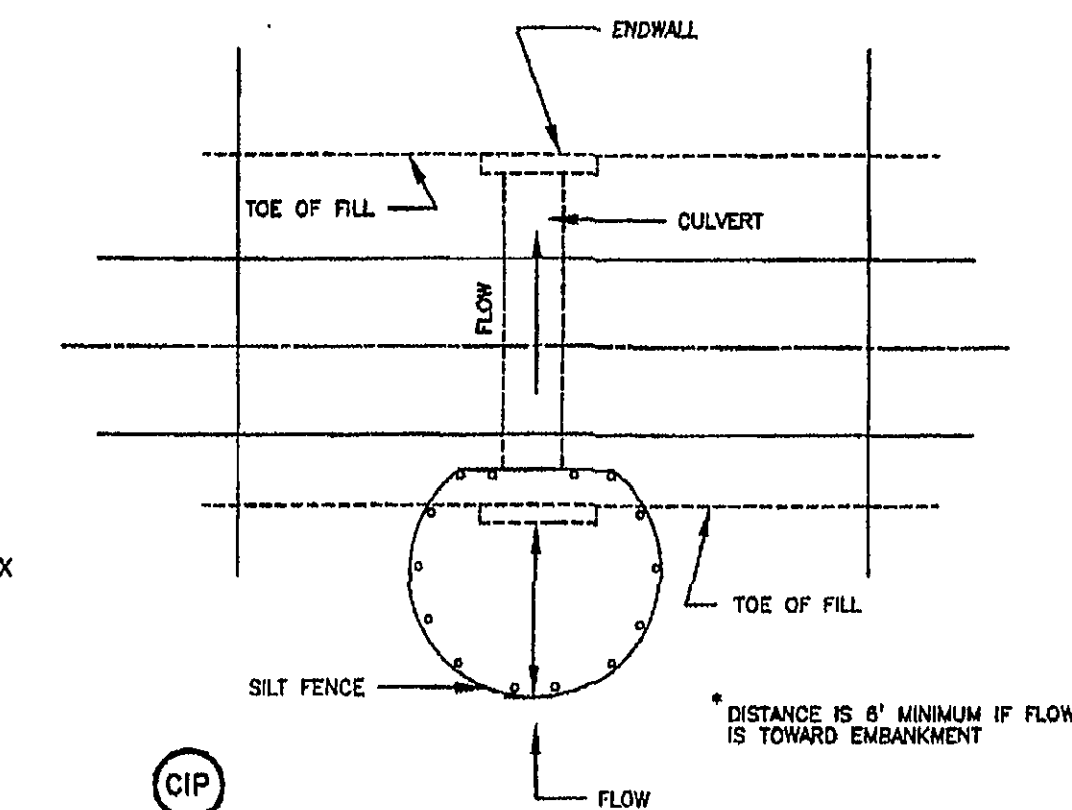


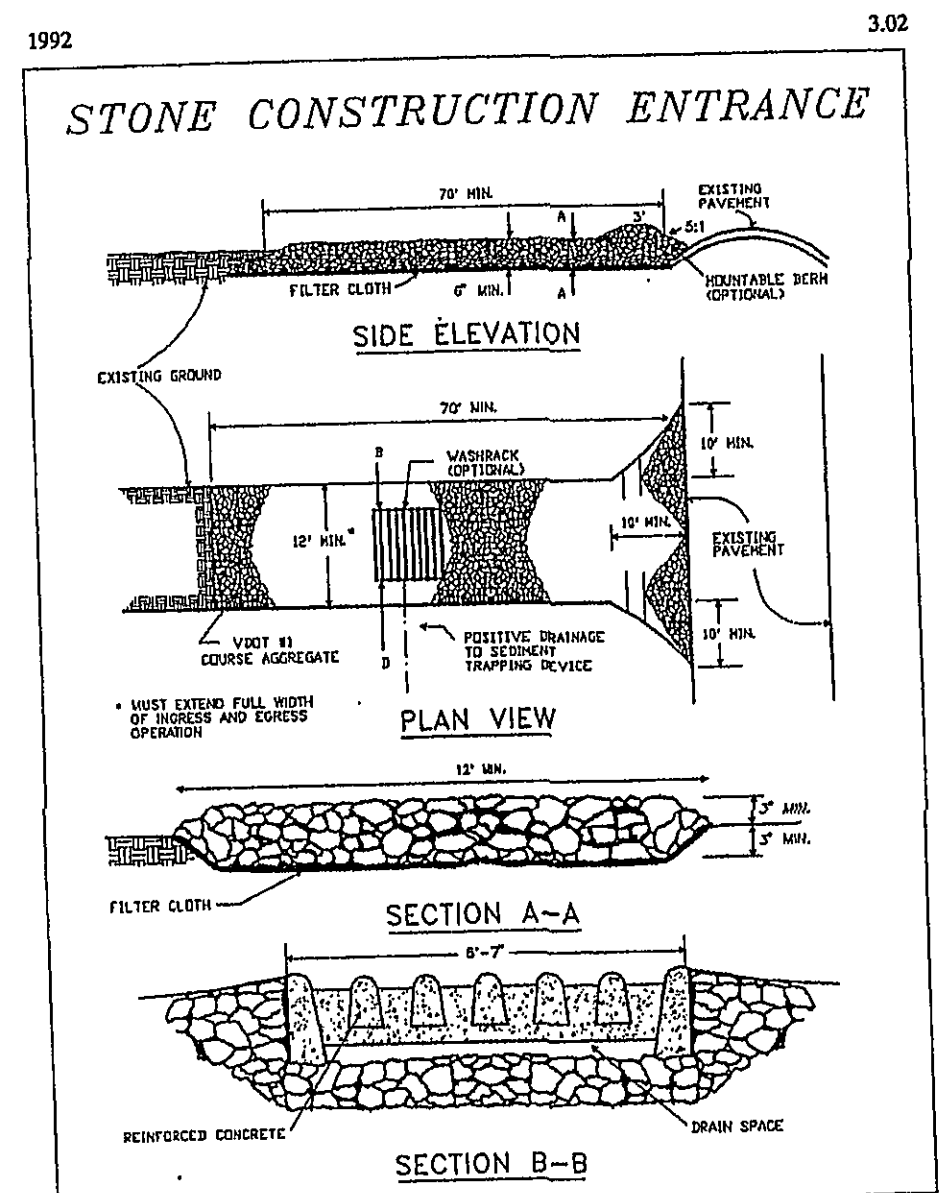
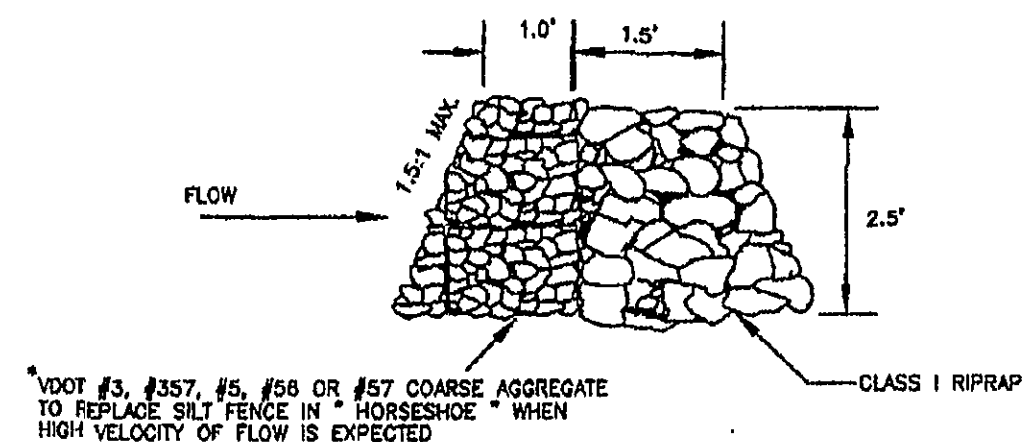
DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

- GRADING NOTES:
1. REMOVE TREES, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.
 2. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
 3. CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.
 4. EXCAVATE TRENCHED TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING AND LB-1 FOR SANITARY SEWER AND WATER. BACKFILL TRENCHES WITH CONTROLLED FILL.
 5. PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTING OR RUNOFF AREAS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DITCHES.
 6. PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHED AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35 DEGREES Fahrenheit (1 C).
 7. UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING INCLUDING ADJACENT TRANSITION AREAS. SMOOTH FINISH SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. GRADE AREAS ADJACENT TO BUILDING LINES TO DRAIN AWAY FROM STRUCTURES AND TO PREVENT PONDING.
 8. FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS.
 9. PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, EROSION, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
 10. PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:
 - (A) ESTABLISH SUITABLE SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOF ROLLING, UNDERCUTTING AND COMPACTING AS NECESSARY.
 - (B) PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR HAND TAMPERS.
 - (C) PRIOR TO COMPACTION, PROVIDE MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM BY MOISTENING OR AERATION EACH LAYER. DO NOT PLACE FILL MATERIAL ON SURFACES WHICH ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
 - (D) COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGE OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR):
 - (i) 95% UNDER FOUNDATIONS, SLABS, WALKS, AND PAVEMENTS
 - (ii) 85% UNDER LAWN OR UNPAVED AREAS
 11. OWNER SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.

SILT FENCE CULVERT INLET PROTECTION



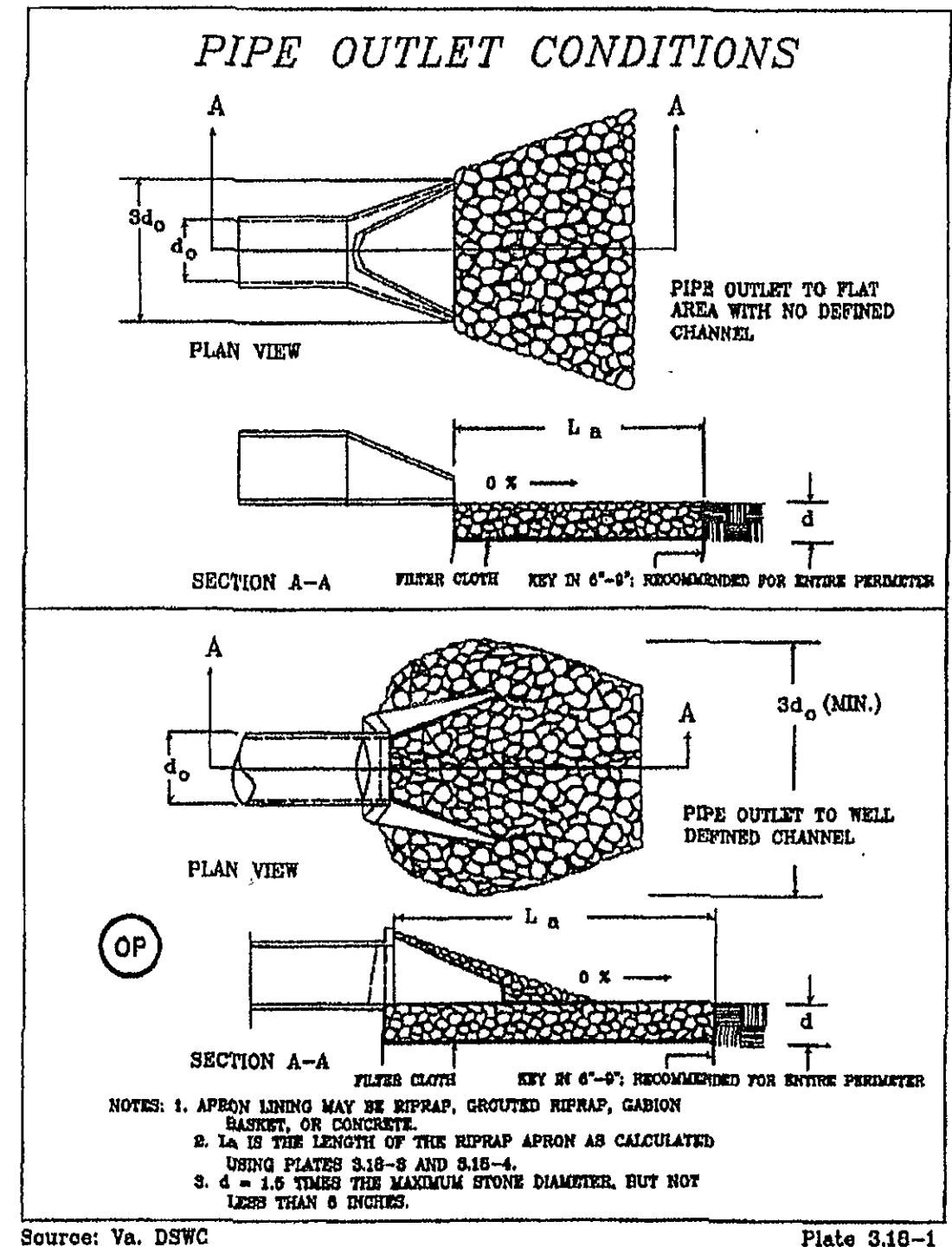
*** OPTIONAL STONE COMBINATION**



III - 9

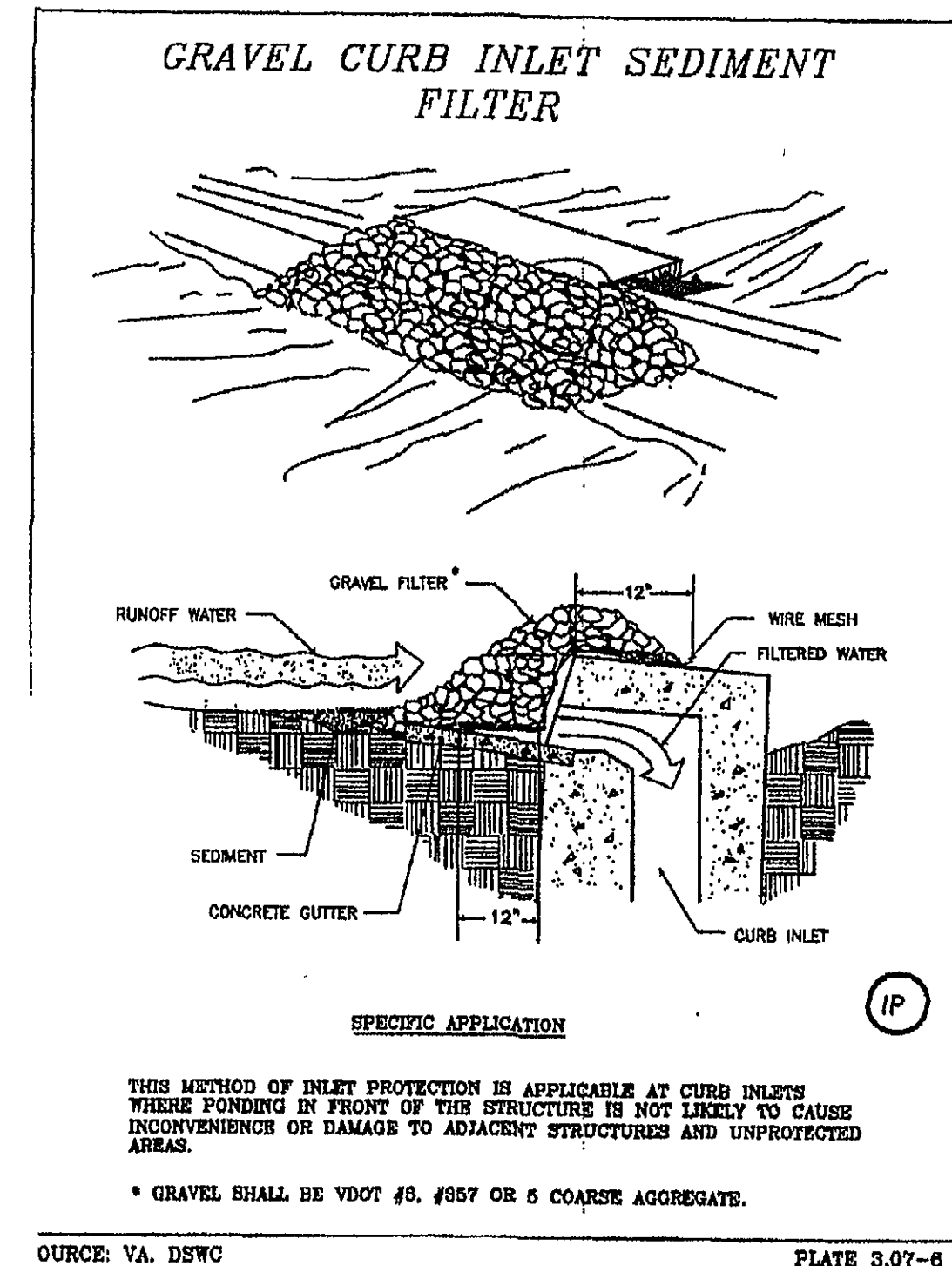
E & S QUANTITIES AND COST ESTIMATE

ITEM	QUANTITY	UNIT PRICE	COST
CONSTRUCTION ENTRANCE	3	\$1200	\$3600
SILT FENCE	4500 LF	\$1.75/LF	\$7875
SEEDING	1	\$8000	\$8000
OUTLET PROTECTION	5	\$300	\$1500
INLET PROTECTION	2	\$300	\$600
RIP RAP	250/TN	\$15/TN	\$3750
EC-2 MAT	LF	\$2.50/LF	
DENTENTION POND	LS		\$10,000
STRAW BALE BARRIER		\$10EA.	
ROCK CHK. DAM		\$100EA.	
SUBTOTAL			\$33,900
20% CONTINGENCY			\$6,780
TOTAL COST			\$40,680



GENERAL EROSION AND SEDIMENT CONTROL NOTES:

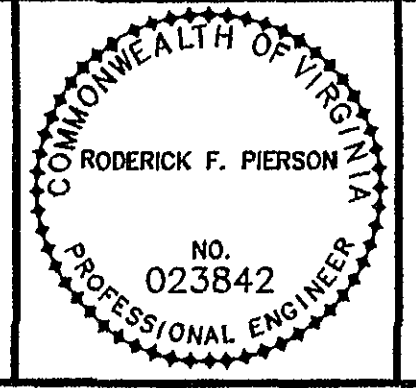
1. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
 2. THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATED, CHANGE OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS, PRACTICAL.
 3. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PREPARED, AS FAR AS PRACTICAL.
 4. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE OVERTOPPED 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 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 CITY.
- PERMANENT SEEDING MIXTURE**
- | | |
|-------------------------------------|---------------------------------------|
| TYPE A | TYPE B |
| 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 @ 1/2 LB / 1000 SF |
- PS**
- | | |
|-------------------------------|---------------------------------------|
| TYPE C | TYPE D |
| 1 FEBRUARY TO 1 JUNE | 15 AUGUST TO 1 OCTOBER |
| K-31 FESCUE @ 5 LB / 1000 SF | CROWN VETCH @ 1/2 LB / 1000 SF |
| ANNUAL RYE @ 1/2 LB / 1000 SF | PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF |
| | RED TOP @ 1/2 LB / 1000 SF |
- TS**
- LIME:** 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE
- FERTILIZER:** 5-20-10 @ 25 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 CONDITIONS:** INCORPORATIONS OF LIME AND FERTILIZER, SELECTION OR CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITH THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.
- SEEDING APPLICATION:** APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, OULTRAPACKER SEEDER, OR HYDRO SEEDER ON A FIRM, FRABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.



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REV	DATE	DESCRIPTION	BY	APP

EROSION & SEDIMENT CONTROL DETAIL SHEET
READ MOUNTAIN - NORTH
CITY OF ROANOKE, VIRGINIA



SCALE: 1" = 50'

COMM. NO. R9989

DATE: 06/15/2000

SHEET 13