

## EROSION AND SEDIMENT CONTROL NARRATIVE

**PROJECT DESCRIPTION:** THE PURPOSE OF PHASE 4 OF THE BRIDGES PROJECT IS FOR THE CONSTRUCTION OF A NEW MULTIFAMILY RESIDENTIAL BUILDING AND ASSOCIATED IMPROVEMENTS. THIS PHASE WILL INCLUDE THE CONSTRUCTION OF AN APARTMENT BUILDING, PARKING, AND UTILITY IMPROVEMENTS. THE PROPOSED PROJECT INCLUDES A DISTURBED AREA OF 2.0 ACRES FOR PHASE 4 IMPROVEMENTS.

**EXISTING SITE CONDITIONS:** THE EXISTING SITE IS THE FORMER LOCATION OF A MANUFACTURING MILL. THE FORMER IMPROVEMENTS HAVE BEEN REMOVED AND THE SITE WAS GRADED AND FILL MATERIAL PROVIDED UNDER A SEPARATE SET OF PLANS AND PERMIT. THE SITE IS VACANT WITH EXISTING IMPROVEMENTS OFF-SITE INCLUDING, PUBLIC SANITARY SEWER MAIN, PUBLIC WATERLINE MAIN, AND PRIVATE STORM SEWER IMPROVEMENTS TO REMAIN.

**ADJACENT PROPERTY:** THE PROPERTY IS BOUNDED BY OLD WHITMORE AVENUE PUBLIC RIGHT OF WAY TO THE NORTH, JEFFERSON STREET PUBLIC RIGHT OF WAY TO THE WEST, RESERVE AVENUE PUBLIC RIGHT OF WAY TO THE SOUTH, AND A STARBUCKS AND MORGAN SOUTHERN RAILROAD TO THE EAST. THE ROANOKE RIVER IS LOCATED APPROXIMATELY 150' TO THE EAST OF THE SUBJECT SITE. THE SITE IS LOCATED WITHIN THE FLOODPLAIN OF THE ROANOKE RIVER BASIN.

**OFF-SITE AREAS:** OFF-SITE AREAS OF IMPROVEMENT INCLUDE CURB AND GUTTER, SIDEWALK STREET TREES, AND STREET LIGHTING IMPROVEMENTS TO JEFFERSON STREET. THERE ARE NO OFF-SITE AREAS OUTSIDE OF RIGHT OF WAY IMPROVEMENTS PROVIDED WITH THIS PROJECT. ALL MATERIAL TRANSPORTED OFF-SITE SHALL BE DISPOSED OF IN AN APPROVED AND PERMITTED LOCATION. G.C. SHALL NOTIFY THE CITY OF ROANOKE INSPECTOR WITH DETAILS REGARDING WHERE THE EXPORTED MATERIAL IS BEING TRANSPORTED TO.

**SOILS:** SOILS INFORMATION HAS BEEN PROVIDED ON SHEET C09 INDICATING THAT THE SITE IS 100% 53--URBAN LAND AS SPECIFIED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE - WEB SOIL SURVEY.

**CRITICAL EROSION AREAS:** G.C. SHALL ENSURE THAT THE PROPOSED CONTECH UNIT REMAINS SEDIMENT FREE DURING CONSTRUCTION. CONTECH SHALL ACTIVATE THE UNIT AND PROVIDE CERTIFICATION OF ITS ACCEPTANCE. THIS CERTIFICATION SHALL BE FORWARDED TO THE CITY OF ROANOKE FOR THEIR FILES BY THE CONTRACTOR WHEN AVAILABLE AT THE END OF THE PROJECT.

### EROSION AND SEDIMENT CONTROL MEASURES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

### STRUCTURAL -

CONSTRUCTION ENTRANCE--STD. 3.02....A STONE PAD, LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS TO THE CONSTRUCTION SITE, TO REDUCE THE SOIL TRANSPORTED ONTO PUBLIC ROADS AND OTHER PAVED AREAS.

SILT FENCE--STD. 3.05....A TEMPORARY BARRIER CONSTRUCTED ALONG THE PERIMETER OF THE DISTURBED AREA AS REQUIRED TO INTERCEPT AND DETAIN SEDIMENT.

INLET PROTECTION--STD. 3.07....A SEDIMENT FILTER TO PREVENT SEDIMENT FROM ENTERING, ACCUMULATING IN AND BEING TRANSFERRED INTO AN INLET AND ASSOCIATED DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF A DISTURBED PROJECT AREA.

### VEGETATIVE -

TEMPORARY SEEDING--STD. 3.31....ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR PERIODS OF 30 DAYS TO 1-YEAR BY SEEDING WITH AN APPROPRIATE RAPIDLY GROWING SEED MIXTURE.

PERMANENT SEEDING--STD. 3.32....ESTABLISHMENT OF A VEGETATIVE COVER BY PLANTING SEED ON ALL FINAL GRADED AREAS THAT WILL NOT RECEIVE AN IMPROVISED COVER OR RECEIVE TOPSOIL MATERIAL TO PROVIDE A STABILIZED SITE AFTER THE PROJECT IS COMPLETE.

MULCHING--3.35....MULCH SHALL BE APPLIED TO ALL TEMPORARY AND PERMANENT SEEDING OPERATIONS TO PROMOTE THE GROWTH OF VEGETATION AND TO PROTECT THE SOIL SURFACE FROM RAINDROP IMPACTS.

### MANAGEMENT STRATEGIES:

A) CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.

B) SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.

C) THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.

D) ALL FILL AND CUT SLOPES AND AREAS NOT RECEIVING PAVEMENT OR CONCRETE SHALL BE SEED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.

E) ONLY AFTER INSPECTION AND APPROVAL FROM THE LOCAL PROGRAM ADMINISTRATOR MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

### PERMANENT STABILIZATION:

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISHED GRADING. THE PERMANENT SEEDING INSTALLATION SHALL BE PER THE APPROPRIATE PERMANENT SEEDING APPLICATION.

### STORMWATER MANAGEMENT:

THE PROPOSED PROJECT WILL BE CONSTRUCTED IN PHASES. THIS PLAN SET IS FOR PHASE 4. STORMWATER QUALITY REQUIREMENTS FOR THIS PHASE HAVE BEEN MET IN PHASES 1 AND 2 OF THIS PROJECT. ADDITIONAL STORMWATER QUALITY MEASURES HAVE BEEN PROVIDED TO ACCOUNT FOR A PORTION OF THE FUTURE DEVELOPMENT OF PHASE 3. CALCULATIONS HAVE BEEN PROVIDED FROM THE SITE TO THE 1% POINT DURING A 2-YEAR 24-HOUR DESIGN STORM TO CHECK FOR EROSION CONDITIONS AND MEET CHANNEL PROTECTION REQUIREMENTS. FLOOD PROTECTION CALCULATIONS ARE NOT REQUIRED AS THE SITE IS IN A MAPPED FLOODPLAIN.

### MAINTENANCE/INSPECTIONS:

THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS, AND WITHIN 48 HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION. WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

A) INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.

B) IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.

C) A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

### GENERAL E.S.C. NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

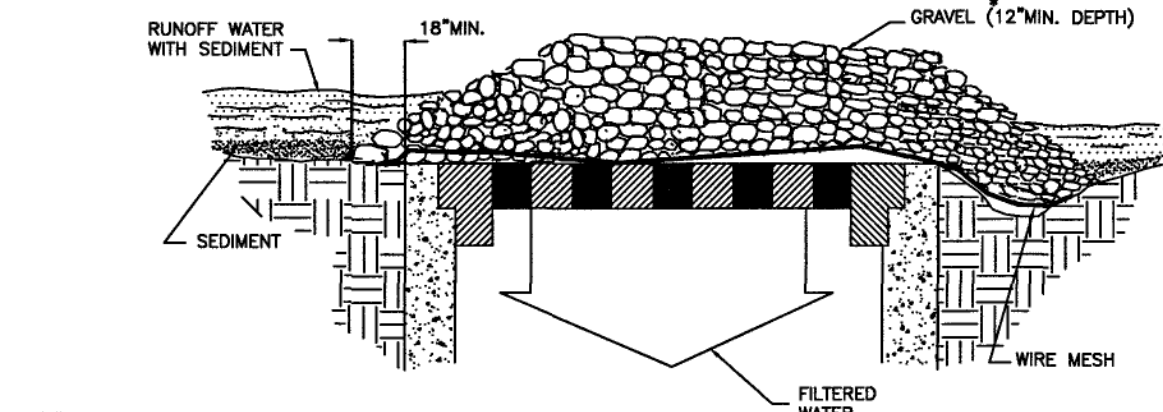
ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF--PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.



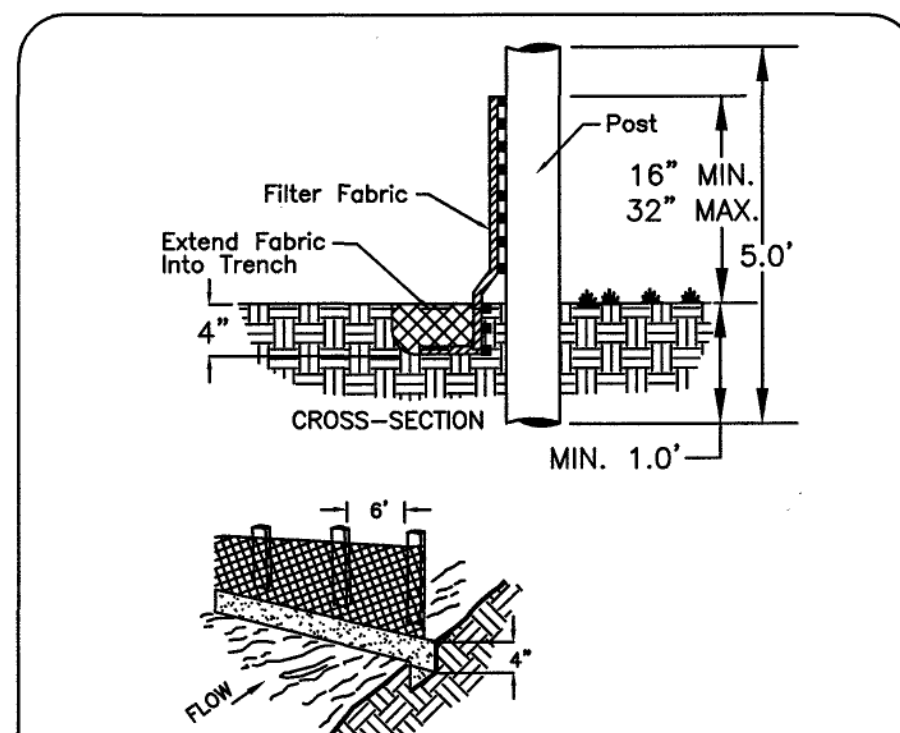
#### SPECIFIC APPLICATION

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.

ALL ON-SITE  
INLETS WHERE  
APPLICABLE

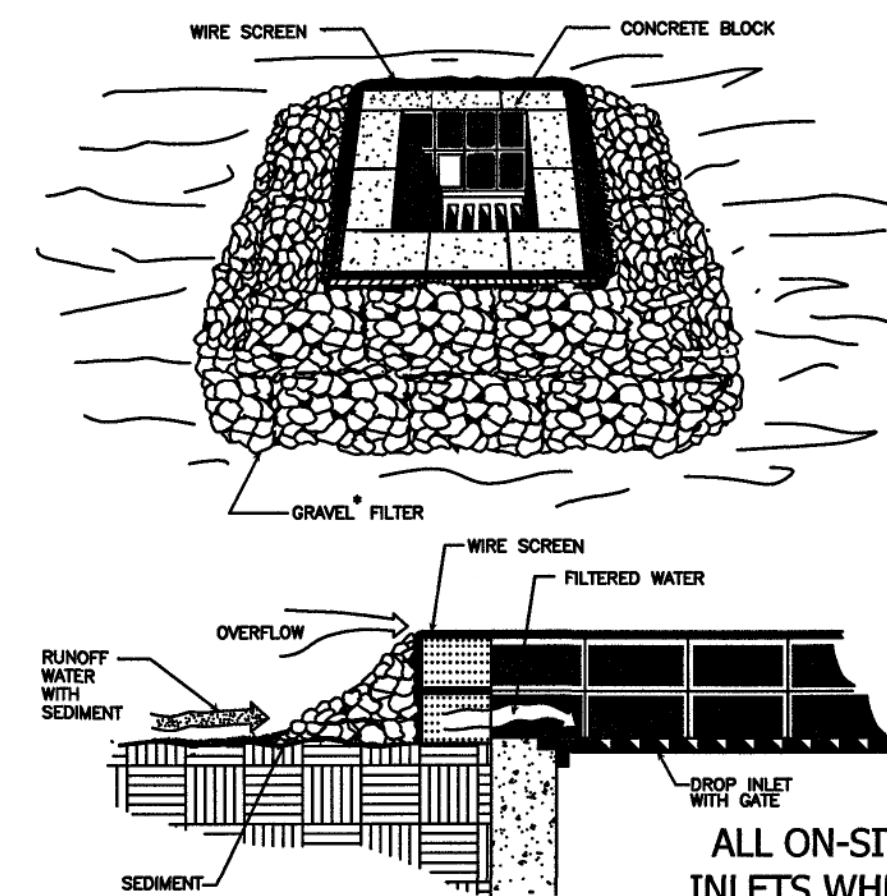
### IP GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



### SF CONSTRUCTION OF A SILT FENCE

EROSION AND SEDIMENT CONTROL STANDARD - 3.05

## BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER



#### SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

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

SOURCE: VA. DSWC

PLATE: 3.07-3

TABLE 3.31-B

(Revised June 2003)

### TEMPORARY SEEDING SPECIFICATIONS

#### QUICK REFERENCE FOR ALL REGIONS

APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

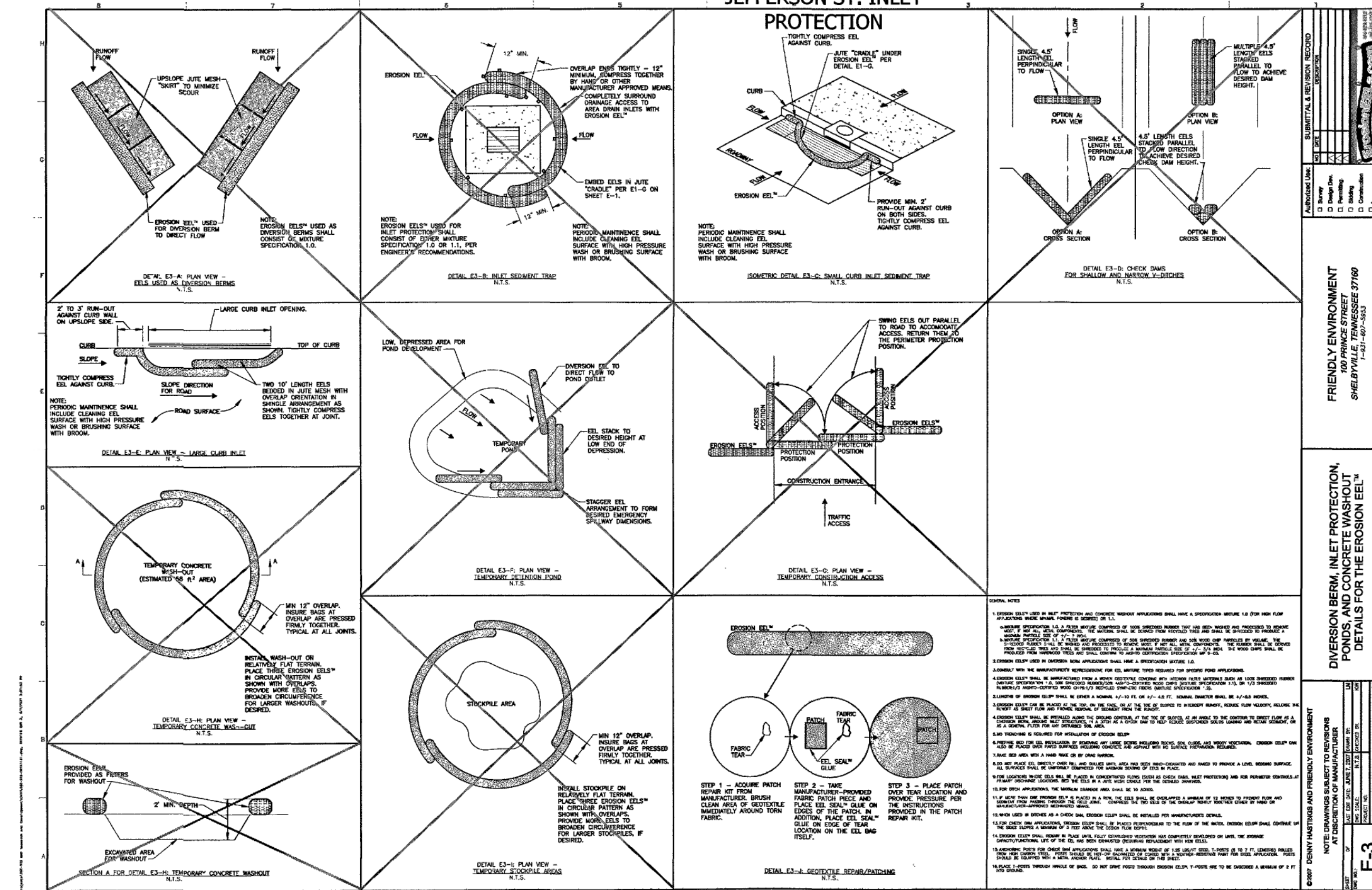
#### FERTILIZER & LIME

- Apply 10-10-10 fertilizer at a rate of 450 lbs./acre (or 10 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

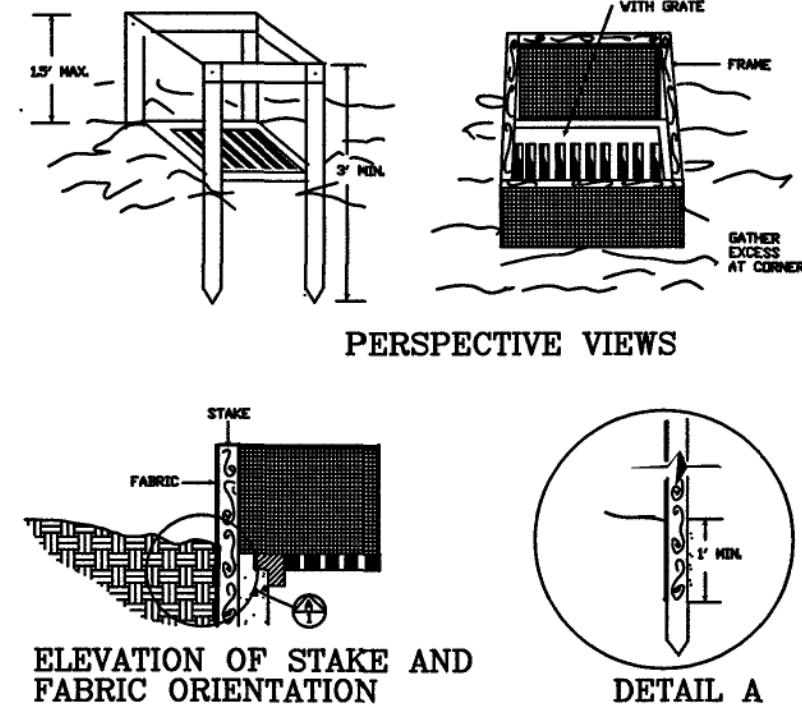
#### NOTE:

- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <http://www.dor.state.va.us/esw/es.htm#tubs>

### TS TEMPORARY SEEDING SPECIFICATIONS



## SILT FENCE DROP INLET PROTECTION



#### PERSPECTIVE VIEWS

#### DETAIL A

#### SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 6%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THIS METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

TABLE 3.32-C

(Revised June 2003)

### PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN/MOUNTAIN AREA

LAND USE	SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue <sup>1</sup> Perennial Ryegrass <sup>2</sup> Kentucky Bluegrass <sup>3</sup>	90-100% 0-10% 0-10% TOTAL: 200-250 lbs.
High-Maintenance Lawn	Minimum of three (3) up to five (5) varieties of Kentucky Bluegrass from approved list for use in Virginia <sup>1</sup>	TOTAL: 125 lbs.
General Slope (3:1 or less)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>3</sup>	125 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Slopes greater than 3:1)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>3</sup> Crownvetch <sup>4</sup>	105 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

- When selecting varieties of turfgrasses, use the Virginia Crop Improvement Association (VCIA) recommended turfgrasses variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrasses variety list is available at the local County Extension office or through VCIA at 804-748-4884 or at <http://baudwin.ces.vt.edu/hd/turf/turfselectionandselection.htm>
- Perennial Ryegrass will germinate faster and at lower soil temperatures than Tall Fescue, thereby providing cover and erosion resistance for seedbed.
- Use seasonal nurse crop in accordance with seeding dates as stated below:  
March, April - May 15th ..... Annual Ryegrass  
May 16th - August 15th ..... Fescue Millet  
August 16th - September, October ..... Annual Ryegrass  
November - February ..... Winter Rye
- All legume seed must be properly inoculated. If Flatapex is used, increase to 30 lbs/acre. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30-40 lbs/acre.

#### FERTILIZER & LIME

- Apply 10-20-10 fertilizer at a rate of 600 lbs./acre (or 12 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

#### NOTE:

- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <http://www.dor.state.va.us/esw/es.htm#tubs>

### PS PERMANENT SEEDING SPECIFICATIONS

### Erosion & Sediment Control Technical Bulletin No. 4 Nutrient Management for Development Sites

C. When applying maintenance fertilizer on established sod,

Month	Type of Grass			
	Tall Fescue Perennial Rye	Kentucky Bluegrass	Bermudagrass	Zoysiagrass
September	1	1	0	0
October	1	1	0	0
Early November	0	0	0	0
April	0	0	0	0
May	0-0.5	0-0.05	1	1
June	0	0	0	1
July/August	0	0	1	1
Yearly Lbs. N/1000 sq. ft.	2.5	2.5	2	2

Month	Type of Grass			
	Tall Fescue Perennial Rye	Kentucky Bluegrass	Bermudagrass	Zoysiagrass
August 15	1.5	1.5	0	0
October 1	1.5	1.5	0	0
April	0	0	1.5	1.5
May 15	0	0	0	1
June	0	0	1.5	1.5
Yearly Lbs. N/1000 sq. ft.	3	3	3	3

### FERTILIZER SPECIFICATIONS AND RATES FOR MANAGEMENT

www.balzer.cc

New River Valley  
Richmond  
Roanoke  
Shenandoah Valley

RESIDENTIAL LAND DEVELOPMENT ENGINEERING  
SITE DEVELOPMENT ENGINEERING  
LAND USE PLANNING & ZONING  
LANDSCAPE ARCHITECTURE  
LAND SURVEYING  
ARCHITECTURE  
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WETLAND DELINEATIONS & STREAM EVALUATIONS

Balzer and Associates, Inc.

1208 Corporate Circle  
Roanoke, VA 24018  
540-772-9580  
FAX 540-772-8050

DRAWN BY LAR

DESIGNED BY BTC

CHECKED BY CPB

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