## EROSION-SILTATION CONTROL SYMBOL TITLE TITLE GENERAL NOTES --- ) ROCK CHECK DAMS SAFETY FENCE TEMPORARY GRAVEL 1, DESIGN OF DETENTION BASINS SHALL CONFORM TO THE REQUIREMENTS LEVEL SPREADER OF THE COUNTY OF ROANOKE DRAINAGE STANDARDS (REF. SECTIONS CONSTRUCTION ENTRANCE 503.02, 503.03, AND 505.02). THE DESIGN OF THE FACILITY AND CONSTRUCTION ROAD VEGETATIVE STREAMBANK PREPARATION OF AS-BUILT PLANS SHALL BE BY A CERTIFIED 3.03 STABILIZATION PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE COMMONWEALTH STABILIZATION STRUCTURAL STREAMBANK OF VIRGINIA. VARIABLE | STRAW BALE BARRIER 3.04 STABILIZATION 67 CU. YD./ACRE 2. ACCESS TO THE FACILITY MUST BE PROVIDED IN ACCORDANCE WITH THE TEMPORARY VEHICULAR 67 CU, YD,/ACRE (EXCAVATED) COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR SILT FENCE 3.05 STREAM CRUSSING FILTER CLOTH ORIGINAL GROUND DETENTION PONDS, LATEST EDITION. - COARSE AGGREGATE WW SEDIMENT BASIN SCHEMATIC UTILITY STREAM CROSSING <del>(200000000)</del> BRUSH BARRIER 3. IF THE FACILITY IS OVER FOUR (4) FEET DEEP, TAKES OVER TWO (2) CRUSS-SECTION **ELEVATIONS** HOURS TO DRAIN, OR THE INTERIOR SLOPE EXCEEDS 3 (H): 1 (V), **—** STORM DRAIN DEWATERING STRUCTURE PERMANENT FENCING MAY BE REQUIRED, ADDITIONALLY, IF THE 3.07 INLET PROTECTION FACILITY IS IN A CONGESTED AREA OR WILL IN ANY WAY POSE A \* SEE PLATE 3.13-1 HAZARD TO THE GENERAL PUBLIC, FENCING MAY BE REQUIRED. CULVERT INLET PROTECTION(CIP TURBIDITY CURTAIN FENCING SHALL BE A MINIMUM OF SIX (6) FEET HIGH, A MINIMUM OF CLASS I RIP-RAP-STANDARD NINE GAUGE LINK FENCE, AND MUST HAVE ONE OR MORE Length(ft) = 6 x Drainage Area (ac.) LUCKING DOUBLE GATES (MINIMUM TEN FEET WIDE) FOR ACCESS. CDARSE AGGREGATE \*\*-SUBSURFACE DRAIN TEMPORARY DIVERSION DIKE(DD \_\_\_\_ -DIVERSION DIKE 4. DETENTION PONDS SHALL BE BONDED IN ACCORDANCE WITH THE ROANDKE SURFACE ROUGHENING TEMPORARY FILL DIVERSION(FI COUNTY BONDING POLICY FOR SUBDIVISION AND SITE DEVELOPMENT. CREST OF EMERGENCY A SEPARATE BOND FOR THE DETENTION FACILITY WILL BE REQUIRED DESIGN HIGH WATER EMPORARY RIGHT-OF-WAY MIN. 1.0' / AND ADMINISTERED APART FROM THE SUBDIVISION DEVELOPMENT BOND. TOPSOILING REFERENCE ESTIMATE - THIS SHEET. DIVERSION 67 C.Y./AC. — <del>---</del>(3)---TEMPORARY SEEDING DIVERSION 5. REFERENCE THE COUNTY OF ROANDKE DESIGN AND CONSTRUCTION 'DRY' STORAGE - RISER CRES STANDARDS FOR DETENTION PONDS, LATEST EDITION, FOR ACCEPTANCE FILTER CLOTH -AND MAINTENANCE OF THE FACILITY, CERTIFIED AS-BUILTS ARE 67 C.Y./AC. --<del>----</del>(3)----PERMANENT SEEDING TEMPORARY SEDIMENT TRAP "VET" STORAGE DEWATERING DEVICE REQUIRED AND MUST INCLUDE: -EXCAVATED AREA-A. DIMENSIONS OF THE FACILITY SEDIMENT CLEANOUT POINT TEMPORARY SEDIMENT BASIN (SB BE VDDT #3,#357 0F#5 ("WET" STORAGE REDUCED B. VOLUME @ MAXIMUM DEPTH TO 34 C.Y./ACRE) BERMUDA GRASS AND TEMPORARY SLOPE DRAIN ZOYSIAURASS ESTABLISHMENT C. ELEVATIONS OF STRUCTURES, SPILLWAYS, AND TOP (ST) SEDIMENT TRAP DESIGN ELEVATIONS WITH MATERIALS VERIFICATION INCLUDING RESULTS OF DENSITY TESTS MULCHING PAVED FLUME EMERGENCY SPILLWAY CONDUCTED BY AN INDEPENDENT SOIL TESTING LABORATORY THEAT. SOIL STABILIZATION STORMWATER CONVEYANCE E. LOCATION AND ELEVATION OF BENCHMARK. BLANKETS AND MATTING CHANNEL TREES, SHRUBS, VINES <del>---</del>®---DUTLET PROTECTION FOR AREAS LESS THAN 3.0 ACRES. FOR AREAS 6. ONE FOOT MINIMUM FREEBOARD REQUIRED FOR THE 100 YR WATER AND GROUND COVERS LARGER THAN 3.0 ACRES A SEDIMENT BASIN SURFACE ELEVATION. TREE PRESERVATION IS REQUIRED. SEE DETAIL THIS SHEET. RIPRAP AND PROTECTION DUST CONTROL TEMPORARY SEDIMENT TRAP DATA DESIGN HIGH WATER | MIN. 2.0' MIN. 3.0' CONSTRUCTION NOTES 2 ACRES OR LESS OF DRAINAGE AREA 2-10 ACRES OF DRAINAGE AREA STURAGE (C.Y.) HIN. 1.0' STRUCT AREA (ACRES) 1. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE COUNTY OF ROANDKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, REQ'D DESIGN 'DRY' STORAGE - RISER CREST LATEST EDITION. FILTER CLOTH (DOWNSTREAM VIEW) (OPTIONAL) (OPTIONAL) (DOWNSTREAM VIEW) "WET" STORAGE DEWATERING DEVICE 2. SLOPES STEEPER THAN 3 TO 1 (HORIZONTAL TO VERTICAL) SHALL BE BENCHED OR STEPPED PRIOR TO PLACING FILL ON THEM. 295 CY | 360 CY 14' 2.2 AC 1 & 2 COARSE AGGREGA SEDIMENT CLEANOUT POINT -COARSE AGGREGA WET: 74' (L) x 33' (W) x 2' (D) -DRY: 82' (L) x 41' (W) x 2' (D)-3. ON-SITE FILL MATERIAL OR BORROW FILL MATERIAL MAY BE UTILIZED. FILL MATERIAL SUILS, IN GENERAL DESIGN ELEVATIONS WITHOUT SHALL BE COMPACTABLE (CD) ROCK CHECK DAM EMERGENCY SPILLWAY TEMPORARY DIVERSION DIKE SHALL BE WITHIN AN ACCEPTABLE RANGE OF MOISTURE CONTENT (RISER PASSES 25-YR, EVENT) WHICH IS READILY CONTROLLED SHALL NOT BE HIGHLY SUSCEPTIBLE TO VOLUME CHANGE (SHRINKAGE OR SWELL) OR SETTLEMENT TEMPORARY FILL DIVERSION 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 TEMPORARY RIGHT-OF-WAY DIVERSION 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 DIVERSION +/- 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. FILTERED WATER 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 SPECIFIC APPLICATION DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS. This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause xtend Flabric and Wire Into Trenchinconvenience or damage to adjacent structures and unprotected areas. 7. FIELD DENSITY TESTS ARE TO BE CONDUCTED BY AN INDEPENDENT SOILS TESTING LABORATORY UNDER THE DIRECTION OF A QUALIFIED GEDTECHNICAL ENGINEER. THE RESULTS OF THESE TESTS SHALL BE ≡ Gravel shall be VDOT #3, #357 or 5 SUBMITTED TO THE COUNTY OF ROANDKE WITH AS-BUILT PLANS AS A CONDITION OF ACCEPTANCE OF THE FACILITY BY THE COUNTY. FIELD coarse aggregate. DENSITY TESTS, AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED (IP) GRAVEL CURB INLET SEDIMENT FILTER PERIODICALLY TO DETERMINE THE DEGREE OF COMPACTION. ANY AREAS CROSS-SECTION 1.0' FAILING TO MEET THE ABOVE REQUIREMENTS SHALL BE REVORKED AND/OR RECOMPACTED UNTIL THE REQUIRED DEGREE OF COMPACTION IS ACHIEVED. w 10' IF WIRE IS CONSTRUCT A WASHBOARD OR 8. ANTI-SEEP COLLARS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL USED. -Filter Cloth 6' IF WIRE IS WASH RACK IF REQUIRED. Ref. Table 3.02-A of NOT USED. HANDBOOK, LATEST EDITION. Virginia ESC Handbook for requirements. 9. ALL DISTURBED AREAS SHALL BE COVERED WITH FOUR (4) INCHES OF TOPSOIL AND SEEDED. \* MUST EXTEND FULL WIDTH OF INGRESS (SF) CONSTRUCTION OF A SILT FENCE SEPTEMBER TO 15 OCTOBER & EGRESS OPERATION. 10. THE MINIMUM SLOPE OF THE BASIN 'FLOOR SHALL BE ONE (1) PERCENT K-31 FESCUE @ 5 LB / 1000 SF GRADED TO DRAIN TO THE PRINCIPAL SPILLWAY. DEPTH BELOW TOP OF INLET REQUIRED SEDIMENT-LADEN RUNOFF MIN. 1'-MAX. 2' FERTILIZER: 5-20-10 @ 25 LB / 1000 SF SPECIFIC APPLICATION FILTER CLOTH This method of inlet protection is applicable where heavy flows are expected and where an overflow capability and ease of maintenance # 000000 are desirable. Section A-A LARGER PARTICLES Section A-A Pipe Dutlet To Flat Area With No Defined Channel <u>Pipe Outlet To</u> <u>Well-Defined Channe</u> STORM WATER WITH -LARGER PARTICLES REMOVED OP) OUTLET PROTECTION SPECIFIC APPLICATION This method of inlet protection is applicable where heavy concentrated flows are expected, Drain Space---WASH RACK DETAIL (IF REQUIRED) but not where ponding around the structure might cause excessive inconvenience or damage Apron lining may be rip-rap, grouted rip-rap, or concrete. La is the length of the ripto adjacent structures and unprotected areas. TOTAL DISTURBED AREA = 4.4 AC. CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE rap apron as calculated using plates 1.36d and 1.36e. \* Gravel shall be VDDT #3, #357 or #5 coarse aggregate. 3, d = 1.5 times the maximum stone diameter, but not less ( IP ) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER EXCAVATED DROP INLET SEDIMENT TRAP DATE: 11/02/93 04-10-93

COST ESTIMATE

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
CONSTRUCTION ENTRANCE	EA	1	\$ 700.00	\$ 700.00
SILT FENCE	LF			
INLET PROTECTION	EA	6	\$ 75.00	\$ 450.00
CULVERT INLET PROTECTION	EA	2	\$ 3.00	\$ 1,650.00
TEMPORARY DIVERSION DIKE	LF	980	\$ 2.00	\$ 1,960.00
SEDIMENT TRAP	EA	2	\$ 500.00	\$ 1,000.00
CHECK DAM	EA			
PERMANENT SEEDING	ACRE	2.0	\$ 2,000.00	\$ 4,000.00
OUTLET PROTECTION	EA	2	\$ 125.00	\$ 250.00
SEDIMENT BASIN	EA			
SUB-TOTAL			;	\$ 10,010.00
10% CONTINGENCY.				\$ 990.00
TOTAL PROJECT COST				\$ 11,000.00
				<u> </u>

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- 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 RUNDFF BE DIVERTED 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 ERUSION, 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 PRACTICE 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 ROANDKE COUNTY.

## PERMANENT SEEDING MIXTURE

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

TYPE B (SLOPES 34 OR STEEPER) 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

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

ANNUAL RYE @ 1/2 LB / 1000 SF 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

38-0-0 € 7 LB / 1000 SF IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SUIL ERUSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION, ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

COMM. No.: 2002-053

ROANOKE OF

SCALE: NO SCALE DRAWING BY: CLN,AF DESIGNED BY: G:\CAD\DETAILS\EROSION\EROSION)

APPROVED BY: GWS,III

**EROSION & SEDIMENT CONTROL** STORMWATER MANAGEMENT DETAILS

DEPARTMENT ENGINEERING AND INSPECTIONS

08-05-93 ENGR. & INSPEC 10-27-93 ENGR. & INSPEC.

COUNTY