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 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 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 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 ROANOKE 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 ROANOKE COUNTY PERSONNEL TO CONDUCT SITE INSPECTIONS, NOR DOES IT DENY THE RIGHT OF THE PERMITTEE (S) TO ACCOMPANY THE INSPECTOR (S).

#### 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 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 WORK.

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; NO EARTHEN CONTROLS OR STRUCTURES ARE PROPOSED ON THIS PROJECT.

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.

NOT APPLICABLE; NO SEDIMENT TRAP OR BASIN PROPOSED.

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.

NOT APPLICABLE; NO DRAINAGE ARE PROPOSED OVER SLOPES.

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; 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: 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.

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.

NOT APPLICABLE: NO NO STORM SEWER SYSTEM PROPOSED.

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.

LIVE WATERCOURSE PROTECTION AND PERMITS ARE NOT APPLICABLE; NO LIVE WATERCOURSES ARE DISTURBED.

MS-13: WHERE MORE THAN 2 TRIPS IN 6 MONTHS ARE EXPECTED ACROSS A LIVE WATER COURSE OBTAIN THE NECESSARY PERMIT AND INSTALL A TEMPORARY STREAM CROSSING

STREAM CROSSING IS NOT APPLICABLE; NO LIVE WATERCOURSES ARE DISTURBED.

MS-14: OTHER FEDERAL, STATE, AND LOCAL REGULATIONS MUST BE MET WHEN WORKING IN LIVE WATERCOURSES.

REGULATIONS PERTAINING TO LIVE WATERCOURSES ARE NOT APPLICABLE; NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.

MS-15: THE BED AND BANKS OF DISTURBED WATERCOURSES MUST BE STABILIZED IMMEDIATELY.

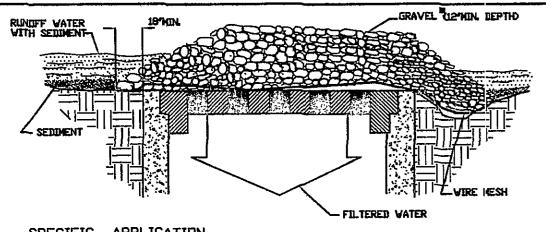
LIVE WATERCOURSE BED AND BANK STABILIZATION ARE NOT APPLICABLE; NO LIVE WATERCOURSES ARE DISTURBED.

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 MEASUIRE.

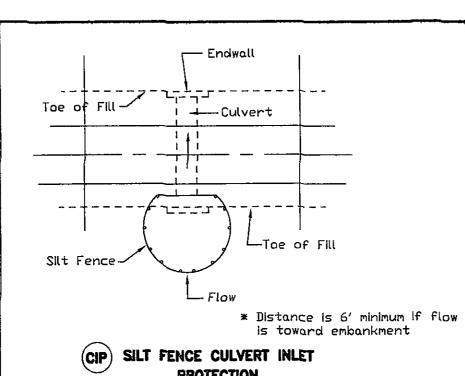
MS-19: NOT APPLICABLE: INCREASE IN RUNOFF IS LESS THAN 0.5 CFS.



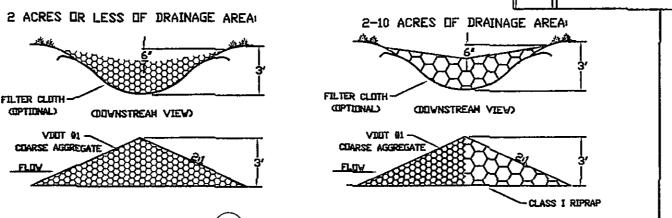
SPECIFIC APPLICATION
This method of inlet protection is applicable where heavy concentrated flows are expected, but not where ponding around the structure might cause excessive inconvenience or damage to adjacent structures and unprotected areas.

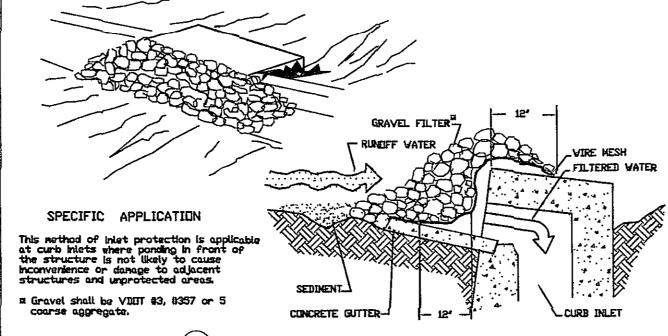
\* Gravel shall be VDDT #3, #357 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

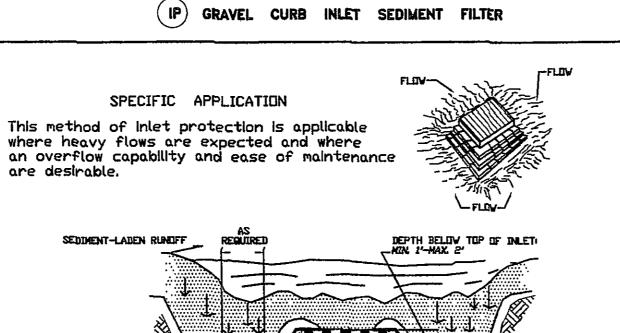


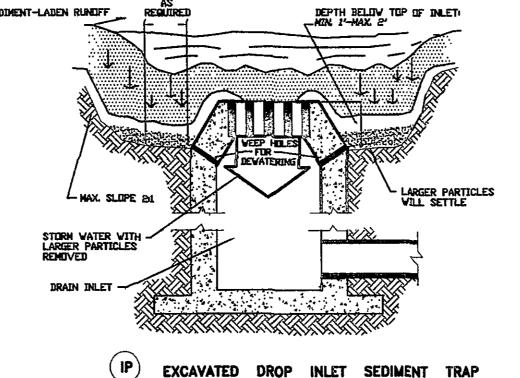
NO. TILE SYMBOL TILE SYMBOL 3.01 SAFETY FENCE ROCK CHECK DAMS TEMPORARY GRAVEL 3.02 LEVEL SPREADER CONSTRUCTION ENTRANCE CONSTRUCTION ROAD VEGETATIVE STREAMBANK STABILIZATION STABILIZATION STRUCTURAL STREAMBANK 3.04 STRAW BALE BARRIER STABILIZATION TEMPORARY VEHICULAR 3.05 SILT FENCE STREAM CROSSING 三棋三 3.06 BRUSH BARRIER <del>(2000)</del> UTILITY STREAM CROSSING STORM DRAIN 3.07 DEWATERING STRUCTURE INLET PROTECTION 3.08 CULVERT INLET PROTECTION TURBIDITY CURTAIN TEMPORARY DIVERSION DIKE (DD) SUBSURFACE DRAIN \_\_\_\_ TEMPORARY FILL DIVERSION <del>----</del>®----SURFACE ROUGHENING EMPORARY RIGHT-OF-WAY <del>----</del>-----TOPSOILING DIVERSION 3.12 DIVERSION TEMPORARY SEEDING ----(13)------TEMPORARY SEDIMENT TRAP PERMANENT SEEDING <del>-----</del>®----TEMPORARY SEDIMENT BASIN <del>----</del>®-----BERMUDA GRASS AND 3,15 TEMPORARY SLOPE DRAIN ZOYSIAGRASS ESTABLISHMENT PAVED FLUME MULCHING ---(II) STORMWATER CONVEYANCE SOIL STABILIZATION CHANNEL LANKETS AND MATTING REES, SHRUBS, VINES 3.18 DUTLET PROTECTION AND GROUND COVERS TREE PRESERVATION 3,19 <del>~\_\_</del>@\_\_\_ AND PROTECTION DUST CONTROL <del>----</del>(nc)----

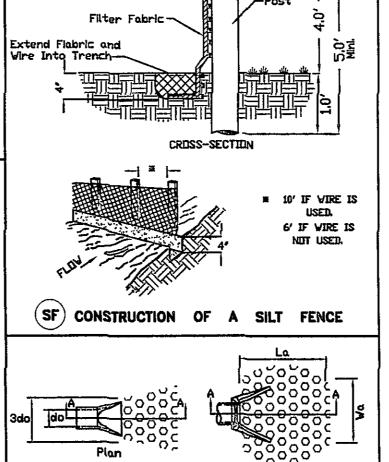




(CD) ROCK CHECK DAM





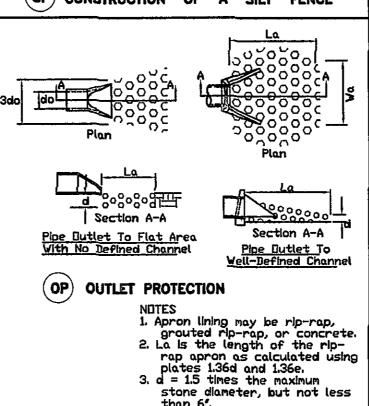


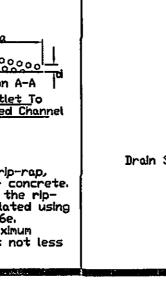
TEMPORARY DIVERSION DIKE

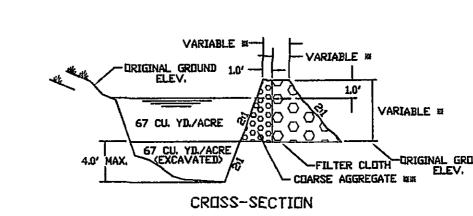
TEMPORARY FILL DIVERSION

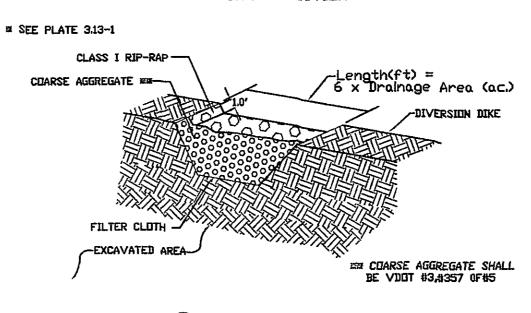
TEMPORARY RIGHT-OF-WAY

DIVERSION







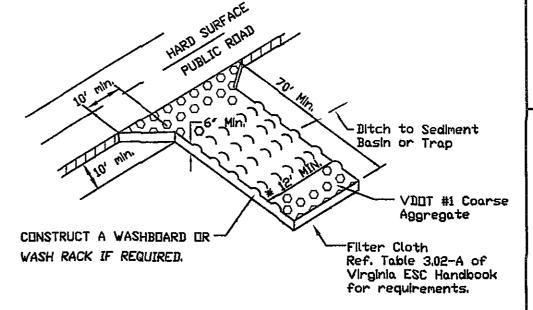


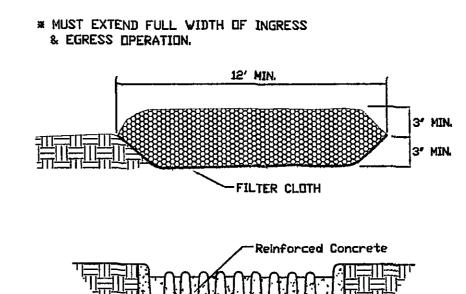
(8T) SEDDAENT TRAP

NOTE; 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	STORAGE (C.Y.)		WEIR LENGTH	WEIR HEIGHT (FT.)	BERM	4.
STRUCTURE	(ACRES)	REQ'D	DESIGN	(FT.)	(FT.)	HEIGHT (FT.)	
							5.
1	1.3 AC.	241 C.Y.	W=126 C.Y.	10.8'	1.75'	2.75'	6.
			D=122 C.Y.				
	To	P OF WET	48' X 33' –	3.0' DEEP			
	TC	P OF DRY	53' X 40' –	1.75' DEEP			_
							D)
		_					PL
							SEI





WASH RACK DETAIL (IF REQUIRED)

CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

### EROSION-SILTATION CONTROL COST ESTIMATE

DESCRIPTION	UNIT	QUANTITY	UNIT	COST	TOTAL	COST
CONSTRUCTION ENTRANCE	EA	INNO	LUDED	IN ES	C PLAN	
SILT FENCE	LF	100	\$	3.00	\$	<i>300.00</i>
INLET PROTECTION	EA	INNO	LUDED	IN ES	C PLAN	
TEMPURARY DIVERSION DIKE	LF			· · · · · ·		
SEDIMENT TRAP	EA				:	
DUTLET PROTECTION	EA	1	\$	75.00	\$	75.00
TEMPORARY AND PERMANENT SEEDING	1000 SF	INNO	LUDED	IN ES	C PLAN	
TREE PROTECTION	EA					
CULVERT INLET PROTECTION	EA					
SUB-TOTAL				_	\$	<i>375.00</i>
10% CUNTINGENCY					\$	38.00
TOTAL PROJECT COST					\$	413.00

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SUIL ERUSIUN & SEDIMENT CUNTRUL MEASURES SHALL BE ACCUMPLISHED IN STRICT ACCURDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA ERUSIUN AND SEDIMENT CONTRUL 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.

3. 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 RUNDFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.

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 EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO ROANOKE COUNTY.

# TEMPORARY SEEDING MIXTURE

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 — FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50 100
 FEB. 16 — APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100

GERMAN MILLET (SETARIA ITALICA)

MAY. 1 - AUG. 31

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.

### (PS) PERMANENT SEEDING MIXTURE

TYPE A	TYPE B (SLUPES 31 DR STEEPER)
1 FEBRUARY TO 1 JUNE K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF 1 JUNE TO 1 SEPTEMBER	15 MARCH TO 1 MAY CROWN VETCH @ 1/2 LB / 1000 SF 000 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 RED TOP @ 1/8 LB / 1000 SF
K-31 FESCUE @ 5 LB / 1000 SF GERMAN MILLET @ 1/2 LB / 1000 1 SEPTEMBER TO 15 OCTOBER K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	SF

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTUNE
FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
38-0-0 @ 7 LB / 1000 SF

MULCH: 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.

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 SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED

BY THE INSPECTOR.

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 = 0.1 AC.

DEPARTMENT
OF
ENGINEERING AND INSPECTIONS

2 ENGR. & INSPEC. 08-05-9	<i>!</i> \	NO.	REVISIONS	DATE
2 ENGR. & INSPEC. 08-05-9 3 ENGR. & INSPEC. 10-27-9 4		6		
2 ENGR. & INSPEC. 08-05-9		5		
2 ENGR. & INSPEC. 08-05-9		4		
		3	ENGR. & INSPEC.	10-27-9
1 ENGR. & INSPEC. 04-10-9		2	ENGR. & INSPEC.	08-05-9
		1	ENGR. & INSPEC.	04-10-9

COUNTY OF ROANOKE

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

SHEET 6 OF 6