

ALL COSTS GIVEN ARE COMPLETE IN PLACE

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Diagram illustrating the design elevations with emergency spillway. The structure includes a main spillway crest and a downstream emergency spillway crest. Key features and elevations are labeled:

- DESIGN HIGH WATER (20-YR. STORM FLOOD):** Indicated by a dashed line at the top left.
- MIN. 1.0':** Minimum freeboard above the design high water on both the main spillway and the emergency spillway.
- 0.5':** Elevation difference between the design high water and the main spillway crest.
- 67 C.Y./AC. "DRY" STORAGE:** Storage area above the main spillway crest.
- 67 C.Y./AC. "WET" STORAGE:** Storage area between the main spillway crest and the downstream emergency spillway crest.
- SEDIMENT CLEANOUT POINT ("WET" STORAGE REDUCED TO 34 C.Y./ACRE):** Located at the base of the main spillway structure.
- RISER CREST:** The crest of the main spillway structure.
- DOWNSLOPING DEVICE:** Located at the base of the emergency spillway.
- CREST OF EMERGENCY SPILLWAY:** The crest of the downstream emergency spillway.

DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

A cross-sectional diagram of a riser crest. The diagram shows a trapezoidal structure with a central vertical riser. The top surface is labeled 'DESIGN HIGH WATER (25-YR. STORM ELEV.)'. To the left of the riser, there are two storage areas: '67 C.Y./AC. "DRY" STORAGE' and '67 C.Y./AC. "WET" STORAGE'. A 'SEDIMENT CLEANOUT POINT' is indicated at the base of the riser. To the right of the riser, a 'DEWATERING DEVICE' is shown. Dimensions include a width of '0.5' at the top, a riser diameter of 'MIN. 1.0'', and a riser height of 'MIN. 2.0''. The base of the structure is 'MIN. 3.0'' wide.

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, #357 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

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.

1. DESIGN OF DETENTION BASINS SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY OF ROCKLAND DRAINAGE STANDARDS (REF. SECTIONS 3.01 THROUGH 3.04) AND 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 ROCKLAND DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION POND, LATEST EDITION.
3. IF THE FACILITY IS OVER FOUR (4) FEET DEEP, TWICE OVER TWO (2) HOURS TO RAIN, ON THE INTERIOR SURFACE EXCEEDS 3 (3): 1 (V), PERMANENT FENCING MAY BE REQUIRED, ADDITIONALLY, IF A HAZARDOUS MATERIAL IS CONSIDERED TO BE IN OR WILL IN ANY WAY POSE A HAZARD TO THE GENERAL PUBLIC, FENCING MAY BE REQUIRED. FENCING SHALL BE A MINIMUM OF SIX FEET HIGH AND SHALL BE OF STANDARD NINE GAUGE LINK FENCE, AND MUST HAVE ONE OR MORE LOCKING DOUBLE GATES (MINIMUM TEN FEET WIDE) FOR ACCESS.
4. DETENTION POND SHALL BE BONDED IN ACCORDANCE WITH THE ROCKLAND COUNTY BONDING POLICY FOR SUBDIVISION AND SITE DEVELOPMENT. BONDING SHALL BE FOR THE FULL COST OF THE FACILITY TO BE DESIGNED AND ADMINISTERED APART FROM THE SUBDIVISION DEVELOPMENT BOND. REFERENCE ESTIMATE - THIS SHEET.
5. REFERENCE THE COUNTY OF ROCKLAND DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION POND, LATEST EDITION, FOR ACCEPTANCE OF THE DESIGN 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.

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

1. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE COUNTY OF ROCKHIDE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS LATEST EDITION.
2. SLOPES STEEPER THAN 3 TO 1 (HORIZONTAL TO VERTICAL) SHALL BE BENCH 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 AND UNIFORMITY COEFFICIENT
 - 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) OF FILL SHALL HAVE AN ROCK LARGER THAN TWO (2) INCHES (5.1 CM) IN DIAMETER.
5. THE APPROVED FILL SHALL BE PLACED IN EIGHT (8) INCH (2 CM) LOOSE LIFTS. EACH LIFT SHALL BE SPREAD IN UNIFORM LAYERS. FILL SOIL SHALL BE UTILIZED ONLY WITHIN A MOISTURE RANGE OF PLUS OR MINUS ONE PERCENT OF THE MOISTURE CONTENT OF THE FILL. FILL SHALL BE COMPACTED 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% OF THE STANDARD SPECIFICATION NO. 303 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
7. FIELD DENSITY TESTS ARE TO BE CONDUCTED BY AN INDEPENDENT SOIL TESTING LABORATORY UNDER THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER. THE RESULTS OF THESE TESTS SHALL BE SUBMITTED TO THE COUNTY OF ROCKHIDE WITH AN AS-BUILT PLANS AS A CONDITION OF ACCEPTANCE OF THE FACILITY BY THE COUNTY. FIELD DENSITY TESTS SHALL BE CONDUCTED WITHIN SEVEN (7) DAYS OF COMPLETION PERIODICALLY TO DETERMINE THE DEGREE OF COMPACTION. ANY AREAS FAILING TO MEET THE ABOVE REQUIREMENTS SHALL BE REWORKED AND RECOMPACTION UNTIL THE REQUIRED DEGREE OF COMPACTION IS ACHIEVED.
8. ANTI-SLOPE 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 SEEDED.
10. THE MINIMUM GRADE OF THE BASIN "FLOOR" SHALL BE ONE (1) PERCENT GRADED TO DRAIN TO THE PRINCIPAL DRAINAGE

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

[illegible]

The diagram illustrates a gravel filter inlet protection system. On the left, a pile of gravel is shown with runoff water flowing from it. The water then passes through a 12-inch layer of gravel filter. Below the gravel filter is a concrete gutter. A wire mesh is positioned at the curb inlet, allowing filtered water to pass through while trapping sediment. The diagram is labeled with 'RUNOFF WATER', 'GRAVEL FILTER', '12"', 'WIRE MESH', 'FILTERED WATER', 'SEDIMENT', 'CONCRETE GUTTER', '12"', and 'CURB INLET'.

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 1.36d and 1.36e.
3. d = 1.5 times the maximum stone diameter, but not less

[illegible]

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NOT REQUIRED

1. ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION & SEDIMENT CONTROL MANUAL, 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. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN PLACE 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 AND SEDIMENT 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 CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES. REFER TO THE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO THE DESIGN REVIEW BOARD.

TYPE A

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BIRCH WINTERWET @ 1/2 LB / 1000 SF

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

LIME:
1-40 LB / 1000 SF PULVERIZED LIME, LIMESTONE

FERTILIZER:
1-20 LB @ 25 LB / 1000 SF
18-0-0 @ 7 LB / 1000 SF

MULCH:
IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE
APPLIED IN ACCORDANCE WITH SECTION 7.5 OF THE VIRGINIA EROSION
AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOD CONDITIONING:
INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED
SEED, MULCHING, MAINTENANCE OF NEW SEEDINGS, 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,
SPRINKLER SEEDER, OR HYDROSEEDER ON A FIRM, FLAT, SEEDBED.
MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

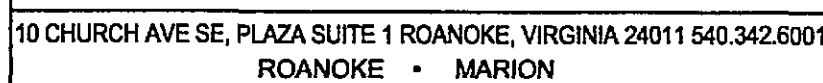
TOTAL DISTURBED AREA = 7.2 AC. = 313,633 SQ. FT.

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

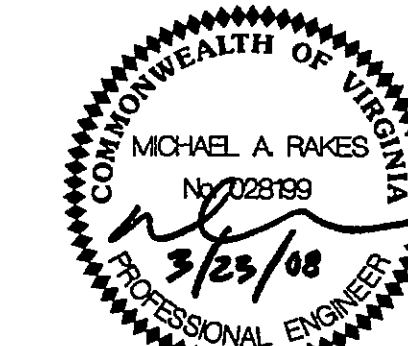
SHEET
C504

GENERAL NOTE



**FLEET SERVICE
CENTER
ROANOKE COUNTY**
5253 Old Hollins Rd
Roanoke, VA 24019
IFB-0898

SPECTRUM DESIGN PROJECT NO. 06118



DATE	March 23, 2008
DESIGN ARCHITECT	WWH
PROJECT ARCHITECT	
PROJECT ENGINEER	MAR
CHECKED BY	<i>[Signature]</i>
DRAWN BY	MF
REVISIONS	NUMBER
	DATE

SHEET TITLE
ROANOKE COUNTY ESC DETAILS

C504