

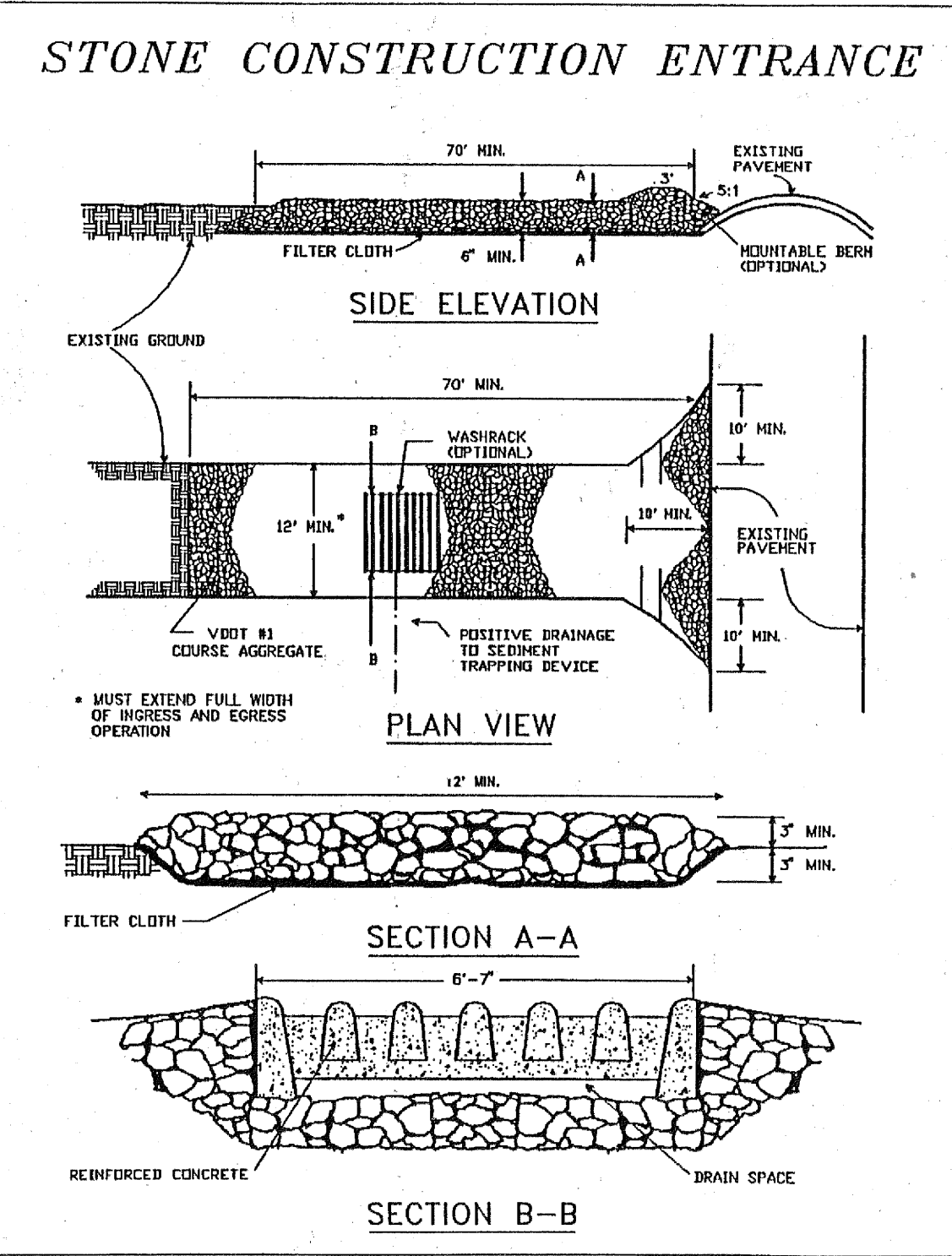
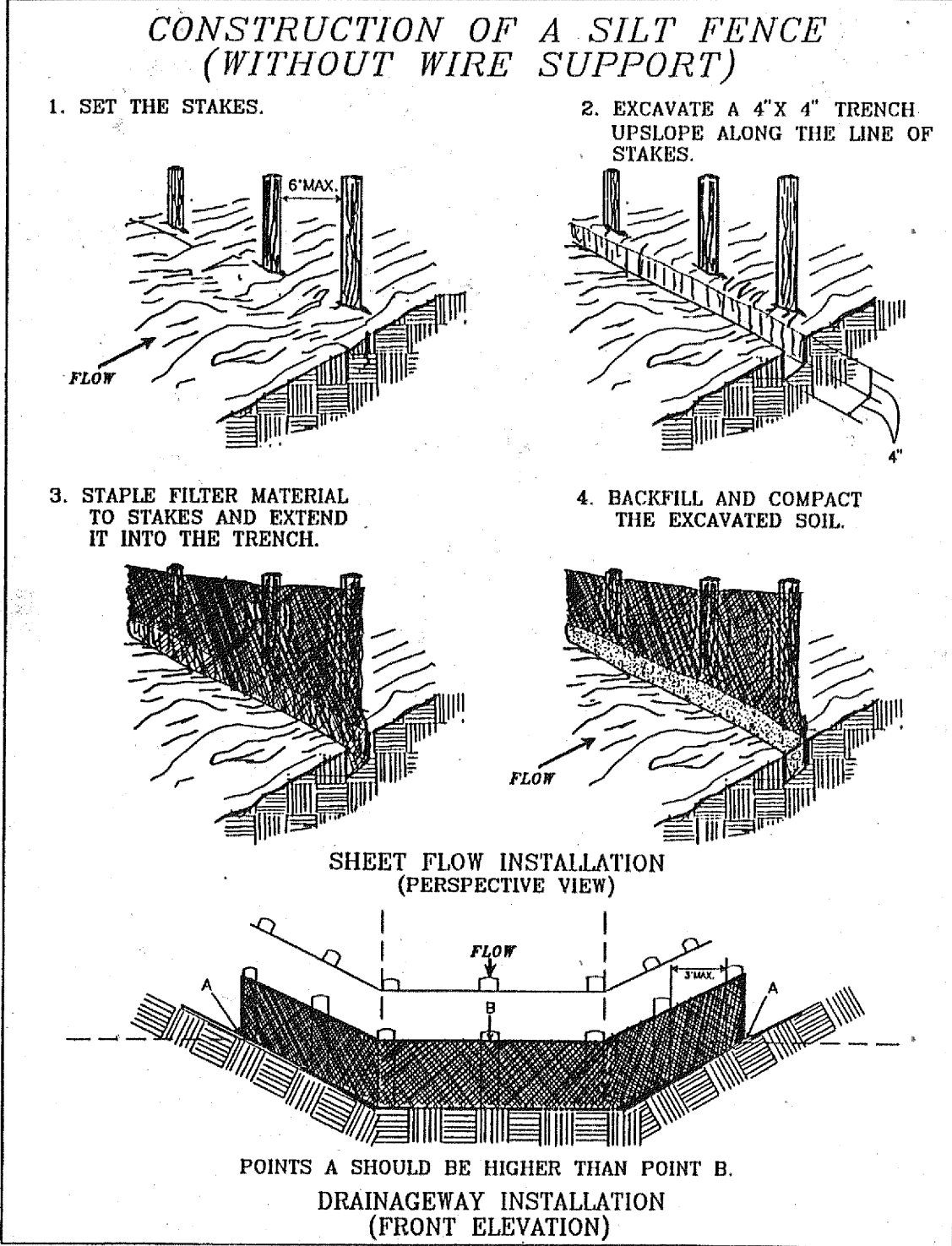
TABLE 3.35-A			
ORGANIC MULCH MATERIALS AND APPLICATION RATES			
MULCHES:	RATES:		NOTES:
	Per Acre	Per 1000 sq. ft.	
Straw or Hay	1½ - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 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 nitrogen per ton. 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 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.			

EC-2 erosion blanket(also in VESCH as treatment one). Generally not used in ditches with a velocity of over four fps

\*EC-2 soil retention mats shall consist of a machine produced mat of wood fibers, coconut fibers, wood excelsior or manmade fiber that shall intertwine or interlock. Mats shall be of constant thickness with fiber evenly distributed over its entire area and covered on the top and bottom side with netting having a high web strength, (not glued but machine sewn).\*

EC-3 erosion blankets(also in VESCH as treatment two) can be used in ditches from 4 to 14 fps.

\*EC-3 erosion blankets must be a three dimensional geomatrix of UV stabilized nylon, polyethylene or polypropylene sewn with UV stabilized polyester thread to form a mat. RAG C350 or P300, Murotel Heavyweight and Enkamat are some of the products that fit this description.



#### GENERAL EROSION AND SEDIMENT CONTROL 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 specification of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations VR 625-02-00 Erosion and Sediment Control Regulations.

ES-2: The plan approving authority must be notified one week prior to the pre-construction 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 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 sedimentation as determined by the plan approving authority.

ES-7: 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.

SEEDING REQUIREMENTS	
STD & SPEC 3.31	TEMPORARY SEEDING – TS
	Rates per acre:
	Winter – 40 lbs. annual rye and 40 lbs. cereale rye
	Summer – 40 lbs. annual rye and 40 lbs. foxtail millet
	Fertilizer – 1500 lbs. of 10-13-10 per acre
	Lime – 2 tons per acre
STD & SPEC 3.32	PERMANENT SEEDING – PS
	Seasonal rates per acre:
	Feb. 1 to May 15
	100 lbs. tall fescue
	15 lbs. annual rye
	2 lbs. red clover
	May 16 to July 31
	120 lbs. tall fescue
	10 lbs. Foxtail millet
	2 lbs. red clover
	Aug. 1 to Sept. 15
	100 lbs. tall fescue
	15 lbs. annual rye
	2 lbs. red clover
	120 lbs. tall fescue
	10 lbs. cereale rye
	2 lbs. red clover
	Sept. 16 to Jan. 31
	Fertilizer – all seasons - 1500 lbs. of 10-18-10 per acre
	Lime – all seasons – 2 tons per acre
	A mulch cover is required on every seeding.
	Straw at 80 bales per acre or an approved manufactured mulch/stabilization material

MS-1 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT THAT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2 SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.

MS-3 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

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.

MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-11 BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12 WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHOULD BE TAKEN TO MINIMIZE 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 COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

MS-14 WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

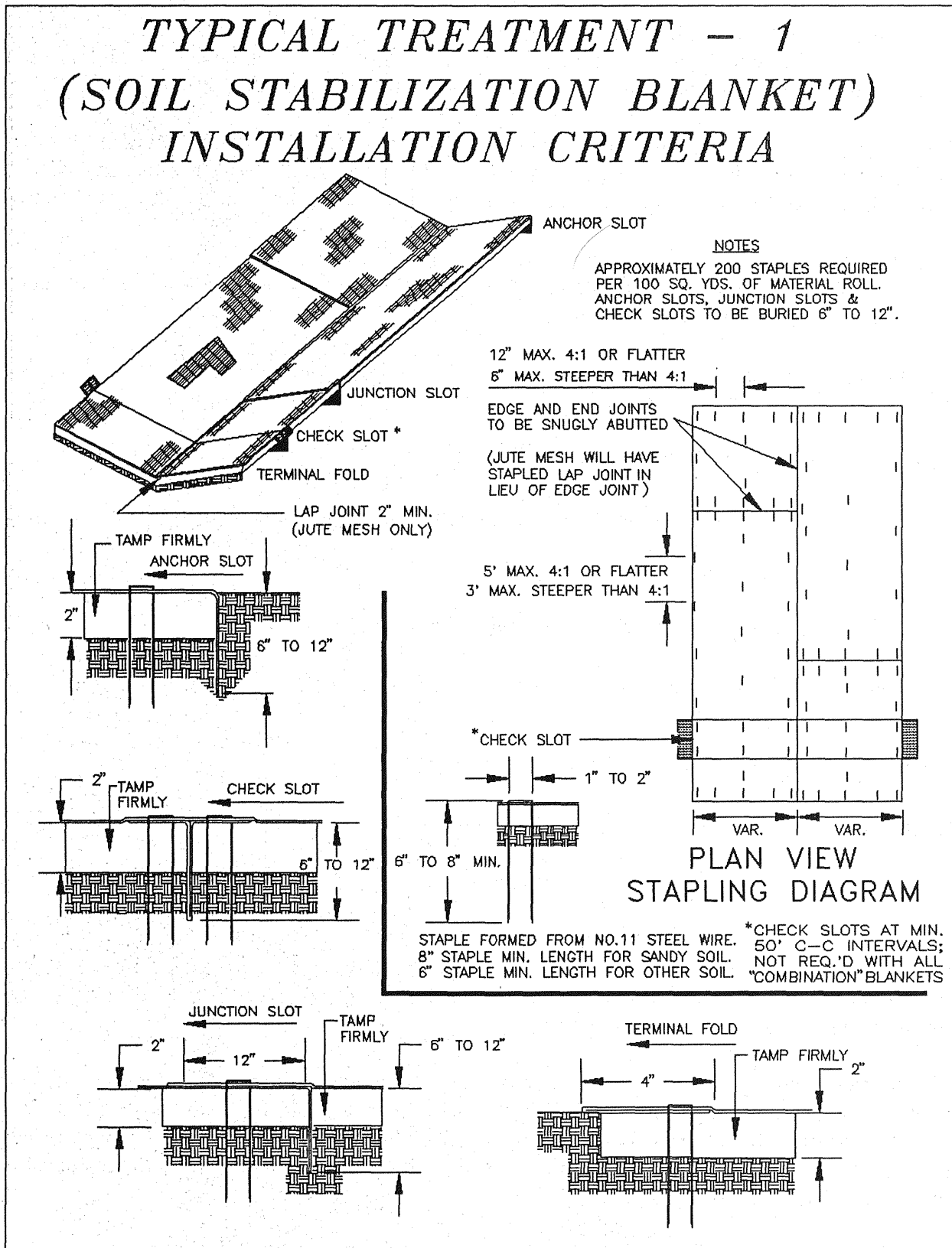
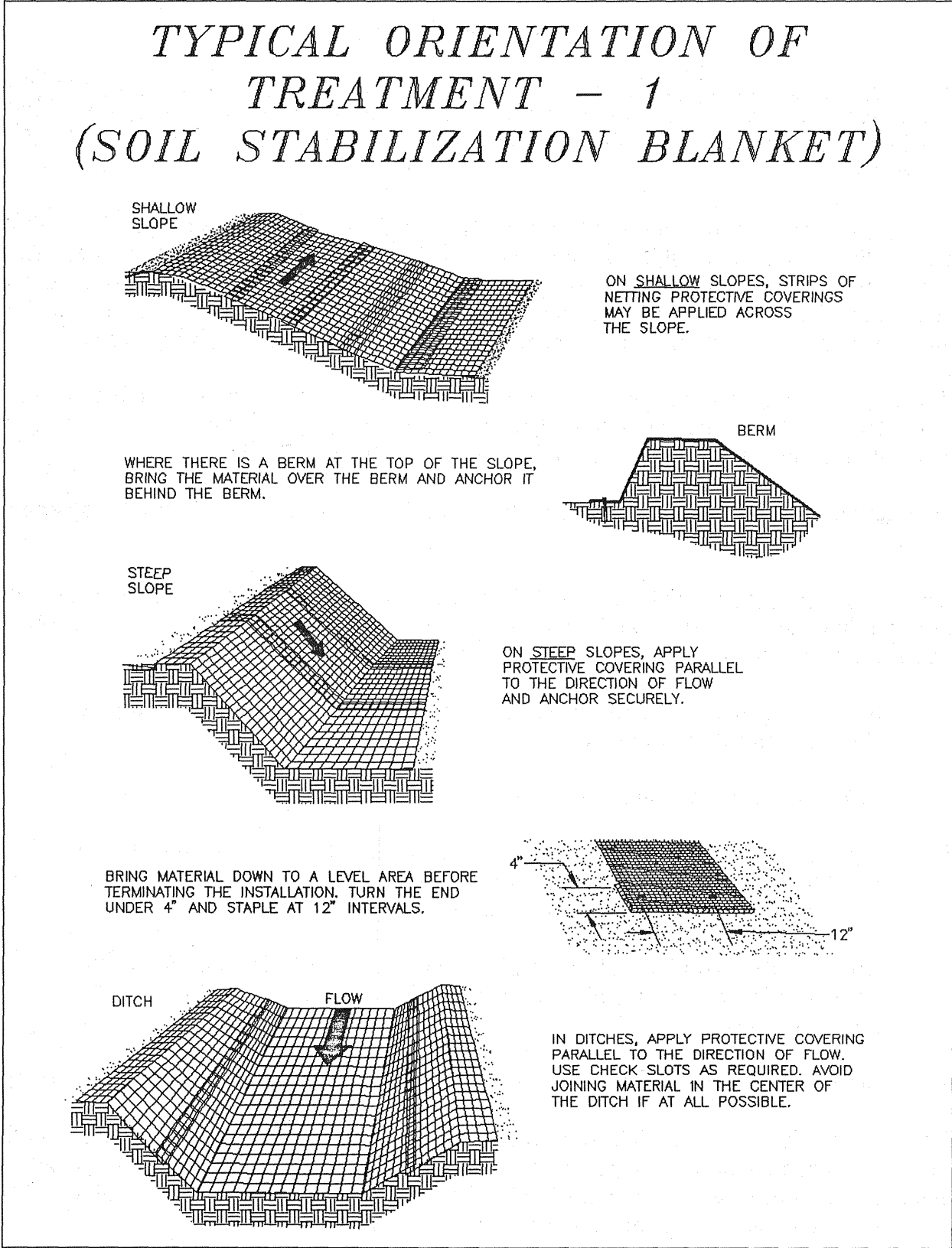
MS-16 NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. ALL TRENCHES ARE TO BE BACKFILLED EACH DAY, SEEDED AND MULCHED IMMEDIATELY. IN THE EVENT THAT TRENCHES CANNOT BE BACKFILLED IMMEDIATELY, EROSION CONTROL MEASURES WILL BE INSTALLED.

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 SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH 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.

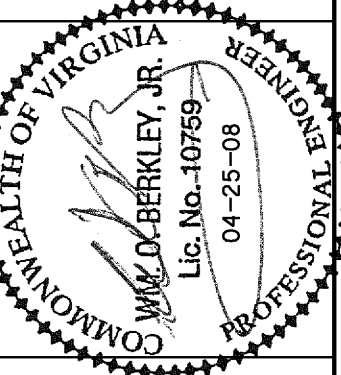
MS-18 ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED, AS DETERMINED BY THE E&S ADMINISTRATOR.

MS-19 PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASE IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

- CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
  - THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION.
  - NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR FREQUENCY STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BEDS OR BANKS.
  - ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR FREQUENCY STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS.
  - PIPES AND STORM SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR FREQUENCY STORM TO VERIFY THAT STORMWATER WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHEN THE TEN-YEAR FREQUENCY STORM IS CONTAINED WITHIN THE APPURTENANCES; OR DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT FLOOD RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL.
  - PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION/RETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.
- THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION AND MAKE THE IMPROVEMENTS.
- ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
- IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION/RETENTION, HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL OR DETENTION FACILITY.
- IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS IN A RESIDENTIAL SUBDIVISION DEVELOPMENT, SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE RESIDENTIAL SUBDIVISION DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE SUBDIVISION DEVELOPMENT SHALL BE USED IN ALL ENGINEERING CALCULATIONS.



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**WESTLAKE VILLAGE  
BUSINESS PARK SOUTH  
SEWERAGE FACILITIES**  
GILLS CREEK DISTRICT FRANKLIN CO., VA.

**E & S CONTROL DETAILS**

DATE:	01-10-08
DRAWN:	
CHECKED:	
REVISIONS	
NO.	DATE
1	03-04-08
2	03-31-08
3	04-14-08
4	04-25-08

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