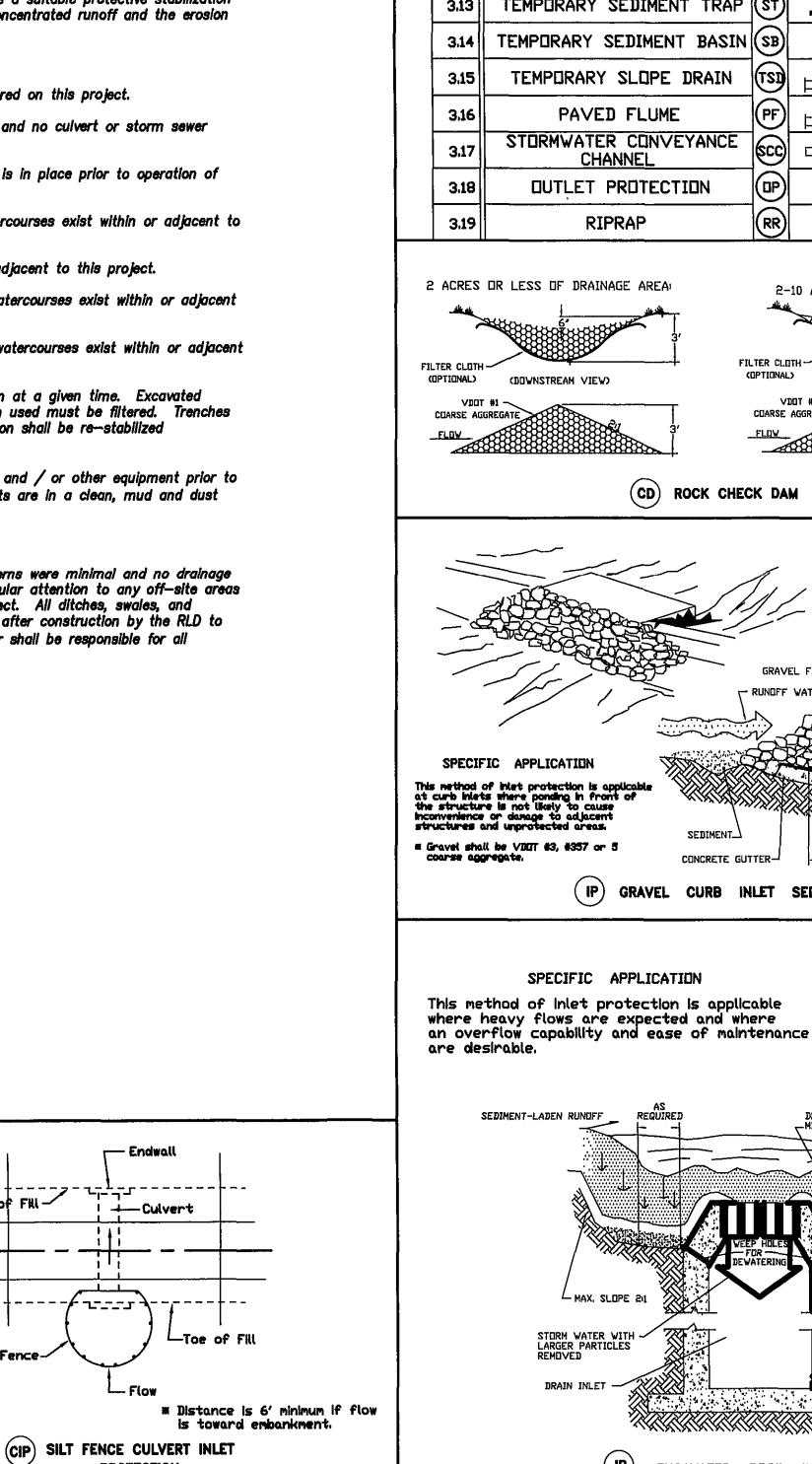
MS-16: Regarding utility installations, no more than 500 LF of trench may be open at a given time. Excavated material shall be placed on uphill side of trench. Effluent of any dewatering system used must be filtered. Trenches shall be proper backfilled and compacted per detail and specs. Completed installation shall be re-stabilized

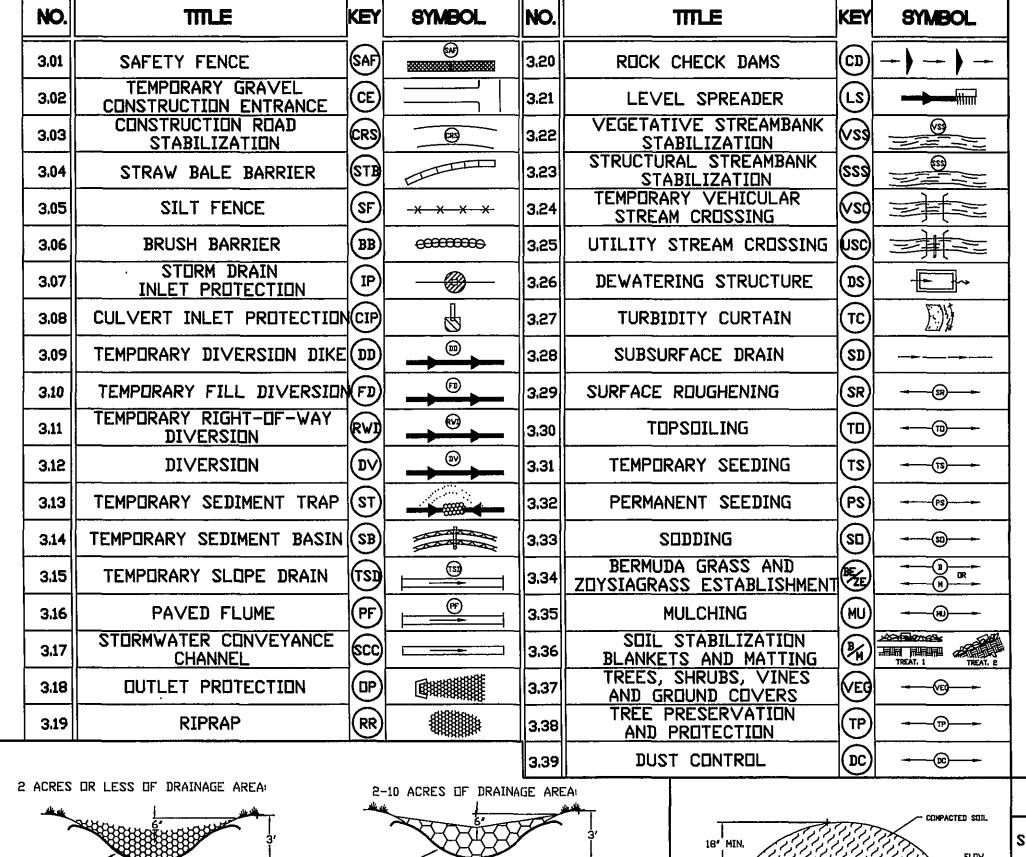
MS-17: The contractor shall provide adequate means of cleaning mud from trucks and / or other equipment prior to entering public streets. It is the contractor's responsibility to insure that the streets are in a clean, mud and dust free condition at all times.

MS-18: See Maintenance under ESC Narrative for removal of temporary measure.

MS-19: Due to the size and minimal complexity of this project stormwater concerns were minimal and no drainage calculations were required. However, the Responsible Land Disturber shall pay particular attention to any off-site areas contributing runoff to the site and off-site locations receiving runoff from this project. All ditches, swales, and natural watercourses downstream of this project shall be field inspected during and after construction by the RLD to ensure compliance with DCR's MS-19. If erosion or scour is occurring the developer shall be responsible for all corrective measures.

GRAVEL (12"MIN, DEPTH)





FILTER CLOTH -

(CD) ROCK CHECK DAM

(IP) GRAVEL CURB INLET SEDIMENT FILTER

SPECIFIC APPLICATION

STORM WATER WITH ~ LARGER PARTICLES REMOVED

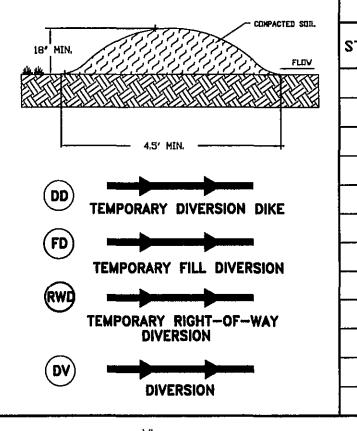
DRAIN INLET .

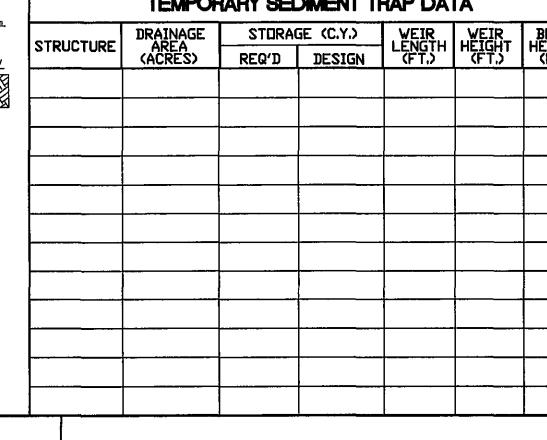
(DOWNSTREAM VIEW)

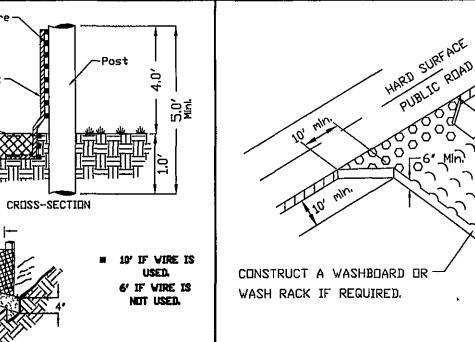
(DOWNSTREAM VIEV)

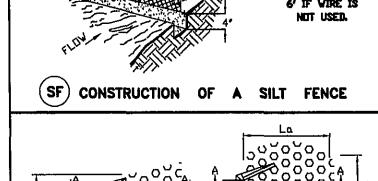
FILTERED WATER

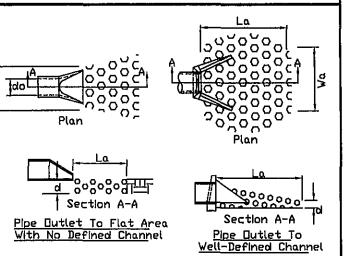
xtend Flabric and

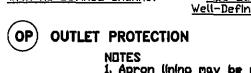




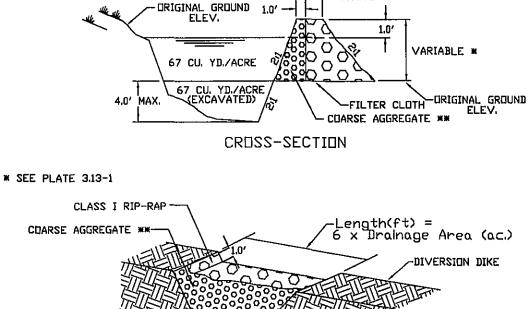








1. Apron lining may be rip-rap, grouted rip-rap, or concrete.
2. La is the length of the rip-rap apron as calculated using plates 1.36d and 1.36e.
3. d = 1.5 times the maximum stone diameter, but not less



** COARSE AGGREGATE SHALL BE VDOT #3,#357 0F#5

VARIABLE *-

SEDIMENT TRAP

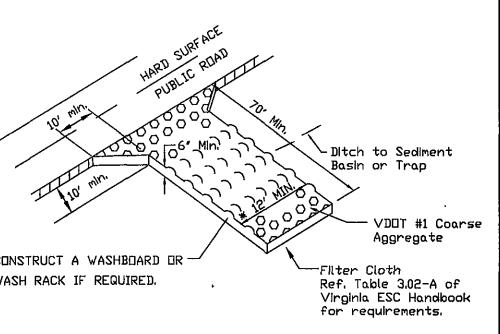
FILTER CLOTH -

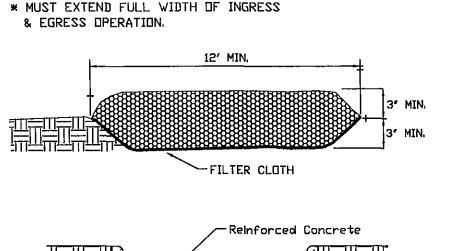
~EXCAVATED AREA

FOR AREAS LESS THAN 3.0 ACRES. FOR AREAS LARGER THAN 3.0 ACRES A SEDIMENT BASIN IS REQUIRED, SEE DETAIL THIS SHEET.

TEMPORARY SEDIMENT TRAP DATA

STRUCTURE	DRAINAGE AREA (ACRES)	STORAC REQ'D	DESIGN	WEIR LENGTH (FT.)	WEIR HEIGHT (FT.)	BERM HEIGHT (FT.)
 						,, ,,
<u> </u>						
·						
		1				





000000000000 WASH RACK DETAIL (IF REQUIRED)

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

EROSION-SILTATION CONTROL COST ESTIMATE

ALL CHOTS GIVEN APE CHAPLETE IN PLACE

ALL COSTS GIVEN ARE	LUMPLEIE	IN PLACE		
DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
CONSTRUCTION ENTRANCE	EA	1	\$ 700.00	\$ 700.00
SILT FENCE	LF	335	\$ 3.00	\$ 1,005.00
INLET PROTECTION	EA			
TEMPORARY DIVERSION DIKE	LF	55	\$ 2.00	\$ 110.00
SEDIMENT TRAP	EA			
CHECK DAM	EA			
PERMANENT SEEDING	AC	0.1	\$ 1,500.00	\$ 150.00
TREE PROTECTION	EA			
CULVERT INLET PROTECTION	EA			
SUB-TOTAL				\$ 1,965.00
10% CONTINGENCY				\$ 195.00
TOTAL PROJECT COST				\$ 2,160.00

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SUIL ERUSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA ERUSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

2. THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.

), ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED, AS FAR AS PRACTICAL.

4. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN

5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.

6. FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA ERUSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL ERUSION CONTROL PLANS SUBMITTED TO ROANDKE COUNTY.

TEMPORARY SEEDING MIXTURE

PLANTING DATES **SPECIES** (LBS./ACRE) 50 - 100 50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) SEPT. 1 — FEB. 15 CEREAL (WINTER) RYE

(SECALE CEREALE) FEB. 16 - APR. 30 ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) 60 - 100

TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED areas that may not be at final grade but will remain dormant (undisturbed) FOR LONGER THAN 30 DAYS, PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

PERMANENT SEEDING MIXTURE

(SETARIA ITALICA)

<u>TYPE A</u> 15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF BURZY WINTER RYE @ 1/2 LB / 1000 S l February to 1 June

TYPE B (SLOPES 34 OR STEEPER) 15 MARCH TO 1 MAY CROWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS & 1/2 LB / 1000 SF RED TOP & 1/8 LB / 1000 SF

15 AUGUST TO 1 DCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF 1 JUNE TO 1 SEPTEMBER RED TOP @ 1/8 LB / 1000 SF K-31 FESCUE @ 5 LB / 1000 SF

GERMAN MILLET @ 1/2 LB / 1000 SF K-31 FESCUE @ 5 LB / 1000 SF

ANNUAL RYE @ 1/2 LB / 1000 SF

MAY. 1 - AUG. 31

140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

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

INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

TOTAL DISTURBED AREA = 0.176 AC.

WVWA ID# 6PUJXU

DEPARTMENT ENGINEERING AND INSPECTIONS

This method of inlet protection is applicable where heavy

concentrated flows are expected, but not where ponding

≈ Gravel shall be VD□T #3, #357 or #5 coarse aggregate.

around the structure might cause excessive inconvenience

or damage to adjacent structures and unprotected areas.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

RUNDFF WATER WITH SEDIMENT

SPECIFIC APPLICATION

6	REVISIONS	DATE
5		
4	· -	
3_	ENGR. & INSPEC.	10-27-93
2	ENGR. & INSPEC.	08-05-93
1	ENGR. & INSPEC.	04-10-93

PROTECTION

— Endwall

---- Culvert

7777

ROANOKE COUNTY OF

EXCAVATED DROP INLET SEDIMENT TRAP

LARGER PARTICLES

DATE: 11/02/93 SCALE: NO SCALE DRAWING BY: CLN,AF G:\CAD\DETAILS\EROSION\EROSION) DESIGNED BY: APPROVED BY: GWS,III

EROSION & SEDIMENT CONTROL STORMWATER MANAGEMENT DETAILS

