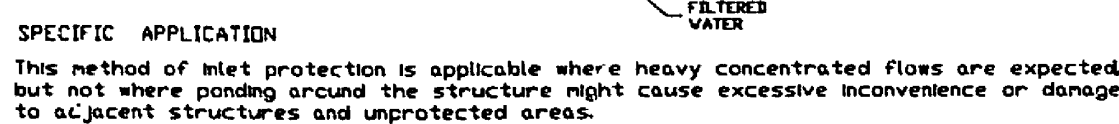
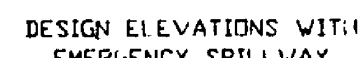


ALL COSTS GIVEN ARE COMPLETE IN PLACE

SEDIMENT BASIN SCHEMATIC  
ELEVATIONS



DEPARTMENT  
OF  
ENGINEERING AND INSPECTIONS

1. DESIGN OF DETENTION BASINS SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY OF ROANOKE DRAINAGE STANDARDS (REF SECTIONS 503.02, 503.03, AND 505.02). THE DESIGN OF THE FACILITY AND PREPARATION OF AS-BUILT PLANS SHALL BE BY A CERTIFIED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE COMMONWEALTH OF VIRGINIA.

2. ACCESS TO THE FACILITY MUST BE PROVIDED IN ACCORDANCE WITH THE COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, LATEST EDITION.

3 IF THE FACILITY IS OVER FOUR (4) FEET DEEP, TAKES OVER TWO (2) HOURS TO DRAIN, OR THE INTERIOR SLOPE EXCEEDS 3 (3) : 1 (1) V, PERMANENT FENCING MAY BE REQUIRED. ADDITIONALLY, IF THE FACILITY IS IN A CONGESTED AREA OR WILL IN ANY WAY POSE A HAZARD TO THE GENERAL PUBLIC, FENCING MAY BE REQUIRED. FENCING SHALL BE A MINIMUM OF SIX (6) FEET HIGH, A MINIMUM OF STANDARD NINE GAUGE LINK FENCE, AND MUST HAVE ONE OR MORE LOCKING DOUBLE GATES (MINIMUM TEN FEET WIDE) FOR ACCESS.

4 DETENTION PONDS SHALL BE BONDED IN ACCORDANCE WITH THE ROANOKE COUNTY BONDING POLICY FOR SUBDIVISION AND SITE DEVELOPMENT. A SEPARATE BOND FOR THE DETENTION FACILITY WILL BE REQUIRED AND ADMINISTERED APART FROM THE SUBDIVISION DEVELOPMENT BOND. REFERENCE ESTIMATE - THIS SHEET

5 REFERENCE THE COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, LATEST EDITION, FOR ACCEPTANCE AND MAINTENANCE OF THE FACILITY. CERTIFIED AS-BUILTS ARE REQUIRED AND MUST INCLUDE:

- A. DIMENSIONS OF THE FACILITY
- B. VOLUME @ MAXIMUM DEPTH
- C. ELEVATIONS OF STRUCTURES, SPILLWAYS, AND TOP
- D. MATERIALS VERIFICATION INCLUDING RESULTS OF DENSITY TESTS CONDUCTED BY AN INDEPENDENT SOIL TESTING LABORATORY
- E. LOCATION AND ELEVATION OF BENCHMARK

6. ONE FOOT MINIMUM FREEBOARD REQUIRED FOR THE 100 YR WATER SURFACE ELEVATION.

1. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE COUNTY OF  
ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS,  
LATEST EDITION.

2. SLOPES STEEPER THAN 3 TO 1 (HORIZONTAL TO VERTICAL) SHALL BE BENCHED OR STEPPED PRIOR TO PLACING FILL ON THEM.

3. ON-SITE FILL MATERIAL OR BORROW FILL MATERIAL MAY BE UTILIZED.  
FILL MATERIAL SOILS, IN GENERAL:

A. SHALL BE COMPACTABLE  
B. SHALL BE WITHIN AN ACCEPTABLE RANGE OF MOISTURE CONTENT WHICH IS READILY CONTROLLED  
C. SHALL NOT BE HIGHLY SUSCEPTIBLE TO VOLUME CHANGE (SHRINKAGE OR SWELL) OR SETTLEMENT

4. FILL MATERIALS CONTAINING ROCKS LARGER THAN SIX (6) INCHES (15.2 CM) SHALL NOT BE USED. THE UPPERMOST TWO (2) FEET (61 CM) SHALL NOT HAVE ANY ROCK LARGER THAN TWO (2) INCHES (5.1 CM) IN DIAMETER.

5. THE APPROVED FILL SHALL BE PLACED IN EIGHT (8) INCH (20 CM) LOOSE LIFTS. EACH LIFT SHALL BE SPREAD IN UNIFORM LAYERS. FILL SOIL SHALL BE UTILIZED ONLY WITHIN A MOISTURE RANGE OF  $\pm 5\%$  OF THE OPTIMUM MOISTURE CONTENT (COMPACTION) OF THE FILL SHALL BE PERFORMED WITH APPROVED EQUIPMENT. COMPACTION OF THE LAYERS SHALL BE CONTINUOUS AND UNIFORM.

6. EMBANKMENT MATERIAL IN FILL AREAS SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES AND SHALL BE COMPACTED TO A MINIMUM 95% DENSITY IN ACCORDANCE WITH SECTION 303 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.

7. FIELD DENSITY TESTS ARE TO BE CONDUCTED BY AN INDEPENDENT SOILS TESTING LABORATORY UNDER THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER. THE RESULTS OF THESE TESTS SHALL BE SUBMITTED TO THE COUNTY OF ROCKHIDE WITH AS-BUILT PLANS AS A CONDITION OF ACCEPTANCE OF THE FACILITY BY THE COUNTY. FIELD DENSITY TESTS, AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED PERIODICALLY TO DETERMINE THE DEGREE OF COMPACTION. ANY AREAS FAILING TO MEET THE ABOVE REQUIREMENTS SHALL BE REVOKED AND/OR RECOMPACTED UNTIL THE REQUIRED DEGREE OF COMPACTION IS ACHIEVED.

8. ANTI-SEEP COLLARS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

9. ALL DISTURBED AREAS SHALL BE COVERED WITH FOUR (4) INCHES OF TOPSOIL AND SEED.

10. THE MINIMUM SLOPE OF THE BASIN FLOOR SHALL BE ONE (1) PERCENT GRADED TO DRAIN TO THE PRINCIPAL SPILLWAY.

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.

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

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

COUNTY OF ROANOKE

The diagram illustrates a stormwater inlet and sediment trap system. At the top, a plan view shows a rectangular inlet with a grid of bars, with arrows indicating flow direction and a 'MAX. 2' dimension. The main cross-section shows a 'SEDIMENT-LADEN RUNOFF' entering from the left. A 'MAX. SLOPE 2:1' is indicated for the inlet structure. The water flows through a 'VEED INLET FOR DEWATERING' which has a 'DEPTH BELOW TOP OF INLET: MAX. 1'-MAX. 2"' and a 'MAX. 2' dimension. Below this, a 'STORM WATER WITH LARGER PARTICLES REMOVED' is shown entering a 'BRAND INLET'. The bottom of the system is a 'LARGER PARTICLES VELL SETTLE' trap. The entire system is labeled 'EXCAVATED DRAIN INLET SEDIMENT TRAP' at the bottom.

**(SF) CROSS-SECTION**

12' IF V1  
6' IF V2  
12' UT L

**(OP) CONSTRUCTION OF A SILT FENCE**

**Plan**

**Section A-A**

**Pipe Outlet to Flat Area with No Defined Channel**

**Section A-A**

**Pipe Outlet Well-Defined Ch**

**(OP) OUTLET PROTECTION**

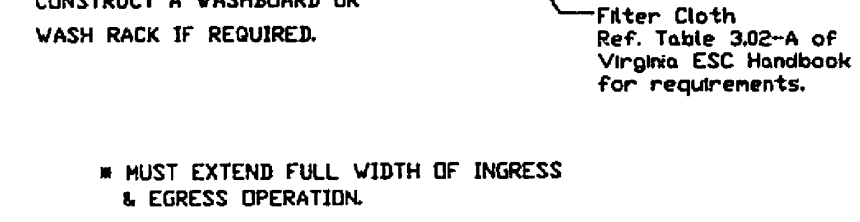
**NOTES**

1. Agron tiling may be re-entrant, grouted, riprap, or concrete.
2.  $L_s$  is the length of the rip rap on the outlet.
3.  $L$  is the length of the filter layer.
4.  $L_s$  is the length of the stone layer.
5.  $L$  is the length of the stone layer.
6.  $L_s$  is the length of the stone layer.
7.  $L$  is the length of the filter layer.
8.  $L_s$  is the length of the stone layer.
9.  $L$  is the length of the filter layer.
10.  $L_s$  is the length of the stone layer.
11.  $L$  is the length of the filter layer.
12.  $L_s$  is the length of the stone layer.
13.  $L$  is the length of the filter layer.
14.  $L_s$  is the length of the stone layer.
15.  $L$  is the length of the filter layer.
16.  $L_s$  is the length of the stone layer.
17.  $L$  is the length of the filter layer.
18.  $L_s$  is the length of the stone layer.
19.  $L$  is the length of the filter layer.
20.  $L_s$  is the length of the stone layer.



For areas less than 3.0 acres. For areas larger than 3.0 acres, A SEDIMENT TRAP, is required. Please see Va' ESC manual for design.

STRUCTURE	DRAINAGE AREA (ACRES)	STORAGE (C.Y.)		WEIR LENGTH (FT.)	WEIR HEIGHT (FT.)	BERM HEIGHT (FT.)
		REQ'D	DESIGN			

[illegible]

ALL COSTS GIVEN ARE COMPLETE IN PLACE

### 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 FLOOD 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 AND/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 CONTROL HANDBOOK, LATEST EDITION. THE SYMBOLS AND KEYWORDS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION, THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL

TYPE A TYPE B (SLOPES 3:1 OR STEEPER)

TO BEGIN TO 1 FEBRUARY  
FESQUE S E 5 LB / 1000 SF  
RYE 27 WINTER RYE 1 1/2 Lb / 1000 SF

FEBRUARY TO 1 JUNE  
FESQUE S E 5 LB / 1000 SF  
PERENNIAL RYEGRASS 1 1/2 Lb / 1000 SF

JUNE TO 1 SEPTEMBER  
FESQUE S E 5 LB / 1000 SF  
WINTER WHEAT 1 1/2 Lb / 1000 SF

SEPTEMBER TO 15 OCTOBER  
FESQUE S E 5 LB / 1000 SF  
WINTER RYE 1 1/2 Lb / 1000 SF

OCTOBER TO 1 NOVEMBER  
FESQUE S E 5 LB / 1000 SF  
WINTER RYE 1 1/2 Lb / 1000 SF

NOVEMBER TO 1 DECEMBER  
FESQUE S E 5 LB / 1000 SF  
WINTER RYE 1 1/2 Lb / 1000 SF

140 LB / 1000 SF POLYMERIZED AGRICULTURAL LIMESTONE

LIMESTONE 5-20-0 E 25 LB / 1000 SF  
38-0-0 E 7 LB / 1000 SF

IF REQUIRED, SHALL BE USED OVER ALL SEEDER AREAS AND SHALL BE  
APPLIED IN ACCORDANCE WITH SECTION 1.7.5 OF THE VIRGINIA EROSION  
AND SEDIMENT CONTROL HANDBOOK. LATEST EDITION.

CONDITIONS

CORPORATION OF LAW AND FERTILIZER. SELECTION OF CERTIFIED  
SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING,  
SHALL BE DONE IN ACCORDANCE WITH SECTION 1.7.5 OF THE VIRGINIA  
SOIL CONSERVATION AND SEDIMENT CONTROL HANDBOOK.  
LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS  
REQUIRED BY THE DIRECTOR.

APPLICATION SHALL BE UNIFORM WITH A CYCLONE SEEDER, DRILL,  
TUBULAR SPREADER OR HYDROSEEDER ON A FIRM, FRAIL, SEDED  
SURFACE. SEEDING SHALL BE DONE AT THE FOLLOWING RATES:

TOTAL DISTURBED AREA = 1.8 AC. = 78,400 SQ. FT.

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

EROSION & SEDIMENT CONTROL  
STORMWATER MANAGEMENT DETAILS

SHEET  
9  
OF  
9

WT=0.391

05-16M