CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE FOLLOWING MINIMUM STANDARDS:

MS-1: THOUGH TS / PS LABELS ARE SHOWN GENERICALLY ON THE PLANS, THE CONTRACTOR SHALL SEED ALL AREAS NOT INDICATED TO BE OTHERWISE STABILIZED WITH PERMANENT SEED MIXTURE WITHIN 7 DAYS OF REACHING FINAL GRADE OR WITH TEMPORARY SEED MIXTURE ANY AREA YET TO REACH FINAL GRADE BUT THAT IS NOT PROPOSED TO BE ACTIVELY INVOLVED IN THE WORK WITHIN 30 DAYS. THESE SEED MIXTURES AND APPLICATION SPECIFICATIONS ARE SHOWN HEREON. THE CONTRACTOR

SHALL HONOR THE CLEARING AND GRADING LIMITS SHOWN ON THE PLAN. 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

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 WORK.

AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, OFF—SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A

MS-4: ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED IN ADVANCE OF THE WORK THEY ARE INTENDED TO PROTECT.

MS-5; EARTHEN CONTROLS AND STRUCTURES SHALL BE STABILIZED IMMEDIATELY UPON INSTALLATION. (NOT APPLICABLE).

SUPPLEMENTARY EROSION CONTROL PLAN FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

MS-6: WHERE A SEDIMENT TRAP (<3 ACRES OF DRAINAGE) OR SEDIMENT BASIN (>3 ACRES OF DRAINAGE) ARE INDICATED CALCULATIONS SHOWN ARE BASED ON OUTLINED DRAINAGE AREAS, CONTRACTOR SHALL HONOR INDICATED DRAINAGE DIVIDES AND CONFORM TO VOLUMES, DETAILS, ETC. PROVIDED ON PLANS.

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: WHERE CONCENTRATED RUNOFF HAS BEEN ROUTED DOWN SLOPES CARE HAS BEEN TAKEN TO DESIGN AN ADEQUATE CHANNEL OR DRAIN. CONTRACTOR SHALL Install these measures along with their stabilization as soon as practical to protect slope. (Not applicable).

MS-9: NOT APPLICABLE: SEEPAGE THROUGH SLOPES IS NOT ANTICIPATED TO BE ENCOUNTERED ON THIS PROJECT.

MS-10: INLET OR CULVERT INLET PROTECTION IS PROPOSED FOR THE INLETS OF ALL STORM SEWERS OR CULVERTS ON-SITE. RLD SHALL INSURE PROPER INSTALLATION AND ASSURE ADEQUATE SIZING BASED ON DRAINAGE AREA OF EACH INLET.

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: WHEN WORKING IN AND AROUND A LIVE WATERCOURSE, THE CONTRACTOR SHALL TAKE GREAT CARE TO MINIMIZE IMPACT ON THE STREAM. ASSURE THAT PROPER PERMITS FROM DEQ / COE ARE IN HAND PRIOR TO COMMENCING SUCH WORK. (NOT APPLICABLE).

MS-13: WHERE MORE THAN 2 TRIPS IN 6 MONTHS ARE EXPECTED ACROSS A LIVE WATERCOURSE OBTAIN THE NECESSARY PERMIT AND INSTALL A TEMPORARY STREAM CROSSING. (NOT APPLICABLE).

MS-14; OTHER FEDERAL, STATE, AND LOCAL REGULATIONS MUST BE MET WHEN WORKING IN LIVE WATERCOURSES. (NOT APPLICABLE).

MS-15: THE BED AND BANKS OF DISTURBED WATERCOURSES MUST BE STABILIZED IMMEDIATELY. (NOT APPLICABLE).

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 IMMEDIATELY.

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: INCREASES IN STORMWATER VOLUME, VELOCITY, AND PEAK RUNOFF HAVE BEEN ADDRESSED IN THE PLAN PER THE EXISTING STORMWATER MANAGEMENT FACILITY LOCATED BELOW THIS DEVELOPMENT.. RESPONSIBLE LAND DISTURBER SHALL PAY PARTICULAR ATTENTION TO OFF-SITE AREAS CONTRIBUTING RUNOFF TO THE SITE, OFF-SITE LOCATIONS RECEIVING RUNOFF FROM THIS PROJECT, AND PROPER OPERATION OF STORMWATER MANAGEMENT PRACTICES ON-SITE. 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.

GENERAL EROSION AND SEDIMENT CONTROL NOTES, ROANOKE COUNTY, VIRGINIA

ES-1: 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 AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE ONSITE 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 AND NARRATIVE, AS WELL AS A COPY OF THE LAND DISTURBING PERMIT, SHALL BE MAINTAINED ON THE SITE AT ALL TIMES. THE EROSION AND SEDIMENT CONTROL ADMINISTRATOR WILL DELIVER THESE MATERIALS AT THE ONSITE PRECONSTRUCTION CONFERENCE.

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

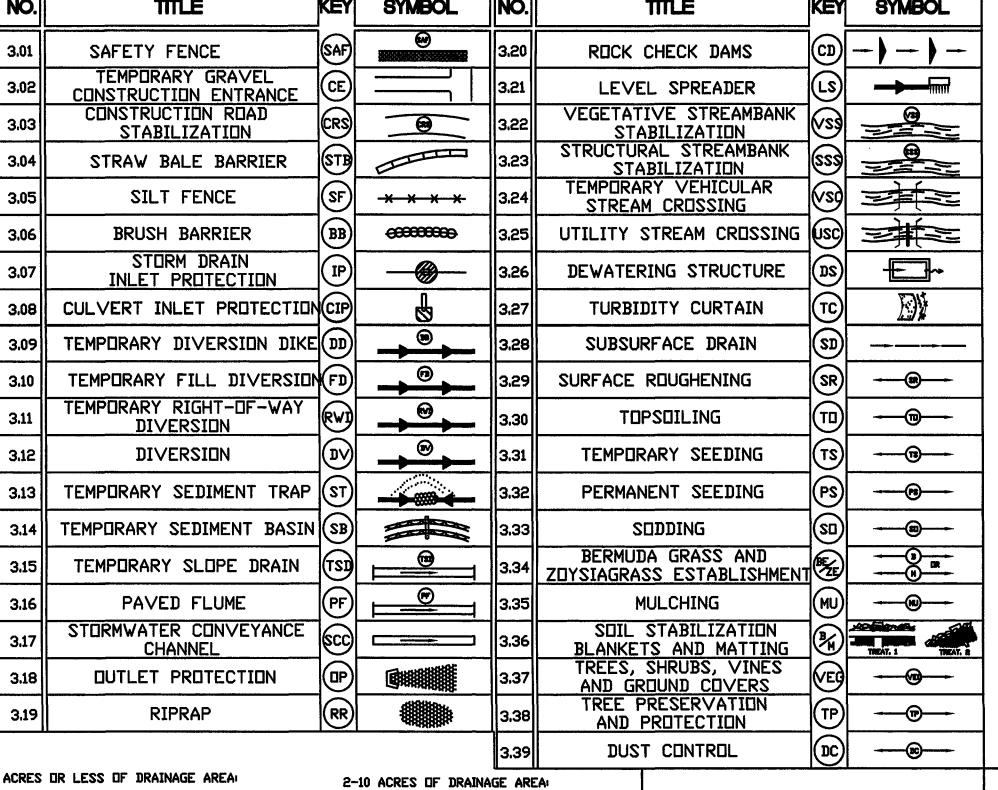
ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

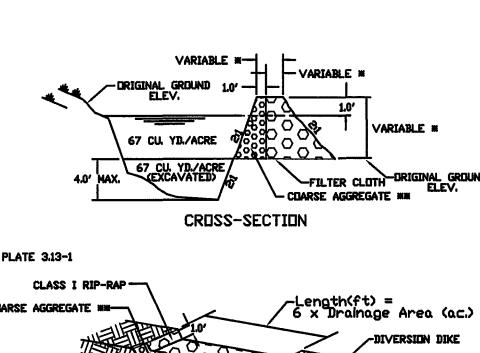
ES-7; ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING THE LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

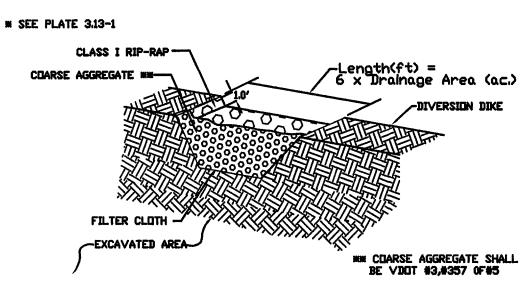
ES-8: DURING DEWATERING OPERATION, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

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 IMMEDIATELY. AN INSPECTION REPORT MUST BE FILED WITH THE BOTETOURT COUNTY EROSION AND SEDIMENT CONTROL ADMINISTRATOR ONCE EVERY TWO WEEKS, BEGINNING WITH COMMENCEMENT OF THE LAND DISTURBING ACTIVITY, and within 48 hours of any runoff—producing rainfall event. Failure to submit a report will be grounds for immediate revocation of the land DISTURBING PERMIT. REPORTS MUST BE POSTMARKED WITHIN 24 HOURS OF THE DEADLINE. A STANDARD INSPECTION REPORT FORM WILL BE SUPPLIED, WHICH SHOULD BE COPIED AS NECESSARY. THIS PROVISION IN NO WAY WAIVES THE RIGHT OF BOTETOURT COUNTY PERSONNEL TO CONDUCT SITE INSPECTIONS, NOR DOES IT DENY THE RIGHT OF THE PERMITTEE (S) TO ACCOMPANY THE INSPECTOR (S).

NO. TILE SYMBOL SYMBOL TITLE 3.01 SAFETY FENCE ROCK CHECK DAMS TEMPORARY GRAVEL 3.02 LEVEL SPREADER CONSTRUCTION ENTRANCE CONSTRUCTION ROAD VEGETATIVE STREAMBANK 3.03 STABILIZATION STABILIZATION STRUCTURAL STREAMBANK 3.04 STRAW BALE BARRIER STABILIZATION EMPORARY VEHICULAR 3.05 SILT FENCE STREAM CROSSING BRUSH BARRIER UTILITY STREAM CROSSING 6000000000 DEWATERING STRUCTURE 3.07 INLET PROTECTION TURBIDITY CURTAIN CULVERT INLET PROTECTION(CIP) TEMPORARY DIVERSION DIKE(DD) SUBSURFACE DRAIN ---TEMPORARY FILL DIVERSION SURFACE ROUGHENING EMPORARY RIGHT-OF-WAY 3.11 TOPSOILING DIVERSION ----(3)----TEMPORARY SEEDING DIVERSION ----18 TEMPORARY SEDIMENT TRAP PERMANENT SEEDING TEMPORARY SEDIMENT BASIN **---**BERMUDA GRASS AND TEMPORARY SLOPE DRAIN ZOYSIAGRASS ESTABLISHMENT MULCHING PAVED FLUME STORMWATER CONVEYANCE SOIL STABILIZATION 3.17 (%) BLANKETS AND MATTING CHANNEL TREES, SHRUBS, VINES DUTLET PROTECTION 3.18 AND GROUND COVERS TREE PRESERVATION RIPRAP 3.19 AND PROTECTION ---® DUST CONTROL 2 ACRES OR LESS OF DRAINAGE AREA







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

375 C.Y. 382 C.Y.

BOTTOM OF WET = $41' \times 30$

TOP OF WET 53 X 42' - 3.0' DEEP

TOP OF DRY 61' X 50' - 2.0' DEEP

389 C.Y. | 399 C.Y.

BOTTOM OF WET = 42' x 3

TOP OF WET 54' X 43' - 3.0' DEEP

TOP OF DRY 62' X 51' - 2.0' DEEP

STRUCTURI

2.8 AC.

SEDMENT TRAF

1,950.00 650 3.00 *75.00 525.00* inlet protection EA TEMPORARY 1,710 2.00 3,420.00 DIVERSION DIKE 1,000.00 2,000.00 SEDIMENT TRAP EA Temporary and 1,500.00 6,150.00 **ACRE** 4.1 PERMANENT SEEDING EA 125.00 125.00 OUTLET PROTECTION CONSTRUCTION ROAD 3,926.00 2.00 STABILIZATION 18,796.00 SUB-TOTAL 10% CONTINGENCY 1,904.00

EROSION-SILTATION CONTROL

COST ESTIMATE

QUANTITY

TOTAL COST

700.00

\$ 20,700.00

UNIT COST

700.00

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION

TOTAL PROJECT COST

CONSTRUCTION

ENTRANCE

TEMPORARY SEDIMENT TRAP DATA

3.0

2.0'

2.0'

Ref. Table 3.02-A of

for requirements.

Virginia ESC Handbook

	PLANTING DATES	SPECIES	RATE (LBS./ACRE)
	SEPT. 1 — FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	50 - 100
,		CEREAL (WINTER) RYE (SECALE CEREALE)	
	FEB. 16 — APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100
	MAY. 1 — AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

TEMPORARY SEEDING MIXTURE

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.

SPECIFIC APPLICATION This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas. # Gravel shall be VDOT #3, #357 or 5 coarse aggregate.

(CD) ROCK CHECK DAM

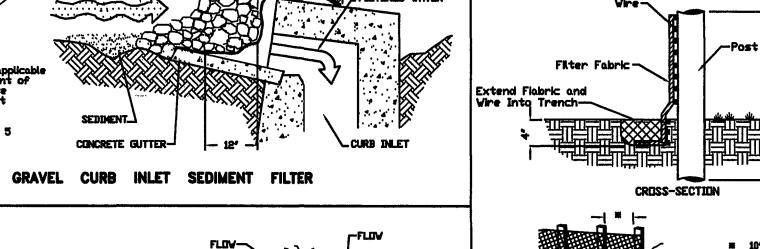
FILTER CLOTH-

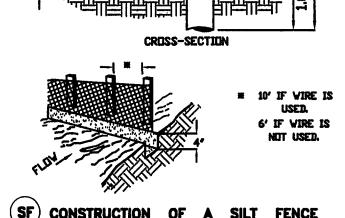
ODIVNSTREAM VIEW

FILTER CLOTH -

(DOWNSTREAM VIEW)

STURM VATER VITH LARGER PARTICLES REMOVED

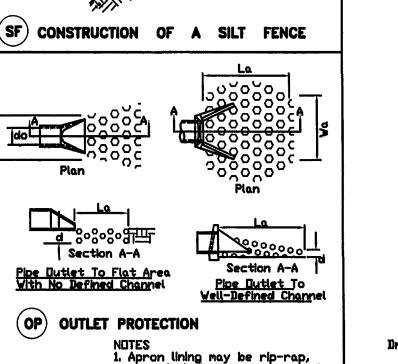




TEMPORARY DIVERSION DIKE

TEMPORARY FILL DIVERSION

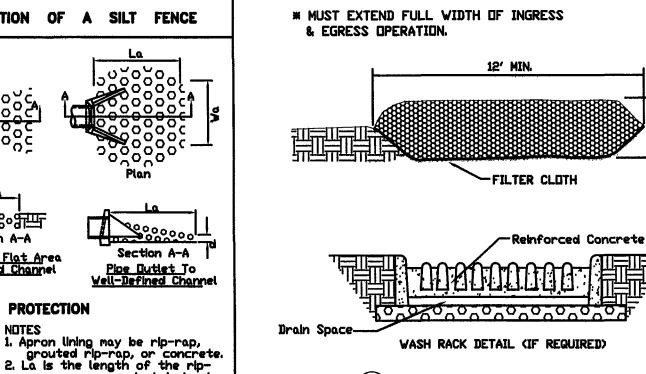
TEMPORARY RIGHT-OF-WAY



rap apron as calculated using plates 1.36d and 1.36e.

3. d = 1.5 times the maximum

stone diameter, but not less than 6'.



CONSTRUCT A WASHBOARD OR

WASH RACK IF REQUIRED.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

PERMANENT SEEDING MIXTURE

	TYPE A	TYPE B (SLOPES 34 OR STEEPER)	
- VDDT #1 Coarse Aggregate Cloth Table 3.02-A of la ESC Handbook equirements.	15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF BURZY WINTER RYE @ 1/2 LB / 1000 1 FEBRUARY TO 1 JUNE 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 GERMAN MILLET @ 1/2 LB / 1000 SF	RED TUP @ 1/8 LB / 1000 SF 15 AUGUST TU 1 UCTUBER CRUWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TUP @ 1/8 LB / 1000 SF	
	1 SEPTEMBER TO 15 OCTOBER K-31 FESCUE @ 5 LB / 1000 SF		

ANNUAL RYE @ 1/2 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

IF REQUIRED, SHALL BE USED DIVER 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 RESEEDING 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 = 5.7 AC.

WVWA ID# 6QZK6Z

- SEDIMENT

This method of inlet protection is applicable where heavy concentrated flows are expected, but not where ponding around the structure might cause excessive inconvenience or damage to adjacent structures and unprotected areas.

Gravel shall be VDOT #3, #357 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

DEPARTMENT ENGINEERING AND INSPECTIONS

NO.	REVISIONS	DATE
6		
5		
4		
3	ENGR. & INSPEC.	10-27-93
2	ENGR. & INSPEC.	08-05-93
1	ENGR. & INSPEC.	04-10-93

SPECIFIC APPLICATION

an overflow capability and ease of maintenance

This method of inlet protection is applicable

where heavy flows are expected and where

are desirable.

COUNTY OF ROANOKE

EXCAVATED DROP INLET SEDIMENT TRAP

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

EROSION & SEDIMENT CONTROL STORMWATER MANAGEMENT DETAILS