

# EROSION AND SEDIMENT CONTROL NARRATIVE

## PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE CONSTRUCTION OF A 350+ PARKING GARAGE STRUCTURE. APPROXIMATELY 0.80 ACRES OF EXISTING PAVEMENT WILL BE REMOVED TO ALLOW A FOOTPRINT OF 0.56 ACRES TO BE CONSTRUCTED. AN APPROXIMATE ACREAGE OF 0.87 ACRES WILL BE DISTURBED DURING CONSTRUCTION.

## EXISTING SITE CONDITIONS

THE BUILDING WILL BE CONSTRUCTED ON AN AREA COMPRISED OF MOSTLY EXISTING IMPERVIOUS SURFACE. THE SITE DRAINS TO THE ALLEY TOWARDS THE MIDDLE OF THE SITE OR SALEM AVENUE. THE EXISTING ELEVATIONS VARY FROM 992 TO 970.

## ADJACENT PROPERTY

THE SITE IS BOUNDED TO THE NORTH BY SALEM AVENUE, AND CAMPBELL AVENUE TO THE SOUTH. THE ADJACENT PROPERTIES ARE DEVELOPED PARCELS WITH A PUBLIC ALLEY THROUGH THE MIDDLE OF THE SITE.

## OFF-SITE AREAS

NO OFF-SITE DISTURBANCE IS ANTICIPATED DURING CONSTRUCTION OF THIS PROJECT.

## SOILS

THE PROJECT SITE LIES WITHIN THE APPALACHIAN AND BLUE RIDGE REGION, AND IS DIVIDED INTO PLATEAUS, MOUNTAINS AND NARROW VALLEYS. SOILS TEND TO BE SHALLOW AND ACID, AND MAY ERODE RAPIDLY ON STEEP SLOPES. SHALEY SLOPES ARE OFTEN UNSTABLE AND DROUGHTY.

ACCORDING TO THE USDA SOIL SURVEY FOR ROANOKE, THE PREDOMINANT SOILS LOCATED ON THE PROPOSED SITE IS COWSNELL, A SOIL WITH A MODERATE PERMEABILITY RATE AND IS HIGHLY ERODIBLE.

## CRITICAL EROSION AREAS

THERE ARE NO KNOWN CRITICAL EROSION AREAS ON OR ADJACENT TO THE SITE.

## EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

## STRUCTURAL PRACTICES

### 1. TEMPORARY CONSTRUCTION ENTRANCE - 3.02

A TEMPORARY CONSTRUCTION SHALL BE INSTALLED TO MINIMIZE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY CONSTRUCTION VEHICLES.

### 2. SILT FENCE BARRIER - 3.05

SILT FENCE SEDIMENT BARRIERS WILL BE PLACED DOWN SLOPE OF EXISTING AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF.

### 3. STORM DRAIN INLET PROTECTION - 3.07

ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION TO FILTER SEDIMENT-LADEN CONSTRUCTION RUNOFF BEFORE ENTERING THE STORM SEWER INLETS.

### 4. STRAW BALE BARRIER - 3.04

A TEMPORARY SEDIMENT BARRIER COMPOSED OF STRAW BALES PLACED ACROSS A SLOPE TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS.

## VEGETATIVE PRACTICES

### 1. TOP SOILING (STOCKPILE) - 3.30

WHERE ENCOUNTERED, TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. THE STOCKPILE IS TO BE STABILIZED WITH TEMPORARY SEEDING.

### 2. TEMPORARY SEEDING - 3.31

ALL DENUDEED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED. THE TYPE OF SEED AND FERTILIZER, AND LIME REQUIREMENTS SHALL BE IN ACCORDANCE WITH TABLE 3.31-B, SHOWN ON THE PLANS.

## MANAGEMENT STRATEGIES

- CONSTRUCTION TRAFFIC SHOULD BE LIMITED TO ACCESS ROADS AND AREAS TO BE GRADED. COORDINATION OF CONSTRUCTION ROUTES MUST BE DONE THRU THE CITY OF ROANOKE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE INSTALLED AS A FIRST STEP IN GRADING, IMMEDIATELY AFTER IMPERVIOUS SURFACES ARE REMOVED.
- ALL MAJOR GRADING SHOULD BE COMPLETED WITHIN 30 DAYS OF THE BEGINNING OF THE PROJECT. TEMPORARY SEEDING SHALL BE APPLIED IMMEDIATELY AFTER GRADING IS COMPLETED ON THE RESPECTIVE AREAS.
- THE CONSTRUCTION SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND ESPECIALLY AFTER EACH SIGNIFICANT STORM TO LOCATE DAMAGES AND CONDUCT MAINTENANCE OPERATION.

## PERMANENT STABILIZATION

PERMANENT SEEDING WILL BE USED ON ALL DISTURBED AREAS WHICH ARE NOT TO BE PAVED AND SHOULD BE DONE IMMEDIATELY FOLLOWING FINAL GRADING. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED, THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION. VEGETATIVE COVER SHALL BE ESTABLISHED AS FOLLOWS:

SEED PER TABLE 3.32-B (SHOWN ON PLANS)  
TOPSOIL 4" THICK, PER VDOT SPEC. 602 (CLASS B)  
LIME PER TABLE 3.32-B (SHOWN ON PLANS)  
FERTILIZER PER TABLE 3.32-B (SHOWN ON PLANS)

SOIL TESTS SHALL BE CONDUCTED TO DETERMINE THE AMOUNT OF LIME NEEDED TO OBTAIN AN APPROPRIATE SOIL PH FOR THE VEGETATION BEING ESTABLISHED. SEEDBED PREPARATION SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATION LISTED IN STD & SPEC 3.32, PERMANENT SEEDING, OF THE VESCH.

TABLE 3.31-B (REVISED JUNE 2003)  
TEMPORARY SEEDING SPECIFICATIONS QUICK  
REFERENCE FOR ALL REGIONS

SEED		
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 AND LIME

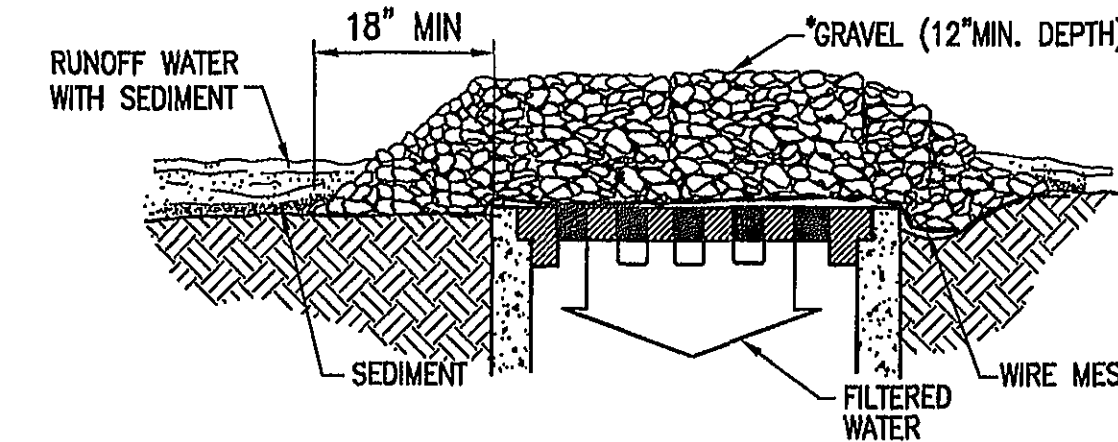
\*APPLY 10-10-10 FERTILIZER AT A RATE OF 500LBS/ACRE (OR 10LBS/1,000 SQFT)  
\*APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 50LBS/1,000 SQFT)  
NOTE:  
-A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL PH OF SITE.  
-INCORPORATE THE LIME 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/ew/edsa.htm#pubs>

TABLE 3.32-D (REVISED JUNE 2003)  
PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN AREA

SEED		
LAND USE	SPECIES	APPLICATION RATES
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	KENTUCKY 31 OR TURF-TYPE FULL FESCUE IMPROVED PERENNIAL KENTUCKY BLUEGRASS	200-250 lbs 90-100% 0-10% 0-10%
LOW-MAINTENANCE (STEEPER THAN 3:1)	KENTUCKY 31 FESCUE RED TOP GRASS SEASONAL NURSE CROPS** CROWN VETCH***	100 LBS 2 LBS 20 LBS 20 LBS 150 LBS TOTAL
**PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN FESCUE, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED. ***USE SEASONAL NURSE CROP IN ACCORDANCE WITH THE SEEDING DATES AS STATED BELOW: MARCH, APRIL THROUGH MAY 15TH ANNUAL RYE MAY 16TH THROUGH AUGUST 15TH FOXTAIL MILLET AUGUST 16TH THROUGH SEPTEMBER, OCTOBER ANNUAL RYE NOVEMBER THROUGH FEBRUARY WINTER RYE		
***IF FLATPEA IS USED, INCREASE TO 30 LBS/ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY ALSO BE INCLUDED IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS; ADD 10-20 LBS/ACRE IN MIXES.		

### FERTILIZER AND LIME

\*APPLY 10-20-10 FERTILIZER AT A RATE OF 500LBS/ACRE (OR 12LBS/1,000 SQFT)  
\*APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 50LBS/1,000 SQFT)  
NOTE:  
-A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL PH OF SITE.  
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## SPECIFIC APPLICATION

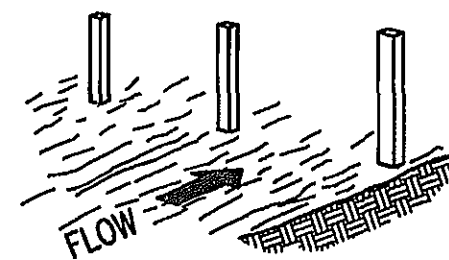
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.  
\* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

## DROP INLET PROTECTION

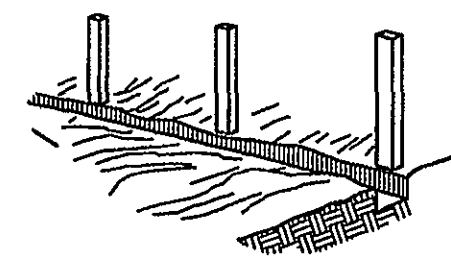
NO SCALE

PLATE 3.07-2

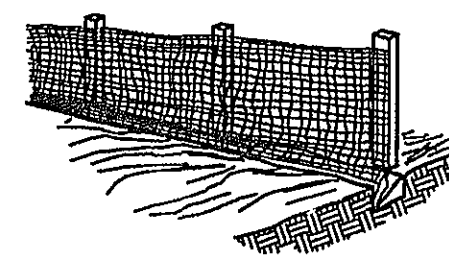
## 1. SET THE STAKES.



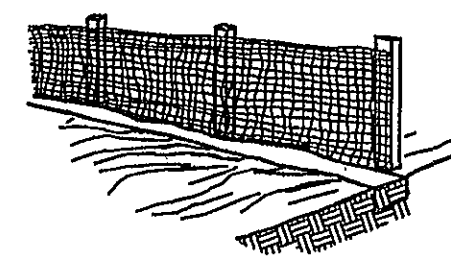
## 2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



## 3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



## 4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



CONSTRUCTION OF A FILTER BARRIER

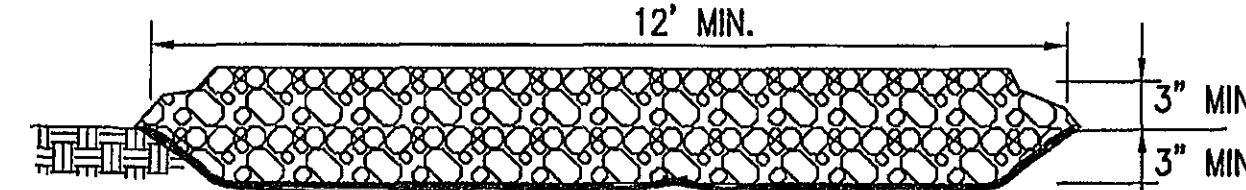
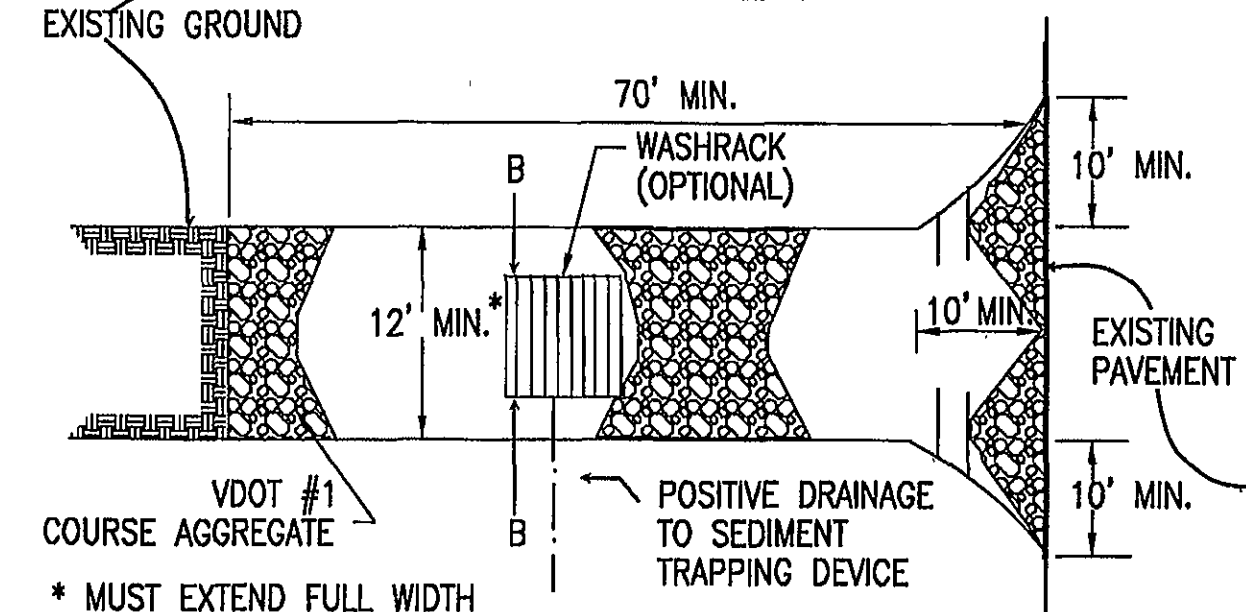
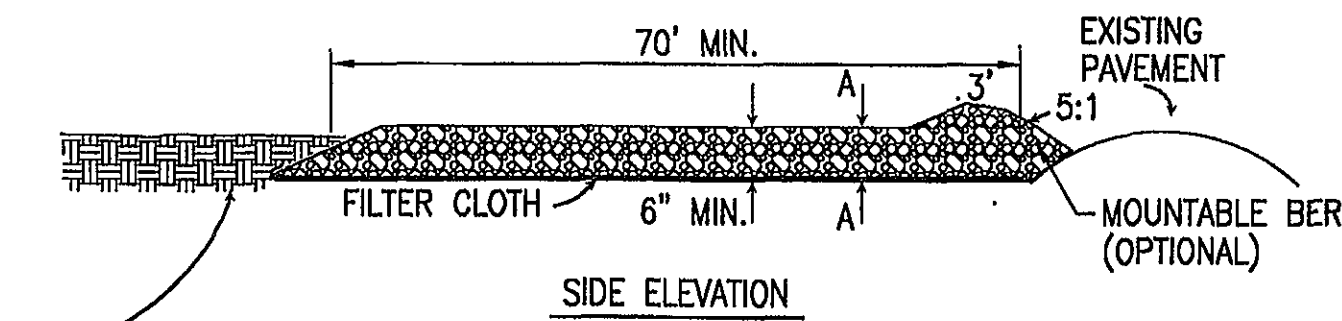
## CONSTRUCTION SPECIFICATIONS

### MATERIALS

- SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS NOTED IN TABLE 3.05-B OF THE VESCH.
- SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F.
- IF WOODEN STAKES ARE UTILIZED FOR SILT FENCE CONSTRUCTION, THEY MUST HAVE A DIAMETER OF 2 INCHES WHEN OAK IS USED AND 4 INCHES WHEN PINE IS USED. WOODEN STAKES MUST HAVE A MINIMUM LENGTH OF 5 FEET.
- IF STEEL POSTS (STANDARD "U" OR "T" SECTION) ARE UTILIZED FOR SILT FENCE CONSTRUCTION, THEY MUST HAVE A MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT AND SHALL HAVE A MINIMUM LENGTH OF 5 FEET.
- WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD-STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES.

### INSTALLATION

- THE HEIGHT OF A SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE AND SHALL NOT EXCEED 34 INCHES ABOVE GROUND ELEVATION.
- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE UNAVOIDABLE, FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4-INCHES WIDE AND 4-INCHES DEEP ON THE UPSLOPE SIDE OF THE PROPOSED LOCATION OF THE MEASURE.
- WHEN WIRE SUPPORT IS NOT USED, EXTRA-STRENGTH FILTER CLOTH SHALL BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6-FEET APART (SEE PLATE 3.05-2). THE FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING ONE INCH LONG (MINIMUM) HEAVY-DUTY WIRE STAPLES OR TIE WIRES AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- IF A SILT FENCE IS TO BE CONSTRUCTED ACROSS A DITCH LINE OR SWALE, THE MEASURE MUST BE OF SUFFICIENT LENGTH TO ELIMINATE ENDFLOW, AND THE PLAN CONFIGURATION SHALL RESEMBLE AN ARC OR HORSESHOE WITH THE ENDS ORIENTED UPSLOPE (SEE PLATE 3.05.2) EXTRA-STRENGTH FILTER FABRIC SHALL BE USED FOR THIS APPLICATION WITH A MAXIMUM 3-FOOT SPACING OF POSTS. ALL OTHER INSTALLATION REQUIREMENTS NOTED IN #5 APPLY.
- THE 4-INCH BY 4-INCH TRENCH SHALL BE BACK FILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
- SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.



SOURCE: VA. DSWC

## TEMPORARY CONSTRUCTION ENTRANCE

NO SCALE

PLATE 3.02-1

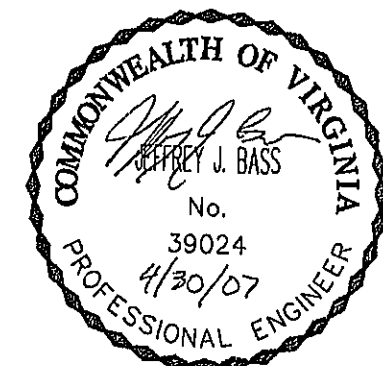
## SILT FENCE

NO SCALE

PLATE 3.05-2

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CAMPBELL AVENUE  
PARKING DECK  
ROANOKE, VIRGINIA

CN NO: 2426.2  
DATE: 4/30/07  
DESIGN: JJB  
DRAWN: JAW  
REVIEW: TAR

REVISIONS  
No. Date Description By

EROSION AND  
SEDIMENT  
CONTROL  
DETAILS  
CG501

SHEET 7 OF 11