

1. SET POSTS AND EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.

2. STAPLE WIRE FENCING TO THE POSTS.

3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.

Labels: FILTER FABRIC, WIRE.

SF

SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control
Sherwood & Ryan

PLATE. 3.05-1

The diagrams show cross-sections of three types of diversions. Each diagram includes a 10% settlement line and a 0.5' free board. The parabolic diversion has a smooth, curved bottom. The trapezoidal diversion has a flat bottom with sloped sides. The vee-shaped diversion has a V-shaped bottom. The flow depth is indicated by an arrow pointing to the water surface.

TYPICAL PARABOLIC DIVERSION

TYPICAL TRAPEZOIDAL DIVERSION

TYPICAL VEE-SHAPED DIVERSION

Source: Va. DSWC

Plate 3.12-1

The image contains several technical drawings of waterway cross-sections and details:

- TYPICAL COMPACTED SOIL:** A cross-section of a ditch with compacted soil walls.
- TYPICAL CONCRETE LINED DITCH:** A cross-section of a ditch with a concrete lining.
- TYPICAL VEE CROSS-SECTIONS:** Two cross-sections of a V-shaped ditch, one with compacted soil and one with a concrete lining.
- PARABOLIC WATERWAY CROSS-SECTION:** A cross-section of a parabolic waterway with dimensions T (top width) and D (depth).
- TYPICAL RIPRAP CHANNEL:** A cross-section of a channel with a riprap lining. Dimensions include D (depth), W (width), and a slope of $1\frac{1}{2}$ H to 1 V. A note indicates that filter cloth is preferred, but a granular filter may be substituted for filter cloth (see Spec. 5.19, Riprap).
- TYPICAL CONCRETE CHANNEL:** A cross-section of a concrete channel with an expansion joint (90° spacing). Dimensions include A (height), $15'$ (width), and $4-16"$ (dowel size). A note indicates that 6x6 welded wire fabric is required.
- SECTION A-A:** A cross-section of a trapezoidal waterway with dimensions D (depth), W (width), and $12"$ DIA. WEEP HOLE, 6' o.c. (on center).

SOURCE: VA. DSWC

PLATE 3.17-1

2 ACRES OR LESS OF DRAINAGE AREA:

6'

3'

FILTER CLOTH (OPTIONAL)

(DOWNSTREAM VIEW)

VDOT #1 COARSE AGGREGATE

2:1

3'

FLOW

2-10 ACRES OF DRAINAGE AREA:

6'

3'

FILTER CLOTH (OPTIONAL)

(DOWNSTREAM VIEW)

VDOT #1 COARSE AGGREGATE

2:1

3'

FLOW

CLASS I RIPRAP

SOURCE: VA. DSWC

PLATE. 3.20-1

This diagram illustrates a drop inlet system with a gravel filter. The top part shows a plan view of a rectangular structure with a central opening. Labels include: WIRE SCREEN (pointing to the top and bottom edges of the central opening), CONCRETE BLOCK (pointing to the top right corner), and GRAVEL FILTER (pointing to the area around the central opening). The bottom part shows a cross-section of the structure. Labels include: RUNOFF WATER WITH SEDIMENT (pointing to the water entering from the left), OVERFLOW (pointing to the top edge of the structure), WIRE SCREEN (pointing to the screen inside the structure), FILTERED WATER (pointing to the water exiting to the right), SEDIMENT (pointing to the material settling at the bottom of the structure), and DROP INLET WITH GATE (pointing to the bottom of the structure).

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

SOURCE: VA. DSWC

PLATE 3 07-3

H	H_0	W
1.5	0.5	2.0
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

SOURCE: VA. DSWC

PLATE. 3.13-1

1' VARIABLE*

VARIABLE*

1.0'

ORIGINAL GROUND ELEV.

67 CU. YD./ACRE

2:1

1:1

67 CU. YD./ACRE (EXCAVATED)

4' MAX.

FILTER CLOTH

COARSE AGGREGATE **

CLASS I RIPRAP

ORIGINAL GROUND ELEV.

* SEE PLATE 3.13-1

CROSS SECTION OF OUTLET

CLASS I RIPRAP

LENGTH (IN FEET) = 6 X DRAINAGE AREA (IN AC.)

DIVERSION DIKE

EXCAVATED AREA

COARSE AGGREGATE **

FILTER CLOTH

** COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

OUTLET (PERSPECTIVE VIEW)

ST

SOURCE: VA. DSWC

PLATE. 3.13-2

SOIL STABILIZATION MATTING SHALL BE USED IN CONJUNCTION WITH RIPRAP AT OUTLET END OF PIPE

ENTRENCH EDGE OF MATERIAL

CHECK SLOTS TO BE CONSTRUCTED AS PER MANUFACTURER'S RECOMMENDATIONS.

TRANSVERSE CLOSED CHECK SLOT

FLOW

5'

1'-2'

1'

UPSTREAM AND DOWNSTREAM TERMINAL

1'-2'

6'-8'

6'-8'

TRANSVERSE OPEN CHECK SLOT

SOURCE: VDOT ROAD AND BRIDGE STANDARDS

PLATE: 3.36-4

The diagram illustrates the construction of a riprap apron. The top portion is a plan view showing a 'PAVED CHANNEL' on the left, a 'TRANSITION' zone in the middle, and a 'RIPRAP APRON' on the right, which leads into a 'RECEIVING CHANNEL'. The bottom portion is a cross-section view showing the 'PAVED CHANNEL' as a flat surface, the 'TRANSITION' as a sloped area, and the 'RIPRAP APRON' as a layer of stones. Below the riprap is a 'FILTER FABRIC' layer. A 'KEY' is shown at the interface between the riprap and the filter fabric, with a note indicating it should be '6" - 9" RECOMMENDED FOR ENTIRE PERIMETER'. Arrows indicate the flow of water from the paved channel through the transition and apron into the receiving channel.

NOTES:

1. RIPRAP APRON REDUCES THE FLOW VELOCITY BELOW THE PERMISSIBLE VELOCITY OF THE NATURAL RECEIVING CHANNEL.
2. TRANSITION SIDE DIVERGENCE IS 1 IN 3F, WHERE

$$F = \text{FROUDE NUMBER} = \frac{V}{\sqrt{gd}}, \text{ WHERE}$$

V = VELOCITY AT THE BEGINNING OF THE TRANSITION
d = DEPTH OF FLOW AT THE BEGINNING OF THE TRANSITION

$$g = 32.2 \text{ ft./sec.}^2$$

SOURCE: VA. DSWC

PLATE 3.18-2

				DESIGNED	H & S
				DRAWN	H & S
				CHECKED	
	RECORD DRAWINGS	MAR 2008	RLT		
	CONSTRUCTION	MAR 2004	RLT	PROJ. ENGR.	H & S
	REGULATORY APPROVAL	NOV 2003	RLT		
	PRELIMINARY DESIGN	NOV 2002	RLT		
NO.	ISSUED FOR	DATE	RY	APPROVED	

THIS DOCUMENT ORIGINALLY ISSUED
FOR CONSTRUCTION AND SEALED BY
ROBERT S. DIFIORE, SEAL NO. 22769

THIS DOCUMENT ORIGINALLY ISSUED
FOR CONSTRUCTION AND SEALED BY
RONALD L. TAYLOR, SEAL NO. 024649

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HAZEN AND SAWYER
Environmental Engineers & Scientists
4011 WestChase Blvd., Raleigh, North Carolina 27607

CITY OF ROANOKE
VIRGINIA

REGIONAL WATER POLLUTION CONTROL PLANT WET WEATHER IMPROVEMENTS

MISCELLANEOUS STANDARD DETAILS

THE SCALE BAR	DATE	JULY 2003
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THE SCALE SHOWN BELOW MEASURES ONE	H & S JOB NUMBER	30788A
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INCH LONG ON THE ORIGINAL DRAWING.	CONTRACT NUMBER	DRAWING NUMBER
	A	D3