EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The following project will involve extending the public gravity sewer from the current termination point to the properties owned by Joe Altadonna and Jim McKelvey. The total area of disturbance is 0.50 acres.

EXISTING SITE CONDITIONS Existing site conditions include suburban street scapes and yard scapes reflective of city streets and urban yards. The site contains standard vegetation that would occur in a commercial area. The topography of the site is relatively flat with varied slopes. The site drains generally in the western direction and towards the existing creek.

ADJACENT AREAS

Areas adjacent to the project include commercial properties. The terrain adjacent to the project corridor is a mix of grassy, paved and wooded areas. It is mostly adjacent to streets surrounded by existing commercial properties.

OFF-SITE AREAS No off-site areas will be disturbed as part of this project except for access and staging.

Some portions of the work will traverse steep slopes for short distances.

Soils data taken from NRCS Soil Survey for Franklin County

C Clifford Fine Sandy Loam 7D Clifford Fine Sandy Loam 15-25% 8E Clifford-Hickoryknob 25-45%

EROSION AND SEDIMENT CONTROL MEASURES

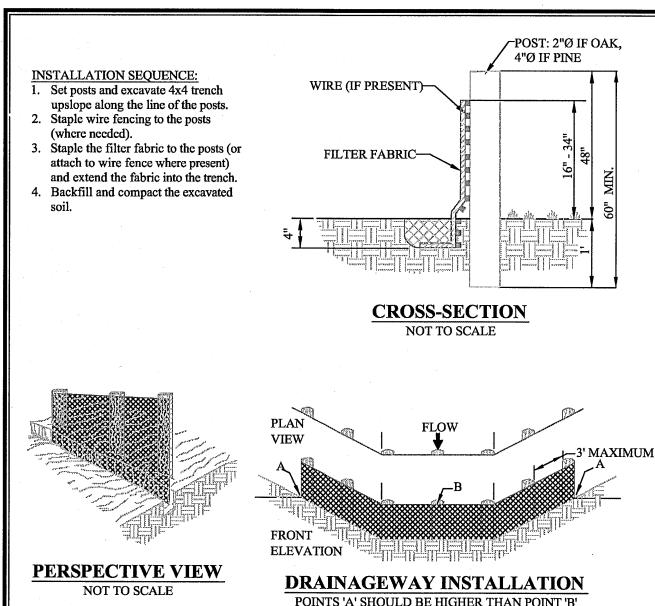
1. <u>Silt Fence</u> (Section 3.05) Temporary silt fence shall be installed along the peripheries of the areas disturbed for the sewer

- Permanent Seeding (Section 3.32) All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. Erosion control blankets will be installed over fill slopes which have been brought to final grade and have been seeded to protect the slopes from rill and gully erosion and to allow seed to germinate properly. Mulch (straw or fiber) will be used on relatively flat areas. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching.
- Mulching (Section 3.35) Mulch shall be used over all seeded areas and shall be applied in accordance with Standard and pecification 3.35 of the Virginia Erosion and Sediment Control Handbook, latest edition.

PERMANENT STABILIZATION

Permanent stabilization will be accomplished by establishment of turf

No Design Calculations are required.



POINTS 'A' SHOULD BE HIGHER THAN POINT 'B' NOT TO SCALE

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 VESCH Table 3.05-B, latest edition. 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 spliced 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

When wire support is used, standard-strength filter cloth may be used. Wire fence reinforcement for silt fence using standard-strength filter cloth shall be a minimum of 14 gauge and shall have a minimum mesh spacing of 6 inches. Posts for this type of installation shall be placed a maximum of 10 feet apart. When wire support is not used, extra-strength filter cloth must be used. Posts for this type of installation shall be placed a maximum of 6 feet apart. Inspect all silt fencing each week and after every significant runoff producing event, and repair the fence as needed

SF- SILT FENCE BARRIER

Refer to and comply with the Standards and Specifications of the Virginia Erosion & Sediment Control Handbook, latest edition. This information is based on and modeled after it and is provided as a quick reference.

KEY	NAME	SYMBOL	VESCH No.		
(B/M)	Soil Stabilization Blankets and Matting		3.36		
CE	Temporary Gravel Construction Entrance	l Construction Entrance			
CIP	Culvert Inlet Protection	nlet Protection			
(CRS)	Construction Road Stabilization	oad Stabilization			
(DD)	Temporary Diversion Dike	sion Dike			
ES-1	Silt Fence Break				
(IP)	IP Storm Drain Inlet Protection				
MU	Mulching		3.35		
(OP)	Outlet Protection		3.18		
PS	Permanent Seeding		3.32		
SAF	Construction Safety Fencing		3.01		
SF	Silt Fence		3.05		
SR	Surface Roughening		3.29		
ST	Temporary Sediment Trap	green and green	3.13		
TP	Tree Preservation and Protection		3.38		
(TS)	Temporary Seeding		3.31		

ENERAL EROSION AND SEDIMENT CONTROL NOTES

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, latest edition and Virginia Regulations 4VAC50-30, Erosion and Sediment Control Regulations. ES-2: The plan approving authority must be notified one week prior to the preconstruction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection.

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

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.

limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the

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.

EROSION CONTROL LEGEND AND GENERAL NOTES

Refer to and comply with the Standards and Specifications of the Virginia Erosion & Sediment Control Handbook. latest edition. This information is based on and modeled after it and is provided as a quick reference.

MS #	MINIMUM STANDARDS	MEASURE APPLIED FOR EACH MINIMUM STANDARD	
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE STIE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.		PERMANENT SEEDING HAS BEEN SPECIFIED FOR ALL DENUDED AREAS ALONG WI APPLICABLE MULCH, LIME AND FERTILIZATION.	
MS #2	During Construction of the project, soil stockpiles shall be stabilized or projected with sediment trapping measures. The contractor is responsible for the temporary projection and permanent stabilization of all soil stockpiles on site.	THERE ARE NO SOIL STOCKPILES PROPOSED, IF SOIL IS TO BE STORED ON SI IS SHALL HAVE SILT FERCE INSTALLED AROUND THE DOWN HILL SIDE OF THE TO INSURE PROTECTION FROM SEDIMENT LADEN RUN-OFF FROM LEAVING THE	
MS #3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERMISE PERMANENTLY STABILIZED, PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND EVORE IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	PERMANENT SEEDING HAS BEEN SPECIFIED FOR ALL DENUDED AREAS ALONG VAPPLICABLE MULCH, LIME AND FERTILIZATION.	
MS #4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN THE LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCES OCCURS.	SILT FENCE WILL BE INSTALLED AT AREAS DISTURBED FOR THE SEWER SYSTEM	
MS #5	STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE	
MS # 6	SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN 3 ACRES. B. FLOW GREATER THAN THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STROAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.	NOT APPLICABLE	
MS #7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION, SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.	NOT APPLICABLE	
MS #8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE	
MS # 9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	NOT APPLICABLE	
NS # 10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	NOT APPLICABLE	
MS # 11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE QUITLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL	NOT APPLICABLE	
NS #12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION, NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFEDNAMS, EATHER FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NO CAUSEWAYS, COFFERDAMS, OR EARTHEN FILL IS PROPOSED FOR THE PRO	
MS 4 13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NOMERODIBLE MATERIAL SHALL BE PROVIDED.	NO CONSTRUCTION VEHICLES SHALL ENTER THE WATERCOURSE.	
MS #14	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCRURSES SHALL BE MET.	DEG APPROVAL WILL BE OBTAINED.	
MS #15	THE BED AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED,	CLASS I RIP RAP WILL BE INSTALLED ON THE STREAM BANKS.	
MS #16	UNDERGROUND UTILITY LINES SHALL BE INSTALED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: A. NO MORE THAN 300 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THRU AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN GROSET TO MINIMIZE EROSION AND PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCORDISHED IN WITH THESE REGULATIONS. F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLED WITH.	CRITERIA A THROUGH F WILL BE APPLIED DURING THE INSTALLATION OF THE SEMER SYSTEM LINES	
MS #17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SUFFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SUFFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF THE DAY, SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA, STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	CONSTRUCTION VEHICLES WILL REMAIN ON PAVED SURFACES ELIMINATING THE POTENTIAL FOR THE TRANSPORT OF SEDIMENT TO THE PUBLIC ROAD.	
/S / 18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE IMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR, TRAPPED SEDIMENT AND THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	REMOVAL OF TEMPORARY EROSION CONTROL MEASURES ARE SPECIFIED IN THE DETAILS SHOWN OR WHEN THE COUNTY DEEMS THE SITE FULLY STABILIZED.	
ws # 19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION & DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY & PEAK FLOW RATE OF STORMWATER RUNOF FOR THE STATED FREQUENCY STORM OF 24 HOUR DURATION.	THERE IS NO INCREASE IN STORMWATER VOLUME OR VELOCITY DUE TO THE PROPOSED WORK. THE PROPOSED EROSION CONTROL MEASURES WILL ELIMINATE ANY POTENTIAL OF DOWNSTREAM EROSION OR DAMAGE.	

-	DF SYMBOL	
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ORGANIC MULCH MATERIALS AND APPLICATION RATES				
Mulches	Rate per acre	Rate per 1000SF	NOTES	
Straw or hay	1½ - 2 tons (min. 2 tons for winter cover)	70 - 90 lbs	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.	
Fiber mulch	minimum 1500 lbs.	35 lbs	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.	
Corn stalks	4 - 6 tons	35 lbs	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.	
Wood chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air- dried. Treat with 12 lbs. nitroger, per tor Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.	
Bark chips or shredded bark	50 - 70 cu.yds.	1 -2 CY	Free of coarse matter. Air- dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.	

Before mulching, complete required grading and install needed sediment control practices. Lime and fertilizer should be incorporated and surface roughening accomplished as needed. Seed should be applied before mulching except in the following cases:

a. Where seed is to be applied as part of a hydroseeder slurry containing fiber mulch. b. Where seed is to be applied following a straw mulch spread during winter months. Application. Mulch material shall be spread uniformly, by hand or machine. When spreading straw by hand, divide the area to be mulched into approximately 1,000 SF sections and place 70-90 lbs. (1-1/2 to 2 bales) of straw in each

section to facilitate uniform distribution. Mulch anchoring. Straw mulch must be anchored immediately after spreading to prevent displacement. Other organic mulches listed in table do not require anchoring. The following methods of anchoring straw may be used: a. Mulch anchoring tool (often referred to as a krimper or krimper tool). This is a tractor-drawn implement designed

to punch mulch into the soil surface. This method provides good erosion control with straw. It is limited to use on slopes no steeper than 3:1 where equipment can operate safely. Machinery shall be operated along the contours. b. Fiber mulch. Apply fiber mulch by means of a hydroseeder at a rate of 500-750 lbs./ acre over top of straw mulch or hay. It has an added benefit of providing additional mulch to the newly seeded area.

c. Liquid mulch binders. Application of liquid mulch binders and tackifiers should be heaviest at the edges of areas and at crests of ridges and banks, to prevent displacement. The remainder of the area should have binder applied uniformly. Binder may be applied after mulch is spread or may be sprayed into mulch as it is being blown onto

Mulch nettings. Lightweight plastic, cotton, or paper nets may be stapled over the mulch according to manufacturer's recommendations. Peg and twine. Because it is labor-intensive, this method is feasible only in small areas where other methods cannot be

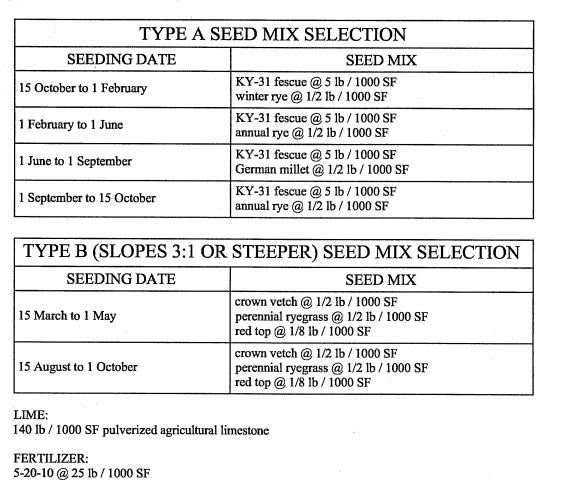
used. Drive 8-10 inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes may be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross-within-a square. Turn twine 2 or more times around each peg.

Chemical mulches, synthetic binders, and asphalt binders may be used in situations as described in VESCH, latest

Maintenance. All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, re-install netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place up until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.

MU- MULCHING

Refer to and comply with the Standards and Specifications of the Virginia Erosion & Sediment Control Handbook, latest edition. This information is based on and modeled after it and is provided as a quick reference.



38-0-0 @ 7 lb / 1000 SF

Shall be used over all seeded areas and shall be applied in accordance with Standard and Specification 3.35 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 reseeding shall be in accordance with specifications contained within the Virginia Erosion and Sediment Control Handbook, latest edition.

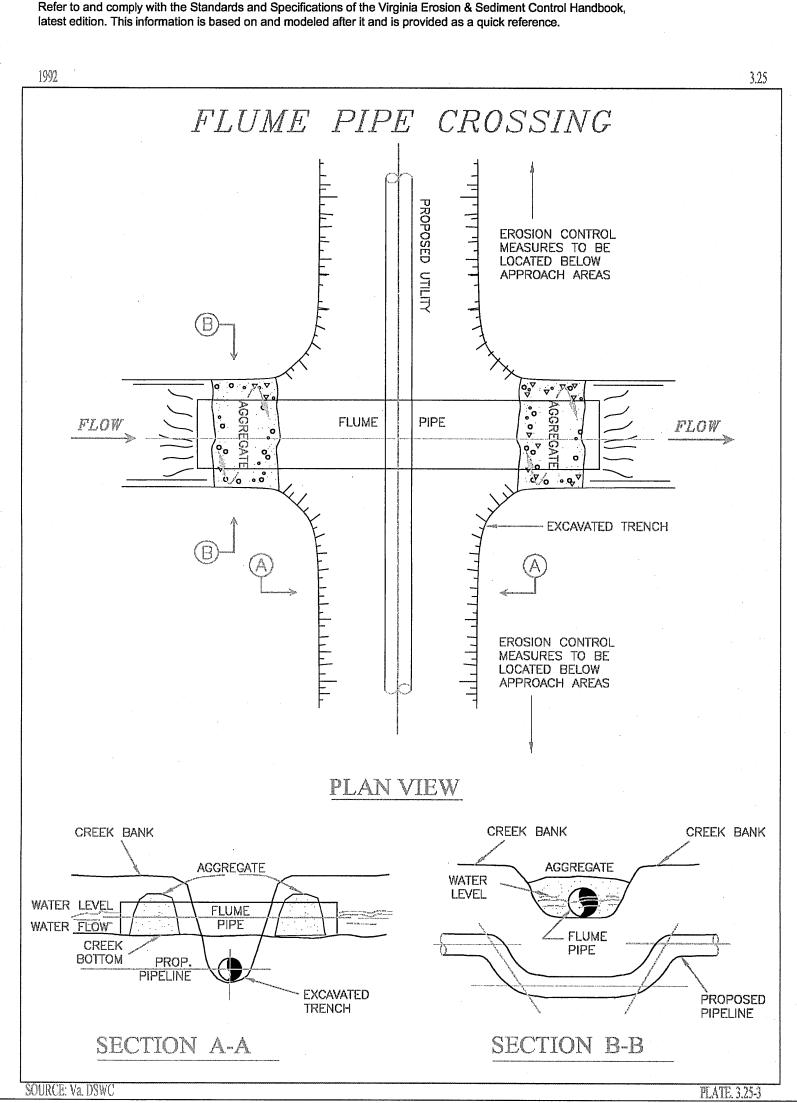
Additional seeding to be performed as required by the inspector.

SEED APPLICATION:

Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydroseeder on a firm, friable, seedbed. Maximum seeding depth shall be 1/4 inch.

PS-PERMANENT SEEDING

Refer to and comply with the Standards and Specifications of the Virginia Erosion & Sediment Control Handbook, latest edition. This information is based on and modeled after it and is provided as a quick reference.



INCREASES IN VOLUME, VELOCITY & PEAK FLOW HATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24 HOUR DURATION. FLAN

PLAN

STEEL ENCASEMENT CONCRETE ENCASEMENT ABANDON OR REMOVE

LIMITS OF DISTURBED AREA

WATERLINE PLUG

Designed: DMV Drawn: LBR Checked: JGR Approved: DMV 4/27/12 Date: Project: WSE

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