

EROSION AND SEDIMENT CONTROL NARRATIVE CONTINUED**SOILS:**

17D EVARD FINE SANDY LOAM, 15 TO 25% SLOPES
THIS SOIL IS MODERATELY STEEP, VERY DEEP, AND WELL DRAINED. IT IS ON THE SIDE SLOPES IN THE BLUE RIDGE. SLOPES ARE SMOOTH AND COMPLEX.
INDIVIDUAL AREAS ARE LONG AND IRREGULAR IN SHAPE. AREAS RANGE FROM 15 TO 60 ACRES IN SIZE.

THE TYPICAL SEQUENCE, DEPTH, AND COMPOSITION OF THE LAYERS IN THE UNDISTURBED EVARD SOIL ARE AS FOLLOWS—

SURFACE LAYER:
0 TO 3 INCHES, DARK BROWN FINE SANDY LOAM

SUBSURFACE LAYER:
3 TO 5 INCHES, YELLOWISH BROWN FINE SANDY LOAM

SUBSOIL:
5 TO 12 INCHES, STRONG BROWN SANDY CLAY LOAM
12 TO 31 INCHES, YELLOWISH RED SANDY CLAY LOAM
31 TO 44 INCHES, RED, YELLOWISH RED, AND VERY PALE BROWN SANDY CLAY LOAM
44 TO 68 INCHES, STRONG BROWN SAPROLITE THAT CRUSHES TO SANDY LOAM

INCLUDED WITH THIS SOIL IN MAPPING ARE THE VERY DEEP, WELL DRAINED EDNEYVILLE AND HAYESVILLE SOILS, AND THE MODERATELY DEEP, EXCESSIVELY DRAINED PEAKS SOILS. EDNEYVILLE AND PEAKS SOILS ARE ON ADJACENT SIDE SLOPES IN HIGHER POSITIONS ON THE LANDSCAPE THAN THE EVARD SOIL. ALSO INCLUDED ARE SOILS THAT HAVE STONES ON THE SURFACE. INCLUDED SOILS MAKE UP ABOUT 25 PERCENT OF THE MAP UNIT.

PROPERTIES OF THE EVARD SOIL—

PERMEABILITY: MODERATE
AVAILABLE WATER CAPACITY: HIGH
SURFACE RUNOFF: RAPID
DEPTH TO BEDROCK: MORE THAN 80 INCHES
DEPTH TO SEASONAL HIGH WATER TABLE: MORE THAN 72 INCHES
EROSION POTENTIAL: HIGH
ROOTING DEPTH: MORE THAN 40 INCHES
ORGANIC MATTER CONTENT: LOW
SHRINK-SWELL POTENTIAL: LOW

THE SLOPE IS A LIMITATION ON SITES FOR SEPTIC TANK ABSORPTION FIELDS OR DWELLINGS, AND FOR LOCAL ROADS AND STREETS. INSTALLING THE FILL LINES AT THE CORRECT GRADE AND ON THE CONTOUR HELPS TO OVERCOME THE SLOPE.

THE CAPABILITY SUBCLASS IS VIE.**CRITICAL AREAS:**

2:1 FILL SLOPES SHALL BE PROTECTED EITHER BY DIVERSION OR DIVERSION DIKE WITH SLOPE DRAIN AS INDICATED ON ESC PLAN.

EXISTING 8" WATER LINE ADJACENT TO SEDIMENT BASIN SHALL BE LOCATED AND INVERT CHECKED AT CRITICAL LOCATIONS (PRIMARY SPILLWAY CROSSING AND EMERGENCY SPILLWAY CROSSING) PRIOR TO CONSTRUCTION OF SEDIMENT BASIN TO ASSURE THERE ARE NO CONFLICTS AND THAT EACH SITUATION CAN BE CONSTRUCTED WITHOUT ADVERSE EFFECT ON THE WATER LINE. WATER LINE SHALL BE PROTECTED AND MAINTAINED IN SERVICE AS TOP PRIORITY.

SPECIAL CARE SHOULD BE GIVEN TO THE EXISTING CULVERTS UNDER ROSELAWN ROAD TO INSURE THAT SEDIMENT LADEN RUNOFF IS NOT CARRIED THROUGH THE CULVERTS AND INTO THE WATERCOURSE ADJACENT TO ROSELAWN ROAD. HOWEVER, FLOW THROUGH CULVERTS MUST BE MAINTAINED AND CONTRACTOR SHALL CLEAN OUT CLOGGED CULVERTS AS NECESSARY DURING CONSTRUCTION.

CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE FOLLOWING MINIMUM STANDARDS:

MS-1: THOUGH TS / PS LABELS ARE SHOWN GENERALLY 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.

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.

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: 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.

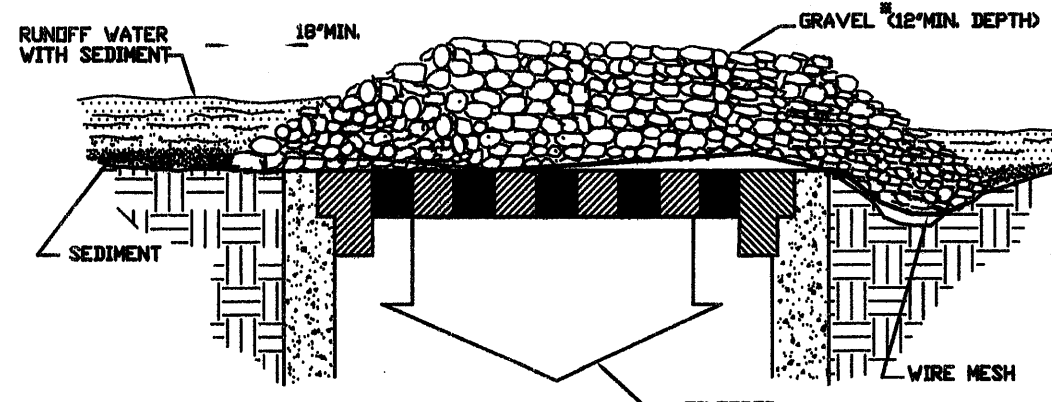
MS-15: LIVE WATERCOURSE BED AND BANK STABILIZATION ARE NOT APPLICABLE; NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.

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 SPEC. 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 CONSTRUCTION OF A STORMWATER MANAGEMENT FACILITY WITH SECTION NO. 1 OF STONE MANOR. RESPONSIBLE LAND DISTURBER SHALL PAY PARTICULAR ATTENTION TO OFF-SITE AREAS CONTRIBUTING RUNOFF TO THE SITE. OFF-SITE LOCATIONS REQUIRING 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 DOR'S MS-19. IF EROSION OR SOUR IS OCCURRING THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

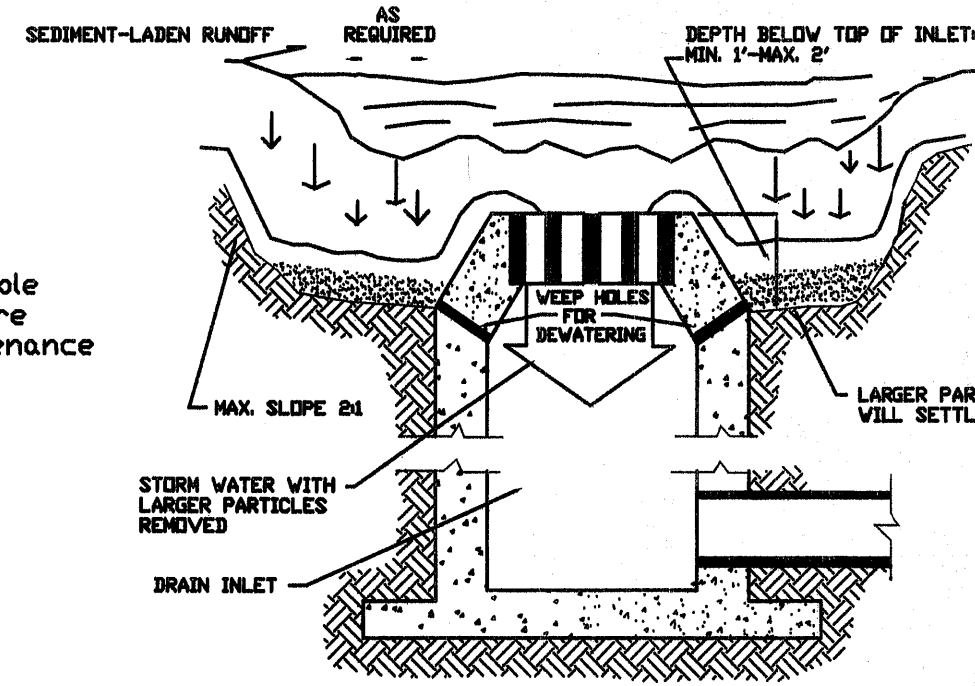
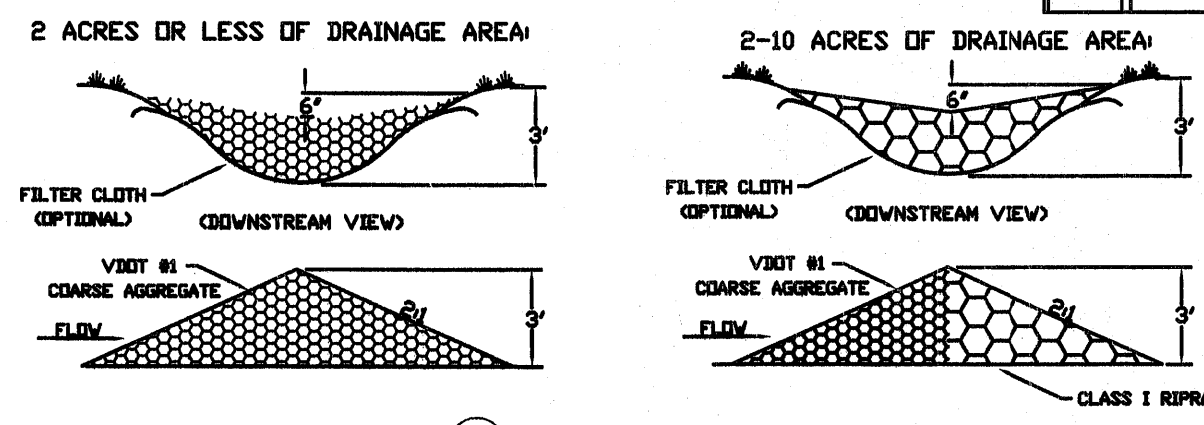
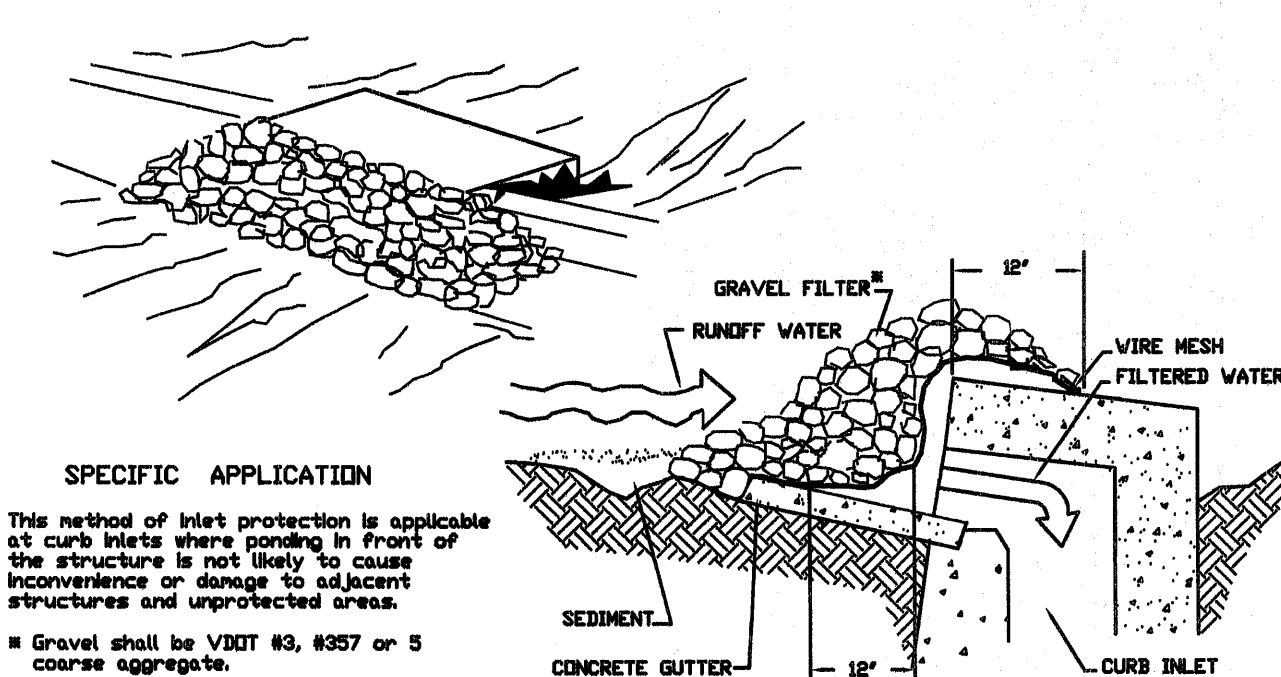
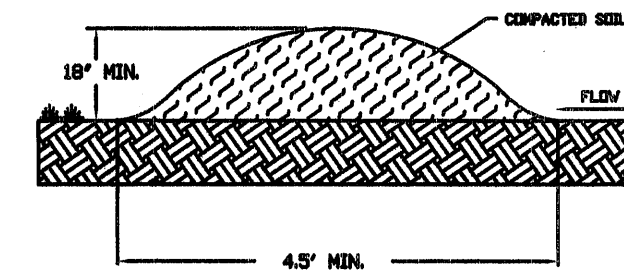
**SPECIFIC APPLICATION**

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.

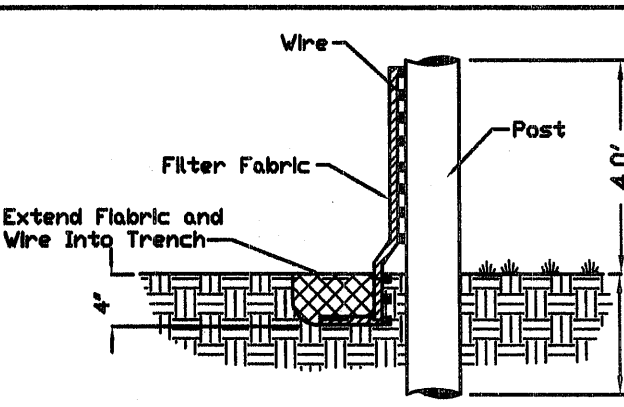
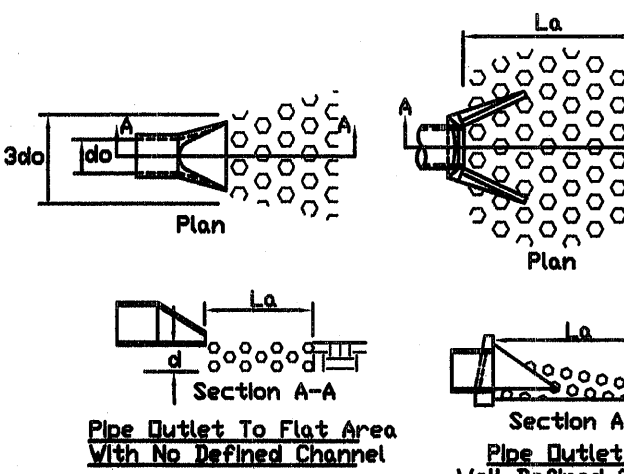
Gravel shall be VDOT #3, #57 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER**SPECIFIC APPLICATION**

This method of inlet protection is applicable where heavy flows are expected and where an overflow capability and ease of maintenance are desirable.

**(IP) EXCAVATED DROP INLET SEDIMENT TRAP****(CD) ROCK CHECK DAM****(IP) GRAVEL CURB INLET SEDIMENT FILTER**

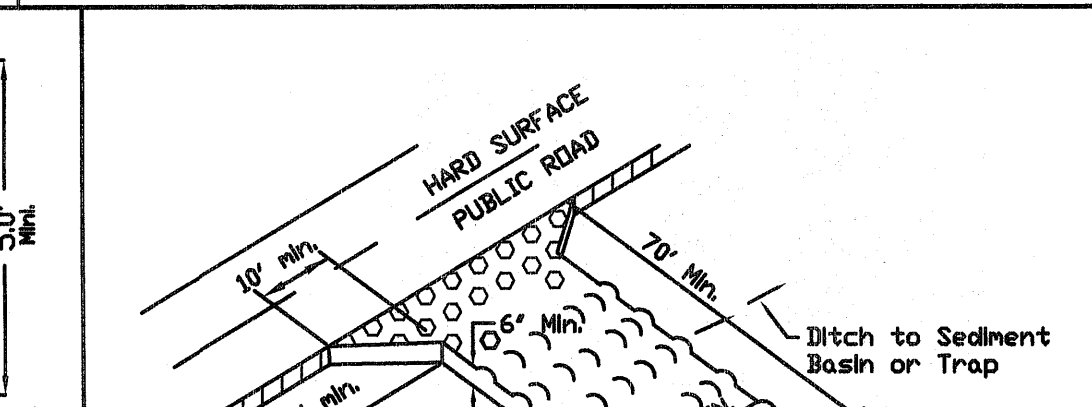
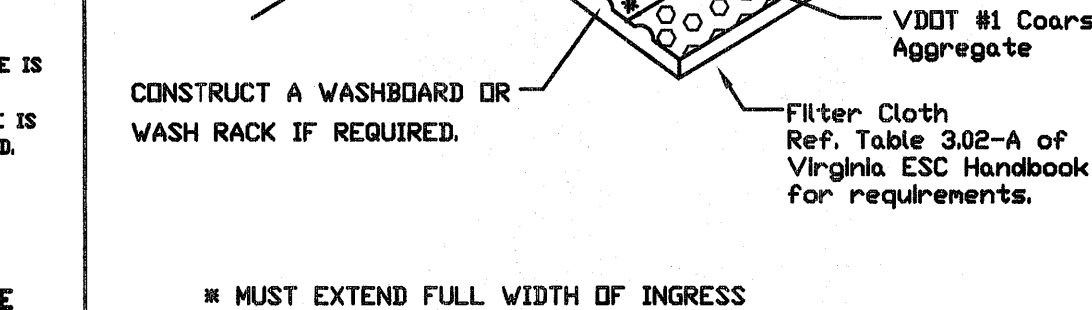
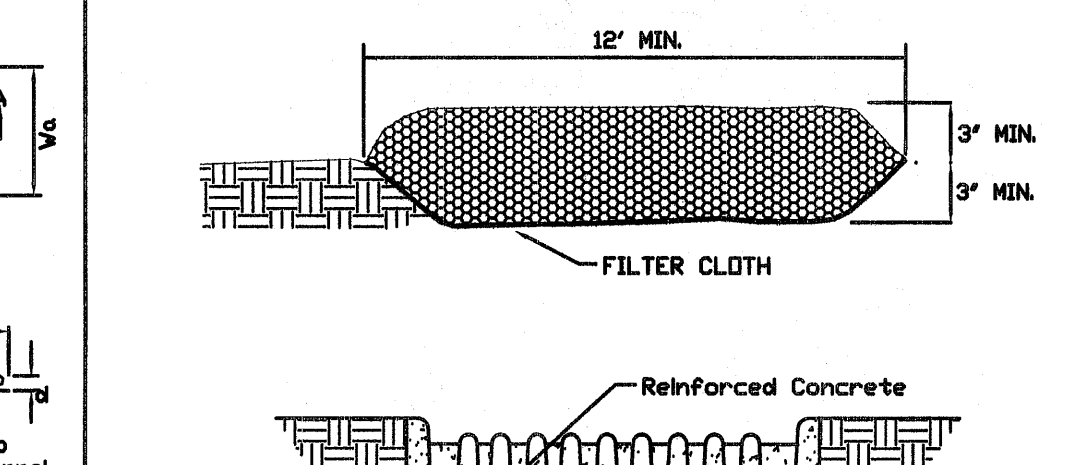
- DD TEMPORARY DIVERSION DIKE
FD TEMPORARY FILL DIVERSION
RWI TEMPORARY RIGHT-OF-WAY DIVERSION
DV DIVERSION

**(SF) CONSTRUCTION OF A SILT FENCE****NOTES**

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 136d and 136e.
3. d = 1.5 times the medium stone diameter, but not less than 6".

(OP) OUTLET PROTECTION**TEMPORARY SEDIMENT TRAP DATA**

STRUCTURE	DRAINAGE AREA (ACRES)	STORAGE (C.Y.) REQ'D	DESIGN	WEIR LENGTH (FT.)	WEIR HEIGHT (FT.)	BERM HEIGHT (FT.)
1	3.0 AC.	402 C.Y.	W=201 C.Y. D=201 C.Y.	18.0'	2.0'	3.0'
2	3.0 AC.	402 C.Y.	W=201 C.Y. D=201 C.Y.	18.0'	2.0'	3.0'
3	1.56 AC.	209 C.Y.	W=104.5 C.Y. D=104.5 C.Y.	9.4'	1.75'	2.75'
4	2.58 AC.	346 C.Y.	W=172.9 C.Y. D=172.9 C.Y.	15.5'	2.0'	3.0'

**(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE****EROSION-SILTATION CONTROL COST ESTIMATE**

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
CONSTRUCTION ENTRANCE	EA	2	\$ 700	\$ 1,400
SILT FENCE	LF	1175	3	3,525
INLET PROTECTION	EA	8	100	800
TEMPORARY DIVERSION DIKE	LF	1985	2	8,586
TEMPORARY FILL DIVERSION	LF	1455	2	2,910
SEDIMENT TRAP	EA	3	500	1500
STORMWATER CONVEYANCE CHANNEL	LF	220	3	660
PERMANENT SEEDING	AC	11	1200	13,200
OUTLET PROTECTION	EA	1	75	75
SEDIMENT BASIN	EA	1	5000	5000
SEDIMENT TRAP	EA	4	750	3,000
SUB-TOTAL				\$ 40,656
10% CONTINGENCY				\$ 4,066
TOTAL PROJECT COST				\$ 44,722

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION 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.
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 RUNOFF 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 EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED IN ALL EROSION CONTROL PLANS SUBMITTED TO ROCKINGHAM COUNTY.

(TS) TEMPORARY SEEDING MIXTURE

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	50 - 100
FEB. 16 - APR. 30	CERIAL (WINTER) RYE (SECALE CEREALE)	60 - 100
MAY. 1 - AUG. 31	ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	50

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 (SLOPES 3:1 OR STEEPER)
15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF BORIZY WINTER RYE @ 1/2 LB / 1000 SF	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
1 FEBRUARY TO 1 JUNE K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	15 AUGUST TO 1 OCTOBER PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF
1 JUNE TO 1 SEPTEMBER K-31 FESCUE @ 5 LB / 1000 SF GERMAN MILLET @ 1/2 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	
MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDING 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 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, FRABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.	

TOTAL DISTURBED AREA = 12 AC.

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