

The diagram illustrates a cross-section of a spillway structure. Key features and labels include:

- DESIGN HIGH WATER (60'-10" STICH ELEV.)**: Indicated by a horizontal line at the top left.
- MIN. 10'**: Two vertical dimension lines indicating minimum heights on the left and right slopes.
- CREST OF EMERGENCY SPILLWAY**: The top edge of the structure on the right.
- 67 C.Y./AC. 'DRY' STORAGE**: The uppermost storage area, indicated by a stippled pattern.
- 67 C.Y./AC. 'WET' STORAGE**: The middle storage area, indicated by a cross-hatched pattern.
- SEDIMENT CLEANOUT POINT ('WET' STORAGE, REDUCED TO 34 C.Y./AC.)**: A vertical structure within the wet storage area.
- RISER CREST**: The top edge of the sediment cleanout point structure.
- DEWATERING DEVICE**: A structure at the bottom right of the wet storage area.

A cross-sectional diagram of a dike structure. The dike has a trapezoidal shape with a flat top. On the left side, there are two storage areas: the top one is labeled '67 C.Y./AC. "DRY" STORAGE' and the bottom one is '67 C.Y./AC. "WET" STORAGE'. The bottom of the dike is labeled 'SEDIMENT CLEANTOUT POINT'. On the right side, there is a 'RISER CREST' and a 'DEWATERING DEVICE' located just below it. The top of the dike is labeled 'DESIGN HIGH WATER (25-YR. STORM ELEV.)'. A horizontal line across the top of the dike is labeled 'MIN. 2.0\''. A vertical line from the top of the dike down to the riser crest is labeled 'MIN. 1.0\''. A horizontal line from the riser crest to the right edge of the dike is labeled 'MIN. 3.0\''. A horizontal line from the left edge of the dike to the riser crest is labeled '0.5\''. The diagram uses different hatching patterns to represent different materials or storage levels.

1. DESIGN OF DETENTION BASINS SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY OF ROCKADE DRAINAGE STANDARDS (REF. SECTIONS 50302, 50303, AND 50542). 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 ROCKADE 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 (H) : 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 WILL 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 ROCKADE 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 ROCKADE 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 ROCKLAND DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS LATEST EDITION.
2. SLOPES STEEPER THAN 3 TO 1 (HORIZONTAL TO VERTICAL) SHALL BE BLENDED 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 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) LODES LAYERS. EACH LIFT SHALL BE SPREAD IN UNIFORM LAYERS. FILL SOIL SHALL BE UTILIZED ONLY WITHIN A MOISTURE RANGE OF +/- 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 ROCKLAND, 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 REWORKED 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.

2 ACRES OR LESS OF DRAINAGE AREA

2-10 ACRES OF DRAINAGE AREA

FILTER CLOTH (OPTIONAL)

(DOWNSTREAM VIEW)

VDOT #1

COARSE AGGREGATE

FILTER

CLASS 1 RIPRAP

3'

3'

3'

3'

CD ROCK CHECK DAM

The diagram illustrates a curb inlet system with a gravel filter and wire mesh. It shows runoff water entering a concrete gutter, passing through a gravel filter, and then through a wire mesh before entering the curb inlet. The system is labeled with components: RUNOFF WATER, GRAVEL FILTER, WIRE MESH, FILTERED WATER, SEDIMENT, CONCRETE GUTTER, and CURB INLET. Dimensions of 12' are indicated for the gravel filter and the concrete gutter sections.

SPECIFIC APPLICATION

This method of inlet protection is applicable at curb inlets where panning in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas.

■ Gravel shall be VDOT #3, #37.5 or 5 coarse aggregate.

IP GRAVEL CURB INLET SEDIMENT FILTER

The diagram illustrates a stormwater drainage system designed for sediment removal. It features a cross-section of a drainage channel with a sloped bottom. A sediment layer is shown accumulating at the bottom, with a label indicating 'SEDIMENT-LADEN RUNOFF' and 'AS REQUIRED' for removal. A 'DRAIN INLET' is shown at the bottom of the channel, with a 'MAX. SLOPE 2:1' indicated. A 'STORM WATER WITH LARGER PARTICLES REMOVED' is shown entering the inlet. A 'WEEP HOLES FOR DEWATERING' are shown in the side of the inlet. A 'LARGER PARTICLES WILL SETTLE' is shown in the bottom of the inlet. A 'DEPTH BELOW TOP OF INLET: MIN. 1'-MAX. 2'' is indicated. An inset diagram shows a plan view of the inlet with 'FLOW' arrows indicating the direction of water flow.

Diagram illustrating four types of temporary diversion structures:

- (DD) TEMPORARY DIVERSION DIKE**: A cross-section showing a dike structure with a minimum height of 10' and a minimum width of 4.5'. The structure is labeled "COMPACTED SOIL" and "FLOW" direction is indicated.
- (FD) TEMPORARY FILL DIVERSION**: A cross-section showing a fill structure with a minimum height of 10' and a minimum width of 4.5'.
- (RWL) TEMPORARY RIGHT-OF-WAY DIVERSION**: A cross-section showing a diversion structure with a minimum height of 10' and a minimum width of 4.5'.
- (DV) DIVERSION**: A cross-section showing a diversion structure with a minimum height of 10' and a minimum width of 4.5'.

Diagram illustrating a wire mesh trench structure for erosion control. The structure consists of a wire mesh (labeled "Wire") supported by a post (labeled "Post"). The mesh is covered with filter fabric (labeled "Filter Fabric"). The structure is designed to extend fabric and wire into the trench (labeled "Extend Fabric and Wire Into Trench"). The cross-section shows the mesh structure and the filter fabric. A dimension of 4.0' (4 feet) is indicated for the height of the mesh structure. A note indicates "10' IF V. USE" and "6' IF V. NOT U."

Plan

Section A-A

Pipe Outlet To Flow Area With No Defined Channel

Pipe Outlet To Well-Defined Channel

OP OUTLET PROTECTION

NOTES

- 1 Apron lining may be rip-rap, grouted rip-rap, or concrete.
- 2 L_a is the length of the rip-rap apron as calculated on plates 136d and 136e.
- 3 d = 15 times the maximum stone diameter, but not less than 6".

* SEE PLATE 3.13-1

Diagram illustrating a cross-section of a diversion dike structure. The structure consists of a core of excavated area (hatched pattern) surrounded by a filter cloth (wavy line pattern). The top layer is composed of coarse aggregate (stippled pattern). A diversion dike is shown on the right side, extending from the main structure. The length of the dike is labeled as $6 \times \text{Drainage Area (ac.)}$. The diagram also shows a filter cloth layer and an excavated area beneath the aggregate. A legend indicates that the stippled pattern represents coarse aggregate shall be VDOT #3, #57 or #5.

NOTE;
FOR AREAS LESS THAN 3.0 ACRES. FOR AREAS
LARGER THAN 3.0 ACRES A SEDIMENT BASIN
IS REQUIRED. SEE DETAIL THIS SHEET.

[illegible]

Diagram illustrating a drainage system for a road surface. The road surface is labeled "HARD SURFACE PUBLIC ROAD". The drainage system consists of a layer of "VDOT #1 Coarse Aggregate" (10 mm thick) and a "Ditch to Sediment Basin or Trap" (70 mm deep). The slope of the road surface is indicated as 10%.

CONSTRUCT A WASHBOARD OR
WASH RACK IF REQUIRED.

Filter Cloth
Ref Table 302-A of
Virginia ESC Handbook
for requirements

MUST EXTEND FULL WIDTH OF INGRESS
& EGRESS OPERATION.

The diagram illustrates a temporary gravel construction entrance. The top portion is a plan view showing a rectangular area with a width of 12' MIN. The area is filled with a cross-hatched pattern representing gravel. A line labeled 'FILTER CLOTH' runs along the bottom edge of the gravel area. The bottom portion is a cross-section view showing the gravel area resting on a layer of 'Reinforced Concrete'. Below the concrete is a 'Drain Space' containing a series of small circles representing drainage pipes. The entire structure is labeled 'WASH RACK DETAIL (IF REQUIRED)'.

ALL COSTS GIVEN ARE COMPLETE IN PLACE				
DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
CONSTRUCTION ENTRANCE	EA	1	\$ 800.00	\$ 800.00
SILT FENCE	LF	1250	3.00	3,750.00
INLET PROTECTION	EA	10	55.00	550.00
TEMPORARY DIVERSION DIKE	LF	900	2.00	1,800.00
TEMPORARY FILL DIVERSION	LF			
SEDIMENT TRAP	EA			
CHECK DAM	EA			
PERMANENT SEEDING	1000 SF	395	50.00	19,750.00
OUTLET PROTECTION	EA			
SEDIMENT BASIN	EA	1	7,500.00	7,500.00
RIGHT-OF-WAY DIVERSION	LF	50	2.50	125.00
CULVERT INLET PROTECTION	EA	1	100.00	100.00
SUB-TOTAL				\$ 34,375.00
10% CONTINGENCY				\$ 3,438.00
TOTAL PROJECT COST				\$ 37,813.00

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 UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES SHOWN 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 ROADNOE COUNTY.

TYPE A

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BURNZY WINTER RYE @ 1/2 LB / 1000 SF

1 FEBRUARY TO 1 JUNE
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 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

TYPE B (SLOPES 34 OR STEEPER)

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

15 AUGUST TO 1 OCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

LIME: 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 SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 175 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 IN A FIRM, FRIABLE, SEEDBED MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH

TOTAL DISTURBED AREA = 9.75 AC.

WVWA ID# 6QSG72

1	ENGR. & INSPEC.	04-10-93
2	ENGR. & INSPEC.	08-05-93
3	ENGR. & INSPEC.	10-27-93
4		
5		
6		
NO.	REVISIONS	DATE

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

SHEET
12
OF
12